

The Socioeconomic and Reproductive Characteristics of Women with Obstetric Fistula in a Teaching Hospital in Jos North Local Government Area. Plateau State, Nigeria

Idoko Lucy O, Okafor Kingsley C*, Japari MI, Aaron E, Ayobami AM, Steve TO

Department of Community Medicine & Primary Health Care. Bingham University, Karu, Nasarawa State, Nigeria

Corresponding Author: Okafor Kingsley C, Department of Community Medicine & Primary Health Care Bingham University, Karu, Nasarawa State, Nigeria. E-mail: drokaforkingsley@gmail.com

Received: ☒ June 19, 2020; **Accepted:** ☒ July 10, 2020; **Published:** ☒ July 20, 2020;

Abstract

Introduction: Social and economic conditions profoundly impact on health of people in terms of health seeking behaviours, health promotion and maintenance of healthy lifestyle. This general occurrence of obstetric fistula has been attributed to cultural factors that promote child marriage and poor socio-economic conditions such as; illiteracy, unemployment, lack of knowledge on reproductive health, rural dwelling and poor access to maternal health services and emergency obstetric care. This study seeks to identify the socioeconomic and reproductive health features in women with obstetric fistula in a Teaching Hospital in Jos North Local Government Area. Plateau State, Nigeria.

Methodology: The study was conducted between January and March, 2019 at the Bingham University Teaching Hospital Fistula Centre. The research was a cross sectional study design involving all 49 patients present at the VVF Centre BHUTH and the VVF Hostel (Total study population).

Results: The youngest patient was 15 years and the oldest 60 years old, majority were in the age group 15 years to 29 years and 30 to 34 years. Most respondents were married, and most were without formal education. A third of their husbands were unemployed and half had no income. Majority of the husbands of the respondents were farmers. A third did not know their husbands income. Most of the patients were farmers and small proportions were petty traders and artisans. A third had no employment before the occurrence of obstetric fistula, this proportion increased to 82% after the occurrence of fistula. On the basis of income (per month) 43% had no income before development of fistula, this increased to 92% after fistula development. Majority of the patients earned between 1,000-9,999 Naira monthly (2.5 USD – 24.99 USD).

Conclusion: Most of the patients were farmers and small proportions were petty traders and artisans. Majority of the patients earned between 1,000-9,999 Naira monthly (2.5 USD – 24.99 USD). Women are encouraged to delay marriage a bit and seek formal education. They should take advantage of the girl child education opportunities available to make demands and take opportunity to learn. Communities should support female education as a strategy to reduce unemployment, delay early marriage and improve decision making.

Introduction

Women with obstetric fistula are indicators of the failure of health systems to deliver accessible, timely and appropriate intra-partum care [1, 2]. A decline in the quality of maternal health care, rising fertility and poverty levels are indicated in causing a rise in the incidence of fistula in Nigeria. According to the World Bank Development report, it is estimated that Births attended by skilled health staff in Nigeria was at 35.2 % [3]. Also, only an estimated 5.9% of pregnant women delivered in Emergency Obstetric Care (EmOC) facilities, indicating a high level of unmet need for EmOC service as appropriately 15% of pregnant women are generally expected to develop complication which could require EmOC services [4].

The advent of anesthesia and safe, effective surgical procedures for cesarean sections have made the occurrence of obstetric fistula a rare event in the developed world, when they do occur, they are typically due to a congenital anomaly, surgical complication, malignancy, or radiation damage [5]. However, in the low- and middle-income regions of Asia and Sub-Saharan Africa, the overwhelming cause of fistulas between the bladder and the vagina (vesico-vaginal fistula, VVF) and between the rectum and vagina (recto-vaginal fistula, RVF) is prolonged and obstructed labor [6, 7, 8].

Women with obstetric fistula are indicators of the failure of health systems to deliver accessible, timely and appropriate intrapartum care [9, 10]. In 2012, Nigeria's Federal Ministry of Health published its National Strategic Framework for the

Elimination of Obstetric Fistula (NSFEOF), 2011–2015 [11]. The framework has since lapsed and there is no tangible evidence that the goal of eliminating obstetric fistula was met despite support from USAID (Fistula care project) and UNFPA in repairing more than 15,000 cases [12].

Social, cultural and economic conditions profoundly impact on health of people in terms of health seeking behaviours, health promotion and maintenance of healthy lifestyle [13, 14]. This general occurrence of obstetric fistula has been attributed to cultural factors that promote child marriage and poor socio-economic conditions such as; illiteracy, unemployment, lack of knowledge on reproductive health, rural dwelling and poor access to maternal health services and emergency obstetric care [15, 16].

Age

Occurrence of obstetric fistula is seen among malnourished and young women who marry early usually before age 18 prior to maturation of the pelvis for child bearing [17, 18]. In Jos, Nigeria 33.6% of the patients had been married by age 14 whereas 39.1% had not yet menstruated as at time of marriage [15]. In Ethiopia 25.7% of fistula patients were married at age of 25 and above, 21.5% below 15, 18.9% between 20-24 years and 16.6% between 15-19 years [19]. In Kenya, 24.4% of the patients married below age 18 and 45.7% married 18 years and above [20]. Age at first pregnancy in the Ethiopian women with fistula was less than 15 years in 9.9%, 15-19 years in 19.4%, 20-24 years in 15.5% and 25 years and above in 13.8% of the total population of women in those age groups [19].

