

KNOWLEDGE, ATTITUDE AND MATERNAL HEALTH CARE UTILIZATION AMONG MARRIED WOMEN OF REPRODUCTIVE AGE TOWARDS VESICOVAGINAL FISTULA IN KEBBI STATE, NIGERIA

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ABSTRACT:

This cross sectional study sought to assess the knowledge, attitude and maternal health care utilization among married women of reproductive age in Birnin Kebbi Local government area, Kebbi State of Nigeria, and to characterize associations of socio-demographic characteristics, maternal health care utilization, knowledge, attitude with the occurrence of vesicovaginal fistula (VVF). A community-based household survey was conducted among married women of reproductive age. The study included 380 married women aged between 15-49 years, chosen by simple random sampling from 30 selected settlements in the study area. All participants were interviewed face to face using a structured household questionnaire. 49.3% of respondents were 15-26 years old, 45.8% reported to have attended quranic school, and only 10.3% had finished primary school. 63.7% were first married at 12-15 years old, while 56.3% of the respondents had their first baby at 14-17 years. 36 (9.5%) respondents were found to be living with VVF. The study revealed that the relationship between knowledge and occurrence of VVF was found to be highly significant ($p < 0.001$). In contrast, the attitude level was not found to have a significant relationship with the occurrence of VVF ($p = 0.396$). A highly significant relationship between utilization of maternal health services and occurrence of VVF was also found. The women had less knowledge about preventive measures than about risk factors, sign and symptoms. The maternal health status of the women was poor which is a common factor for the occurrence of VVF. Findings indicated that there is inadequate awareness among women regarding maternal health issues. There is need to develop concrete strategies toward prevention and eradication of VVF.

Keywords: Vesico vaginal fistula, Married women, Reproductive age, Knowledge, Attitude, Maternal health care

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INTRODUCTION

Approximately about 7 million women were affected from complication of pregnancy and childbirth worldwide and out of the estimates; 6.5 million are from the developing countries [1]. Globally maternal mortality claims the lives of 500,000 women each year leaving a lot of orphans without protecting their lives. Among the total estimates, 55,000 of the death are from Nigeria [2].

Maternal mortality is among the major problem for women in Nigeria. For every woman who dies in labour, 20 or more will be affected by childbirth injuries and most of this is obstetric fistula [3].

Obstetric fistula consider to be the most devastating major morbidity condition that affect women following childbirth [4] It is also a painful and serious condition that occur as a result of abnormal opening of a hole between the vagina and bladder, leaves a woman with continuous leaking of urine, genital ulceration, frequent infection and offensive odour as a result of prolong or long stay

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in childbirth [5]. Current data of the prevalence shows that more than 2 million women were affected worldwide; Nigeria alone has 1 million cases [6]. Though the problem continues to be reported every year but mostly found in sub-Saharan Africa and some part of Asia. Vesico vaginal fistula is preventable and treated disease but is more commonly found among the poor population, young women, illiterate girls whom mainly leaves in the rural communities with difficulty in accessing emergency obstetric care and mostly skilled birth attendance are limited or not utilized [7].

Generally, prolonged obstructed labour is the main cause of obstetric fistula in developing countries [8]. Nigeria account 8% of the global maternal death where obstructed labour found to be among the major causes of maternal mortality and in Nigeria almost 96.5% of the VVF cases were as a result of obstructed labour [9]. The underlying factors of obstructed labour were early marriage/pregnancy and poverty which as a result of poor health care, inadequate nutrition, inaccessibility to maternal health services, illiteracy, lack of transportation and limited power/decision in seeking medical care which are also the major cause of obstetric fistula among the northern Nigerian women [10]. Most of women in the rural communities has little knowledge regarding the cause and preventive measures of VVF which they relate it to be punishment, 'God making' sexual transmitted disease [11]. Most of the previous studies indicate that, incidence and prevalence of VVF is underestimated because number of cases obtain only for those that present themselves for care at health facility [11, 12]. This shows that most of the affected women remain silence and hidden [13].

Kebbi State is located in the north west of Nigeria and Birnin -Kebbi Local Government is located in the capital city of Kebbi State which is the sample area of the study. It has an estimated population of 532,979 with 117,256 being women of childbearing age. Majority of them are predominantly Hausa-Fulani of the Islamic faith. Most of the indigenes are farmers and nomads which is also source of their revenue. Practice of Purdah is so common among the married women (wife seclusion) where their movement is strictly under the control of the husband and permission has to be obtained before financing for health care or any other spending. The objectives of this study were to assess the knowledge, attitude towards vesico vaginal fistula and maternal health care utilization in Birnin Kebbi Local Government and

the relationship of socio-demographic, level of knowledge, attitude, maternal health care utilization and the occurrence of VVF among married women in reproductive age living in Birnin Kebbi Local Government.

