

ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE, COPING AND SURVIVAL STRATEGIES FOR WOMEN OF CHILDBEARING AGE WITH VESICO-VAGINAL FISTULA (VVF)

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Abstract

The purpose of this study was to assess the Knowledge, Attitude, Practice, Coping and Survival Strategies for women of childbearing age with VVF in Jos North Local Government Area of Plateau State. To achieve the purpose of the study five research questions were formulated with two research hypothesis postulated and tested at 0.05 level of significant. The population of the study consisted of all Married Women attending Primary Health Care Clinics. The sample size population for the study comprised 100 Married Women attending Primary Health Care Clinics gotten through purposive sampling technique. The instrument used for data collection was researcher's structured questionnaire. The validity of the instrument was established by two experts from Measurement and Evaluation Department who determined the clarity, appropriateness of the language and suitability of the instrument for data collection for this study. The reliability of the instrument was established through the use of Cranach Alpha technique. The reliability index of .8 was obtained and made it suitable for the study. The researcher paid a courtesy call on the Chairman Jos North Local Government Area with an introductory letter duly signed by the Researcher seeking for permission to reach out to the respondents to collect data for the study. Ethical permission was sort from the respondents to participate in the study based on their consent. The data collected were analyzed using descriptive statistics of frequency counts and percentages and were presented in Tables. The result of the study shows that there were factors responsible for the incidence of VVF in Jos North Local Government Area of Plateau State, high level of knowledge (86%) of Vesico vaginal fistula (VVF) screening, positive attitude (84%) towards Vesico vaginal fistula (VVF) screening, high level of practice (86%) of Vesico vaginal fistula (VVF) screening, coping and survival strategies (86%) for victims living with VVF and the null hypothesis of no significant difference regarding the level of knowledge of Vesico vaginal fistula (VVF) screening based on age and level of education were all accepted.

Keywords: Assessment, Knowledge, Attitude, Practice, Coping. Survival Strategies, women of childbearing age, Vesico-Vaginal Fistula

Introduction

The earliest and oldest evidence of obstructed labour was discovered in the remains of Queen Henhenit, who was a wife of King Mentuhotep II of Egypt sometime in 2050 BC. This observation was made when the Queen's mummy was discovered by Edouard Naville and was sent to the Metropolitan Museum of Art, New York in 1907. In 1923, the mummy was returned to Cairo for detailed clinical examination by Professor D. E. Derry, which showed that there was a tear in the bladder connecting to the vagina and closer examination indicated that the pelvic bone was abnormal in shape. This was too small or narrow to allow a passage of fetal head, led to severe pain, cause damage to the bladder and vagina which was responsible for the death of Queen Henhenit (Zacharin, 1988). Prior to the above discovery, an Arabo-Persian physician named Avicenna, who died in 1037 AD, was the first individual to observe that urinary incontinence in women was as a result of fistula consequent upon obstructed labour (Zacharin, 1988). He further advised on pregnancy prevention among young girls or women who married young. In 1597, Felix Platter, Basle described fistula as a consequence of a first labour, the young girl had the opening of the bladder to such a degree that there was a long gaping furrow that the open bladder could be seen on account of this injury which led to constant involuntary discharge of urine, excoriated and inflamed" (Zacharin, 1988).

Between 1845 and 1859 Doctor Marion Sims has become famous for his aggressive discoveries of instruments and materials used in closing enormous fistula. Till date Sim has been praised for recognizing that health problem faced by women required urgent medical and surgical attention (Medscape, 2003). At the beginning of 19th century, major progress was made in the repair and treatment of Vesico-vaginal fistula (VVF) (de Lmballe, Wutser, Simon, Sims, Emmet and Bozeman & Zacharin, 1988).

Historically, VVF is not a new phenomenon but a common scourge throughout the world. However, improved and advanced obstetric care in areas such as Europe and North America has made the scourge relatively unknown in these geographical regions of the world. Metro (2006) observed that fistula is oblivion in countries where there is universal health care, which takes women's health more seriously. He further commented that VVF resulted in urinary incontinence in third world countries centers around obstetric difficulties, while 90% of such cases are caused by bladder trauma during surgery with hysterectomy. Wall et al (2003) explained that there were cases of VVF in industrialized countries due to radiation therapy or surgery, thus distinguishing the aetiology from that of developing countries, which results mainly from neglect of obstetric complications that occur under very different circumstances. According to Villey (2006) the incidence of VVF in the United States is debated, "while most authors quote an incidence rate of VVF after total abdominal hysterectomy (TAH) of 0.5-2%, others suggest only 0.05% incidence rate of injury to either the bladder or urethra, thus in approximately 10% of cases of VVF due to obstetrical trauma associated aetiology. Radiotherapy and surgery for malignant gynaecologic disease each accounted for 5% of cases". Most discussions about VVF center on Africa are misleading because several other parts of the world also face this problem. Wall et al (2003) explained that there has not been an up to date study around the world to actually determine the extent and the places where the scourge occur most. They further stated that the incidence and prevalence of obstetric fistulas have never been included on the standardized demographic and health surveys (DHS) that are carried out to evaluate population characteristics and overall health status in developing countries".