Parity

"Fistula developed most commonly in a woman's first pregnancy, with 45.8% of fistulas occurring among primigravidae. However, 20% of fistulas occurred in women of high parity (≥ 4 pregnancies)" [15]. 47.6% of the patients developed fistula in their first delivery whereas, 52.4% in subsequent deliveries as reported in a study done in Kaduna, Nigeria [21].

Literacy

Education empowers women to have confidence and favours decision making to use health care services available [22, 23]. A study done in Jos, Nigeria characterized the women in the fistula centre as illiterates as 84.6% had no formal education, 14% had primary level of education and 1.4% secondary [15]. In Kaduna Metropolis of Nigeria, 69.6% of the patients had no formal education, 26.1% had primary and 4.3% had secondary education [21]. In North eastern Nigeria, 96.3% of the women involved were illiterates [24]. Ethiopian demographic and health survey also revealed the incidence of fistula in the entire women population to be; 19.4% among the uneducated group of women, followed by those with secondary and tertiary level of education (17.9%) and 16.2% with primary level of education [19]. whereas in Kenya, 27.2% of the patients had no formal education and 60.0% had primary level education [20].

Poverty

Poverty plays a major in contributing to the incidence of obstetric fistula as it reduces health seeking behaviours due to cost of health services, limiting the quality of health care options available, and allows women to resort to alternative less effective care [25, 26].

Duration of Labour

Barriers to the utilization of maternal health care services were lack of awareness, financial constraint, and confidence on local TBAs [27, 28]. In Kenya, 77.1% of the patients laboured for over twelve hours [20]. In Jos, 21.1% of women sought help when they had been in labour for less than a day, 30.2% after two days, 27.1% had been in labour for three days and 21.4% four days and more. Reasons for delay were; lack of permission to seek emergency obstetric care in 28.7%, lack of accessible transportation (25%), preference for traditional remedies (7.4%), ignorance of EMOC (6.5%), no nearby hospital (5.6%) and 26.8% had no reasons for delay [15].

Antenatal Care

About 77% of the patient in Kaduna metropolis and 72% in Jos did not have any antenatal care during pregnancy that resulted in the fistula [15, 21]. Also, 24.2% from the entire population of women that did not attend ANC in Ethiopia developed fistula.

Place of Delivery

Occurrence of obstetric fistula is presence of skilled birth attendant during labour and efficiency of referral services when complications ensue. In Kenya, 2018. 5% of the patients delivered at home, 4.3% in clinics and 58.6% in hospitals. In Jos, 76.5% delivered in some "type of health facility", with 26.6% by attendants with formal health training and 49.9 by doctors. 23.5% delivered at home attended by "untrained traditional birth attendants" [15].

Problem Statement

It is estimated that Nigeria accounts for 40% of the worldwide fistula prevalence. Recent prevalence of obstetric fistula is estimated as 150, 000 [29, 30]. In recent times, there has been an emergence of a new scenario of the Obstetric fistula profile with older multi-parous women in their twenties and thirties, who have previously successfully delivered vaginally, developing obstetric fistulae. These are largely attributed to a low level of skilled birth attendance at delivery, inadequate access to emergency obstetric care and increasing recourse to deliveries at home and alternative health care system [9, 10].

Applying the 0.4% lifetime prevalence to the estimated number of women of reproductive age in Nigeria 37, 425,000 [31], 149,700 (approximately 150,000) women of reproductive age in Nigeria either currently have obstetric fistula, or have experienced fistula symptoms in the past. Possible factors in the formation of obstetric fistula include static gender norms that require women to seek approval from their husbands before seeking medical care during labour; poverty, ignorance, illiteracy, preference for home delivery and the desire to avoid Caesarean section, early childbearing (as op-

posed to early marriage); harmful traditional practices like “gishiri cut”, low social status of women coupled with poor access to and utilization of Emergency Obstetric services are other reasons proffered for the higher incidence of obstetric fistula in Nigeria [31, 15, 32]. The typical of patient in Nigeria is best described as young, married at an early age, illiterate, poor, rural, and lacking access to ante-natal care [33, 34]. Approximately 80% of women with obstetric fistula never really seek treatment due to lack of awareness, affordability or access. The cost of repairing a fistula is about \$100-\$400 which is far beyond what most patients can afford. Even those who are able to seek treatment have to travel long distances to repair centres and wait for weeks to get repaired due to various constraints like a heavy backlog of cases, few surgeons, shortage of supplies and equipment among others [10, 32]. Literature reveals that obstetric fistula appears to be linked to certain social-economic and cultural factors including young age at marriage, poverty and illiteracy, living in rural areas with lack emergence obstetric care [35, 36, 13]. Obstetric fistula has devastating social and economic consequences on the lives of these women. The majority of the women are abandoned by their spouses who cannot stand the smell of urine. Divorce rates due to fistula are about 50% in Nigeria while in Zambia it is as low as 15% [37]. Studies have shown that obstetric fistula usually affects first time mothers who have laboured for several days at home, with no access to emergency obstetric care including lifesaving procedures like caesarean section. Quite often, these women end up with obstructed labour, stillbirths and for those who survive this ordeal, an obstetric fistula often develops [38, 35, 39].