MATERIALS AND METHODS

A cross-sectional study was conducted to assess the knowledge and attitude towards vesico vaginal fistula and utilization of maternal health care service of married women in productive age in Birnin Kebbi LGA of Kebbi State, Nigeria. Thirty settlements were selected purposively from 321 settlements in 15 political wards (4 wards are urban and 70% of settlements are rural areas). A sample size calculation was performed by using Yamane equation; where estimated variance in population was 0.34 and the accepted error was 0.05 [14]. A total of 380 participants were selected using a simple random sampling method. A constructed questionnaire consisted of four parts: 1) Socio-demographic characteristics, 2) Knowledge about VVF (risk factors, sign and symptoms and preventive measures), 3) Attitude towards VVF, 4) maternal health care utilization, was used in face to face interview.

Bloom's cut off point was used to classify the level of knowledge and attitude of the respondents [15]. Descriptive statistics was used to describe the numbers, frequency, percentage, mean and standard deviation of variables. For bivariate analysis, Chi-square test was used in statistical measurement which determines the association among independent variables and dependent variables. The level of significant for the relationship was set at *p-value* = 0.05.

This study was approved by the Kebbi-State Health Research Ethics Committee, Ministry of Health, Nigeria. Informed consents were obtained from Birnin Kebbi LGA, Community heads and respondents.

RESULTS

There were 380 women who participated and answered the questionnaire, Table 1 shows that the respondents aged range from 25 to 29 years old are the majority (23.9%) followed by 20 to 24 years with (17.9%), while 30-34 years (14.7%) and 15-19 years (14.2%) almost getting the same percentage of the respondents. Nearly 73% of respondents lived with their spouse and the rest were widow, divorce and separated. A high number of respondents (36.1%) were illiterate. Among the literate respondents, most of them (45.8%) had quranic education. For the occupation of the

Table 1 Socio-demographic characteristics of the respondents

Characteristics	Frequency	Percent
Age (years) (n=380)		
15-19	54	14.2
20-24	68	17.9
25-29	91	23.9
30-34	56	14.7
35-39	59	15.5
40-44	36	9.5
45-49	16	4.2
<i>Mean ± SD</i>		28.82±8.34
Religion (n=380)		
Islam	378	99.5
Christianity	2	0.5
Educational status (n=380)		
Quranic school	174	45.8
Primary school	39	10.3
Secondary school	24	6.3
Tertiary institution	6	1.6
None	137	36.1
Occupation (n=380)		
Housewife	150	39.5
Daily employment	117	30.8
Petty trading	81	21.3
Animal husbandry/Poultry	21	5.5
Others	11	2.9
Marital status (n=380)		
Married	276	72.6
Widow	5	1.3
Divorce	35	9.2
Separated	64	16.8
Age at first marriage (years) (n=380)		
12- 15	242	63.7
16- 19	117	30.8
20 -24	21	5.5
<i>Mean ± SD</i>		15.48 ± 1.96
Age at the first delivery (years) (n=357)		
14-17	201	56.3
18-21	145	40.6
22-25	11	3.1
<i>Mean±SD</i>		16.53 ± 4.54
Occurrence of VVF	36	9.5

respondents, Table 1 also shows that almost 39.5% of the respondents were full housewives, 30.8% work for daily employment either within their houses or outside, 21.3% were petty traders, 5.5% had animal husbandry/poultry and the rest (2.9%) had little income activities. More than 60% of the respondents had their first marriage between the ages of 12-15 years, only 5.5% of them married at age more than twenty. Majority (56.3%) of married women had their first baby between the ages of 14-17 years, 40.6% of them had the first baby at ages between 18 and 21, and only 3.1% had their first baby between the ages of 22-25 years (Table 1). Utilization of maternal health services of respondents was quite low as shown in Table 2.