WHO (2006) reported that an estimate of 2 million young women live with untreated VVF, and new cases of between 50,000 and 100,000 are reported every year. In spite of the stigma associated with VVF, it still records one of the commonest distressing conditions which bring women to hospital in many African countries (Kabir et al, 2003). Wall et al (2003) suggested that mapping of the entire world for a survey on VVF should include virtually all Africa, South Asia,

less developed parts of Oceania, Latin America, Middle East, some remote areas in central Asia, selected isolated areas of former Soviet Union and Soviet dominated Eastern Europe.

Globally, for every maternal death, an additional 20–30 woman develops a serious pregnancy-related complication, of these severe maternal morbidities; obstetric fistula is one of the most common devastating conditions (Ahmed and Tunçalp, 2015). An estimated 2 million women in developing countries are living with untreated obstetrical fistulas (Jokhio, Rizvi, Rizvi & MacArthur, 2014). Lewis (2015) opined that over 70,000 Bangladeshi women live with obstetric fistula and about 9,000 new cases occur each year in Ethiopia.

Wall, Arrow, Smith, Lassey and Danso (2010) explained that in Sub-Saharan Africa and many other developing countries, women and girls continue to endure a miserable and incredibly embarrassing life due to the ravaging effects of fistula characterized by an abnormal connection between the urinary bladder and the vagina. According to Nigeria National Demographic and Health Survey (NDHS, 2008) the prevalence of VVF in Nigeria was 0.4%, suggesting that approximately 150,000 women of reproductive age currently live with or have previously had VVF. This rationalizes an annual incidence of at least 11,000 new VVF patients in Nigeria, with a minimum of 150,000 VVF patients awaiting surgery. VVF remained a neglected condition until the launch of the End Fistula Campaign by the United Nations Population Fund for Population Activities in 2003 (Maiwada et al., 2017)

The UNFPA deputy representative discovered that Nigeria accounts for 40% of the global fistula burden a figure she deemed totally unacceptable. In Nigeria, obstetric fistula still remains a public health challenge with hundreds of thousands of women afflicted. These women suffer severe medical, psychological, and social issues that impact their daily lives. Many are rejected by their own families and communities, and sent away to live in hospitals or other places among women with similar conditions **Campaign to End Fistula Now Active in 30 Countries**, 2004)

Maiwada et al. (2003) reported that about 120 vesico-vaginal fistula patients were admitted in Kano over two months. USAID (2011) reported that in Maiduguri, Jos, and Sokoto, studies reported 241 cases over two years, 932 cases over seven and a half years, and 31 cases in one year, respectively. Zaria and Katsina saw 44 cases over ten years and 27 cases over seven years. Waaldijk (2014) managed 1,716 fresh VVF cases (of less than three months' duration) in Katsina and Kano fistula centers.

According to the National Population Commission (2006) and NDHS (2018) antenatal care attendance (ANC), skilled birth attendants (SBA), and contraceptive prevalence rate (CPR) in Plateau State are among the worst in the North Central Geopolitical zone. Although precise data on VVF prevalence in the State are lacking, there are a significant number of new VVF cases recorded each year, with the State alone accounting for 0.2% of existing cases in the country (Maiwada et al., 2017). However, Plateau State, with an estimated population of 4.7 million of which 836,000 are women of childbearing age, is located in the North Central part of Nigeria. The maternal mortality rate for the State is estimated at 1,000 per 100,000 live births, and the total fertility rate is 8, both above the national average (NDHS 2018).

