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Vesico-Vaginal Fistula and its Sociocultural Impact on The Health of Women in Northern Nigeria

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Abstract

The aim of this study is to determine the impact of vesicovaginal fistula (VVF) and its sociocultural factors on the health of women in northern Nigeria. Specifically, to investigate the impact of simple vaginal fistulas, ureterovaginal fistulas, urethrovaginal fistulas, enterovaginal fistulas, and their respective sociocultural factors on the health of women in northern Nigeria. The study targeted 25,115 VVF patients in the reproductive age range of 15-49 years attending the Faridat Yakubu General Hospital in Zamfara State, the National Obstetric Fistula Center in Babbaru Ruga, Katsina State, and the Gesse VVF Center in Birnin Kebbi, Kebbi State. In determining the sample size for this study, the Taro yemen method was used in 394 cases, including 132 at Faridat Yakubu General Hospital in Zamfara State, 131 at the National Obstetric Fistula Center in Babbaru Ruga, Katsina State, and 131 at Gesse VVF Center in Birnin Kebbi, Kebbi State. The main instrument for this study is to use a structure questionnaire in a four-point rating scale, divided into two clusters, with section B consisting of 25 items. This instrument was validated based on facial and content parameters for data collection. The data collected and compiled for the study were analyzed using descriptive statistics of mean and standard deviation, and the null hypothesis was tested using ANOVA. The results indicate that simple vaginal fistulas, ureterovaginal fistulas, urethrovaginal fistulas, enterovaginal fistulas, and their sociocultural factors have a significant impact on the health of women in northern Nigeria. Similarly, there is a significant difference between the mean of the respondents from Zamfara, Katsina, and Kebbi states of the National Obstetric Fistula Center on the impact of simple vaginal fistula and uretero-vaginal fistula, whereas the mean of the respondents at the National Obstetric Fistula Center shows that there were significant differences in their responses. The Zamfara, Katsina and Kebbi State centers demonstrate that the impact of urethrovaginal fistulas, enterovaginal fistulas, and their sociocultural factors on women's health is consistent across northern Nigeria. Additionally, some of the recommended measures will be very helpful in reducing the impact of vesicovaginal fistula and its sociocultural factors on the health of women in Nigeria. Sequel to the above, recommendations were made in the study.

Key words: *Vesico-Vaginal Fistula, Sociocultural, Impact, Health*

1.1 Introduction

Vesicovaginal fistula (VVF) has significant social and cultural implications for women's health in northern Nigeria. In Nigeria, VVF is a common public health and social problem. Two million women worldwide live with VVF–with an annual incidence of 50,000 to 100,000 new cases (UNFPA, 2008). Nigeria bears about 40% of the annual global burden (UNFPA, 2008).

These numbers may be low because accurate prevalence rates of obstetric fistula are not easy to obtain due to inaccurate reporting, underreporting and shame, which prevents women from complaining of obstetric fistula (Miller *et al.*, 2005). It is not only a public health problem, but a critical medical condition with far-reaching social implications for those affected, their families, and their communities (Amodu *et al.*, 2018 & Sullivan *et al.*, 2016). Vesicovaginal fistula is a devastating condition that affects many women in Nigeria, especially those living in rural and deprived areas. This condition is often the result of prolonged obstructed labor, which can lead to a perforation or tear in the birth canal, causing leakage of urine and stool. The social and cultural risk factors associated with vaginal fistula in Nigeria are complex and multifaceted, with significant implications for the health and well-being of affected women.

Many women with vesicovaginal fistula (VVF) experience social isolation, as they are often ostracized by their communities due to the stigma associated with the condition. They may be abandoned by their husbands and families, and some may even be banished from their communities. This isolation and rejection can lead to feelings of depression and hopelessness, which can hurt a woman's overall health. In addition, many women with vesicovaginal fistula do not have adequate health care and experience financial difficulties due to the high cost of treatment. Apart from constant leakage of urine, VVF often causes its victims to suffer fetal death, damage to the cervix and pelvis, and neurological conditions such as foot drop, genitourinary infections, ammonia-induced dermatitis, genital wounds, kidney infections, and it occur mostly during menstruation (Hilton, 2003).

Researchers have suggested several factors that contribute to the occurrence of VVF (Mela *et al.*, 2007; Muhammad et al., 2009; Wall, 2012, Okoye, Emma-Echiegu & Tanyi, 2014). This condition also comes with a lot of discrimination and stigma. For example, the heinous nature of FGM exposes its victims to abuse and stigma which leads to them being ostracized by their husbands, families, and community (Pope *et al.*, 2011). For example, researchers have reported on the sociocultural aspect of abuse and stigma that leads family members to be unwilling to share food with women with VVF at family events (Khisa & Nyamongo, 2012). In addition, there are reports that vaginal infections sometimes lead to a woman not being able to perform certain household tasks and marital obligations towards her husband (Ahmed & Holtz, 2007).

Fasakin (2007) also reported on VVF and the psychosocial well-being of women in Nigeria, concluding that victims of VVF often lead undignified lives. Many of them were abandoned or divorced by their husbands and shunned by families and communities because of their bad smell and inability to engage in sexual activity and bear children. In societies like Nigeria, where a woman's worth depends on fulfilling her marital (sexual) duties, this situation is devastating. Thus, it is safe to infer that the lives of women with fistula are generally unstable.