This study seeks to identify the socioeconomic and reproductive health features in women with obstetric fistula in a Teaching Hospital in Jos North Local Government Area, Plateau State, Nigeria.

Methodology

The study was conducted at the Bingham University Teaching Hospital Fistula Centre. It is a 20 bed capacity Centre with administrative offices, Clinics, VVF theatre, rehabilitation centre, bed hostel accommodation and a kitchen facility. The Centre receives patients from all over Nigeria; it conducts about 450 fistula surgeries in a year. 450 and 445 Fistula surgeries were conducted at the Centre in 2017 and 2018 respectively. The Fistula Centre also offers physiotherapy, psychological counselling, health and nutrition classes, a post-surgery skill acquisition program, extensive community outreach and patient screening/identification. Currently, The VVF Centre has fistula Surgeons, Nurses, Nursing aids and Attendants. Surgeries are done twice in a week (Thursdays and Fridays) while there is a weekly outpatient clinic on Tuesdays for new clients and another clinic on Fridays to review patients admitted in the ward. The research was a cross sectional study design using of all the patients present at the VVF Centre BHUTH and the VVF Hostel. It involved all the women with Obstetric Fistula within the Fistula Centre who gave informed consent to be part of the study. This was a total population study involving all women admitted in the hospital as the time of the study. Thus, no sample size calculation was done.

An Interviewer-administered structured questionnaire containing questions on socio-demographic information of the respondents, reproductive history, participant’s income, and husbands’ income. This study was done in between January and March, 2019. Data was analyzed using a computer software; Statistical Package for the Social Science (SPSS) version 20.0. Descriptive statistics, proportions, tables and diagrams were generated to illustrate findings. Exchange rate used to calculate monthly earning was (USD 1 = NGN 400). Limitations include self-report by respondents, language barrier was a limitation in this study. Ethical approval for the study was given by the Bingham University Teaching Hospital Ethical Committee, (NHREC/21/05/2005/00617). Informed consent was gotten from each participant.

Results

Table 1. Respondents Age, Religion, State of Origin, Marital Status, Educational Level

Age Group At Last Birthday	No of Fistula Patients	Percent
15-19	3	6.1
20-24	10	20.4
25-29	11	22.4
30-34	14	28.6
35-39	6	12.2
40-44	3	6.1
60-64	2	4.1
Religion	No. of Fistula Patients	Percent
Christianity	27	55.1
Islam	22	44.9
State of Residence	No. of Fistula Patients	Percent
Taraba	12	24.5
Gombe	9	18.4
Adamawa	5	10.2
Kaduna	4	8.2
Kano	4	8.2
Nasarawa	4	8.2
Plateau	3	6.1
Benue	2	4.1
Borno	2	4.1
Yobe	2	4.1
Bauchi	1	2.0
Niger	1	2.0
Marital Status	No. of Fistula Patients	Percent
Single	5	10.2
Married	25	51.0
Divorced	7	14.3
Separated	11	22.4
Widowed	1	2.0
Level of Education	No. of Fistula Patients	Percent
None	23	46.9
Primary	10	20.4
Secondary	12	24.5
Tertiary	4	8.2
Total	49	100.0

1. Respondents Age, Religion, State of Origin, Marital Status, Educational Level

Table 1 shows that the youngest patient was 15 years and the oldest 60 years old, Most (48.9%) respondent were 15-29 years old, 14 (28.6%) were between age 30 to 34 and 2 (4.1%) between 60 and 64.

Twenty seven (55.1%) of the women interviewed were Christians and 22 (44.9%) were Muslims. Most respondents 12 (24.5%) reside in Taraba State followed by Gombe 9 (18.4%) and Adamawa 5 (10.2%) Kaduna, Kano, Nasarawa 4 (8.2%) respectively, Also, plateau 3 (8.2%), Benue, Borno and Yobe 2 (4.1%), least was in Niger and Bauchi State (1% each).

Most respondents 25 (51.0%) were married. This is followed by those who are separated 11 (22.4%) and Divorced 7 (14.3%), 5 (10.2%) were single, while the least proportion were those widowed 1 (2%). Those without formal education constituted the highest group 23 (46.9%), followed by those with secondary education 12 (24.5%) closely followed by those with primary education 10 (20.4%) and tertiary education 4 (8.2%).