1.1 Statement of the Problem

Women with VVF experience emotional disturbance, loss of ability to work, lack of social acceptance and lack of support from their husbands, family members as well as community members. The feeling of having no control and emotions related to their physical challenges with VVF affect these women's relationships at home, with friends, and with their husbands. These feelings result in a loss of control over daily routines such as self-care, household chores, and filling the role expected of a wife in the community. In such a setting, lack of capacity to provide emergency obstetric services or treatment in a timely fashion result in death or disability from complications related to pregnancy and childbirth

Poor reproductive health behaviour is a major contributor to poor maternal health outcomes. The national median age at marriage is 18 years and the national rate of teenage pregnancy is 23%; however, these values mask wide zonal variations with the North West and North East zones having median ages of marriage of 15.4 years and 16.2 years respectively with a teenage pregnancy rate of 36% and 32% respectively. Use of modern contraceptives is low (10%) and access to emergency obstetric care services is very limited with only 38% of deliveries supervised by a skilled birth attendant

The problem has been acknowledged that Vesico vaginal fistula (VVF) have been on the increase in Nigeria, despite efforts on the part of Ministry of Health to provide information on Vesico vaginal fistula (VVF). Given the increase vulnerability of women of childbearing age to the risk of Vesico vaginal fistula (VVF), it is better to understand the effects of Vesico vaginal fistula (VVF) in order to help them deliver safely. These situations are worrisome and unacceptable which increase the gap or disparity that justified the need for this present study to find on the knowledge, attitude, practice, coping and survival strategies for victims living with VVF.

A study carried out by [Imran elta](#) (2018) on factors associated with the awareness of vaginal fistula among women of reproductive age: findings from the 2018 Nigerian demographic health cross-sectional survey. The purpose of the study was to determine the prevalence of awareness of urinary/faecal incontinence due to vaginal fistula, and the associated risk factors among women with no previous experience of incontinence. The study used cross-sectional study research design. The study was carried out in Nigeria. The population of the study consisted of all women of reproductive age in Nigeria. The sample size population for the study was 26 585 women of reproductive age. The instrument used for data collection was questionnaire. Data collected was analyzed using descriptive, univariate and multivariable models. The finding of the study revealed that significant number of young women with no childbirth experience had low level of awareness. The study recommended that vaginal fistula awareness programmes should target women at risk of vaginal fistula to improve the quality of information in future surveys.

Kirk, etal (2021) conducted a study on changes in community knowledge and attitude related to female genital fistula following the implementation of a multi-component intervention in Nigeria and Uganda. The aim of the study was to describe changes in fistula knowledge and attitudes toward those living with fistula among community members in Nigeria and Uganda following implementation of a multi-component intervention addressing treatment barriers. The study adopted a pre-post qualitative design. The study was conducted in Nigeria and Uganda. The population of the study consisted of all female and male community members from three sites in Nigeria and Uganda. The sample size population for the study was 337 female and male community members from three sites in Nigeria and Uganda. The instrument used for data collection was questionnaire. The data collected was audio-recorded, transcribed, and translated into English (from Hausa, Igbo, and Luganda, as necessary). This analysis conveys an overall sense of whether each respondent type expressed certain knowledge or attitudes related to fistula. This assessment, presented in **Tables** describes whether or not a particular theme readily emerged from the data. The study showed that Community members demonstrated basic knowledge of symptoms of fistula and mixed understanding of its causes; prolonged obstructed labor and niatric causes were most known. Myths and misconceptions around fistula causes commonly relate to incorrect biomedical understanding, witchcraft, and promiscuity. Awareness that fistula can be surgically repaired free of charge at fistula centers varied across study regions, with higher awareness among individuals who personally knew someone who experienced repair at a center. Although community members at baseline and endline perceive shame and stigma as affecting women living with fistula, community attitudes toward these women show an increase in empathy at endline in intervention areas. The study recommended that further programmatic

research on society-targeted approaches emphasizing comprehensive community understanding of fistula and stigma reduction is needed.

A study was carried out by Ezeonu, etal (2017) on Awareness of Obstetric Vesicovaginal Fistula among Pregnant Women in a Rural Hospital. The purpose of the study was to evaluate the level of awareness of vesicovaginal fistula among pregnant women attending antenatal clinic in a rural hospital. The study used a cross sectional study research design. The study was conducted at Mile 4 hospital, Abakaliki, Ebonyi State. The population of the study consisted of all pregnant women who presented for routine antenatal care. The sample size population for the study was 204 pregnant women who presented for routine antenatal care. The instrument used for data collection was semi-structured questionnaires containing open and close ended questions on socio-demographic data, awareness of risk factors for obstetric vesicovaginal fistula, awareness of complications of obstetric vesicovaginal fistula and knowledge about its prevention. The data collected were collated and entered into a spread sheet for analysis using the Statistical Package for Social Sciences (SPSS) Version 21. The finding of the study revealed that obstetric fistula is a source of worry to medical practitioners in developing countries. Knowledge about it and the risk factors appear inadequate. The study recommended that there was need to properly inform women during their antenatal clinic visits about the risk factors for obstetric fistula and where to find care when faced with this challenge.

