

Comparing Uterine Leiomyoma (Fibroid) Incidence Among Nulliparous and Parous Women in Nlagu Christian Hospital Abia State Nigeria: A Cohort Study

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ABSTRACT

Uterine leiomyomas (fibroid) refer to a tumor or growth that grows in the wall of the uterus. Leiomyomas are the most common benign tumors of the uterus with an estimated incidence of 20-40% in women during their reproductive years. It is commonly found in women between the ages of 30-40 years and it's rare before the age of 20 years. This study examined the incidence of occurrence of Uterine fibroid amongst nulliparous and multiparous women, applying a cross-sectional descriptive design and a cohort study to determine the incidence of Uterine fibroid among the two groups. A total of 60 patient's data was, collated, collected and analyzed in the study focus, which includes, client's month/year of admission, age that has the highest occurrence of uterine fibroid, distribution of client's age, and occurrence of uterine fibroid amongst nulliparous and multiparous women. Conclusively, the rate of uterine fibroid is higher amongst nulliparous women, occurring at a frequency of 35 and a rate of 58% while in multiparous women had highest amongst women of childbearing age between the age group of 30-39 years with 18% of the women having 1 child, 17% had 2-5 children, while 7% had 6-10 children. It is advisable that our women are thought by our health workers, voluntary organizations, government, etc, on the ways to prevent and cure fibroid to reduce complications Uterine fibroid is a tumor or growth made of smooth muscle cells, fibroblasts and other materials in the walls of the uterus.

Keywords: Cohort study; Comparing; Uterine; Leiomyoma; Incidence; Nulliparous; Parous women, Hospital

Vol No: 04, Issue: 02

Received Date: September 23, 2022

Published Date: November 15, 2022

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Citation: Peace EO, et al. (2022). Comparing Uterine Leiomyoma (Fibroid) Incidence Among Nulliparous and Parous Women in Nlagu Christian Hospital Abia State Nigeria: A Cohort Study. Mathews J Nurs. 4(2):9.

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ABBREVIATION

Ru-486 (Mifepristone).

INTRODUCTION

Uterine fibroids are benign monoclonal tumors of the smooth muscle cells found in the human uterus. In a study conducted by Okogbo et al. [1], on the prevalence of Uterine fibroid in south Western Nigeria showed the prevalence of uterine fibroid was lower from age below 20 years (0.0%). There was a high prevalence of uterine fibroid which is 67.1% in the age range of 30- 39 years and decreased to 32.9% in the age range of 40-49years. High prevalence manifested at this age group was believed to be due to the fact that symptoms become manifest at this age group prompting the need to seek medical interventions. Leiomyoma Uteri in Ethiopian women, a clinical study revealed that menorrhagia was the commonest symptom of uterine fibroid with about 42% occurrence, followed by abdominal swelling and lower abdominal pain which recorded 38.1%, other symptoms accounted for 9.9%. The influence of hormones plays a major role too, oestrogen and progesterone production is high within the age group of 25-40 years thus favoring the growth of fibroid, whereas at menopause the production of oestrogen and progesterone is reduced. Fibroids are living tissue, requiring oxygen and nutrients to survive and grow, supplied by blood vessels in an around the uterus. A woman who has given birth to a large family is far less likely to develop myomata than a woman who has never been pregnant or has had only one child. Increased risk for myomas is associated with early menarche and older age of the first term of pregnancy. pregnancy has a protective effect on fibroid, incidence of uterine fibroid is higher in nulliparous women and lower in grand multiparae. Anti-hormonal drug Ru-486(Mifepristone) has also been shown to reduce fibroid size by about half, reduce pelvic pain, bladder pressure, and lower back pain as surgical treatment is the best option for uterine fibroids. It is obvious that women are not aware of the cause, treatment, and preventive measures of fibroid. The incidence of fibroid should be known to every woman to enable individuals, women, governments, and organizations to look for strategies to curb the increasing problem.