Table 2. Respondents Husbands' Occupation and Income

Husband Occupation	No. of Fistula patients	Percent
None	15	30.6
Farming Agro/Livestock	19	38.8
Civil Servant	1	2.0
Private Sector	1	2.0
Petty Trading	2	4.1
Artisan	6	12.2
Teacher	5	10.2
Husbands Income Group/month (NGN)	No. of Fistula Patients	Percent
No income	15	30.6
Do not know	9	18.4
< 1000	1	2.0
1,000-9,999	3	6.1
10,000-19,999	7	14.3
20,000-29,999	6	12.2
30,000-39,999	2	4.1
40,000-49,999	2	4.1
≥50,000	4	8.2
Total	49	100.0

2. Respondents Husbands' Occupation and Income

Table 2 shows that 15 (30.6%) of their husbands had no income generating activities. Among the husbands, farming was the commonest form of occupation 19 (38.8%), followed by artisans 6 (12.2%), teaching 5 (10.2%) and petty trading (12.2%, 10.2% and 4.1% respectively). Civil service was the occupation of 1 (2.0%).

About half 24 (49.9%) had no income 15 (30.6%) or did not know their husbands income 9 (18.4%), 7 (14.3%) earned 10,000 to 19,999 Naira, 6 (12.2%) earn 20,000 to 29,000. Only a few 4 (8.2%) earned greater than 50,000. Meanwhile 8.2% of the husbands were earning 50,000 Naira and above.

The least earning husband received less than 1,000 Naira monthly.

Table 3. Patients Occupation and Income Before and After Obstetric Fistula

Patients Occupation Before Fistula	No. of Fistula Patients	Percent
None	16	32.7
Farming	23	46.9
Petty Trader	8	16.3
Artisan	2	4.1
Patients Occupation After Fistula	No. of Fistula Patients	Percent
None	40	81.6
Farming	7	14.3
Artisan	2	4.1
Patients Income/Month Before Obstetric Fistula (NGN)	No. of Fistula Patient	Percent
No income	21	42.9
1,000-9,999	16	32.7
10,000-19,999	6	12.2
20,000-29,999	3	6.1
40,000-49,999	1	2.0
≥50,000	2	4.1
Patient Income/month after Fistula (NGN)	No. of Fistula Patients	Percent
No Income	45	91.8
1,000-9,999	1	2.0
10,000-19,999	1	2.0
20,000-29,999	1	2.0
≥50,000	1	2.0
Total	49	100.0

3. Patients occupation and income before and after Obstetric fistula

Table 3 shows that farming was the major form of occupation 23 (46.9%) among respondents before fistula, followed by petty trading and artisans (16.3% and 2% respectively). However, 16 (32.7%) of the patients had no employment (income generating activities).

Majority of the patients 40 (81.6%) had no employment after the occurrence of fistula. Farming was the highest form of occupation 7 (14.3% each), followed by artisans 2 (4.1%).

On the basis of income (per month) before development of fistula, 21 (42.9%) of the fistula patients were without income. Majority of the patients 16 (32.7%) formed the least earning group receiving between 1,000-9,999 Naira monthly. This is followed by 6 (12.2%) who earned between 10,000-19,999 Naira monthly. The highest earning women composed 4.1% and received 50,000 Naira and above monthly.

Patient income (per month) after development of fistula 45 (91.8%) of the fistula patients were without income after the development of fistula. Equal proportion of women 1 (2%) earned in all other income groups. (N1, 000-9,999, 10,000-19,999, 20,000-29,999, ≥50,000)

Table 4. Reproductive History: Age at Marriage, at First Pregnancy, a First Child Birth and Parity

Age at Marriage	No. of Fistula Patients	Percent
Single	5	10.2
<15	2	4.1
15-19	26	53.1
20-24	12	24.5
25-29	4	8.2
Age at First Pregnancy	No. of Fistula Patients	Percent
<15	1	2.0
15-19	25	51.0
20-24	18	36.7
25-29	5	10.2
Age at First Child Birth	No. of Fistula Patients	Percent
<15	2	4.1
15-19	20	40.8
20-24	21	42.9
25-29	6	12.2
Parity at Fistula Occurrence	No. of Fistula Patients	Percent
1	18	36.7
2	14	28.6
3	5	10.2
4	2	4.1
5	3	6.1
6	3	6.1
8	2	4.1
11	2	4.1
Total	49	100.0

4. Reproductive History: Age at Marriage, At First Pregnancy, a First Child Birth and Parity

Table 4 shows that 26 (53.1%) of the patients married between 15-19 years. Only 2 of the 49 women were married before age 15 year. 12 (24.5%) were 20 – 24 years, 5 (10.2%) were single, 4 (8.2%) were 25 – 29 years

The mean age of patients at marriage is 16.7, median age 18 and modal age 16.

Most 25 (51.0%) respondents between 15 to 19 years had their first pregnancy, 1 (2.0%) had first pregnancy at less than 15 years, 18 (36.7%) had first pregnancy at 20 – 24 years, 5 (10.2%) had first pregnancy at 25 – 29 years.

Two (4.1%) had first child birth at less than 15 years, 20 (40.8%) had first child birth at 15 – 19 years, 21 (42.9%) had first child at 20 – 24 years while 5 (10.2%) had first child at 25 – 29 years. The youngest age at first child birth was less than 15 and the oldest age at first child birth was 29.

