

Prevalence of Uterine Fibroid among Women of Childbearing Age Attending University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu State (2009-2013)

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Abstract

This paper examined the prevalence of uterine fibroid among childbearing mothers attending University of Nigeria Teaching Hospital (UNTH) Ituku-Ozalla, Enugu State from 2009-2013, using the ex-post facto research design. Five specific objectives, 5 corresponding research questions and three null hypotheses were postulated to guide. Data was collected using an inventory proforma. The validity of the proforma was established. Analysis of the data was done using SPSS batch system. Frequencies and percentages were used to answer research questions. The Chi square (χ^2) statistic was used to test the null hypotheses at .05 level of significance. The results of the data analyzed indicated that the prevalence of uterine fibroid among women of childbearing age attending University of Nigeria Teaching hospital (UNTH) Ituku-Ozalla, Enugu State from 2009-2013 was highest (29.1 %) in the years 2011 and 2013 and lowest (12.6 %) in the year 2012. There were disparities in the prevalence of uterine fibroid among women of childbearing age attending University of Nigeria Teaching hospital (UNTH) Ituku-Ozalla, Enugu State from 2009-2013 based on age, parity and family history. However, there was no significant difference in the prevalence of uterine fibroid among women of childbearing age attending University of Nigeria Teaching hospital (UNTH) Ituku-Ozalla, Enugu State from 2009-2013 based on age, parity and family history. The study recommended among others that early detection of fibroid is of utmost importance to the health practitioners and the patients, as this will help the doctors devise possible means of treating the case without much complication.

Keywords: Prevalence, Uterine Fibroid, Women of Childbearing Age.

Introduction

Fibroid is one of the major reproductive health problems of women. Globally, uterine fibroid has been reported as the most common benign gynaecological tumor affecting women of childbearing age (Stewart, 2001). Studies have shown that it occurs more in black women than in white women (Chandra & Stephen, 2006). This implies that race may be a factor in the development of fibroid. In Nigeria, fibroid accounts for 3.2 to 7.8 per cent of gynaecological cases generally and 68.1 per cent of hysterectomy cases (Aboyeji & Ijaiyo, 2002). The prevalence of uterine fibroid seems to be on the increase among child bearing women leading to other reproductive health problems like infertility. Hence, Amant et al, (2003) stated that fibroid is one of the known causes of infertility, depending on the type.

Uterine fibroids, medically called leiomyoma uteri or myoma are benign (non-cancerous) tumors of the smooth muscles of the uterus (Simms-Stewart & Fletcher, 2012). It is referred to as non-cancerous growth found in the muscle layers of the uterus of women of childbearing age, which can be symptomatic or asymptomatic in nature. Fibroids rarely develop into cancer. Less than 1 percent of all cases of fibroid may result to cancer (Levy Mukherjee, & Hirschhorn, 2000).

There are different types of uterine fibroid, depending on the part of the uterus that is affected. Women's Health Information (2005) identified four different types of fibroid as intramural/interstitial, subserosal/subperitoneal, submucosal/subendometrial, and cervical fibroid. Brindles and Winnie (2012) classified fibroid thus: intramural (inside the uterus (endometrium)), sub serosal (on or outside the uterus), sub mucousal (in the middle layer of the uterus (myometrium)) and pedunculated (suspended by a stalk within or outside the uterus) fibroids. These imply that uterine fibroids are made up of smooth muscle cells and fibrous connective tissues of the uterus. They usually develop from a single smooth muscle cell that continues to grow without a known cause.

The exact cause of uterine fibroid is unknown. However, several factors have been associated with its development. The risk factors include age (Claessens, et al, 2003); parity (Terry, De Vivo, Hankinson, & Missmer,

2010); family history (Sato, Miyake, Nishi, Mori, & Kudo, 2000); Body Mass Index-BMI and alcohol consumption (Wise et al, 2004); ethnicity (Heinemann et al, 2003); diet and progesterone (Mauro et al, 2000). Most of these factors and their association with uterine fibroid development were studied outside Nigeria. This present study therefore examined the association of age, parity and family history with the prevalence of uterine fibroid in University of Nigeria Teaching Hospital (UNTH), Ituku-Ozalla in Enugu State, Nigeria.