A study was carried out by Meskerem, etal (2022) on Knowledge of obstetric fistula and its associated factors among women of reproductive age in Northwestern Ethiopia: a community-based cross-sectional study. The purpose of the study was to assess women's knowledge level about obstetric fistula and its associated factors at Banja District, Northwestern Ethiopia. The study utilized a community-based cross-sectional research design. The study was conducted in Northwestern Ethiopia. The population of the study consisted of 7,759 women in the reproductive age at households' level identified as eligible from registered family folder at respective satellite health posts of selected sub-districts. The sample size population for the study was 773 women in the reproductive age at households' level were identified as eligible from registered family folder at respective satellite health posts of selected sub-districts. Data were collected using face-to-face interviewer-administered pretest structured questionnaire which were adapted through review of relevant literatures. The data collected were entered into EpiData version 4.2 and exported into SPSS Version 25 for cleaning and analysis. Descriptive statistics were applied to compute frequency, proportion, mean, and standard deviation. Wealth index had calculated using principal component analysis (PCA), and categorized it to 5 level of wealth (poorest, poor, medium rich and richest). Binary logistic regression analysis was carried out to check which explanatory variables have association with the outcome variable (i.e., women's knowledge about obstetric fistula). To control for possible confounding factors, variables with P-value of ≤ 0.25 in the bivariate analysis were fitted in the final model using multiple logistic regression analysis. The goodness of fit was tested by Hosmer-Lemeshow statistic and Omnibus tests (30). The finding of the study showed that the overall knowledge of obstetric fistula among reproductive-age women were unacceptably low. Women's level of education, women's occupation, getting counseling about obstetric fistula, participated in pregnant women conferences, having antenatal care follow-up, being from an urban resident, and having TV/radio were variables that have a significant association with knowledge of women's about obstetric fistula. The study recommended that empowering women in education, promoting antenatal care, and reinforcing pregnant women's counseling conference platforms could substantially optimize women's knowledge of obstetric fistula as well as health extension workers and local leaders about obstetric fistula and its risk factors in the study area.

A study was conducted by Ismail, etal (2024) on prevalence of vesico vaginal fistula and coping strategies of women in Kebbi State, Nigeria. The aim of the study was to investigate the

prevalence and coping strategies associated with Vesicovaginal Fistula (VVF) among women in Kebbi State. The study used a descriptive cross sectional study research design. The study was conducted in Kebbi State, Nigeria. The population of the study consisted of all VVF patients who were currently on bed at Gesse VVF Centre in Birnin Kebbi, Kebbi State. The sample size population for the study was 49 VVF patients who were currently on bed at Gesse VVF Centre in Birnin Kebbi, Kebbi State selected through purposive sampling technique. The instrument used for data collection was questionnaire. The data obtained were organized and analyses using Pearson product and spearman rank correlations analysis. The result of the finding revealed that the mean age of marriage was 16, with the highest frequencies of married (35.9%) and divorced (27.4%) respondents. Occupation-wise, 33.4% are housewives, revealing low-income earners, especially among casual laborers (28.9%) and farmers (26.9%). VVF prevalence was concentrated among ages 14–19 (30.7%), and overall prevalence was 29.3 per 1000 deliveries. The disease exhibits an increasing trend, with the years 2011–2012 having the least frequency (17%) and a mean score of 5.1. Yearly variations are noted in documented VVF cases from Gesse VVF Centre in Birnin Kebbi (2011–2020). Knowledge of VVF prevalence is highest (100.0%) among age groups 30–34 and 40 and above, contrasting sharply with the smaller proportion (15–30 age group). Coping mechanisms predominantly involve accepting fate. The study recommended that Health workers at primary health care centres should refer very early to an appropriate health facility any woman with the issues of prolong labour, intensify health education tailored towards girls and women regarding danger of early marriage, provision of laws that prohibit early marriage among young girls and minimize teenage pregnancy.