Majority 18 (36.7%) of the patients have been pregnant once before fistula occurred. Followed by 14 (28.6%) who were pregnant twice and 5 (10.2%) who were pregnant thrice, 2 (4.1%) had had four pregnancies, 3 (6.1%) had had five and six pregnancies. Highest number of pregnancies was seen in 2 (4.1%) of the patients who were pregnant eleven times.

Table 5. Number of Children and Time Since Last Pregnancy/Delivery

Number of Children	No. of Fistula Patients	Percent
No Child	24	49.0
1	11	22.4
2	4	8.2
3	5	10.2
4	1	2.0
5	3	6.1
>5	1	2.0
Time Since Last Pregnancy/Delivery	No. of Fistula Patients	Percent
<6 Months	12	24.5
6-12 Months	12	24.5
1-5 Years	9	18.4
6-10 Years	8	16.3
11-15 Years	5	10.2
16-20 Years	1	2.0
>20 Years	2	4.1
Total	49	100.0

5. Number of Children and time since last pregnancy/delivery

Table 5 shows that majority 24 (49.0%) have had no children after last pregnancy, 11 (22.4%) have had one child, 4 (8.2%) have had two, 5 (10.2%) have had three, 1 (2.0%) have had more than five. Mean number of children is 1.2 and the median number of children is 1.

Table 5 shows that 24.5% and 24.5% of the women had their last pregnancy or delivered less than six months ago and 6-12 months ago respectively. Followed by 9 (18.4%) and 8 (16.3%) of the women who had their last pregnancy/delivery 1-5 years ago and 6-10 years ago respectively. The longest post delivery period was seen in 2 (4.1%) of women who had their last pregnancy/delivery over 20 years ago.

Discussion

Sociodemographic parameters show that the youngest patient was 15 years and the oldest 60 years old. Majority were in the age group 15 – 29 years and 30 to 34 years. This is similar to studies done in Sagamu [40] where the highest frequency age group was 20-29 years age bracket (58.3%) and Port Harcourt (52.5%) [41]. In a study done in Maiduguri, [42] 20–24 years age bracket had the peak frequency of obstetric fistula cases (33.8%). Some studies have shown much lower age groups with obstetric fistula like 10–18 years in a study done in Sokoto (90%) [43], Kano [44] (72.5%) and Maiduguri [45] studies (58.8%). This varying age groups is attributable to the fact that it is culturally acceptable to younger women to marry in Sokoto, [43] Kano [44] and Maiduguri [45] but in Sagamu [40] and Port Harcourt [41] women married at an older age group. This is because, cultural beliefs in the South encourage much older marriage, while in the Northern part of Nigeria, early marriages are still common [46]. It is important for women to marry when their body is old enough to handle the challenges of

pregnancy, child birth and motherhood.

About half of the women interviewed were Christians and other half was Muslims. This is synonymous with the location of the study [47]. Most respondents reside in Taraba State, Gombe and Adamawa. Others were from Kaduna, Kano, Nasarawa, Plateau, Benue, Borno and Yobe while the least were from Niger and Bauchi State respectively. These states are within the geographical location of the fistula center.

Half of the respondents were married, 22.4% separated, 14.3% divorced, 10.2% were single, while 2% were widowed. Early ages of marriage is a common risk factor for obstetric fistula and most of the obstetric fistula patients in northern Nigeria had early marriage; 93.6% of women in the study done in Sokoto were married before or at 18 years of age, [43] 81.5% of women in a study done in Kano [44] and 52.3% of Maiduguri fistula patients [48] got married by 15 years of age. The practice of early marriage without contraception, often leads to early pregnancy, during this time the pelvis is not developed enough for easy passage of the foetus through the maternal pelvis leading to cephalopelvic disproportion [46].

About half (46.9%) of the women were without formal education, a quarter (24.5%) had secondary education, 20.4% had primary education and 8.2% had tertiary education. This is in agreement with studies which show majority of obstetric fistula patients are non-literate and are from poor homes [42, 43, 48, 49]. This finding is higher than the findings from the National Demographic and Health Survey (NDHS) where the percentage of women age with no education was 35%. [47]. Education and enlightenment are important in decision making and birth preparedness. Female education empowers women to take responsibility for their wellbeing and that of their families. Also, educational attainment among women increases with increasing household wealth, thus education is a vital ingredient to reduce poverty [47].

Among the husbands, farming was the most common occupation as over a third were farmers, 12.2% were artisans, 10.2% were teachers, others were petty traders and civil servants. About a third had no income, 18.4% did not know their husbands income, 14.3% earned 10,000 to 19,999 Naira (25.00 USD – 49.99 USD), 12.2% earn NGN 20,000 to 29,000 (50.00 USD -74.99USD). Only a few (8.2%) earned greater than 50,000 Naira (125.00USD). The least earning husband received less than 1,000 Naira monthly (2.50 USD). This finding has a serious socioeconomic effect on patients, families and their communities. A lot of the respondents are living below 1 USD per day, while others barely meet up due to the daily needs with their current income. It is critical to initiate poverty alleviation programs to help improve the living conditions of the people. Poverty reduces health seeking behaviours due to cost of health services, limiting the quality of health care options available, and allows women to resort to alternative less effective care [25, 26].