Studies have shown that lifestyle changes among women with urinary incontinence include wearing clothes that can cover a visible urine mark, always wearing extra clothes, changing clothes frequently, limiting physical activity, abstaining from sex, and limiting water intake (Anders, 2000; Li *et al*., 2007; Delarmelendo *et al.*, 2013). Some of the means of protection used by these women include homemade sanitary napkins, toilet paper, towels, and tissues (Diokno, *et al.*, 2004). There are other survival strategies adopted by women with VVF. According to Watt, *et al.* (2013), Many VVF patients use religion as a coping strategy. This is because some victims of VVF believe that they are bewitched by some evil or spiritual forces.

Most studies on VVF in Nigeria have addressed the experiences of women awaiting reforms (Fasakin, 2007), sociocultural and health system factors that predispose women to this condition (Johnson, 2015), the impact of VVF on livelihoods (Ijaiya et *al.*, 2010) fistula Birth, socio-cultural practices in the Hausa community of Northern Nigeria *(* Amodu; Salami, & Richter, 2017) and the clinical management of the condition and barriers to health-seeking behavior of VVF patients (Asiedua , Maya, Kuumuori; Sebastian, Adelaide, Ephraim, & Adano, 2023).
The studies reviewed so far have many shortcomings, such as first-hand accounts of women with VVF, and experiences of living and coping with the condition. None of these studies examine vesicovaginal fistula (VVF) and its social and cultural impact on women's health in northern Nigeria.
These show that there is knowledge gap, very little is currently known about victims' experiences regarding their coping strategies. Therefore, the specific aim of this study includes investigating some of the different types of VVF such as simple ureterovaginal fistulas, urethrovaginal fistulas, and enterovaginal fistulas, and their social and cultural impact on women's health in northern Nigeria. It is believed that such information can inform the design and implementation of programs and interventions to address and the target population on the best strategies to deal with this condition is the northern Nigeria.

Statement of the problem

Vesicovaginal fistula and its socio-cultural impact on women's health in Northern Nigeria proper, specifically the different types of vesicovaginal fistulae such as simple fistula, ureterovaginal fistula, urethrovaginal fistula and enterovaginal fistula and their social and cultural impacts on women's health have not been thoroughly investigated. However, it should be noted that a major socio-cultural factor associated with vaginal fistula in Nigeria is the lack of access to quality maternal health care services. Many women in rural areas lack access to skilled birth attendants or emergency obstetric care, increasing their risk of complications during childbirth, such as obstructed labor. In addition, cultural beliefs and practices surrounding childbirth and pregnancy may also contribute to the development of vaginal fistula. For example, some societies may believe that childbirth is a natural process that does not require medical intervention, leading to women giving birth at home without proper medical supervision.
The health effects of vaginal fistula are profound and can have long-term effects on affected women. In addition to the physical pain and discomfort caused by this condition, women with vaginal fistula often experience social isolation, stigma, and discrimination. Many women are ostracized from their communities and may be abandoned by their husbands and families because

of the unpleasant odor and leakage associated with this condition. This can have devastating effects on a woman's mental health and well-being, leading to depression, anxiety, and low self-esteem. Addressing the sociocultural risk factors associated with vaginal fistula in Nigeria requires a multifaceted approach that includes improving access to high-quality maternal healthcare services, increasing awareness about the condition, and challenging harmful cultural beliefs and practices. Healthcare providers and policymakers must work together to ensure that all women have access to skilled birth attendants and emergency obstetric care, regardless of socioeconomic status or geographic location. In addition, community interventions aimed at educating and empowering women about their reproductive health rights can help prevent the development of vaginal fistula and support affected women to seek treatment and rehabilitation.

Aim and Objectives of the Study

The study aims to determine the impact of Vesico-Vaginal Fistula and its sociocultural factors on the health of women in Northern Nigeria, to specifically.

1. Identify the impact of Simple vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria
2. Determine the impact of Uretero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria
3. Determine the impact of Urethro-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria
4. Investigate the impact of Entero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria
5. Recommend measures aimed at mitigating the impact of early marriage in the Northern Part of Nigeria.

Research Questions

1. To what extent do Simple vaginal fistula and its sociocultural factors impact the health of women in Northern Nigeria?
2. To what extent do Uretero-vaginal fistula and its sociocultural factors impact on the health of women in Northern Nigeria?
3. To what extent do Urethro-vaginal fistula and its sociocultural factors impact on the health of women in Northern Nigeria?
4. To what extent do Entero-vaginal fistula and its sociocultural factors impact on the health of women in Northern Nigeria?
5. What are the measures aimed at mitigating the impact of VVF and its sociocultural factors on the health of women in Nigeria?

2.0 Literature Review

VVF and its social and cultural factors

VVF has shown us that this condition is not a new phenomenon, in fact, this condition has been a common condition around the world (Villey, 2006). In the medical profession, the term "vesico" is given to the urinary bladder. A VVF is therefore an abnormal connection between the urinary tract and the vagina so that there is uncontrollable leakage of urine into the vaginal canal.

According to Feeley (2006), "VVF is an abnormal connection between the urinary bladder and the vagina that results in a continuous, involuntary discharge of urine into the vaginal vault." The report by Wall et al (2003) indicates that there are cases of cystic ovarian disease in industrialized countries, but these cases are due to radiotherapy or surgery, and thus the etiology is distinct from that in developing countries, which is mainly due to neglect of obstetric complications (Wall et al 2003:1408). According to Feeley (2006), the incidence of VVF in the United States is debated, while most authors suggest an incidence of VVF after total abdominal hysterectomy (TAH) of 0.5-2%, others suggest an incidence of 0.05% only from bladder or urethral involvement, so in about 10% of VVF cases obstetric trauma was the associated etiology.