A study was carried out by Imran, et al (2018) on factors associated with awareness of vaginal fistula among women of reproductive age: findings from the 2018 Nigerian demographic health cross-sectional survey. The aim of the study was to determine the prevalence of awareness of urinary/faecal incontinence due to vaginal fistula, and the associated risk factors among women with no previous experience of incontinence. The study used a cross-sectional study, the 2018 Nigerian Demographic Health Survey, to analyze awareness of vaginal fistula among women with no previous leakage of urine or stool. The descriptive, univariate and multivariable models were presented. Results of the study showed 26 585 women were interviewed, 50 (0.2%) who had experienced fistula were excluded from the risk factor analysis. The mean age of women with childbirth experience was 32.8 ± 8.6 years, while that of women without childbirth experience was 20.3 ± 6.2 years. The prevalence of vaginal fistula awareness was 52.0%. Factors associated with the awareness include the following: childbirth experience (adjusted OR (AOR)=1.14; 95% CI, 1.01 to 1.30); age of 20–24 years (AOR=1.36; 95% CI, 1.18 to 1.56) and older; currently working (AOR=1.35; 95% CI, 1.22 to 1.49) and ownership of a mobile phone (AOR=1.16; 95% CI, 1.05 to 1.27). Other associated factors included the following: having at least secondary education; wealth quintiles, ethnicity, regional location, religion, access to radio, newspaper and internet; age up to 17 years at first sex; history of previous termination of pregnancy and use of contraception which showed a significant number of young women with no childbirth experience had low level of awareness. The study recommended that vaginal fistula awareness programmes targetting women at risk of vaginal fistula should be conducted in the area of study.

1.2 Research Questions

1. What are the factors responsible for the incidence of VVF in Jos North Local Government Area of Plateau State?
2. What is the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State?
3. What is the attitude of women of childbearing age towards Vesico vaginal fistula (VVF) screening in Jos North Local Government Area of Plateau State?

4. What is the level of practice of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State?
5. What are the coping and survival strategies of victims living with VVF in Jos North Local Government Area

1.3 Hypothesis

1. There is no significant difference in the mean percentage of the respondents regarding the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State based on age.
2. There is no significant difference in the mean percentage of the respondents regarding the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State based on level of education.

1.2 Scope

This study covered the knowledge, attitude, practice, coping and survival strategies of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State. The study also covered factors capable of influencing Vesico vaginal fistula (VVF) screening such as age, educational level and religious affiliation in the area.

2.0 Methods and Materials

2.1 The Research Design

The study employed a Cross-sectional research design.

2.2 Area of the Study

The study was conducted in Jos North Local Government Area, Plateau State, Nigeria. Jos North is one of the sixteen local government areas in Plateau State, Nigeria.

2.3 Population of the Study

The population of the Study consisted of all women of childbearing age in Jos North Local Government Area of Plateau State, Nigeria.

2.4 Sample and Sampling Technique

The sample size population for the study consisted of 100 respondents gotten through purposive sampling technique.

2.5 The Instrument used for Data Collection

The instrument used for data collection was questionnaire made up of 5 sections which are the biodata of the respondents, the level of knowledge of Vesico vaginal fistula (VVF) screening, the attitude of women of childbearing age towards Vesico vaginal fistula (VVF) screening, the level of practice of Vesico vaginal fistula (VVF) screening and the coping and survival strategies of victims living with VVF

2.6 Validity and Reliability of the Instrument

The draft of study objectives, questions and research hypothesis were given to the experts who validated them and their criticism, corrections and suggestions were used to produce the final copy of the instrument for the study. Split half method was used to determine the reliability of the instrument by administering 20 questionnaire on 20 respondents who were not part of the study population but have the same characteristics with the study population. The scores of even and odd numbers were correlated using Cranach Alpha technique to arrive at 0.8 reliability index and made the instrument reliable for this study

2.7 Method of Data Analysis

The data collected were analyzed using descriptive statistic of frequency counts and percentages and were presented in Tables. Hypotheses were analyzed using Chisquare statistics at 0.05 level of significant and were presented in Tables. The presentation of the data and findings of the study are arranged according to research questions and hypothesis

2.8 Result of the Study

Table 1

Bio-Data of the Respondents (n-100)				
S/n	Variable	Group	F	%
1	Age	15-20	10	10
		21-30	30	30
		31-40	40	40
		41 and above	10	10
2	Occupation	Students	10	10
		Applicant	20	20
		House wife	35	35
		Trading	15	15
3	Religious Affiliation	Farming	20	20
		Christian	70	70
		Islam	30	30
		Traditional	0	0
4	Educational attainment	Others	0	0
		Non-formal education	5	5
		Primary education	25	25
		Secondary education	40	40
5	Number of children	Tertiary education	30	30
		0	15	15
		1-2	40	40
		3-4	30	30
		5 and above	25	25