Half (46.9%) of the women were farmers before the onset of obstetric fistula, 16.3% were petty traders, 2% were artisans. However, 32.7% of the patients had no income generating activities and were solely dependent on their husbands for funds and upkeep. This proportion increases

after the occurrence of obstetric fistula as majority of the patients (81.6%) had no income generating activities after the occurrence of fistula. The occurrence of obstetric fistula made the patients poorer and further worsened the low socioeconomic status of these women. Most times patients pay out of pocket in order to treat this condition leading to catastrophic health expenses and increase in poverty. Evidence even suggests that finance was a major reason for delay in seeking care. Thus, obstetric fistula discussions and support must be put on the front burner of public health situations needing urgent attention.

On the basis of income (per month) before development of fistula, just about half of the fistula patients were without income, this unemployment rate increased after the occurrence of obstetric fistula as 91.8% were without income before coming to the hospital for admission. This depicts a sad reality, that a poor woman is further impoverished by her disease condition. A third earned between 1,000-9,999 Naira monthly (USD 2.5 – USD 24.9), One in ten earned between 10,000-19,999 Naira monthly (25USD – 49.99USD). The highest earning women composed 4.1% and received 50,000 Naira (125.00USD) and above monthly. This trend demonstrates the level of poverty in these households, this much lower than the national average of 65% of women are currently employed, as this study shows 43% are unemployed [47]. This disparity may be due to the fact these women are mainly from rural communities and rural area national average was 32% unemployment 12 month preceding the study [47].

Majority of the women married early, 53.1% of the patients married between 15-19 years. Only 2 of the 49 women were married before age 15 years. All these indicate the presence of risk factors for obstetric fistula. This is a similar situation in a study done in Sokoto [43] where 93.6% of respondents were married before or at 18 years of age, in Kano [44] and Maiduguri [42] were 81.5% and 52.3% of obstetric fistula patients were married at 15 years of age.

This study also showed that the mean age of patients at marriage is 16.7 years, median age 18 years and modal age 16 years. This is in consonance with finding from a study done in Jos [49] where the mean age of marriage for marriage was 15.5 years and Gombe [42] was 14 years. Most of the obstetric fistula patients in northern Nigeria had early marriage [42, 43, 44, 45, 50, 51].

Early marriage often leads to early pregnancy as half of the respondents had their first pregnancy between 15 to 19 years, 2.0% had first pregnancy at less than 15 years. A similar trend is seen in their first child birth. The youngest age at first child birth was less than 15 years and the oldest age at first child birth were 29 years.

Majority had fistula after the first pregnancy, this is in consonance with finding from a study done in Jos, [15] where fistula developed most commonly in a woman's first pregnancy, with 45.8% of fistulas occurring among primigravidae [15]. This may be due to poor knowledge of danger signs, monitoring prolonged labour in women who are pregnant for the first time.

Commonly, obstetric fistula had occurred before patient became multiparous, as mean number of children is 1.2 and the median

number of children is 1. Half have had no children after last pregnancy, a quarter has had one child, 8.2% have had two children and 10.2% have had three.

Conclusion

The youngest patient was 15 years and the oldest 60 years old, majority were in the age group 15 years to 29 years and 30 to 34 years. Most respondents were married, and most were without formal education. A third of their husbands were unemployed and half had no income. Majority of the husbands of the respondents were farmers. A third did not know their husbands income.

Most of the patients were farmers and small proportions were petty traders and artisans. A third had no employment before the occurrence of obstetric fistula, this proportion increased to 82% after the occurrence of fistula. On the basis of income (per month) 43% had no income before development of fistula, this increased to 92% after fistula development. Majority of the patients earned between 1,000-9,999 Naira monthly (2.5 USD – 24.99 USD).

Majority married, became pregnant and had their first child between ages 15 years to 19 years. Only 2 of the 49 women were married before age 15 year. Half have had no children after last pregnancy and a quarter have had one child.

Recommendations

To the Women

Women are encouraged to delay marriage a bit and seek formal education. They should take advantage of the girl child education opportunities available to make demands and take opportunity to learn.

To the Community

Communities should support female education as a strategy to reduce unemployment, delay early marriage and improve decision making.

To the Government

Formal education should be made free and compulsory for girls' up to secondary school. The government should take necessary steps to eradicate poverty and empower women through soft loan schemes, women cooperative societies, and other female economic empowerment programs. There is need to improve the socio-economic condition of the communities. Government should put more effort to improve the lot of male and female farmers, through provision of arable land, soft loans, and seeds for planting. Government supported mechanization to improve the socioeconomic situation of the women. Support education of the girl child and enlighten communities on supporting pregnant women and the people involved in decision making.

Help implement and legislate against negative traditional practices such as early marriage and childbearing and gender inequality.

