

Prevalence of Leiomyoma in South Eastern Tertiary Hospital of Nigeria From 2005-2012.

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Abstract: Aim & Objectives: This is to determine the age range that are vulnerable to this lesion with view of evaluating possible cause of infertility.

Materials & Methods: A cross sectional study of post-surgical uterine samples, histologically reported leiomyoma totaling 557 from 2005-2012 were collected from the departmental result records. The whole samples were seen to be females and analysis done per each year using SPSS (statistical package for the social sciences) version 16.

Results: The most prevalent age range of occurrence throughout the study was age range of 30-40 years and this is closely followed by 40-50 years. These ranges fall into the fertility years of most African women hence the search for effective treatment and cause of infertility.

Conclusion: We were able to actualize that at early ages and late-post menopausal the number of lesion appears to be minimal.

Keywords: leiomyoma, Histology, infertility

I. Introduction:

Uterine leiomyoma (fibroids, Myomas) are among the most common tumors of female reproductive tract and occur within the premenopausal women.¹ They are benign monoclonal tumors of uterus composed of spindle shaped smooth muscle fibres with extracellular matrix of collagen, fibronectin and proteoglycan.² There is preposition of genetic disposition, with 2-3 fold of risk increase in affection.³ They may be seen in single but usually in clusters. Are more common in women of African descent and in nulliparity women; as are often seen in ages of 30-45 years.⁴ This benign, solid tumors of female genital tract though asymptomatic are of hormone dependent. They are affected by level of oestrogen, progesterone and a variety of growth factors.^{5,6} The role of gonadal steroids is believed to be the fact that fibroids are rarely seen in children as they tend to regress after menopause. These benign lesion can grow within the muscle layers of the uterus (serosal, submucosal or intramural), as intrauterine fibroid . At times they may be seen outside the uterus as pedunculated stalk.⁷ Uterine leiomyoma can be symptomatic or asymptomatic. The cardinal clinical presentations include: menorrhagia, metrorrhagia, infertility, pains, pressure symptoms and repeated abortions.⁶ Although, the etiology of this lesion is unknown but is leading indication for hysterectomy in USA. It is about four times higher in blacks when compared with whites. However, the women who suffer from this disease always desire to maintain fertility since most are young women. This drives them to seek for treatment modalities but this choice of treatment is often limited. At the moment there is no effective long term medicinal treatment for uterine fibroids. Surgical approach is still the gold standard for treatment. However, oral administered medications are now coming up.

Ogedengbeok et al found that 1 in every 5 women of child bearing ages of over 30 years have fibroids.⁹ Akinyemi B.O found that 20-30% of women of this age harbor uterine fibroids thus accounting to 3.2 – 7.6% of new gynaecological cases and 68.1% of hysterectomies.¹⁰⁻¹² Durhan N et al found that uterine myomas, though benign, solid, pelvic tumors in women occur in 20-40% of this group of women at their reproductive age since this forms the basis of hysterectomy. However, other modalities in treatment like uterine embolization for those with large symptomatic myomas who are poor surgical risks/wishes not to do surgery. Also pre-operative gonadotropin –releasing hormone analog treatment before myomectomy as this have decreased the size and vascularity of the myomas; though it has demerits of hardening of capsules leading to difficulty in resecting.¹³ The embolization is a percutaneous procedure that results to occlusion of perifibroid vessels and ischaemic infarction of fibroid thus shrinking the fibroid within months to years.^{14,15} However, incomplete infarcted fibroids may regenerate and develop over time.^{15,16} Incomplete infarcted uterus after embolization will have hyaline necrosis or coagulative necrosis of the tumor mass.^{17,18}

Transcervical expulsion of fibroid occurs in 2.2-7.7% of women after embolization, in few cases surgical extraction may be needed.¹⁹ This expulsion could be associated with endometrial infection as this occurs in about 5.9% and 2.6% leading to major infections that ends up with surgery.¹⁹ This is why its mandatory to

routinely give prophylactic antibiotics during embolization as to reduce risk of infections. However, transient or permanent amenorrhea has been seen with result of incomplete non target embolization of ovaries leading to atrophy of the ovaries.¹⁹ These may result to not only impairing the lining of the endometrium and embryo implantation but also affecting cause of pregnancy. Other abnormalities could exist such as placenta praevia or accrete which will lead to increased risk of bleeding and that may result to hysterectomy.²⁰

In our own case, it is pertinent to note surgical approach-hysterectomy and myomectomy still stands as main and definitive mains of treatment. This is equally the findings with studies of Lunsden et al,²¹ Omole A et al and Emebolu J.O respectively. They hold the view that hysterectomy is a definitive while myomectomy may remove fibroids for women under 40 years with low parity and the great desire to maintain fertility.²⁴⁻²⁶ In our study we tend to evaluate the prevalence of this benign, solid tumors and to know which age range is mostly affected as a factor of infertility.