The results in Table 1 shows that one hundred respondents participated in the study out of which age bracket 31-40 were 40 respondents representing 40%, age bracket 21-30 were 30 respondents representing 30%, age bracket 41 and above were 20 respondents representing 20%, and 15-20 were 10 respondents representing 10%. The Table further revealed on occupation of the respondents housewife were 35 respondents representing 35%, applicants and farming were 20 representing 20% respectively, trading were 15 representing 15%, and students were 10 representing 10%. On religious affiliation; Christians were 70 representing 70% and Islam were 30 representing 30%. Educational attainment those who completed secondary education were 40 representing 40%, tertiary education were 30 representing 30%, those who completed primary education were 25 representing 25% and non-formal education were 5 representing 5%. Table also showed parity of the respondents, 1-2 children were 40 representing 40%, 3-4 children were 30 children representing 30%, 5 and above children were 25 representing 25%, and zero child were 15 representing 15%.

Table 2

Factors Responsible for the Incidence of VVF in Jos North Local Government Area of Plateau State (n=100)

S/n	Items	yes	%	no	%	Decision
1	Obstetric trauma	75	75	25	25	
2	Gynecological surgery	80	80	20	20	Factor
3	Radiation therapy	65	65	35	35	Factor
4	Cancer	58	58	42	42	Factor
5	Latrogenic cause	60	60	40	40	Factor
6	Poor healthcare	84	84	16	16	Factor
7	Congenital anomalies	70	70	30	30	Factor

Table 2 reveals that all the items were factors responsible for the incidence of VVF in Jos North Local Government Area of Plateau State.

Table 3:

Level of Knowledge of Vesico Vaginal Fistula (VVF) Screening among Women of Childbearing Age in Jos North Local Government Area of Plateau State (n=100)

S/n	Items	yes	%	no	%	Decision
1	Vesico vaginal fistula is a condition where an abnormal connection is form between the bladder and vagina leading to inconsistent urine.	70	70	30	30	High Level
2	Vesico vaginal fistula is cause by childbirth complication.	68	68	22	22	High Level
3	Inconsistent urine is a symptom of Vesico vaginal fistula.	86	86	14	14	High Level
4	Prolong labor increases the risk of developing Vesico vaginal fistula.	75	75	25	25	High Level
5	Vesico vaginal fistula is diagnosed through physical examination.	80	80	20	20	High Level
6	Surgery is the primary treatment of Vesico vaginal fistula.	65	65	35	35	High Level
7	Fistula repair is the name of surgical procedure used to repair Vesico vaginal fistula.	58	58	42	42	High Level
8	Urinary tract infection, kidney damage and infertility are complications of untreated Vesico vaginal fistula.	60	60	40	40	High Level
9	Age, multiple pregnancies and history of pelvic surgery are risk factors of Vesico vaginal fistula.	84	84	16	16	High Level
10	Depression, anxiety and stigma and shame are some of the psychological effects of Vesico vaginal fistula.	70	70	30	30	High Level
11	Improved access to healthcare, increased awareness and education, and skilled attendance at birth are some key aspect of Vesico vaginal fistula prevention.	68	68	22	22	High Level
12	Kidney failure is a potential long-term consequence of untreated Vesico vaginal fistula.	86	86	14	14	High Level
13	Inadequate surgical repair is a common cause of Vesico vaginal fistula recurrence.	75	75	25	25	High Level
14	Improved success rate is a potential benefit of using a graft material in Vesico vaginal fistula repair surgery.	80	80	20	20	High Level
15	7 to 14 days is the recommended duration of postoperative catheterization after Vesico vaginal fistula repair surgery.	65	65	35	35	High Level

Childbearing Age in Jos North Local Government Area of Plateau State (n=100)

Table 3 reveals that there was high level of knowledge (86%) of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State was high for all questions.

Table 4

Attitude of Women of Childbearing Age towards Vesico Vaginal Fistula (VVF) Screening in Jos North Local Government Area of Plateau State (n=100)

S/n	Items	yes	%	no	%	Decision
1	Vesico vaginal fistula (VVF) is a cursed or punishment by God.	35	35	65	65	Positive
2	I feel sympathetic towards women with Vesico vaginal fistula (VVF).	70	70	30	30	Positive
3	I feel that Vesico vaginal fistula (VVF) is medical condition.	68	68	22	22	Positive
4	I socially interact with women who has Vesico vaginal fistula (VVF).	86	86	14	14	Positive
5	I believe that Vesico vaginal fistula (VVF) can be prevented.	75	75	25	25	Positive
6	It is very important to provide medical care and support to women with Vesico vaginal fistula (VVF).	80	80	20	20	Positive
7	I believe that Vesico vaginal fistula (VVF) is not a sign of weakness or vulnerability.	65	65	35	35	Positive
8	I feel that it is very important to raise awareness about Vesico vaginal fistula (VVF) in the community.	58	58	42	42	Positive
9	I feel that Vesico vaginal fistula (VVF) is consequence of poor hygiene and poor healthcare.	60	60	40	40	Positive
10	I feel very supportive about the idea of providing emotional support and counseling to women with Vesico vaginal fistula (VVF).	84	84	16	16	Positive

Table 4 reveals that women of childbearing age had positive attitude towards Vesico vaginal fistula (VVF) screening in Jos North Local Government Area of Plateau State for all the questions.