Out of 358 respondents, 276 or 77.1% delivered at home. Only 23.2% delivered under the assistance of trained health worker while the majority delivered by the untrained traditional birth attendants (TBA). Moreover, 66.9% of respondents did not go for antenatal care and 76.9% of them had not received postnatal care after their delivery. In term of knowledge and attitude of married women towards the VVF, 65.8% of respondents had low knowledge level while the rate of moderate knowledge and high knowledge were 29.5% and 4.7% respectively. The majority of the respondents had moderate attitude with the rate of 60.8%, 35.0% had negative attitude. There was only 4.2% respondents had positive attitude (Table 3).

Table 2 Utilization of maternal health services of the respondents

Items	Frequency	Percent
Place of delivery (n=358)		
Home	276	77.1
Public hospital	70	19.6
Private hospital	9	2.5
Others	3	0.8
Assistance during child birth (n=358)		
Trained TBA	88	24.6
Untrained TBA	174	48.6
Trained health worker	83	23.2
Others	13	3.6
Number of antenatal care visit (n=366)		
>4 times	45	12.3
4 times	16	4.4
3 times	26	7.1
2 times	21	5.7
Once	13	3.6
None	245	66.9
Number of postnatal care visit (n=366)		
None	277	76.9
Once	44	12.2
More than once	39	10.8

Tables 3 Knowledge and attitude levels amongst respondents

Items	Frequency	Percent
Knowledge levels (n=380)		
Low knowledge level (<60%)	250	65.8
Moderate knowledge level (60-80%)	112	29.5
High knowledge level (>80%)	18	4.7
Attitude levels		
Negative attitude	133	35.0
Moderate attitude	231	60.8
Positive attitude	16	4.2

For comparison the relationship between socio-demographic characteristics and occurrence of vesico vaginal fistula as shown in Table 4, study revealed that there was significant relationship between the age of respondents and occurrence of VVF (p -value <0.001). The VVF women were mostly among the age group of 15-26 years while majority of women without VVF were in the age ranged of 27-38 years. The relationship was also found between educational level and VVF occurrence (p -value <0.001), half of women with VVF had no formal education, on the other hand, the educated women were more than twice compared with uneducated women in the women without VVF. Occupation also related to the occurrence of VVF (p -value <0.001), most of VVF women had the employment while majority of women without VVF were housewife. In term of age at first marriage, almost all of VVF women got married at age between 12 and 15 years and majority (60.1%) of women without VVF also got

married at the same age range, however, the significant relationship was found between age at first marriage and VVF occurrence at p -value < 0.001. For age at first delivery, it significantly related to the VVF occurrence at p -value < 0.001, the age range of women with VVF were between 14 and 21 years old, most VVF women (94.4%) delivered at age 14-17 and the rest delivered at age 18-21 years while the age at first delivery of women without VVF was extended to 25 years old. In consideration of maternal health care utilization, 72.2% of the respondents who have VVF had their delivery at health centre while 27.8% delivered at home, the study shown that those that had delivered at the health centre was mainly due to their delivery complications. Most of the respondents without VVF (83.6%) had their delivery at home, only 16.4% had their delivery at health centre, though there were significant relationship among with both place of delivery and occurrence of VVF (p -value<0.001). There

Table 4 The relationship between socio-demographic characteristics of respondents and the occurrence of VVF

Variables	With VVF n (%)	Without VVF n (%)	χ^2	P-value
Age (years) (n=380)				
15-26	28 (77.8%)	139 (40.4%)	18.860	<0.001*
27-38	7 (19.4%)	148 (43.0%)		
≥ 39	1 (2.8%)	57 (16.6%)		
Educational level				
None formal education	19 (52.8%)	118 (34.3%)	4.825	<0.001*
Formal education	17 (47.2%)	226 (65.71%)		
Occupation				
Housewife	3 (8.3%)	147 (42.7%)	16.789	<0.001*
Daily employment	15 (41.7%)	102 (29.7%)		
Informal sector/employment	18 (50.0%)	95 (27.6%)		
Age at first marriage (years)				
12-15	35 (97.2%)	207 (60.1%)	19.356	<0.001*
16-19	1 (2.8%)	116 (33.8%)		
20-24	0 (0.0%)	21 (6.1%)		
Age of first delivery (years)				
14- 17	34 (94.4%)	167 (52.0%)	23.696	<0.001*
18-21	2 (5.6%)	143 (44.6%)		
22-25	0 (0.0%)	11 (3.4%)		

Table 5 The relationship between utilization of maternal health care services and the occurrence of VVF