Uterine fibroids, particularly when small, may entirely be asymptomatic. However, some uterine fibroids show signs and symptoms like menstrual dysfunction, continuous vagina bleeding, pains, pressure related symptoms, sub-fertility, and pregnancy related problems (McIlveen & Li, 2005). According to Newton-Wellesley (2014) uterine fibroids are associated with infertility, abortion, premature labour, heavy bleeding, pelvic pressure, and severe cramping. Some of these symptoms could be severe and may alter the healthy living of the individual.

The occurrence rate of fibroid is of a great concern. The total occurrence of a disease in a particular population is referred to as prevalence. Prevalence is the total number of cases of a disease at a time in a defined population (Peters, 2009). Furthermore, Lucas and Gilles (2003) referred to prevalence as the occurrence of both old and new cases within a stated period of time in a human population. The prevalence rate in this study refers to the occurrence of both old and new cases within a stated period of time per a thousand populations. The study therefore, investigated prevalence and prevalence rate of uterine fibroid between 2009 and 2013 among women of child bearing age attending UNTH.

University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu is located 21km from Enugu capital city along Enugu - Port Harcourt expressway in Nkanu West LGA of Enugu State. It has boundaries with Ituku and Ozalla communities in Awgu and Nkanu LGAs, and that gave it the name Ituku- Ozalla. University of Nigeria Teaching Hospital (UNTH) Ituku-Ozalla, Enugu State was chosen as the area of the study because it is a specialist hospital that treats critical diseases like uterine fibroid and complex patients through the provision of specialized services, advanced technology and the conduct of biomedical research.

Ideally, women of childbearing age are supposed to lead a healthy reproductive live devoid of reproductive health problems that could affect their health generally. Unfortunately, some women of child bearing age are infertile because of uterine fibroid. Uterine fibroid has caused more harm to women of childbearing age. The study sought to determine the prevalence of uterine fibroid among women of childbearing age attending University of Nigeria Teaching Hospital (UNTH), Ituku-Ozalla Enugu State. The association of some demographic factors such as age, parity, and family history were also determined. Specifically the study sought to determine the:

1. Prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013
2. Prevalence rate of uterine fibroid among women of childbearing age attending UNTH from 2009-2013
3. Prevalence of uterine fibroid based on age among women of childbearing age attending UNTH from 2009-2013
4. Prevalence of uterine fibroid based on parity among women of childbearing age attending UNTH from 2009-2013
5. Prevalence of uterine fibroid based on family history among women of childbearing age attending UNTH from 2009-2013

Research Questions

The following research questions are formulated to guide the study:

1. What is the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013?
2. What is the prevalence rate of uterine fibroid among women of childbearing age attending UNTH from 2009-2013?
3. What is the prevalence of uterine fibroid based on age among women of childbearing age attending UNTH from 2009-2013?
4. What is the prevalence of uterine fibroid based on parity among women of childbearing age attending UNTH from 2009-2013?
5. What is the prevalence of uterine fibroid based on family history among women childbearing age attending UNTH from 2009-2013?

Hypotheses

The following null hypotheses were postulated and verified at 0.05 level of significance.

1. There is no significant difference on the prevalence of uterine fibroid among women of childbearing age attending UNTH based on age.
2. There is no significant difference on the prevalence of uterine fibroid among women of childbearing age attending UNTH based on parity.

3. There is no significant difference on the prevalence of uterine fibroid among women of childbearing age attending UNTH based on family history.