II. Materials & Method:

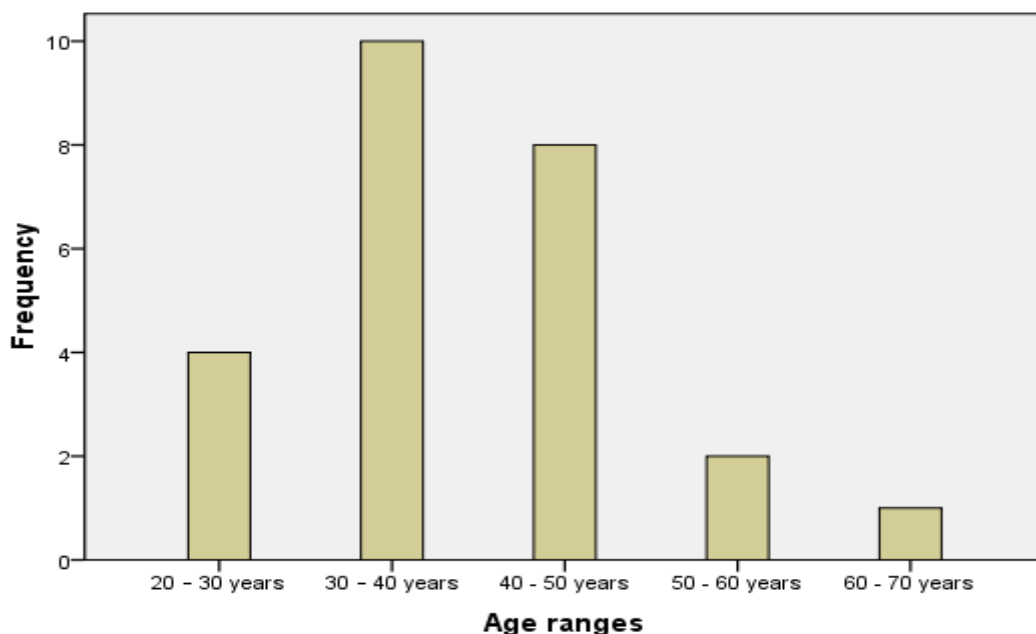
A cross sectional study of 557 post-surgical operated leiomyomata from 2005 -2012 was undertaken. This was based on samples sent in our unit and diagnosed histologically. All data were obtained from result register for all the years of study. They data were analyzed using SPSS version 16.

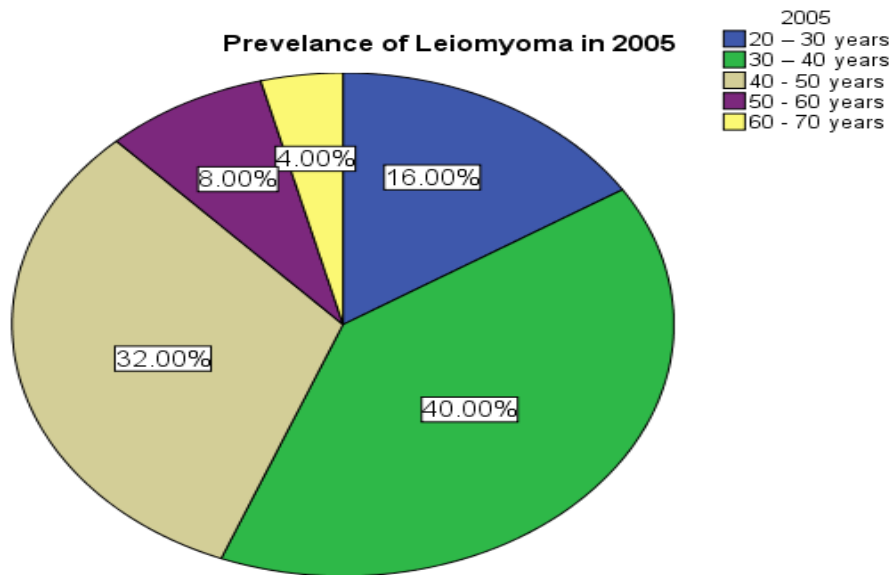
III. Results:

2005

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 – 30 years	4	4.0	16.0	16.0
	30 – 40 years	10	10.0	40.0	56.0
	40 - 50 years	8	8.0	32.0	88.0
	50 - 60 years	2	2.0	8.0	96.0
	60 - 70 years	1	1.0	4.0	100.0
	Total	25	25.0	100.0	
Missing	System	75	75.0		
Total		100	100.0		