Variables	With VVF n (%)	Without VVF n (%)	χ^2	P-value
Place of delivery				
Home	10 (27.8%)	269 (83.5%)	55.128	<0.001*
Health centre	26 (72.2%)	53 (16.5%)		
Delivery Practice				
Trained TBA	0 (0.0%)	88 (27.3%)	68.194	<0.001*
Untrained TBA	8 (22.2%)	179 (55.6%)		
Health worker	28 (77.8%)	55 (17.1%)		
Number of Antenatal Visit				
None	36 (100.0%)	209 (63.3%)	12.578	0.002*
1-3 times	0 (0.0%)	60 (18.2%)		
≥ 4 times	0 (0.0%)	61 (18.5%)		
Number of Postnatal visit				
None	36 (100.0%)	241 (74.4%)	11.986	<0.001*
Once or more	0 (0.0%)	83 (25.6%)		

Table 6 The relationship between knowledge and attitude levels and the occurrence of VVF

Variables	With VVF n (%)	Without VVF n (%)	χ^2	P-value
Knowledge levels				
Low	35 (14.0%)	215 (86.0%)	17.472	<0.001*
Moderate	1 (0.9%)	111 (99.1%)		
High	0 (0.0%)	18 (100.0%)		
Attitude levels				
Negative	12 (9.0%)	121 (91.0%)	1.676	0.396
Moderate	21 (9.1%)	210 (90.9%)		
Positive	3 (18.8%)	13 (81.2%)		

was also relationship between the number of antenatal visit and the occurrence of VVF (*p-value* = 0.002), all women with VVF found not been attending antenatal check-up (ANC), while 36.7%

of women without VVF found to have gone for ANC visit at least once. Delivery practice and the occurrence of VVF was found to be highly significant (*p value* < 0.001), majority of VVF

respondents (77.8%) had their babies delivered with the help of health workers, this was due to obstetric complications (prolonged period during labour), 22.2% were assisted by untrained traditional birth attendants unlike women without VVF where 55.6% of them had their delivery with the help of untrained traditional birth attendants and 44.4% of them delivered under the assistance of trained traditional birth attendants or health workers. There were also significant relationship between the number of postnatal visit and occurrence of VVF (p -value < 0.001), all women with VVF found not to have gone for postnatal visit even one time (Table 5). Table 6 showed that knowledge levels regarding to vesico vaginal fistula of respondents and its occurrence has significant relationship at p -value < 0.001. On the contrary, the attitude levels of respondents was not found to be significant with the occurrence of VVF (p -value=0.396).

DISCUSSION

Most of the age group represented in the present study was the group of 25-29 years old (23.9%), majority of VVF cases occurring in Birnin Kebbi LGA are in the age range of 15-26 years (77.8%). This result was the same with the findings carried out by Velez and colleagues [11] and study of Ibrahim and colleagues [5] they found that most VVF cases affected young girls who are below 16 years. Three quarters of the respondents (72.6%) were married while divorce rate among the respondent with VVF was (86.1%), however the findings of divorce rate in this study is lower than the 55% reported by Ibrahim and colleagues [5]. Education is one of the basic factors as it determines the level of knowledge amongst the respondent, majority of women in this study had no any formal education (36.1%). This was also similar with the previous findings by Ijaiya and team [16] where most of women in the northern part of the Nigeria were illiterate. It is also indicated in the National Demographic and Health Survey which stated that women of reproductive age 15-49 years 36% had no formal education [17]. Most of the respondents (39.5%) are not engage in any income activities. The study findings are the same as reported by Ibrahim and colleagues where 61% of women in the northern part of the country are full housewives [5]. The legal age at first marriage in Kebbi state is 15-18 years [17]. However, the findings of the present study showed the age range at first marriage, 63.7% of the respondents married at the ages of 12-15 years while 30.8% married between the ages of 16-24