METHODOLOGY

This was a cohort and a cross-sectional study conducted at Nigerian Christian Hospital Nlagu, Abia state. Southeast

Nigeria, it compared the incidence of Uterine fibroid among nulliparous and multiparous women from January 2017-January 2018. adopting the pattern of Lane-Claypon's 1926 who first recognized retrospective cohort studies, and used the method to study the breast cancer risk factors, titled "A Further Report on Cancer of the Breast, With Special Reference to Its Associated Antecedent Conditions, based on this, the researchers adopted a retrospective study in an area/hospital that is most functional and effective which serves as a teaching hospital and a referral center in the southeast of Nigeria. The hospital is owned by the United States of America, their medical personnel resides at the staff lodge and works in the hospital including the periodic visitation of their consultants. The total number of patients that came to the gynecological ward from January 2017-January 2018 was the research population, while the target population was a woman who was diagnosed with fibroid. A total of 76 patients were diagnosed with fibroid between the study periods, out of this, 70 patients' medical records were retrieved, and therefore the target population is 70. A checklist was used to obtain data from patients' past medical records from outpatient units where all the treated patient's files were kept for follow-up and referencing. A total of 60 patients' data were collected and analyzed.

Sample Size

A sample of 60 patients was selected from the target population using Taro Yamani's formula for determining the sample size from the target population. Taro Yamani's formula is; $n = N/1 + N(e)^2$

n = sample size N = Population size (Target population), e = Level of precision or sampling error which is 0.05,

1 = Constant $n = 70/1 + 70(0.05)^2$ $n = 70/1.175$ $n = 60$

Participants

The study was only from women who had previous records of fibroid cases, and also have their files kept in the hospital. The inclusion criteria were women and girls diagnosed with fibroid in January 2017-January 2018.

Procedure for the study

On arrival at the hospital, the researchers presented their identification numbers (ID) to the medical director of the hospital, who permitted us for data collection after two months of ethical approval committee did their corrections.

The medical recorders took us to the where they have the files of all the women within one of study. The medical assistant only pulls out the files of the women diagnosed with fibroid to maintain the confidentiality of the medical records of an individual. Using the checklist, only the variables on the list were recorded and coded on the excel sheet for analysis.

Format for Data Collection

The data from past records of the patients diagnosed with fibroid was basically on demographic data of the diagnosed patients seen in section A, eg: age, educational level, parity, and marital status. Section B, data was on admission, age that has the highest, and incidence of occurrence.

Method of data analysis

The proforma was collected after completion from gynecological unit, record department, and theatre department. The following statistical methods were then used to analyze the data, descriptive statistics, tables, and calculations in percentage in order to answer the research

questions and achieve the research objectives.

Ethical considerations

During this research work, the following ethical considerations were observed and carried out; Consent was obtained from the various departments to retrieve the data needed. Objectives of the research work were made known to the various units involved in providing the data required for the research work. Confidentiality of the information obtained from the target group was maintained ensuring that it was only used for the purpose of the research. The anonymity of the patients was equally maintained and due process was observed. The researcher also gave due respect to the staff who assisted in providing the needed information.

RESULTS

A total of 60 patients' data were collected and analyzed. The findings of this research work are presented below as they are related to each research objective of the study

Section A: Demographic Data

Table 1. Demographic Data of Clients (n=60)

Age (Years)	Frequency	Percentage (%)
10-19	-	-
20-29	10	17
30-39	36	60
40-49	14	23
Total	60	100%
Marital status	Frequency	Percentage (%)
Single	34	57
Married	20	33
Divorced	4	7
Widowed	2	3
Total	60	100%
Educational Qualification	Frequency	Percentage (%)
No formal education	10	17
Formal education	11	18
Secondary	16	27
Tertiary	23	38
Total	60	100%

Section B: Showed the number of women who were affected by uterine fibroid between January 2017–January 2018 in Nigerian Christian Hospital Nlago using client’s date of Admission

Table 2. Clients Date of Admission

Client’s month/year of admission	Frequency	Percentage (%)
January–April 2017	24	40
May–August 2017	20	33
September–December 2017	14	24
January-18	2	3
Total	60	100%

Table 2 above showed client’s various months/year of admission, the incidence of uterine fibroid cases was highest in the months of January–April 2017 with frequency of 24 and an equivalent percentage of 40%. May–August 2017 had a percentage of 33%, 24% was recorded between September–December 2017 while January 2018 recorded 3%.