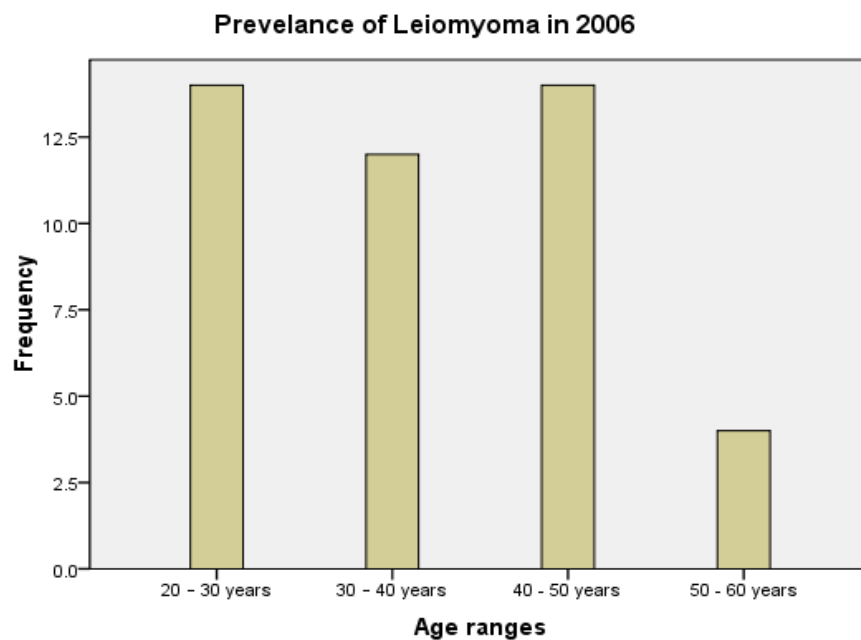
Prevalence of Leiomyoma in 2005

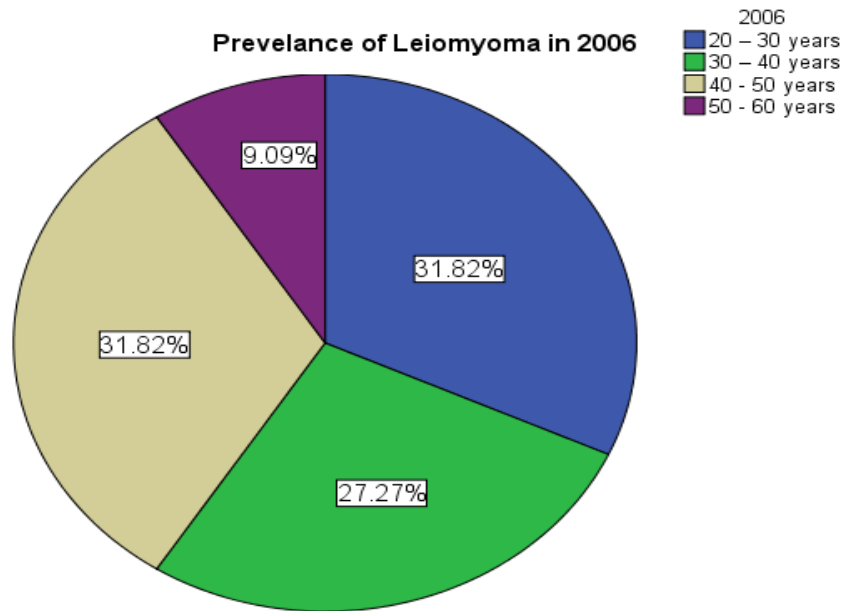




2006

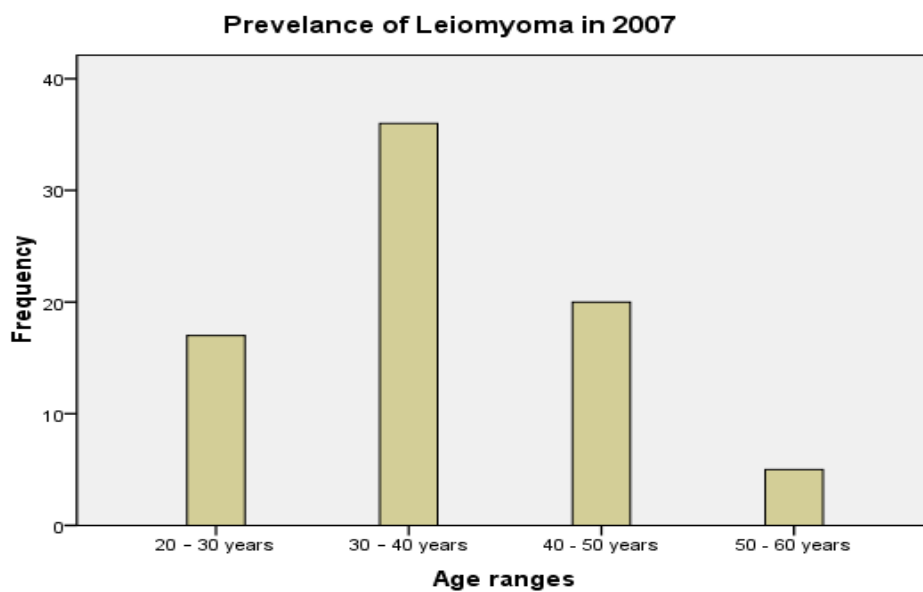
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 – 30 years	14	14.0	31.8	31.8
	30 – 40 years	12	12.0	27.3	59.1
	40 – 50 years	14	14.0	31.8	90.9
	50 – 60 years	4	4.0	9.1	100.0
	Total	44	44.0	100.0	
Missing	System	56	56.0		
Total		100	100.0		