Radiotherapy and surgery for malignant gynecological diseases each account for 5% of cases in the case of Nigeria alone. The incidence of vesicovaginal fistula is 350 cases per 100,000 births in a tertiary teaching hospital. This condition is so overwhelming and thus devastating to Nigerian women that the Federal Minister of Women Affairs and Youth Development in Nigeria has estimated that the number of untreated VVF cases in Nigeria is between 800,000 and 1,000,000 (Fele, 2006). According to this report, Nigerian women are under serious siege by VVF.

There is no universal or common procedure adopted by medical practitioners to describe or classify fistulas, due to the form and extent of infection on patients.

However, the authors create classifications based on the anatomy of the lesion, and the size of the fistula (Wall et al., 2003). However, Sims (1852) identified the following classifications of VVF based on its position on the vagina: (1) simple vaginal fistula (2) urethrovaginal fistula in which the anomaly is limited to the urethra(3) fistula that is "in the neck located from the bladder or the root of the urethra urine, which leads to the destruction of the triangle; (4) fistula involving the body and floor of the bladder and (4) uterovesical fistula where the opening of the fistula connects to the uterine cavity or cervical canal and (5) enterovaginal fistula (Wall *et al.* , 2003).

The socio-cultural conditions in which Nigerian women find themselves serve as predisposing factors for their poor maternal conditions and therefore the occurrence of VVF. These social and cultural factors are mostly responsible for the underlying behaviors and conditions that cause and perpetuate the suffering of VVF victims. Important social and cultural conditions include, but are not limited to early marriage, malnutrition, harmful traditional birth practices, poverty, and illiteracy.

Women's Health in Northern Nigeria

The health of women and girls in northern Nigeria is affected by the complex interplay between gender-based power dynamics, social role expectations for women, and traditional belief systems around marriage, pregnancy, and childbirth (Okoye, Emma-Echiegu & Tanyi, 2014). The literature that was reviewed showed that three key factors related to the folklore community in northern Nigeria specifically put women at risk of VVF. These practices include early marriage and early.

childbirth, traditional birth interventions and female circumcision; and cultural constraints that prevent women in labor from receiving timely health care.

This situation is further complicated by broader resource issues for healthcare workers arising from armed conflict and terrorism. The health implications of vaginal fistula extend beyond the physical realm. Women with this condition often face social isolation, stigma, and psychological distress. Continuous leakage of urine or feces lead to a foul smell. As a result, they suffer from a loss of self-esteem and are often excluded from social activities, exacerbating their psychological distress.

In addition, the physical consequences of vaginal fistula are severe which include chronic infections, such as urinary tract infections and skin infections. These are common because the affected areas are constantly exposed to bacteria. These infections can lead to further complications, including kidney damage and sepsis if left untreated. In addition, the constant leakage of body fluids can cause skin irritation and breakdown, leading to painful blisters and ulcers.

2.2 Theoretical framework

The theory adopted for this study is the Transactional Model of Stress and Coping (TMSC) developed by Lazarus et al. (2019). The theory is a framework for assessing the process of dealing with stressful life events (Biggs *et al.*, 2017). The theory states that coping efforts should be aimed at managing the problem and thereby achieving results (Biggs et al., 2017). According to Biggs *et al.* (2017), stressors are demands made by the human environment that tend to disturb a person's balance, thus affecting his physical and psychological health and requiring actions to restore balance. First, this is done through the individual's assessment of the social and cultural pressures and resources available to the individual. Furthermore, secondary evaluation shows what the individual can do about the circumstances. The TMSC is useful for this study in forming the theoretical framework because of its focus on health behavior, which is multifaceted in nature. The Transactional Model of Stress and Coping (TMSC) is a valuable framework for understanding the psychosocial environment within people that is influenced by interpersonal and community- level factors.

2.3 Empirical -Overview

Okoye, Emma Echegwu, and Tani (2014) studied living with vesicovaginal fistula: experiences of women awaiting repair in Ebonyi State, Nigeria. The study aimed to shed light on how women with VVF cope with the health problem in Ebonyi State, Nigeria. In-depth interviews were conducted with ten women awaiting repair at the National Fistula Center in Abakaliki, Nigeria. Six of the women have been living with this health problem for more than ten years. The results show that almost all the women attributed their health problems to supernatural causes. Women reported suffering from many physical and emotional problems. Some of the methods they came up with to physically deal with the problem included regular bathing and using strips of old wrappers as pads. Many of them get by emotionally and financially by attending religious gatherings and doing some form of income-generating work. The study recommends that reforms should go hand in hand with vocational training so that they have some income-generating work after the reforms.

Next is the study on predisposing factors for vesicovaginal fistula in women in Ebonyi Local Government Area of Ebonyi State (Johnson,2015). The study aimed to identify predisposing factors for VVF in women in Ebonyi Local Government Area of Ebonyi State. This is a descriptive,

cross-sectional community study, and a total of 386 women of reproductive age were assessed using interviewer-administered questionnaires. The study revealed that 80% (309) of the population studied were aware of VVF. The study also revealed that the predisposing factors for VVF were influenced by education level and employment status, as both variables were statistically significant. Education level and functional status were directly proportional to an individual's knowledge and inversely proportional to those predisposing factors for the development of VVF. In conclusion, considerable progress is yet to be made to make women in Ebonyi Local Government Area of Ebonyi State aware of FVF and those predisposing factors for the development of FVF. To reduce those predisposing factors that can lead to VVF; The study suggested advocacy, health education, economic empowerment of women, education of the girl child, and improving the social and economic status of women as tools to bring about the desired change.