years. The result is similar with previous studies carried out by the United Nations Population Fund [3] where young girls got marriage at the ages of 12-13 years. Another report cited that, early marriage is a common practice in northern part of Nigeria where young girls were given out for marriage before or immediately attaining menarche. Majority of these girls were either been forced into marriage or were married off at the age they cannot have decision to accept it as a normal process and their physical structure (pelvis) is not mature [18]. Age at marriage no doubt affects pregnancy related complications amongst women hence likelihood of occurrence of VVF. As the present study was conducted, most age group at first delivery was the group of 14-17 years (56.3%) which is significantly related to the occurrence of VVF. This was in line with the report of the United Nations Population Fund [3] whose study found that most young girls married early become pregnant by 14-15 years and Ajuwon's study [19] which found early marriage resulted to early pregnancy when growth of the pelvis is not completely developed. Age was involved in maternal health status or behaviour by finding that women are ignorant in practicing preventive measures. According to World Health Organization report [20], skilled care before and after birth and mostly during labour can make the difference between life and death for women and their babies and help to prevent obstetric fistula. The current study shows that 100% of the VVF respondents receive no health care in pregnancy and 83.6% of all deliveries took place at home without the support of trained health assistance. This finding is close to the findings by Lindroos and Luukkainen [21] where 69% of women in the rural areas had home delivery by unskilled attendance. There was very significant association between the place and delivery practice and the occurrence of VVF. Lack of access to obstetric care by pregnant women in the study area is a common factor to the prevalence of VVF, where access to antenatal care can help in early detections of difficult and complicated labour before delivery. Virtually, majority of VVF cases seek for medical care very late when labour had already been obstructed as stated by Shittu and colleagues [22]. Women in the rural areas mostly recognise or prefer to seek care from unskilled birth attendance due to the fact of their easy accessibility and cost less than government health institutions. As stated by Wall and colleagues [9], women in the northern Nigeria lacks power in decision making and they have to obtain permission for their movement from their husband.

This could be the common cause of delay in seeking for medical attention. However, in most cases this increases the risk of maternal deaths/disability such as fistula and stillbirth. The objective of this study was to assess the knowledge, attitude and preventive measures towards VVF. However, there are many factors associated with. Knowledge and attitude were the key factors in this study. There was relationship between knowledge level and the occurrence of VVF at p -value <0.001 . Majority of the respondents with VVF 97.2% have low knowledge about vesico vaginal fistula. This indicates that the respondents have poor knowledge when it comes to emergency obstetric care during labour. The proportion is lower with the findings by Hassan and Ekele who stated that 70% of women with fistula on admission have knowledge of causes of their fistula [23]. Knowledge level regarding to the risk factors, majority of the respondents (77.9%) knew about staying long period during labour and delay for seeking care can cause delivery complications. Most of the respondents (72.9%) had moderate knowledge level regarding to signs and symptoms of VVF compared with the risk factors. Knowledge level on preventive measures among the respondents is very low, 56.8% of them knew the preventive measures for VVF by stating that VVF can be prevented by avoiding early marriage, while 34.5% give correct answer that delivery assisted by health worker can minimize the occurrence of VVF. The result is in line with the finding by Hassan and Ekele where doubt knowledge gain by women can put into practice [23]. When compared with the previous studies, majority of women have low knowledge considering the fact that government and donor agencies are making effort in awareness creation on the prevention of fistula but, still there is wide gap on knowledge level amongst women. Majority of the respondents cannot give correct answer that home delivery by untrained birth attendant can cause VVF. This indicates that they don't consider it as the main contributing factor of fistula occurrence. Transportation or delay for referral causes delivery complications, only 26.8% replied correctly. This is similar with the findings by Ibrahim and colleagues where 28% of VVF cases were caused by obstructed labour due to delay in seeking permission from husband/family [5]. For attitude towards vesico vaginal fistula, there was no significant relationship. Majority of the respondents (60.8%) had moderate attitude towards VVF. Due to the negative reaction from the societies towards women affected by VVF, the result of study revealed that 46.8% of the

respondents with VVF face behavioural changes from their husband. The same study carried out by Harrison where VVF cases are often ostracized by their husband, families and communities [24]. The societal reaction towards women with VVF in Nigeria is the same with the previous studies, where 53% of these women found to be rejected [10]. This could be the reason that majority of the respondents 59.7% thought that VVF is an embarrassing disease, while 33.9% thought that VVF lowers the quality life of women and 27.6% think it is incurable disease. From the findings; it can be summarized that, most of the women have poor access to maternal health care services, they also have moderate knowledge level regarding the risk factors of VVF with low knowledge about the preventive measures and moderate attitude towards it. This indicates that, there is poor practice on maternal health issues which will result to increase of prevalence of VVF. Finally, there is need for wider research on community-based study in order to determine the actual incidence and prevalence and the need to develop concrete strategies towards prevention and eradication of the disease.