Table 5

Level of Practice of Vesico Vaginal Fistula (VVF) Screening among Women of Childbearing Age in Jos North Local Government Area of Plateau State (n=100)

S/n	Items	yes	%	no	%	Decision
1	I often encounter cases of Vesico vaginal fistula.	68	68	22	22	High Level
2	I usually diagnose Vesico vaginal fistula using physical examination.	86	86	14	14	High Level
3	Vesico vaginal fistula repair is the common method of surgery I usually use.	75	75	25	25	High Level
4	I used catheterization and medications to manage urinary incontinence in patients with Vesico vaginal fistula.	80	80	20	20	High Level
5	I receive training on Vesico vaginal fistula management in the past 12 months.	65	65	35	35	High Level
6	I feel very confident in managing Vesico vaginal fistula cases.	58	58	42	42	High Level
7	I face lack of training, limited resources, difficulties in diagnosing and patient non adherence to treatment.	60	60	40	40	High Level

Table 5 reveals that women of childbearing age have high level of practice (86%) of Vesico vaginal fistula (VVF) screening in Jos North Local Government Area of Plateau State.

Table 6

Coping and Survival Strategies by Victims living with VVF in Jos North Local Government Area of Plateau State (n=100)

S/n	Items	yes	%	no	%	Decision
1	Have you sought support from family, friends, or support groups?	86	86	14	14	Coping and Survival Strategy
2	Have you had any changes in your diet or lifestyle due to your condition?	75	75	25	25	Coping and Survival Strategy
3	Have you ever rely on others for financial support due to your condition?	80	80	20	20	Coping and Survival Strategy
4	Have you ever accessed any financial assistance or support programs for women with VVF?	65	65	35	35	Coping and Survival Strategy
5	Have you ever experienced social isolation or stigma due to your condition?	58	58	42	42	Coping and Survival Strategy
6	Are you connected with other women who experienced VVF for support?	60	60	40	40	Coping and Survival Strategy
7	Do you face any challenges or barriers in seeking medical care for your condition?	84	84	16	16	Coping and Survival Strategy
8	Have you ever experienced any gaps or inconsistencies in your healthcare?	86	86	14	14	Coping and Survival Strategy

Table 5 above reveals that all items were coping and survival strategies (**86%**) for victims living with VVF in Jos North Local Government Area of Plateau State.

Summary of Chi-Square Analysis of no Significant Difference regarding the Level of Knowledge of Vesico Vaginal Fistula (VVF) Screening among Women of Childbearing Age in Jos North Local Government Area of Plateau State, Nigeria Based on Age (n-150)

S/N	Items	15-20		Age 21-30		31-40		41 above		χ^2 cal	df	p-val.	Decision
		true	false	true	false	true	false	true	false				
1	Vesico vaginal fistula is a condition where an abnormal connection is form between the bladder and vagina leading to inconsistent urine.	7	3	25	5	30	10	13	7	2.19	3	7.81	Accept
2	Vesico vaginal fistula is cause by childbirth complication.	5	5	25	5	35	5	15	5	7.69	3	7.81	Accept
3	Inconsistent urine is a symptom of Vesico vaginal fistula.	5	5	20	10	30	10	10	10	4.76	3	7.81	Accept
Accumulated 2 Cal										14.64	3	7.81	Reject

Table 6 above revealed that the overall χ^2 Cal was rejected since the Chi-square χ^2 calculated was greater than the tabulated under P-value of 0.05=7.81 at 3 degree of freedom (df). We therefore conclude that there was significant difference in the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State, Nigeria based on age. The Table further shows the Chi-square χ^2 calculated for individual item which were all less than the Chi-square χ^2 tabulated at P-value of 0.05=7.81 at 3 degree of freedom (df). We therefore accept the null hypothesis and conclude that there was no significant difference in the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State, Nigeria Based