Another study that reviews VVF in Northern Nigeria is Oluwakemi, Bukola & Richter (2016), Obstetric Fistula and Socio-Cultural Practices in Northern Nigeria Community in Northern Nigeria. The study aimed to explore narratives in the literature on obstetric fistula in the context of the Northern part of the ethnolinguistic community in Northern Nigeria and the potential roles of nurses and midwives in the management of obstetric fistula. Three main cultural practices predispose women in the Northern part of Nigeria to the development of obstetric fistulas: early marriage and early childbirth, unskilled childbirth, female genital mutilation, and social and cultural constraints that lead to limited access to healthcare during childbirth.

There is a failure to implement international rights of the girl child in Nigeria, which perpetuates early child marriage. The traditions in the Northern part of Nigeria limit women's decision-making power about seeking health care during childbirth.

In addition, there is a shortage of nurses and midwives to provide health care services to women during childbirth. Finally, to improve women's access to health care, there is a need for greater political commitment and budgetary allocation to distribute human resources for health to underserved areas in the northern part of Nigeria's communities. There is also a need to (empower) to resist oppressive traditions and provide them with opportunities to improve their social status. The practice of traditional birth attendants can be regulated, and primary health care services strengthened.

Also, Amutaigwe (2023) studied the effects of vesicovaginal fistula on the lives of women in southeastern Nigeria. The purpose of this study was to enrich our understanding of the impact of VVF as it relates to women's experiences in southeastern Nigeria. The transactional model of stress and coping was adopted in this study; This theory asserts that when dealing with any type of stressor, people tend to adopt a problem-focused or emotion-focused coping style. Information about women with VVF is important because it can inform the design and implementation of programs and interventions to address the challenges this population faces. The study conducted in-depth interviews with 20 women at the National Fistula Center in Abakaliki, Nigeria. Study data were coded, and themes were created from the codes and “marital support” was the primary theme. Participants reported receiving varying levels of marital support from their partners. They also faced various challenges such as abandonment, emotional distress, and job loss. The results

of this study may create positive social change to increase spousal support for women with VVF. However, the weakening spousal support can have significant implications for these women's self-esteem and well-being. Women who feel supported by their partners may experience less stigma and may be more willing to acknowledge this birth injury. Providing support to women with VVF can help ensure their physical and emotional comfort and improve their lives as well as the lives of their families and the entire community.

3.0 Methodology

This study employed the survey design which sought the views of respondents in northern Nigeria on VVF and its sociocultural impact on the health of women in Northern Nigeria. The population for this study consisted of 25,115 women with VVF, Faridat Yakubu General Hospital, Zamfara State, National Obstetric Fistula Centre, Babare Ruga, Katsina State. Jesse VVF Centre, Birnin Kebbi, Kebbi State within the childbearing age group of 15 to 49 years. The three health facilities are spread across northern Nigeria. Also, using inclusion criteria, the population consists of women of reproductive age, and exclusion criteria include women below reproductive age and women over reproductive age (Researcher's extract from the registry at the National Centers for Obstetric Fistula, 2024). In determining the sample size for this study, the researcher used the Taro Yemen method to arrive at a sample size of 394 which was 132 for Farida Yakubu General Hospital, Zamfara State, and 131 for National Obstetric Fistula Babar Ruja, Katsina State, and 131 for Jessie VVF the centre, Birnin Kebbi, Kebbi State. Participant sampling was based on the availability of respondents, and they were recruited using a purposive sampling procedure. Participants had to be on admission and awaiting repair at the National Fistula Centers in Northern Nigeria. Women gave their verbal informed consent before responding to the items in the questionnaires. These participants were selected from Zamfara, Katsina, and Kebbi states respectively. The instrument for data collection is based on a four points Likert scale type and is organized into two groups Section B consisting of 25 items on very high Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). Therefore, decision-making on each item was guided by the following rules: 1-1.49 = Very Low Extent, 1.50-2.49 = Low Extent, 2.50-3.49 = High Extent, 3.50-4.00 = Very High Extent. The face and contents validated instrument was done. Validity is the process of determining how well a researcher tests what they are trying to measure (Atim, 2017). Therefore, to ensure validity, a Cronbach alpha scale coefficient of 0.87 was adopted for this instrument. The data collected and compiled for the study was analyzed with descriptive statistics of Mean and standard deviation, and social demographic features of the study participants were presented in frequency tables. Cross tabulations were done, Pearson's Chi-square was used to test for statistical significance while the null hypotheses were tested using Analysis of Variance (ANOVA).

4.0 Results and Discussion of Findings

4.1: Data Presentation and Analysis of the Research Questions

Table 4.1. Respondents Socio-demographic characteristics, their level of Awareness of the various types of VVF and Anti-Natal Care(ANC) Attendance