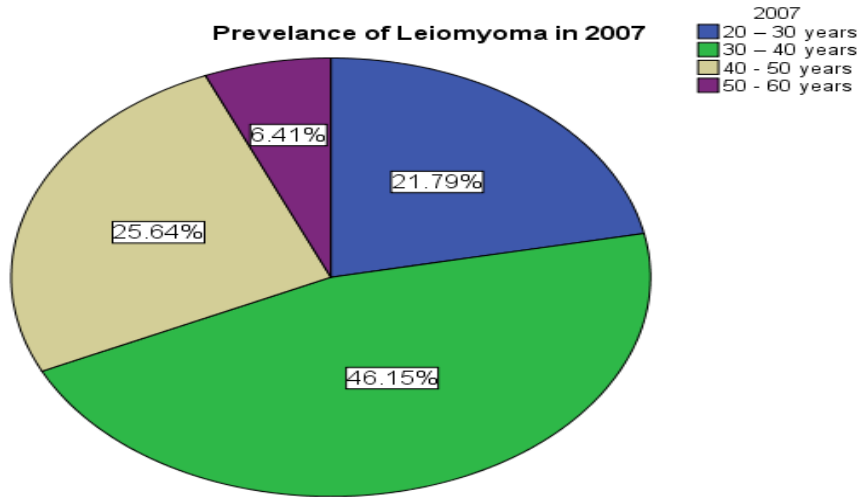




2007

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 – 30 years	17	17.0	21.8	21.8
	30 – 40 years	36	36.0	46.2	67.9
	40 - 50 years	20	20.0	25.6	93.6
	50 - 60 years	5	5.0	6.4	100.0
	Total	78	78.0	100.0	
Missing	System	22	22.0		
Total		100	100.0		