Methods

This study adopted the ex-post-facto research design. Nworgu (2006) asserted that ex-post facto design is used when data are collected after the event under study has taken place (retrospectively). Hence, in this study, the use of ex-post factor design is deemed appropriate as fibroids have already occurred and are recorded in the folders. The population of the study consisted of 127 women childbearing age with uterine fibroid (old and new) that attended University of Nigeria Teaching Hospital Ituku-Ozalla Enugu State from 2009 to 2013. Their hospital folders were used. No sampling was done, as the entire population was used for the study. This is because the population size is small and manageable and this goes with Nwana (1990) which says that when the population of a study is relatively small or manageable the total population should be used. Instrument for data collection was the researchers design uterine fibroid prevalence inventory proforma (UFPIP). Reliability of the uterine fibroid prevalence inventory proforma (UFPIP) was not done. This is because it is only a record inventory and requires no test of reliability. The face validity of UFPIP was established by giving the instrument, the purpose of the study with specific objectives and research questions to three lecturers in department Health and physical education, University of Nigeria Nsukka. Their criticisms, advice and suggestions were used in modifying the instrument that was used for data collection. Data collection was done by the researchers and data was collected from each patient's folder from the record unit. The Statistical Package for Social Sciences (SPSS) was employed, using frequency, percentages and rates. The chi-square statistics was utilized to test the null hypotheses at .05 level of significance. The prevalence rate of uterine fibroid was calculated using this formula:

$$\text{Prevalence rate} = \frac{\text{Number of fibroid cases in a year}}{\text{Population of women at risk fibroid from 2009 – 2013}} \times 1000$$

Results

Table 1

Prevalence of Uterine Fibroid among Women of Childbearing Age Attending UNTH from 2009-2013(N=127)

S/N	Year	F	%
1	2009	20	15.7
2	2010	17	13.4
3	2011	37	29.1
4	2012	16	12.6
5	2013	37	29.1
	Total	127	100.0

Table 1 shows that the prevalence of uterine fibroid among childbearing mothers attending UNTH from 2009-2013 ranged from 12.6 to 29.1 per cent. The highest prevalence of 29.1 per cent was recorded in 2011 and 2013 and the lowest prevalence of 12.6 recorded in 2012.

Table 2

Prevalence Rate of Uterine Fibroid among Women of Childbearing Age Attending UNTH from 2009-2013 (N=127)

S/N	Year	f	%	Rates (per 1000)
1	2009	20	15.7	157.5
2	2010	17	13.4	133.9
3	2011	37	29.1	291.3
4	2012	16	12.6	126
5	2013	37	29.1	291.3
	Total	127	100.0	1000

Table 2 shows that the lowest prevalence rate of uterine fibroid among child bearing mothers attending UNTH from 2009-2013 was 126 per 1000 in the year 2012 and highest prevalence rate of uterine fibroid was 291.3 per 1000 in the year 2011 and 2013, 133.9 per 1000 in the year 2010 and 157.5 per 1000 in the year 2009.

Table 3
Prevalence of Uterine Fibroid among Women of Childbearing Age Attending UNTH from 2009-2013 Based on Age (N=127)

Year	Age										Annual Total	
	22-28 years		29-35 years		36-42 years		43-49 years		≥50 years		f	%
	f	%	F	%	f	%	f	%	f	%		
2009	2	11.1	5	11.4	6	15	4	23.5	3	37.5	20	15.7
2010	2	11.1	3	6.8	7	17.5	4	23.5	1	12.5	17	13.4
2011	10	55.5	13	29.5	10	25	3	17.6	1	12.5	37	29.1
2012	2	11.1	8	18.2	4	10	1	5.9	1	12.5	16	12.6
2013	2	11.1	15	34.1	13	32.5	5	29.4	2	25	37	29.1
Total	18	100	44	100	40	100	17	100	8	100	127	100

Table 3 shows that the highest prevalence of uterine fibroid based on age was 55.5 per cent in the year 2011 within the age range of 22-28 years and lowest (5.9) in 2012 within the age range of 43-49 years.

Table 4
Prevalence of Uterine Fibroid among Women of Childbearing Age Attending UNTH from 2009-2013 Based on Parity (N=127)

Year	Parity								Annual Total	
	Nullipara		Primipara		Multipara		Grand multipara		f	%
	f	%	f	%	F	%	F	%		
2009	10	13.5	0	0	4	30.8	6	30	20	15.7
2010	11	14.9	2	10	0	0	4	20	17	13.4
2011	25	33.8	7	35	5	38.5	0	0	37	29.1
2012	9	12.2	4	20	1	7.7	2	10	16	12.6
2013	19	25.7	7	35	3	23.1	8	40	37	29.1
Total	74	100	20	100	13	100	20	100	127	100

Table 4 shows that the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on parity was highest (40.0 per cent) in the year 2013 among grand multipara women and lowest (0.0 per cent) in the year 2009, 2010 and 2011 among primipara, multipara and granmultipara women.