References

1. Federal Ministry of Health (2011) Standard of Practice on Obstetric fistula in Nigeria, *Chapter 2&3*, 9-15.
2. Baker Z, Bellows B, Bach R, et al. (2017) Barriers to obstetric fistula treatment in low-income countries: a systematic review. *Trop Med Int Heal* 22: 938-959. [Crossref]
3. World Bank Development Report 2012. Nigeria Births Attended By Skilled Health Staff Percent of Total [Internet]. *Tradingeconomics.com*. 2018 [Crossref]
4. Federal Ministry of Health (20011) Nigeria: National reproductive health policy and strategy to achieve quality reproductive and health for all Nigerians, Abuja: *FMOH* 4-10.
5. Dangal G, Thapa K, Yangzom K, et al. (2013) Obstetric Fistula in the Developing World : An Agonising Tragedy. *NJOG*. 2013;8(2):5-15.
6. Lufumpa E, Steele S (2016) Obstetric Fistula: A Narrative Review of the Literature on Preventive Interventions in sub-Saharan Africa. *Afr J Reprod Health* 20: 118-126. [Crossref]
7. Gebresilase YT (2014) A qualitative study of the experience of obstetric fistula survivors in Addis Ababa, Ethiopia. *Int J Womens Health* 6:1033-1043. [Crossref]
8. Aduloju P, Ekiti A (2007) Correlation and impact of obstetric fistula on motherhood Correlation and impact of obstetric fistula on motherhood. *J Chiness Clin Med* 2: 447-462. [Crossref]
9. Federal Ministry of Health, National Strategic Framework for the Elimination of Obstetric fistula in Nigeria, 2011-2015, pp7-27. [Crossref]
10. Andrew Browning, Jenifer E Allsworth, L Lewis Wall (2013) The Relationship Between Female Genital Cutting and Obstetric Fistulas. *Obs Gynecol* 115: 578-583. [Crossref]
11. The USAID (2016) Repairing Obstetric Fistula in Nigeria. [Crossref]
12. Donnay F, Ramsey K (2006) "Eliminating Obstetric Fistula: Progress in Partnerships. *Int J Gynaecol Obstet* 94: 256-261. [Crossref]
13. Tunçalp Ö, Tripathi V, Landry E, et al. (2015) Measuring the incidence and prevalence of obstetric fistula : approaches , needs and recommendations. *Bull World Heal Organ*. 93: 60-62. [Crossref]
14. Muleta M, Rasmussen S, Kiserud T (2010) Obstetric fistula in 14,928 ethiopian women. *Acta Obstet Gynecol Scand* 89: 945-951. [Crossref]
15. L L Wall, Jonathan A Karshima, Carolyn Krischner, et al. (2004) The Obstetric Visicovaginal fistula: Characteristics of 899 patients from Jos, Nigeria. *Am J Obstet Gynecol* 190: 1011-1016. [Crossref]
16. Barageine JK, Tumwesigye NM, Byamugisha JK, et al. (2014) Risk factors for obstetric fistula in western Uganda: A case control study. *PLoS One* 9. [Crossref]
17. Santhya KG (2011) Early marriage and sexual Reproduc-