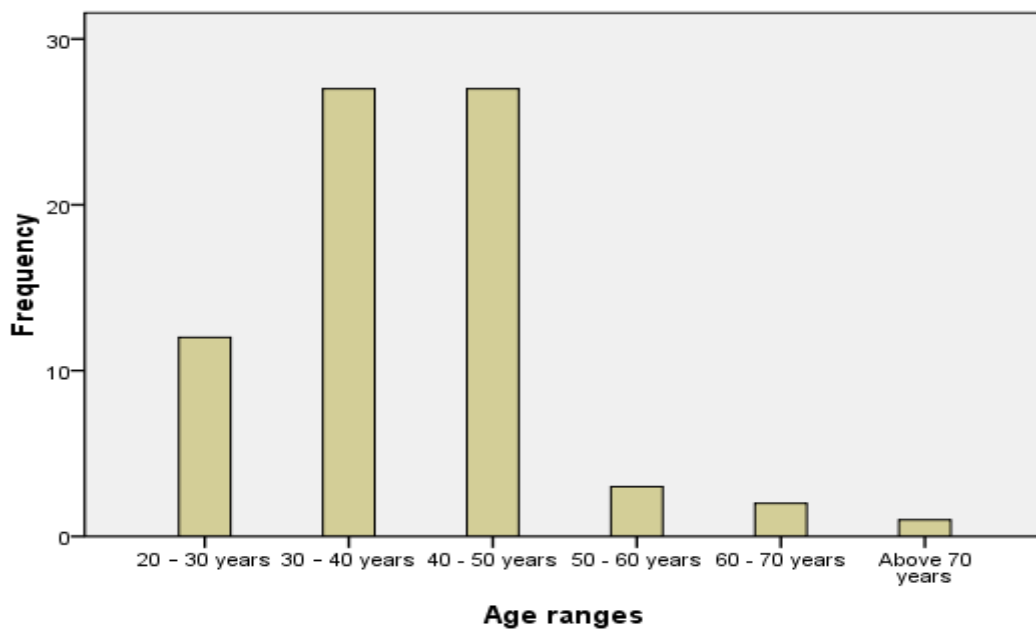


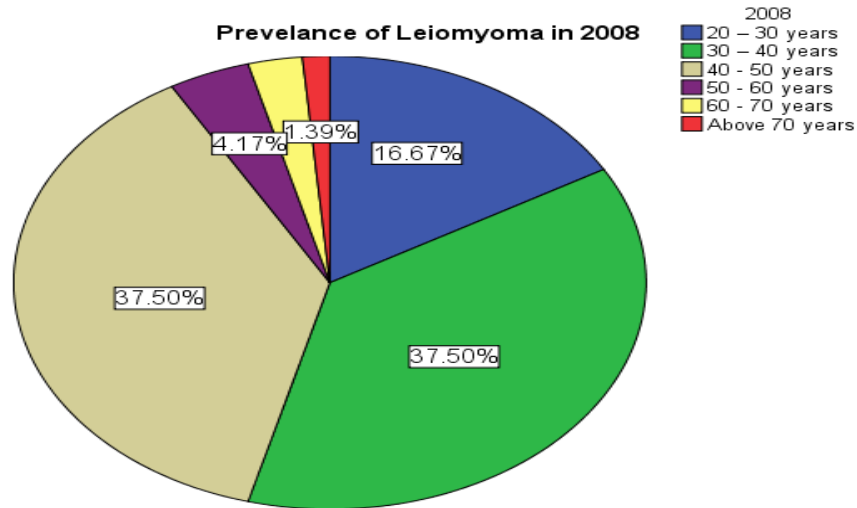


2008

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 - 30 years	12	12.0	16.7	16.7
	30 - 40 years	27	27.0	37.5	54.2
	40 - 50 years	27	27.0	37.5	91.7
	50 - 60 years	3	3.0	4.2	95.8
	60 - 70 years	2	2.0	2.8	98.6
	Above 70 years	1	1.0	1.4	100.0
	Total	72	72.0	100.0	
Missing	System	28	28.0		
Total		100	100.0		