Summary of Chi-Square Analysis of no Significant Difference regarding the Level of Knowledge of Vesico Vaginal Fistula (VVF) Screening among Women of Childbearing Age in Jos North Local Government Area of Plateau State, Nigeria Based on Level of Education (n-150)

s/n	Items	Educational attainment								χ^2 Cal	df	p-val.	Decision
		Non-formal		Primary		Secondary		Tertiary					
		True	False	True	False	True	False	True	False				
1	Vesico vaginal fistula is a condition where an abnormal connection is form between the bladder and vagina leading to inconsistent urine.	7	3	25	5	30	10	13	7	2.19	3	7.8	Accept
2	Vesico vaginal fistula is cause by childbirth complication.	5	5	25	5	35	5	15	5	7.69	3	7.8	Accept
3	Inconsistent urine is a symptom of Vesico vaginal fistula.	5	5	20	10	30	10	10	10	4.76	3	7.8	Accept
	Accumulated χ^2 Cal									14.64	3	7.81	Reject

Education (n-150)

Table 7 above revealed that the overall χ^2 Cal was rejected since the Chi-square χ^2 calculated was greater than the tabulated under P-value of 0.05=7.81 at 3 degree of freedom (df). We therefore conclude that there was significant difference regarding the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State, Nigeria Based on educational attainment. The Table further shows the Chi-square χ^2 calculated for individual item which were all less than the Chi-square χ^2 tabulated at P-value of 0.05=7.81 at 3 degree of freedom (df). We therefore accept the null hypothesis and conclude that there was no significant difference in the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State, Nigeria Based on educational attainment.

Discussion

Table 2 reveals that all the items were factors responsible for the incidence of *VVF* in Jos North Local Government Area of Plateau State such as Poor healthcare (84%), Gynecological surgery (80%), obstetric trauma (75%), congenital abnormalities (70%), radiation therapy (65%), latrogenic cause (60%) and cancer (58%). This finding agrees with the results of a study conducted by Meskerem, Tesfaye, Getnet, Asmamaw, Getahun and Agumasie (2022) in Northwestern Ethiopia.

Table 3 reveals that there was high level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing agefor all questions thus (86%), (84%), (75%), (70%), (68%), (65%) and (60%). These findings were in agreement with the results of the study by Dimejesi, E. (2017), Jacquelyne (2019) and Kirk, Sripad, Ndwiga, Nwala, Odwe and Warren (2021) in Nigeria and Uganda.

Table 4 reveals that women of childbearing age had positive attitude towardsVesico vaginal fistula (VVF) screeningfor all the questions as follows 86%, 84%, 80%, 75%, 70%, 68%, 65%, 60%, 58% and 35%. The results agreed with Kirk, Sripad, Ndwiga, Nwala, Odwe and, Warren (2021) in Nigeria and Uganda.

Table 5 reveals that women of childbearing age have high level of practice of Vesico vaginal fistula (VVF) screening which is indicated thus 86%, 80%, 75%, 68%, 65%, 60%, 58%. The results of this finding concord with the findings of Imoukhede, Adeyemo and Egbochuku (2015) in Warri South local government area of Delta State and Ismai, Jamilu and Abdulmumin (2024) in Kebbi State, Nigeria.

The results showed in Table 6 that all the items were coping and survival strategies for women of childbearing age with VVF in Jos North Local Government Area of Plateau State as follows 86%, 86%, 84%, 80%, 75%, 65%, 60% and 58%. These results is in line with the results of the study carried out by Ismail, Wali, Jamilui and Abdulmumin (2024) in Kebbi State, Nigeria.

Conclusion

There were factors responsible for the incidence of *VVF*, high level of knowledge of Vesico vaginal fistula (VVF) screening, positive attitude towards Vesico vaginal fistula (VVF) screening, high level of practice of Vesico vaginal fistula (VVF) screening, coping and survival strategies for VVF in Jos North Local Government Area of Plateau State. The null hypothesis of no significant difference regarding the level of knowledge of Vesico vaginal fistula (VVF) screening among women of childbearing age in Jos North Local Government Area of Plateau State, Nigeria based on age and level of education were all accepted.

2. 9. Recommendation

Based on the findings of the study, discussion and conclusion, the following recommendations were made:

1. Ministry of Health should tailor and scale up VVF education and sensitization campaigns on facts related to knowledge on VVF among community members.
2. Vaginal fistula awareness programmes should target women at risk of vaginal fistula and the inclusion of other useful questions to improve the quality of information in future surveys
3. Relevant NGOs dealing with reproductive health issues should emphasize on carrying out health promotion campaigns to sensitize the community on VVF.

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