Age group (years)	Frequency (N = 394)	Percentages	level of Awareness of the various types of VVF		ANC Attendance		X^2	P value
			Yes	NO	Yes	NO		
15-24	192	48.7	117(29.7%)	277(70.3%)	127(32.2%)	267 (67.8%)		
25-34	85	21.6	89(22.6%)	305 (77.4%)	272(69.0%)	122(31.0%)	340.822[a]	0.001
35-44	59	15.0	264(67.0%)	130(33.0%)	237(60.2%)	157(39.8%)		
≥45	58	14.7	135 (34.3%)	258(65.5%)	233(59.1%)	160(40.6%)		
Highest Qualification								
None	192	48.7	267 (67.8%)	127 (32.2%)	89(22.6%)	305 (77.4%)		
FLSC	85	21.6	237(60.2%)	157(39.8%)	264(67.0%)	130(33.0%)	310.822[a]	0.011
WASC/SSCE	59	15.0	233(59.1%)	160(40.6%)	135 (34.3%)	258(65.5%)		
Diploma and above	58	14.7	127(32.2%)	267 (67.8%)	267 (67.8%)	127 (32.2%)		
Marital status								
Single	171	43.4	237(60.2%)	157(39.8%)	264(67.0%)	130(33.0%)		
Married	85	21.6	89(22.6%)	305 (77.4%)	135 (34.3%)	258(65.5%)	230.822[a]	0.059
Separated	59	15.0	127(32.2%)	267 (67.8%)	267 (67.8%)	127 (32.2%)		
Divorce	79	20.1	233(59.1%)	160(40.6%)	89(22.6%)	305 (77.4%)		
Employment status								
Unemployed	245	62.2	264(67.0%)	130(33.0%)	237(60.2%)	157(39.8%)		
Employed	72	18.3	135 (34.3%)	258(65.5%)	233(59.1%)	160(40.6%)	340.122[a]	0.023
Business	77	19.5	267 (67.8%)	127 (32.2%)	267 (67.8%)	127 (32.2%)		
	394	100.0	305 (77.4%)	89(22.6%)	89(22.6%)	305 (77.4%)		

Table 4.1 contains respondents' socio-demographic characteristics, and their level of awareness of the various types of VVF and ANC Attendance. Table 4.1 shows the respondents' socio-demographic characteristics and their level of awareness of the various types of VVF and ANC attendance. Most respondents 192 (48.7%) were in the age group 15-24 years while 117(29.7%) were aware of the various types of VVF and 277(70.3%) were not aware. Also, most of the respondents 267 (67.8%) were not attending ANC. The results of the chi-square test show that the ages of the respondents are significantly associated with respondents' level of awareness of the various types of VVF and ANC Attendance. Most of the respondents, 192 (48.7%), do not have a school certificate or its equivalent while 267 (67.8%) were aware of the various types of VVF, and 127 (32.2%) were not aware. About 89 (22.6%) do attend ANC whereas 305 (77.4%) do not attend ANC. The results of the chi-square test show that the qualifications of the respondents are significantly associated with respondents' level of awareness of the various types of VVF and ANC Attendance.

On the issues of marital status, it was found that most of the respondents 171 (43.4%), married 85 (21.6%) while 237(60.2%) were aware of the various types of VVF and 157(39.8%) were not aware. Also, most of the respondents 264(67.0%) were not attending ANC. The results of the chi-square test shows that the marital status of the respondents is not significantly associated with respondents' level of awareness of the various types of VVF and ANC attendance. Also, employment status majority of the respondents 245 (62.2%) were unemployed 264(67.0%) were aware of the various types of VVF and 130(33.0%) were not aware. Also, most of the respondents 237(60.2%) were not attending ANC. The results of the chi-square test show that the employment status of the respondents is significantly associated with the respondents' level of awareness of the various types of VVF and ANC Attendance. Awareness of VVF and ANC attendance is directly proportional to one's level of education.

Research Question 1: To what extent do Simple vaginal fistula and its sociocultural factors impact the health of women in Northern Nigeria?

Table 4.2: Mean response on the extent to which Simple vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria?

S/N	Statement Items	Zamfara (n =131)			Katsina (n =132)			Kebbi (n =131)		
		$\overline{X}_1$	**SD1**	**RK**	$\overline{X}_2$	SD2	**RK**	$\overline{X}_3$	SD3	**RK**
1.	some women with fistula may be left in isolation, they shunned by their families and communities, leading to loneliness and isolation.	3.30	0.59	HE	3.54	0.62	VHE	3.30	0.59	HE
2.	Fistula can cause sexual dysfunction, which can have a negative impact on a woman's self-esteem and relationships.	3.14	1.14	HE	2.95	1.27	HE	3.14	1.14	HE
3.	It may cause infertility, which can have social and economic consequences on women in Nigeria.	3.82	0.78	VHE	3.32	0.68	HE	3.18	0.78	HE

4.	Women suffering from Simple vaginal fistula may experience depression, anxiety, and other mental health problems.	3.37	0.48	HE	3.61	0.49	VHE	3.37	0.48	HE
5.	It may lead to financial hardship because of unemployment	3.30	0.59	HE	3.54	0.62	HE	3.30	0.59	HE
	Grand Mean	**3.39**	**0.72**	**HE**	**3.39**	**0.74**	**HE**	**3.26**	**0.72**	**HE**

Source: *Researcher's Field Result, 2024*

Table 4.2 shows the mean response on the extent to which simple vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria. The result shows that the grand mean for items 1, 2, 3, 4, -5, for the three categories of respondents were higher than the decision mean of 2.5 (that is 3.39, 3.29, and 3.26), which shows that all the women groups (Respondents at Zamfara, Katsina and Kebbi state National Obstetric Fistula Center) share the same opinion that to a high extent simple vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria. This is further confirmed by the item-by-item analyses which mean ratings for these groups are higher than the benchmark of 2.5 with lower values of their respective standard deviations showing the homogeneity in their responses.

Research Question 2: To what extent do Uretero-vaginal fistula and its sociocultural factors impact the health of women in Northern Nigeria?

Table 4.3: Mean response of the respondents on the extent to which Uretero-vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria.