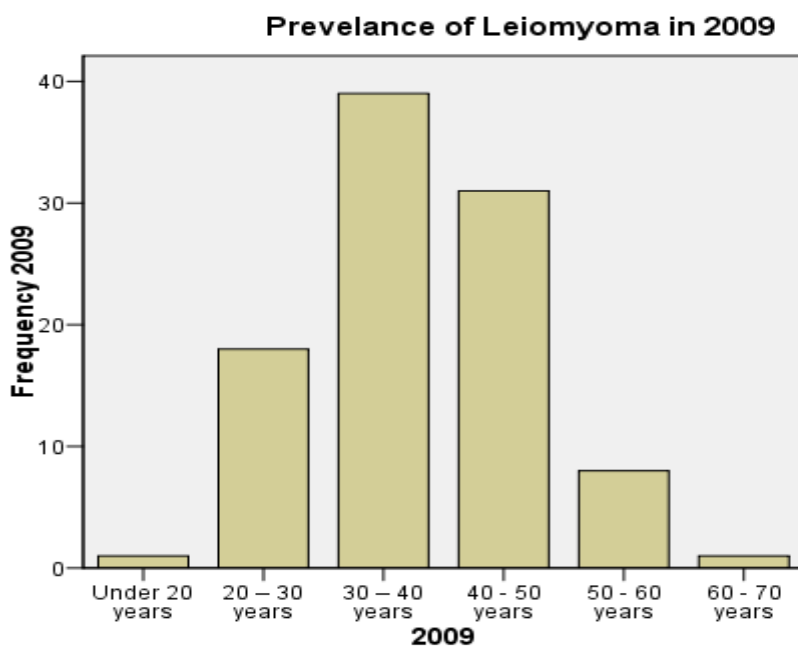
Prevalence of Leiomyoma in 2008

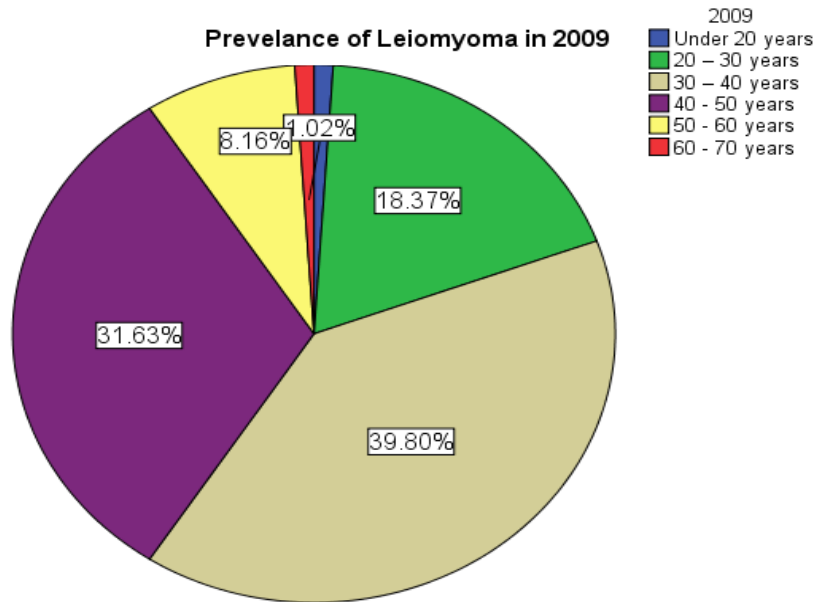




2009

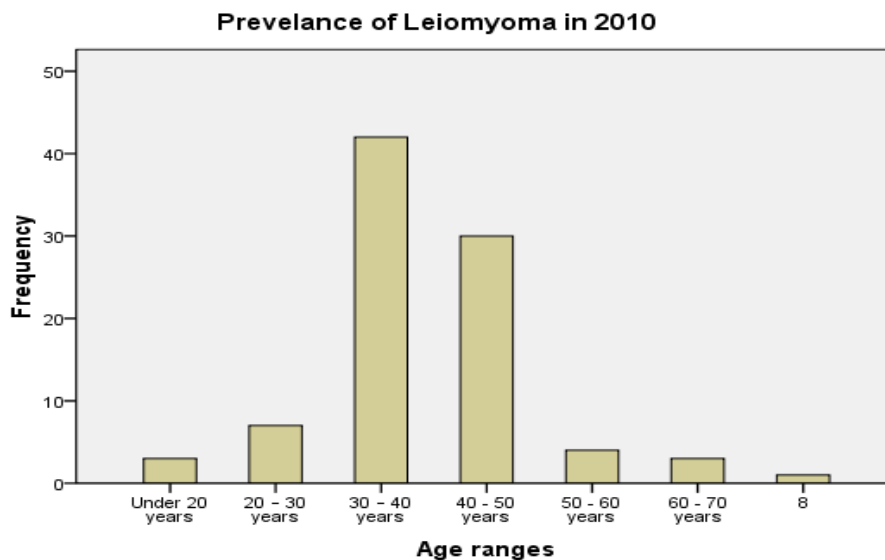
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20 years	1	1.0	1.0	1.0
	20 - 30 years	18	18.0	18.4	19.4
	30 - 40 years	39	39.0	39.8	59.2
	40 - 50 years	31	31.0	31.6	90.8
	50 - 60 years	8	8.0	8.2	99.0
	60 - 70 years	1	1.0	1.0	100.0
	Total	98	98.0	100.0	
Missing	System	2	2.0		
Total		100	100.0		