Section C: Showed the incidence of occurrence of uterine fibroid amongst nulliparous and parous women.

Table 3. Number of children (parity) of the client (n=60)

Parity	Frequency	Percentage (%)
No child (nulliparous)	35	58
A child	11	18
2-5 children	10	17
6-10 children	4	7
Total	60	100%

Table 3 above indicated that the incidence of uterine fibroid is higher amongst nulliparous women, occurring at a frequency of 35 and a rate of 58%. While 18% of the parous women had only one child, 17% had 2-5 children, while 7% had 6-10 children.

Analysis and Test of Hypothesis

The z-test for a mean is a statistical test for a population mean. The z-test can be used when the population is normal, and σ , the standard deviation is known or can be estimated with s , the sample standard deviation. The procedure is used when the sample size, n , is at least 30.

The test statistic is given as,

$$z = \frac{\bar{x} - \mu}{s / \sqrt{n}}$$

Where z- test statistic

\bar{x} - sample mean

μ - population mean

s - Standard deviation

n - Sample size

Analyzing the data obtained from the proforma

In this section, the data obtained from the questionnaires distributed were analyzed in order to test the hypothesis for this research work. The hypotheses were tested using Minitab statistical software.

Decision rule using the p-value at 0.05 level of significance:

The null hypothesis is rejected if the p-value is less than or equal to the 0.05 level of significance. The null hypothesis is accepted if the p-value is greater than the 0.05 level of significance. To determine the number of women affected by uterine fibroid between January 2017–January 2018 in Nigeria Christian Hospital Nlago, we used the estimation of the population total, Y , given by

$\hat{Y} = N\bar{y}$ to obtain the total number, N, of women of childbearing age (parous) who were affected by uterine fibroid between January 2017–January 2018 in Nigeria Christian Hospital Nlangu.

$$N = 70$$

\bar{y} = Sample means of clients on admission.

$$\bar{y} = \frac{1}{4} \times 60 = 15$$

The population total $\hat{Y} = 70 \times 15 = 1050$

Therefore, approximately 1050 women are projected to be affected by uterine fibroid between January 2017–January

2018 in Eastern and South-south states of Nigeria.

Hypothesis 1

Ho: uterine fibroid is significant among multiparous women.

H1: uterine fibroid is not significant among multiparous women.

The number of occurrences of uterine fibroid amongst women between January 2017–January 2018 in Nigeria Christian Hospital Nlangu?

One-Sample Z: Frequency

Test of mu = 15 vs not =15

The assumed standard deviation = 9.59

Variable	N	Mean	Mean	SE Mean	95% CI	Z	P
Frequency	4	15.00	9.59	4.79	(5.60, 24.40)	0.00	1

Conclusion: Since the p-value = 1.000 is greater than the 0.05 level of significance, we accept Ho, and conclude that uterine fibroid is significant among women of childbearing age (multiparous women).

Hypothesis 2

H₀: Uterine fibroid is dependent on nulliparous and parous women.

Variable	N	Mean	Mean	SE Mean	95% CI	Z	P
Frequency	4	15.00	13.69	6.84	(1.58, 28.42)	0.00	1.000

Conclusion: Since the p-value = 1.000 is greater than the 0.05 level of significance, we accept H₀, and conclude that Uterine fibroid is dependent on nulliparous and parous women.

DISCUSSION OF FINDINGS

The incidence of uterine fibroid is higher among women within the age range of 30-39 years. 60% incidence was recorded in women between the age of 30-39 years, 23% was recorded amongst women between the age of 40-49 years and the least incidence of 17% occurred among women within the age group of 20-29 years. Also, a higher incidence was recorded in the months of January-April 2017 with a frequency of 24 and an equivalent percentage of 40%. May-August 2017 had 33%, while 24% was recorded between September-December 2017, and January 2018 recorded 3%. The variations of occurrence in the various months have no

H₁: Uterine fibroid is not dependent on nulliparous and parous women.