- tive Health Vulnerabilities of young women. A synthesis of recent evidence from developing countries. *Curr Opin Obstet Gynecol* 23: 334-339. [Crossref]
18. Amodu OC, Salami BO, Richter MS (2018) Obstetric fistula policy in Nigeria: a critical discourse analysis. *BMC Pregnancy Childbirth*. 18: 269. [Crossref]
 19. Andargie A, Debu A (2017) Determinants of obstetric fistula in Ethiopia. *Afr Health Sci* 17: 671-680. [Crossref]
 20. Khisa Weston, Stephen Mutiso, Judy W Mwangi (2011) Demographic and Medical Profile of patients with Obstetric fistula in Kenyatta National Hospital, Kenya. *International Journal of Obstetric Trauma* 1.
 21. Lengmang S, Degge H (2017) Characteristics of Obstetric Fistula in Kaduna Metropolis. *Open Journal of Obstetrics and Gynecology* 7: 734-741.
 22. Browning A, Menber B (2008) Women with obstetric fistula in Ethiopia: A 6-month follow up after surgical treatment. *BJOG An Int J Obstet Gynaecol* 115: 1564-1569. [Crossref]
 23. Njoku CO, Njoku AN (2019) Obstetric Fistula: The Agony of Unsafe Motherhood. A Review of Nigeria Experience. *J Adv Med Med Res* 28: 1-7.
 24. G S Melah, AA Massa, UR Yahaya, (2007) Risk factors of Obstetric Fistula in north-eastern Nigeria. *J Obstet Gynaecol* 27: 819-823. [Crossref]
 25. Adler AJ, Ronsmans C, Calvert C, et al. (2013) Estimating the prevalence of obstetric fistula: A systematic review and meta-analysis. *BMC Pregnancy Childbirth* 13: 246. [Crossref]
 26. Adler AJ, Fox S, Campbell OMR, et al. (2013) Obstetric fistula in Southern Sudan: Situational analysis and Key Informant Method to estimate prevalence. *BMC Pregnancy Childbirth* 13.
 27. KidistBirmeta, Yohannes Dibaba, Desalegn Woldeyohannes (2013) Determinants of maternal health care utilisation Holeta town, Central Ethiopia. *BMC health services research* 13: 256. [Crossref]
 28. Muleta M, Ababa A, Hospital F (2007) Obstetric Fistula in Rural Ethiopia. *East Cent African J Surg* 84: 526-534. [Crossref]
 29. Report on The Meeting for The Prevention And Treatment of Obstetric Fistula. UNFPA. Addis Ababa, November 2002. Nigeria.
 30. Semere L, Nour NM (2008) Women's Health in The Developing World: Obstetric Fistula: Living with Incontinence and Shame. *Rev Obs Gynecol* 1: 193-197. [Crossref]
 31. (2003) UNFPA and Engender Health.
 32. Wall L L, Arrowsmith S D, Briggs ND, et al. (1996) Urinary Incontinence in the Developing World : *The Obstetric Fistula*.
 33. Kzaura M R, Kama zima R S, Mangi E J (2011) Perceived causes of obstetric fistulae from rural southern Tanzania. *Afr Health Sci* 11: 377-382. [Crossref]
 34. Umoiyoho AJ, Inyang-Etoh EC, Etukumana EA (2012) Obstetric fistula repair: experience with hospital-based outreach approach in Nigeria. *Glob J Health Sci* 4: 40-45. [Crossref]
 35. Wall LL (2012) Obstetric Fistula Is a Neglected Tropical Disease. *PLoS Negl Trop Dis* 6: 8-10. [Crossref]
 36. Nielsen HS, Lindberg L, Nygaard U, et al. (2009) A community-based long-term follow up of women undergoing obstetric fistula repair in rural Ethiopia. *BJOG An Int J Obstet Gynaecol* 116: 1258-1264. [Crossref]
 37. Mselle LT, Kohi TW, Mvungi A, (2011) Waiting for attention and care: Birthing accounts of women in rural Tanzania who developed obstetric fistula as an outcome of labour. *BMC Pregnancy Childbirth* 11.
 38. Kayondo M, Wasswa S, Kabakyenga J (2011) Predictors and outcome of surgical repair of obstetric fistula at a regional referral hospital, Mbarara, western Uganda. *BMC Urol* 11: 23.[Crossref]
 39. Gwyneth Lewis, Luc de Berni (2006) Obstetric Fistula : Guiding Principles for Clinical Management and Programme Development. [Crossref]
 40. Odusoga OL, Oloyede OAO, Fakoya TA, et al. (2002) Vesicovaginal Fistula: A Review of Nigerian Experience: La fistula véscico-vaginale: Un examine de experience nigerian. *Nig Med TA* 19: 101-103
 41. Inimbga NM, John CO, Ekeke NO (2018) Genitourinary Fistulae Experience in a University Teaching Hospital : A South-South Nigeria Perspective. *Greener J Med Sci* 8: 5-10. [Crossref]
 42. Mela GS, Massa AA, Yahaya UR, et al. (2007) Risk factors for obstetric fistula in north-eastern Nigeria. *Journal of Obstetrics and Gynaecology* 27: 819-823. [Crossref]
 43. Ibrahim T, Sadiq AU, Daniel SO (2000) Characteristics of VVF patients as seen at the specialist hospital Sokoto, Nigeria. *West Afr J Med* 19: 59-63. [Crossref]
 44. Kabir M Iliyasu Z Abubakar S Umar U I. Medico-Social Problems of Patients With Vesico- Vaginal Fistula In Murtala Mohammed Specialist Hospital, Kano. *Ann Afr Med* 2: 54-57.
 45. Ampofo K, Otu T, Uchebo G (1990) Epidemiology of Vesico-Vaginal fistulae in northern Nigeria. *West Afr J Med* 9: 98-102. [Crossref]
 46. Ijaiya M, Rahman A, Aboyeji A, (2011) Vesicovaginal Fistula: A Review of Nigerian Experience. *West Afr J Med* 29. [Crossref]
 47. (2018) National Population Commission (NPC) [Nigeria] and ICF 2019 Nigeria Demographic and Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.
 48. Tukur I, Ijaiya MA, Su TT, et al. (2015) Analysis of 137 Obstetric Fistula cases seen at Three Fistula Centers in

- Northwest Nigeria. *East Afr Med J* 92: 408-414.
49. Wall LL, Karshima AK, Kirschner C, et al. (2004) The obstetric vesicovaginal fistula: Characteristics of 899 patients from Jos, Nigeria. *Am J Obstet Gynecol* 190: 1011-1019. [Crossref]
50. Ijaiya MA, Aboyeji AP, Ijaiya ZBB (2002) Epidemiology of Vesico-Vaginal Fistula at the University of Ilorin Teaching Hospital, Ilorin, Nigeria. *Trop J Obstet Gynaecol* 19: 101-103.
51. Audu BM, Kullima AA, Bako B (2008) Epidemiology of vesico-vaginal fistula: No longer a calamity of teenagers. *J Obstet Gynaecol* 28: 432-433. [Crossref]