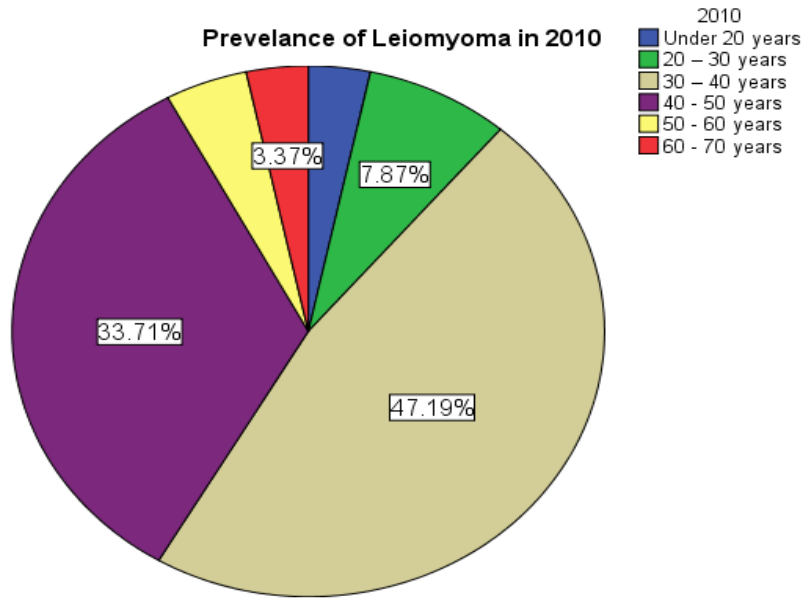




2010

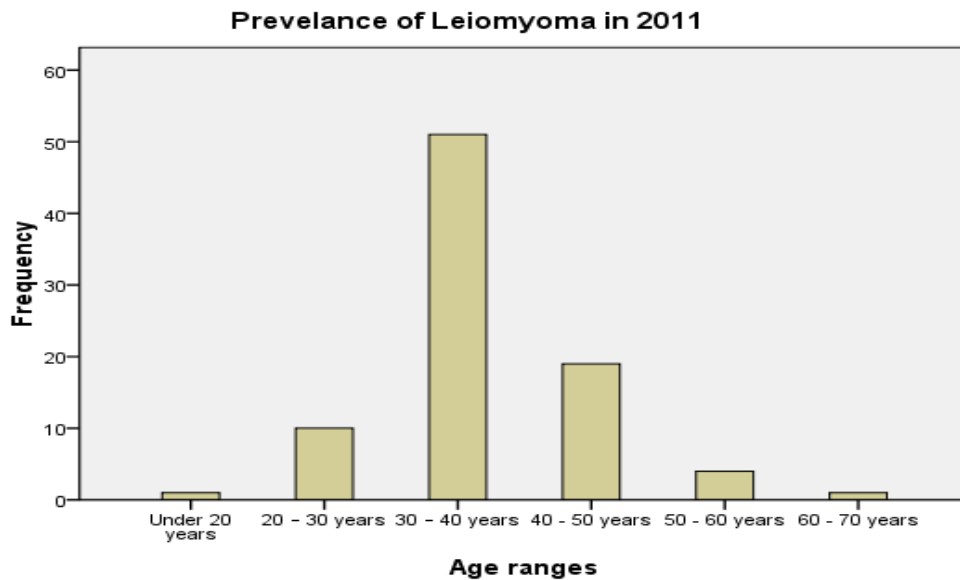
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20 years	3	3.0	3.3	3.3
	20 - 30 years	7	7.0	7.8	11.1
	30 - 40 years	42	42.0	46.7	57.8
	40 - 50 years	30	30.0	33.3	91.1
	50 - 60 years	4	4.0	4.4	95.6
	60 - 70 years	3	3.0	3.3	98.9
	8	1	1.0	1.1	100.0
	Total	90	90.0	100.0	
Missing	System	10	10.0		
	Total	100	100.0		

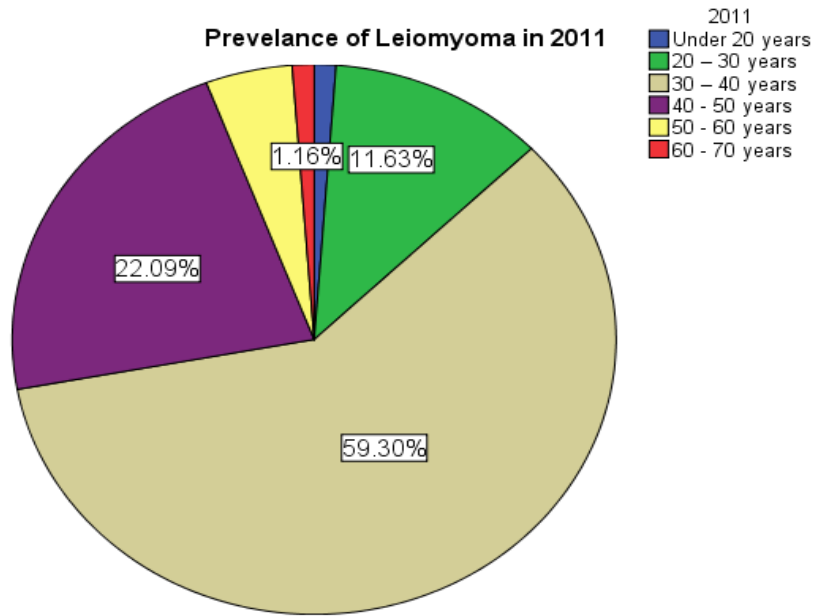




2011

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 20 years	1	1.0	1.2	1.2
	20 - 30 years	10	10.0	11.6	12.8
	30 - 40 years	51	51.0	59.3	72.1
	40 - 50 years	19	19.0	22.1	94.2
	50 - 60 years	4	4.0	4.7	98.8
	60 - 70 years	1	1.0	1.2	100.0
	Total	86	86.0	100.0	
Missing	System	14	14.0		
Total		100	100.0		