Analysis of the research showed the incidence of occurrence of uterine fibroid amongst nulliparous and parous women

One-Sample Z: Frequency Test of mu = 15 vs not =15

The assumed standard deviation = 13.69

actual significance in the incidence of occurrence of uterine fibroid. The higher incidence recorded in some months could be due to local factors such as the availability of surgeons in the hospital, the time the women were booked for uterine fibroid surgery, the time the women decided to seek medical help, and other local factors. From the Demographic data recorded, a higher incidence of 57% occurred among single women, 33% of the women were married, 7% were divorced and 3% of the women were widowed. Also, it was recorded that 38% of the women were educated and attained education to the tertiary level, 27% had secondary education, 18% had formal education while 17% had no formal education. Findings from the research also pointed out that the incidence of uterine fibroid is higher in nulliparous women and recorded at 58%. 18% was recorded amongst women with just one child, 17% was recorded amongst women with

2-5 children, and the least occurrence of 7% was seen in women with 6-10 children.

Relationship of findings with other studies/ literature review

This study compares favorably with other findings and has not shown any huge difference concerning incidence, age of occurrence, treatment, and complication of uterine fibroid. The peak age of occurrence of uterine fibroid was noted in the research study and is specifically within the age range of 30-39 years with 60%. An occurrence rate of 23% was recorded amongst women between the age of 40-49 years and the least incidence occurred among women within the age group of 20- 29 years (17%). This corresponds with the study carried out by Okogbo et al. [1] on the prevalence of uterine fibroid in southwestern Nigeria; a clinical study of the presentation and management outcomes, in which the prevalence of uterine fibroid was 67.1% among women in the age group of 30-39 years and decreased to 32.9% in the age group of 40-49 years. Age below 20 years recorded 0%. In agreement with this research findings, Okogbo et al. [1] revealed that the high incidence manifested in the age group of 30-39 years is due to the fact that symptoms manifest higher in this age group prompting the need to seek medical interventions. This also correlates with the view of Ukwuenuya et al. [2] on the knowledge of uterine fibroid which revealed that more than half of the cases of uterine fibroid are found between the age of 30- 40 years. The research findings revealed that the incidence of uterine fibroid is higher among nulliparous women with an occurrence rate of 58%, 17% among women with 2-5 children, 18% among women with just one child, and 7% among women with 6-10 children. This corresponds with a study carried out by Ukwuenuya et al. [2] on the effect of parity on fibroid which revealed that 67.7% of the patients with uterine fibroid were nulliparous, while 32.3% were of parous with at least one child amongst which some were grand multiparae. These findings also agree with the conceptual review by Ukwuenuya et al. [2] which stated that a woman who has given birth to a large family is far less likely to develop myomata than a woman who has neither been pregnant (nulliparous) nor has only one child [3-32].

Health implications

Based on the findings, some women are not aware of the symptoms and may consider fibroid as a normal occurrence.

Knowledge and information from this research study will increase the enlightenment on the risk of the symptoms, risk factors, prevention, and the need for early diagnosis and management of uterine fibroid to avoid negative effects such as infertility, spontaneous abortion, and labor complications through the health workers, in turn, reduce the incidence rate of uterine fibroid among women of childbearing age.

CONCLUSION

Based on the findings in the study, the researcher concluded that uterine fibroid which is a tumor or growth made of smooth muscle cells, fibroblasts and other materials in the walls of the uterus has a high incidence amongst women of childbearing age between the age group of 30-39 years. Uterine fibroid occurs mostly among nulliparous women and can cause negative effects such as infertility, spontaneous abortion, and complications during labor.

RECOMMENDATION

Health workers should carry out proper sensitization of women of childbearing age on the risk factors, symptoms, and the need for early diagnosis and treatment of uterine fibroid. Public enlightenment campaigns and health education programs should be designed to enlighten the public, particularly women who are at risk of developing uterine fibroid. Women should be encouraged to marry at least before the age of 30 and give birth on time despite the pursuit of a career. They should be encouraged to maintain a healthy weight and consume a good diet rich in fruits and vegetables. The government also has a role to play in the treatment of women who have uterine fibroid by establishing more health facilities with qualified health personnel and surgeons who would manage these women effectively.

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