Table 5
Prevalence of Uterine Fibroid among Women of Childbearing Age Attending UNTH from 2009-2013 Based on Family History (N=127)

Year	Family History				Annual Total	
	Absence of uterine fibroid		Presence of uterine fibroid		f	%
	F	%	f	%		
2009	16	14.8	4	21.1	20	15.7
2010	15	13.9	2	10.5	17	13.4
2011	29	26.9	8	42.1	37	29.1
2012	16	14.8	0	0	16	12.6
2013	32	29.6	5	26.3	37	29.1
Total	108	100	19	100	127	100

Table 5 shows that the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on family history was highest in the year 2011 (42.1 per cent) among women of childbearing age with family history of uterine fibroid and lowest in the year 2012 (0.0 per cent) among women of childbearing age with family history of uterine fibroid.

Table 6
Summary of Chi-square Analysis Testing the Null Hypothesis of No Significant Difference in the Prevalence of Uterine among Women of Childbearing Age Based on Age.

Variable	N	χ^2 Value	P- Value	Df	Decision
Age	127	17.763	.338	16	Accepted

Table 6 shows that the calculated p-value of .338 is greater than the confidence level of 0.05 at 16 degree of freedom. This means that the null hypothesis of no significant difference on the prevalence of uterine fibroid among women of childbearing age based on age is therefore accepted.

Table 7

Summary of Chi-square Analysis Testing the Null Hypothesis of No Significant Difference in the Prevalence of Uterine Fibroid among Women of Childbearing Age Based on Parity

Variable	N	χ^2 Value	P- Value	Df	Decision
Parity	127	20.264	.062	12	Accepted

Table 7 shows that the calculated p-value of .062 is greater than the confidence level of 0.05 at 12 degree of freedom. This means that the null hypothesis of no significant difference on the prevalence of uterine fibroid among women of childbearing age based on parity is therefore accepted.

Table 8

Summary of Chi-square Analysis Testing the Null Hypothesis of No Significant Difference on the Prevalence of Uterine Fibroid Among Women Of Childbearing Age Based on Family History.

Variable	N	χ^2 Value	P- Value	Df	Decision
Family History	127	4.702	.319	4	Accepted

Table 8 shows that the calculated p-value of .319 is greater than the confidence level of 0.05 at 4 degrees of freedom. This means that the null hypothesis of no significant difference on the prevalence of uterine fibroid among women of childbearing age based on family history is accepted.

Discussion

The findings of the study in Table 1 showed that the highest prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 was 29.1 per cent in the year 2011 and 2013 while the lowest prevalence of uterine fibroid was 12.6 per cent in the year 2012. This finding was expected because literature reviewed show that the prevalence lies between the ranges of this finding. This finding is in line with the findings of Ikechebelu (2005) who investigated the prevalence of gynecological diseases in Nnewi, Nigeria and found out that uterine fibroid had a mean prevalence of 19.58 per cent from 1998-2002. Ikechebelu further stated that Uterine fibroid was reported the second commonest indication for gynecological consultation in teaching hospitals after infertility.

Findings in Table 2 indicated that the prevalence rate of uterine fibroid among women of childbearing age attending UNTH from 2009 to 2013 was highest in 2011 and 2013 with a prevalent rate of 291.3 per 1000 women population. This finding was not surprising because it conforms to data in existing literature. Wise et al, (2004) reported a prevalence rate of 29.7 per 1000 women, which translates to 3 per cent of premenopausal black women being diagnosed with fibroids annually.

The finding in Table 3 revealed that the highest prevalence of uterine fibroid based on age was 55.5 per cent in the year 2011 within the age range of 22-28 years and lowest (5.9) in 2012 within the age range of 43-49 years. This finding was not expected because it does not agree with bank of literature reviewed. Lure, Piper, Woliovitch and Glezman (2005) asserted that incidence and prevalence of uterine fibroids increase with age. A population based study in United States found a cumulative prevalence of uterine fibroid of greater than 66 per cent by ultrasound of women approaching 50 years of age (Hai-Yun, Yang & Zhou, 2010).