	Items	Zamfara (n =131)			Katsina (n =132)			Kebbi (n =131)		
		$\overline{X}_1$	**SD1**	**RK**	$\overline{X}_2$	SD2	**RK**	$\overline{X}_3$	SD3	**RK**
6.	It causes social isolation among women	3.18	1.14	HE	2.99	1.27	HE	3.18	1.14	HE
7.	women with Uretero-vaginal fistula may experience a loss of income, which can lead to poverty because of unemployment	3.18	0.76	HE	3.31	0.67	HE	3.18	0.76	HE
8.	It may cause infertility, which can have social and economic consequences on women in Nigeria.	3.60	0.59	VHE	3.53	0.57	VHE	3.60	0.59	VHE
9.	Women suffering from Simple vaginal fistula may experience depression, anxiety, and other mental health problems.	3.75	0.43	VHE	3.80	0.40	HE	3.75	0.43	HE
10.	It causes sexual dysfunction, which can have a negative	3.30	1.20	HE	3.06	1.32	HE	3.29	1.20	HE

	impact on a woman's self-esteem and relationships.									
	Grand Mean	**3.44**	**0.82**	**HE**	**3.35**	**0.85**	**HE**	**3.40**	**0.82**	**HE**

Source: *Researcher's Field Result, 2024*

Table 4.3 contains the mean response of the respondents on the extent to which Uretero-vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria. The result shows that the grand mean for items 6, 7, 8, 9, and -10, for the three categories of respondents were higher than the decision mean of 2.5 (that is **3.40**, **3.35**, and **3.40**), which shows that all the women groups (Respondents at Zamfara, Katsina and Kebbi state National Obstetric Fistula Center) share the same opinion except respondents who were health workers which opined that to a high extent uretero-vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria. This is further confirmed by the item-by-item analyses which mean ratings for these groups are higher than the benchmark of 2.5 with lower values of their respective standard deviations showing the homogeneity in their responses.

Research Question 3: To what extent do Urethro-vaginal fistula and its sociocultural factors impact the health of women in Northern Nigeria?

Table 4.4: Mean Response of the Respondents on the extent to which Urethro-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria

	Items	Zamfara (n =131)			Katsina (n =132)			Kebbi (n =131)		
		$\overline{X}_1$	**SD₁**	**RK**	$\overline{X}_2$	SD₂	**RK**	$\overline{X}_3$	SD₃	**RK**
11	women with Urethro-vaginal fistula may experience a loss of income, which can lead to poverty because of unemployment	3.73	0.48	VHE	3.73	0.44	HE	3.76	0.43	VHE
12	It may cause infertility, which can have social and economic consequences on women in Nigeria.	3.17	1.26	HE	3.06	1.30	HE	3.15	1.29	HE
13	Women suffering from Simple vaginal fistula may experience depression, anxiety, and other mental health problems.	3.15	0.75	HE	3.17	0.73	HE	3.16	0.74	HE
14	It causes sexual dysfunction, which can have a negative impact on a woman's self-esteem and relationships.	3.62	0.57	HE	3.63	0.55	HE	3.62	0.57	HE
15.	It causes Mental health problems due to experiencing anxiety, depression, and other social-economic challenges they face.	3.34	0.46	HE	3.35	0.48	HE	3.37	0.49	HE

	Grand Mean	**3.40**	**0.70**	**HE**	**3.39**	**0.70**	**HE**	**3.41**	**0.70**	**HE**

Source: *Researcher's Field Result, 2024*

Table 4.4 shows the mean response of the respondents on the extent to which Urethro-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria. The result shows that the grand mean for items 11, 12, 13, 14, -15, for the three categories of respondents were higher than the decision mean of 2.5 (that is **3.40**, **3.39**, and **3.41**), which shows that all the women groups (Respondents at Zamfara, Katsina and Kebbi state National Obstetric Fistula Center)share the same opinion that to a high extent Urethro-vaginal fistula and its sociocultural factors have impact on the health of women in Northern Nigeria. This is further confirmed by the item-by- item analyses which mean ratings for these groups are higher than the benchmark of 2.5 with lower values of their respective standard deviations showing the homogeneity in their responses.

Research Question 4: To what extent do Entero-vaginal fistula and its sociocultural factors impact the health of women in Northern Nigeria?

Table 4.5: Mean Response of the respondents on the extent to which Entero-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria.

	Items	Zamfara (n =131)			Katsina (n =132)			Kebbi (n =131)		
		$\overline{X}_1$	**SD1**	**RK**	$\overline{X}_2$	SD2	**RK**	$\overline{X}_3$	SD3	**RK**
16	women with Entero-vaginal fistula may experience a loss of income, which can lead to poverty because of unemployment	3.11	1.15	HE	3.13	1.14	HE	3.06	1.19	HE
17	It may cause infertility, which can have social and economic consequences on women in Nigeria.	3.16	0.76	HE	3.19	0.76	HE	3.17	0.76	HE
18	Women suffering from Simple vaginal fistula may experience depression, anxiety, and other mental health problems.	3.34	0.47	HE	3.35	0.48	HE	3.37	0.49	HE
19	It causes sexual dysfunction, which can have a negative impact on a woman's self-esteem and relationships.	3.50	1.15	VHE	3.13	1.14	HE	3.16	1.19	HE
20.	It causes Mental health problems due to experiencing anxiety, depression, and other social-economic challenges they face.	3.15	0.76	HE	3.19	0.76	HE	3.27	0.76	HE

	Grand Mean	**3.25**	**0.86**	**HE**	**3.20**	**0.86**	**HE**	**3.21**	**0.88**	**HE**

Source: *Researcher's Field Result, 2024*

Table 4.5 shows the mean response of the respondents on the extent to which Entero-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria. The result shows that the grand mean for items 16, 17, 18, 19, -20, for the three categories of respondents were higher than the decision mean of 2.5 (that is **3.25**, **3.20**, and **3.21**), which shows that all the women groups (Respondents at Zamfara, Katsina and Kebbi state National Obstetric Fistula Center) share the same opinion that to a high extent Entero-vaginal fistula and its sociocultural factors have impact on the health of women in Northern Nigeria. This is further confirmed by the item-by-item analyses which mean ratings for these groups are higher than the benchmark of 2.5 with lower values of their respective standard deviations showing the homogeneity in their responses.