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REFERENCES

1. Murray CJL, Lopez AD, World Health Organization [WHO]. Health dimensions of sex and reproduction: the global burden of sexually transmitted diseases, HIV, maternal conditions, perinatal disorders and congenital anomalies. Geneva: WHO; 1998.
2. Ramsey K, Iliyasu Z, Idoko L. Fistula Fortnight: innovative partnership brings mass treatment and public awareness towards ending obstetric fistula. *Int J Gynaecol Obstet.* 2007; 99(Suppl 1): S130-6.
3. The United Nations Population Fund. State of the world population. [Cited 2012 Oct 15]. Available from <http://www.unfpa.org/swp/2004/english/ch7/index.htm>
4. Angioli R, Gomez-Marin O, Cantuarria G, O'Sullivan M J. Severe perineal lacerations during vaginal delivery: the University of Miami experience. *Am J Obstet Gynecol.* 2000; 182(5): 1083-5.

5. Ibrahim T, Sadiq AU, Daniel SO. Characteristics of VVF patients as seen at the specialist hospital Sokoto, Nigeria. *West African Journal of Medicine*. 2000; 19(1):59-63.
6. Kelly J, Kwast BE. Epidemiologic study of vesicovaginal fistulas in ethiopia. *International Urogynecology Journal*. 1993; 4(5): 278-81.
7. Lewis G, de Bernis L. *Obstetric fistula: Guiding principles for clinical management and programme development*. Geneva: WHO Press; 2006.
8. Ijaiya MA, Aboyeji PA. Obstetric urogenital fistula: the Ilorin experience, Nigeria. *West Afr J Med*. 2004; 23(1): 7-9.
9. Wall LL, Karshima JA, Kirschner C, Arrowsmith SD. The obstetric vesicovaginal fistula: characteristics of 899 patients from Jos, Nigeria. *Am J Obstet Gynecol*. 2004; 190(4): 1011-9.
10. Kabir M, Iliyasu Z, Abubakar IS, Umar U I. Medico-social problems of patients with vesico-vaginal fistula in Murtala Mohammed Specialist Hospital, Kano. *Annals of African Medicine*. 2003; 2(2): 54-7.
11. Velez A, Ramsey K, Tell K. The Campaign to End Fistula: what have we learned? Findings of facility and community needs assessments. *Int J Gynaecol Obstet*. 2007; 99(Suppl 1): S143-50.
12. Tahzib F. Epidemiological determinants of vesicovaginal fistulas. *Br J Obstet Gynaecol*. 1983; 90(5): 387-91.
13. Cron J. Lessons from the developing world: obstructed labor and the vesico-vaginal fistula. *MedGenMed*. 2003; 5(3): 24.
14. Yamane T. *Statistics: an introductory analysis*. 3rd ed. New York: Harper and Row; 1973.
15. Bloom BS. *Taxonomy of educational objectives: the classification of educational goals, Handbook 1: Cognitive domain*. New York: David Mckay Company; 1965.
16. Ijaiya MA, Rahman AG, Aboyeji AP, Olatinwo AW, Esuga SA, Ogah OK, et al. Vesicovaginal fistula: a review of nigerian experience. *West Afr J Med*. 2010; 29(5): 293-8.
17. The National Population Commission of Nigeria. *National demographic and health survey*. 2008 [Cited 2012 Oct 12]. Available from: <http://www.population.gov.ng>
18. United Nations Children's Fund. *Early marriage: child spouses*. Siena – Italy: Arti Grafiche Ticci; 2001 [Cited 2014 Aug 20]. Available from: <http://www.unicef-irc.org/publications/pdf/digest7e.pdf>
19. Ajuwon A. Vesico vaginal fistula in Nigeria: extent of the problem & strategies for the prevention & control. In: Owumi BE, editor. *Primary health care in Nigeria*. Ibadan: KA Health; 1997. p. 25-31.
20. World Health Organization [WHO]. *Reproductive health indicators: guidelines for their generation, interpretation and analysis for global monitoring*. Geneva: WHO Press; 2006.
21. Lindroos A, Luukkainen A. Antenatal care and maternal mortality in Nigeria. *Public Health Programme-exchange to Nigeria*. 2004. [Cited 2013 Jan 30]. Available from http://www.uku.fi/kansy/eng/antenal_care_nigeria.pdf
22. Shittu OS, Ojengbede OA, Wara LH. A review of postoperative care for obstetric fistulas in Nigeria. *Int J Gynaecol Obstet*. 2007; 99(Suppl 1): S79-84.
23. Hassan MA, Ekele BA. Vesicovaginal fistula: do the patients know the cause? *Ann Afr Med*. 2009; 8(2): 122-6.
24. Harrison KA. Obstetric fistula: one social calamity too many. *Br J Obstet Gynaecol*. 1983; 90(5): 385-6.