The findings in Table 4 indicated that the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on parity was highest (40.0 %) in the year 2013 among grand multipara women and lowest (0.0 %) in the year 2009, 2010 and 2011 among primipara, multipara and granmultipara women. The finding was unexpected. This is because literature abounds that poise parity is a protective factor. Chen (2001) confirmed that parity has been consistently associated with a 20 per cent to 40 per cent reduction in risk of having fibroids, with risk declining as number of birth increases. Increased parity decreases the incidence and number of clinically apparent uterine fibroid (Baird & Dunson, 2003).

Findings in Table 5 showed that the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on family history was highest in the year 2011 (42.1 per cent) among

women of childbearing age with family history of uterine fibroid and lowest in the year 2012 (0.0 per cent) still among women of childbearing age with family history of uterine fibroid. This revelation of the lowest prevalence among women with family history of fibroid was surprising. However, Sato et al (2000) opined that family history is among the risk factor for uterine fibroid development. This means that uterine fibroid in families' leads to higher prevalence. Furthermore, Sato et al argued that a women that is diagnosed of uterine fibroid, leaves the daughter at high risk of developing uterine fibroid.

The findings in Table 6 indicated no significant difference in the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on age. This finding was shocking. This is because many studies, this present study inclusive had found out that specific age ranges are more prone to uterine fibroids. Nevertheless, Ofori et al (2012) reported that all age groups were not significant in prevalence and sonographic patterns of uterine fibroids among Ghanaian women.

Finding in Table 7 revealed no significant difference in the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on parity. This finding lacks support from some epidemiologic studies which show that grandmulti-parous women are at lower risk of fibroids due to long term reduction in hormones associated with myoma growth (Terry et al, 2010). On the other hand, the finding was synchronous with the findings of Baird and Dunson (2003) which reported that there is no significant difference on the prevalence of uterine fibroid among women of childbearing age.

Findings in Table 8 revealed no significant difference on the prevalence of uterine fibroid among women of childbearing age based on family history. This finding was unexpected because it contradicts the position of Schwartz, Marshall and Baird (2000) and Okolo, Gentry, Perrett, and Maclean (2005) that a significant difference exists in the prevalence of uterine fibroid among women of childbearing age based on family history. Schwartz, Marshall and Baird asserted that first degree relative of a woman with myomas in two first-degree relatives are more than twice likely to have strong expression of vascular endothelial growth factor.

Conclusions

Based on the findings and discussion, the following conclusions were reached.

1. The prevalence and prevalence rate of uterine fibroid were recorded highest in the year 2011 and 2013, and lowest in the year 2012.
2. The highest prevalence of uterine fibroid based on age (55.5%) was within the age range of 22-28 years and the lowest (5.9%) was within the age range of 43-49 years.
3. Also the highest prevalence (40.0 %) of uterine fibroid based on parity was among the grand multiparous women and lowest (0.0 %) in the year 2009, 2010 and 2011 among primipara, multipara and granmultiparous women respectively.
4. Prevalence based on family history was highest in the year 2011 (42.1 per cent) among women of childbearing age with family history of uterine fibroid and lowest in the year 2012 (0.0 per cent) still among women of childbearing age with family history of uterine fibroid.
5. There was no statistically significant difference in the prevalence of uterine fibroid among women of childbearing age attending UNTH from 2009-2013 based on age, parity and family history.

Recommendations

The following recommendations were made based on the findings and discussion.

1. Early detection of uterine fibroid should be encouraged. This will help the doctors devise possible means of treating the case without many complications.
2. Too long child spacing should not be encouraged to couples who are lately married because in the process of spacing, uterine fibroid may set in and sometimes leads to the removal of the womb which ends child birth.
3. Health educators, medical practioners and non-governmental organization should help in tackling this disease by organizing seminars, conferences and symposium that is geared towards addressing the issues of uterine fibroid as it relates to women of childbearing age.
4. Primary and secondary health facilities should be adequately equipped to provide both curative and preventive services for uterine fibroid.

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