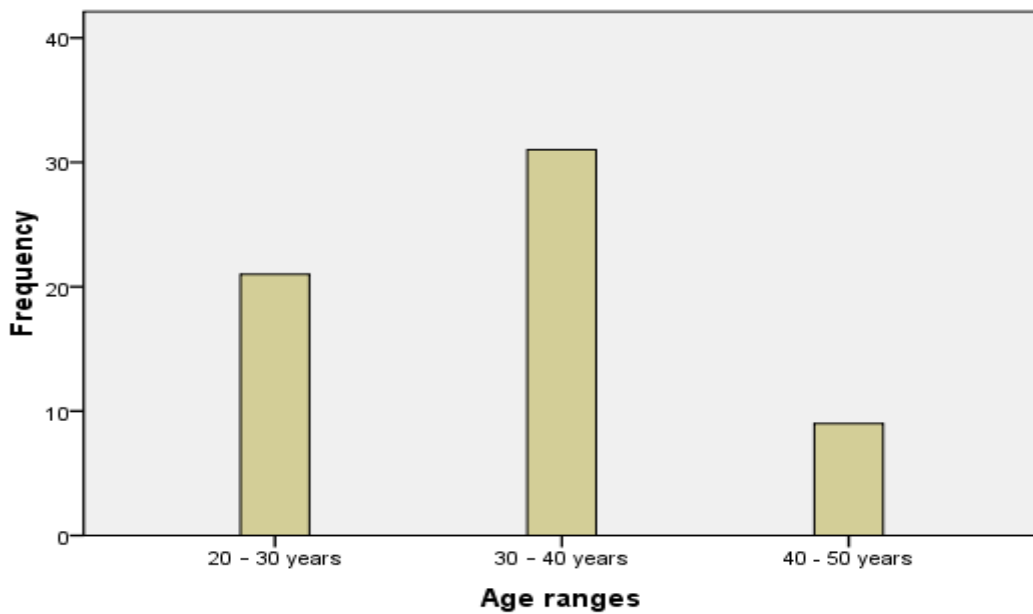


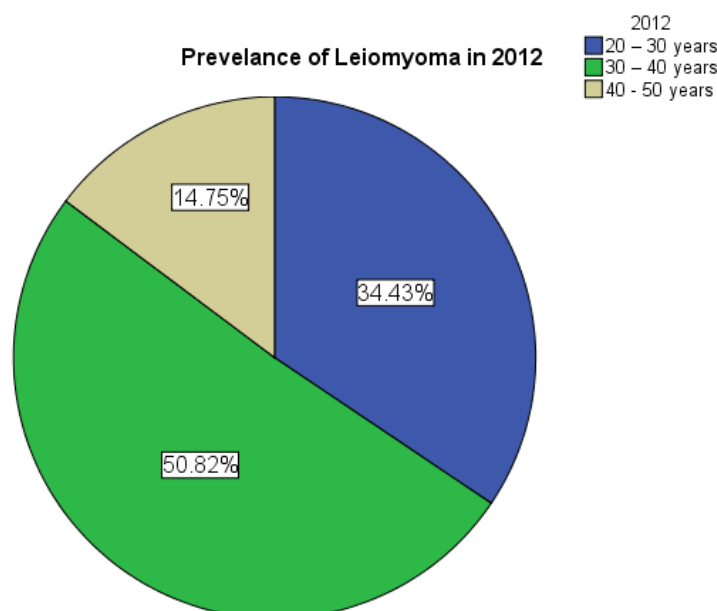


2012

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 20 - 30 years	21	21.0	34.4	34.4
30 - 40 years	31	31.0	50.8	85.2
40 - 50 years	9	9.0	14.8	100.0
Total	61	61.0	100.0	
Missing System	39	39.0		
Total	100	100.0		

Prevalence of Leiomyoma in 2012





From the above representations, we could deduce the average age range of the predilection of this benign, solid tumor to be age ranges of 30- 40 and 40-50 years respectively. In all the years of the study, the most age range involved was 30-40 years as this falls within the fertility years of most black African women hence the search for the cause of infertility among this group of women; thus leading them to surgical removal of this lesion.

DISCUSSIONS: The general result seen from our study was that age range of 30-40 years are the worst hit of the benign, solid tumors. This is closely followed by 40-50 years. This result is similar to other studies like Carolyn J et al who reported that 66 % of women before the reach age of 50 years are often diagnosed with this tumor. Also Day Baird D. et al noted in their study that this tumor is often seen in women of African descent and women who have not borne at ages of 30-45 years.

Other studies by Okolo S.²⁷ and Wise L.A et al²⁸ reported that most of these women starts to give symptoms of the tumor by age of 30 years to end of reproductive life.^{27,28} They noted that the tumor grows very slowly as this varies from individual to the next with about 90% of them ceasing to grow or regress after menopause.²¹ These has attributed to be due to ER-beta, ER-alpha, and progesterone receptors been over expressed in pre menopausal fibroids.^{29,30-33}

This is why myomectomy which is preferred surgery for women aged under 40 years are done as most are of low parity and have great desire to maintain fertility since there is a reasonably good chance of subsequent pregnancy.^{22,24,26} In few cases, myomectomy is also offered to women 40 years and above as in cases of primary infertility as to enable them achieve pregnancy through in vitro-fertilization(IVF) and embryo transfer. This is currently an innovative management for older women not yet pregnant.

Finally, it is adviceable that all women of reproductive age should undergo a thorough gynecologic and pelvic examination before any procedure. Also imaging of uterus using ultrasound or MRI as to evaluate sizes, location and numbers of fibroids. Other laboratory investigations like Full blood count, coagulation studies, metabolic profile and prothrombin test are done.

IV. Conclusions/Recommendation:

Uterine leiomyoma remains benign lesion of public health importance in our environment.

It is necessary for all procedures and benefits to be explained to the patient in details. All hormonal therapies and surgical procedures-myomectomy,hysterectomy and embolization explained with consequent complications.

However, minimal invasive alternatives now available like laparoscopic management,endometrial ablations should be encouraged where they are available.

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