Research Question 4: What are the measures aimed at mitigating the impact of Vesico-Vaginal Fistula and its sociocultural factors on the health of women in Nigeria?

Table 4.6: Mean response of the respondents on the recommended measures aimed at mitigating the impact of Vesico-Vaginal Fistula and its sociocultural factors on the health of women in Nigeria.

	Items	Zamfara (n =131)			Katsina (n =132)			Kebbi (n =131)		
		$\overline{X}_1$	**SD₁**	**RK**	$\overline{X}_2$	SD₂	**RK**	$\overline{X}_3$	SD₃	**RK**
21	Providing girls with access to education can help them to delay marriage and improve their socioeconomic prospects.	3.75	0.43	VHE	3.80	0.40	VHE	3.75	0.43	VHE
22	Providing girls and women with access to economic opportunities can help to improve their financial independence and reduce their vulnerability to early marriage	3.30	1.20	HE	3.06	1.33	HE	3.30	1.20	HE
23	Strengthening and enforcing laws against child marriage can help to protect girls and women from being married off at a young age	3.16	0.76	HE	3.31	0.67	HE	3.16	0.76	HE
24	Raising awareness about the negative consequences of early marriage among communities in Northern Nigeria can help to change social norms	3.65	0.55	VHE	3.53	0.57	VHE	3.65	0.55	VHE
25.	Enforcing laws against child marriage and ensuring that they	3.34	0.48	HE	3.59	0.49	VHE	3.34	0.48	VHE

	are well-implemented is essential to protecting girls from being married off before they are ready.									
	Grand Mean	**3.44**	**0.68**	**HE**	**3.46**	**0.69**	**HE**	**3.44**	**0.68**	**HE**

Source: *Researcher's Field Result, 2024*

Table 4.6 contains the mean response of the respondents on the recommended measures aimed at mitigating the impact of Vesico-Vaginal Fistula and its sociocultural factors on the health of women in Nigeria. The result shows that the grand mean for items 21, 22, 23, 24, and -25, for the three categories of respondents was higher than the decision mean of 2.5 (that is **3.44**, **3.46**, and **3.44**), which shows that all the women groups (Respondents at Zamfara, Katsina and Kebbi state National Obstetric Fistula Center) share the same opinion that to a high extent some of the recommended measures are very useful in mitigating the impact of Vesico-Vaginal Fistula and its sociocultural factors on the health of women in Nigeria. This is further confirmed by the item-by -item analyses which mean ratings for these groups are higher than the benchmark of 2.5 with lower values of their respective standard deviations showing the homogeneity in their responses.

4.2 Testing of Hypotheses

1. **There is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Simple vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria**

To test this hypothesis, data collected were analyzed using the ANOVA - test, and the result of this computation is shown in Table 4.8.

Table 4.7: ANOVA of difference between the mean rating of responses from respondents at the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Simple vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria

				Means					
Source of Variation	***SS***	***Df***	***MS***	Zamfara,	Katsina	Kebbi	**Fcal**	**Fcrit**	**Decision**
Between Groups	1.4778	2	0.738	**3.40**	**3.35**	**3.40**	1.402	0.248	Reject
Within Groups	206.5196	392	0.527						
Total	207.9974	394							

Source: *Researcher's Field Result, 2024*

Table 4.7 contains the ANOVA of the difference between the mean rating of responses from respondents at the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Simple vaginal fistula and its sociocultural factors on the health of women in Northern

Nigeria. The results show the degree of freedom (df) (2,392), 0.05 level of significance, F-critical (Fcrit = 0.248), and F-calculated (Fcal = 1.402). Since Fcrit = 0.248<Fcal = 1.402, we reject the null hypothesis to accept the alternative hypothesis which says that there is a significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Simple vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria

2. **There is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Uretero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria**

Table 4.8: ANOVA of difference between the mean rating of responses from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Uretero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria

				Means					
Source of Variation	***SS***	***Df***	***MS***	Zamfara,	Katsina	Kebbi	**Fcal**	**Fcrit**	**Decision**
Between Groups	0.5349	2	0.2675	**3.40**	**3.39**	**3.41**	0.389	0.248	Reject
Within Groups	269.4715	392	0.687						
Total	270.0064	394							

Source: *Researcher's Field Result, 2024*

Table 4.8 contains the ANOVA of the difference between the mean rating of responses from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Uretero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria. The results show the degree of freedom (df) (2,392), 0.05 level of significance, F-critical (Fcrit = 0.248), and F-calculated (Fcal = 0.389). Since Fcrit = 0.248<Fcal = 0.389, we reject the null hypothesis to accept the alternative hypothesis which says that there is a significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Uretero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria.

3. **There is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Urethro-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria**

Table 4.9: ANOVA of difference between the mean rating of responses from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Urethro-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria

Source of Variation	***SS***	***Df***	***MS***	***Means*** Zamfara,	Katsina	Kebbi	**Fcal**	**Fcrit**	**Decision**
Between Groups	0.0263	2	0.0131	**3.40**	**3.39**	**3.41**	0.0268	0.248	Accepted
Within Groups	191.5900	392	0.489						
Total	191.6163	394							

Source: *Researcher's Field Result, 2024*

Table 4.9 contains the ANOVA of the difference between the Mean Rating of responses from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Urethro-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria. The results show the degree of freedom (df) (2,392), 0.05 level of significance, F-critical (Fcrit = 0.248), and F-calculated (Fcal = 0.0268). Since Fcrit = 0.248>Fcal = 0.0268, we accept the null hypothesis and conclude that there is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Urethro-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria.

4. **There is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Entero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria**

Table 4.10: ANOVA of difference between the Mean Rating of responses from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Entero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria

Source of Variation	***SS***	***Df***	***MS***	***Means*** Zamfara,	Katsina	Kebbi	**Fcal**	**Fcrit**	**Decision**
Between Groups	0.1838	2	0.0919	**3.25**	**3.20**	**3.21**	0.125	0.248	Accepted
Within Groups	286.9606	391	0.7339						
Total	287.1444	394							

Source: *Researcher's Field Result, 2024*

Table 4.10 contains the ANOVA of the difference between the Mean Rating of responses from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Entero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria. The results show the degree of freedom (df) (2,392), 0.05 level of significance, F-critical (Fcrit = 0.248), and

F-calculated (Fcal = 0.125). Since Fcrit = 0.248>Fcal = 0.125, we accept the null hypothesis and conclude that there is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Entero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria.

4.4 Discussion of Findings

The findings from Research Question 1 revealed the data analyzed from responses of the respondents on the extent simple vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria as shown in Table 4.2. The result of the data analysis shows that the grand mean for items 1, 2, 3, 4, -5 for the three categories of respondents was above the standard mean of 2.50 which means that to a high extent, simple vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria. The test of hypothesis further confirmed that there is a significant difference in the mean responses of respondents from Zamfara, Katsina, and Kebbi State at the National Obstetric Fistula Centers on the impact of Simple vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria. This simply means women in Northern Nigeria go through different situations. This is synonymous with Okoye, Emma-Echiegu, & Tanyi, (2014) studied on living with VVF: experiences of women awaiting repairs in Ebonyi State, Nigeria. In Okoye, *et al* (2014), it was found that nearly all the women attributed their health problems to supernatural causes. The women stated that they go through a lot of physical and emotional problems.

Similarly, the findings from research question two in Table 4.3, show that from the data analyzed, the respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State held the same opinion that to a high extent uretero-vaginal fistula and its sociocultural factors have impacts on the health of women in Northern Nigeria. However, the test of hypothesis confirmed there is a significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of uretero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria.

Also, the findings from research question two in Table 4.4, show that from the data analyzed, the respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State held the same opinion that to a high extent Urethro-vaginal fistula and its sociocultural factors have impact on the health of women in Northern Nigeria. The corresponding test of hypothesis further revealed that there is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the impact of Urethro-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria. This simply means that the Urethro-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria.

In another development, the findings from research question two in Table 4.5, show that from the data analyzed, the respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State held the same opinion that to a high extent Entero-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria. The corresponding test of hypothesis further revealed that there is no significant difference in the mean responses of respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on the

impact of Entero-vaginal fistula and its sociocultural factors on the health of women in Northern Nigeria. This simply means that the Entero-vaginal fistula and its sociocultural factors have an impact on the health of women in Northern Nigeria.

Also, the findings from research question two in Table 4.6, show that from the data analyzed, the respondents from the National Obstetric Fistula Centers Zamfara, Katsina, and Kebbi State on some of the recommended measures mitigating against the impact of VVF and its sociocultural factors on the health of women in Nigeria. It was found that respondents held the same opinion that to a high extent the recommended measures are very useful in mitigating the impact of VVF and its sociocultural factors on the health of women in Nigeria.

Some of the measures include; providing girls with access to education can help them to delay marriage and improve their socioeconomic prospects, providing girls and women with access to economic opportunities can help to improve their financial independence and reduce their vulnerability to early marriage, strengthening and enforcing laws against child marriage can help to protect girls and women from being married off at a young age, raising awareness about the negative consequences of early marriage among communities in Northern Nigeria can help to change social norms and enforcing laws against child marriage and ensuring that they are well-implemented is essential to protecting girls from being married off before they are ready.

Conclusion

The different types of vaginal fistulas in Nigeria are complex problems influenced by social and cultural risk factors. Early marriage, limited access to education and health care, and cultural beliefs surrounding childbirth contribute to the high prevalence of this condition. The health impacts, both physical and psychological, are serious and require comprehensive interventions and policies. By addressing these risk factors and implementing appropriate measures, Nigeria can make significant progress in the prevention and management of vaginal fistula, ultimately improving the lives of countless women.

Recommendations

1. Addressing the social and cultural factors associated with vaginal fistula in Nigeria requires a multifaceted approach. First, comprehensive sexual and reproductive health education programs should be implemented to raise awareness about the dangers of early marriage and the importance of competent health care during pregnancy and childbirth. These programs should target young girls and their families and focus on the long-term health consequences of early marriage.
2. Second, efforts must be made to improve access to quality obstetric care. This includes training and equipping traditional birth attendants with the necessary skills and knowledge to identify and manage complications during childbirth. Additionally, increasing the number of skilled health workers in rural areas will ensure that women receive timely and appropriate care.
3. Finally, addressing the social stigma associated with vaginal fistula is crucial. Community awareness campaigns should be conducted to challenge negative perceptions surrounding this condition. By promoting empathy and understanding, affected women can be

reintegrated into their communities, reduce their psychological distress, and improve their overall well-being.

4. Finally, it is important to address the social stigma associated with vaginal fistulas. Community awareness campaigns should be conducted to challenge the negative perceptions associated with this condition. By promoting empathy and understanding, affected women can be reintegrated into their communities, reducing psychological distress, and improving their overall well-being.

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