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Research Article

DETERMINANTS OF UTERINE FIBROIDS AMONG MARRIED WOMEN AND ITS ASSOCIATION WITH FAMILY PLANNING¹Dr. Obaid ur Rehman, ²Dr. Hafiza Iqra Iqbal, ³Dr. Soban Zia¹House Officer, King Edward Medical University, Lahore²Services Institute of Medical Sciences, Lahore³Allama Iqbal medical college Lahore**Abstract:**

Uterine fibroids are benign tumors of the uterine smooth muscle, called myometrium. They are a result of different factors, including obesity, age, early menarche, consumption of red meat, irregular menstrual cycle, use of oral contraceptives and also due to genetic predisposition. Among the family planning methods, the use of Birth control pills was thought to be a major risk factor for the development of fibroids.

Objectives: To determine the risk factors of uterine fibroids among married women and its association with family planning.

Study Design and Duration: A cross-sectional study was conducted during a period of 6 months from January 2016 to June 2016.

Material and methods: A sample of 83 married women who were diagnosed of fibroids in the Outpatient Department (OPD) and Wards of Lady Wellington Hospital, Lahore were chosen by simple random sampling. Data was collected through a questionnaire after taking an informed consent. It was then compiled and analyzed through SPSS.

Results: Our study population consisted of 83 females with most of them (62.7%) belonging to the area of Lahore. 38.6% of the women belonged to the age group of 41-50 years while 32.5% of them belonged to the age group of 31-40 years. About 43.4% of the women were educated up to the level of matriculation. Among the 83 respondents, 59.0% had an early menarche at the age of less than 13 years. About one half of the women (54.2%) suffered from irregular menstrual cycles and 57.8% of them complained about passing of clots during menstruation. Majority of the women with uterine fibroids had used birth control pills (57.8%) while 15.7% had used IUDs. Almost one half of them (49.4%) had undergone some treatment for infertility. Majority of the women (60.2%) had no experience regarding family planning. 94% of them had undergone Ultrasound test at least once in their life. 26.5% of the women had female relatives with diagnosed uterine fibroids. 21.7% of the total respondents consumed excessive red meat while 16.9% of them smoked hookah or cigarettes. Most of the women (58%) had a BMI greater than 28.6. Only 47% of the women said that they had an active lifestyle. Thus, Early menarche, use of birth control pills, irregular menstrual cycles, obesity, age, excessive red meat and genetic predisposition increases the risk for uterine fibroids. Also, an association was built between the use of birth control pills and development of fibroids.

Keywords: *Determinants, Fibroids, Association, Family planning.*

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INTRODUCTION:

A determinant is a variable or group of variable or group of variable that directly or indirectly influence the frequency or distribution of a disease. Fibroids are monoclonal tumors of the uterine smooth muscle cells[1] that are most commonly seen in women of ages 30-40[2] and are [3]. result of certain physiological and pathological conditions. Hence they are also called leiomyomas or myomas. Fibroids are said to develop from normal uterus muscle cells that start growing abnormally. There are four types, intramural and subserosal being the most common and submucosal and subendometrial being less common [4] ; among these, submucosal type was [5] as 5mm, [6] and sometimes combined findings of ultrasonography and HSG are used to diagnose the uterine anomalies. [7] Fibroids most commonly lead to abnormally heavy and prolonged uterine bleeding, [8] with possible subsequent severe anemia, symptoms of pain and pressure leading to difficulty with bowel and bladder function and, in some cases, infertility and pregnancy complications.[9] and are the most common indication for abdominal hysterectomies. [10]

Association is the connection or cooperative links between two diseases and symptoms. Uterine fibroids aren't associated with an increased risk of uterine cancer and almost never develop into cancer. Family planning is the practice of controlling the number of children in the family and the intervals between their births particularly by voluntary sterilization and artificial contraception. The objectives of family planning are to encourage late marriages, improve women's' health, help couples plan the timing of births and size of their families and to balance the desire for children with emotional, physical and financial needs. There are different methods of contraception that help in family planning, which can be classified as spacing methods and terminal methods.

Spacing methods are further classified into barrier methods, intrauterine devices, hormonal methods, post conceptional methods and miscellaneous. Barrier methods include physical methods (condom, diaphragm, vaginal sponge) and chemical methods.

The aetiology and prevalence of uterine fibroids have been studied in the past and it is known as that they are more prevalent in married women. However, at

present the conflicting data about causes of Uterine fibroids in married females co-exist in literature. Although it has been proposed that uterine fibroids can be associated with, obesity, hereditary predisposition, stress, women approaching menopause and early menarche. These studies are concerned with all groups of women, with no regard to their marital or reproductive status. There are no substantial studies on the determinants of fibroids affecting specifically married women. In addition, the connection between family planning and uterine fibroids is also not investigated in detail by the recent studies. Uterine fibroids have such an immense effect on family planning because it has a high probability to lead to infertility, miscarriages and failed attempts to conceive in married women. Since so many women are users of oral contraceptives, obese and high consumers of red meat. Further research must be conducted to create awareness in our country. Therefore, in this study we will investigate mainly the determinants of Uterine fibroids in married females only, along with their associations and effects on family planning because it is necessary to prevent such complications in married women who are interested in conceiving and for a better way of life.

METHODOLOGY:

Our study was a cross-sectional study that was conducted from January 2016 to June 2016 in the OPD and wards of Lady Wellington Hospital, Lahore. The Sample size was calculated to be 83 married women of childbearing age with positive ultrasound report of uterine fibroids. Non-cooperative females not diagnosed with uterine fibroids and with negative ultrasound reports were excluded according to the exclusion criteria. The data was collected from the study population in the form of a questionnaire after taking an informed consent. It was then compiled and analyzed in SPSS version 2016 for the statistical data.

RESULTS:

Our study population consisted of 83 females coming to OPD and wards of Lady Wellington Hospital, Lahore. 38.6% of the females belonged to the age group of 41-50 years, 32.5% to 31-40 years, 25.3% to 21-30 years followed by only 3.6% to the age group of 51-60 years. Most of the women (62.7%) belonged to the area of Lahore and only 43.4% were educated upto the level of matriculation.

Table 1: shows demographic characteristics of the study population. (n=83)

Demographic Data	No. of respondents	Percentage of Respondents.
Age:		
21-30	21	25.3%
31-40	27	32.5%
41-50	32	38.6%
51-60	3	3.6%
Resided in Lahore.	52	62.7%
Education level upto Matriculation	36	43.4%
Income greater than 10,000.	63	75.9%

Among the 83 respondents, 15.7% were menopausal and 59% had early menarche at the age of less than 13 years. The menstrual history was taken from the women and it concluded that most of the women (54.2%) suffered from irregular periods with 57.8% of them passing clots during menstruation. When asked about menstrual cycles, about 51.8% of the women said that they had than 22 and more than 35 days respectively.

Table 2: shows the respondents menstrual history. (n=83)

Menstrual Cycle	Number (percentage)
No. of Post menopausal women	13(15.7%)
Women who had Early Menarche (Less than the age of 13 years)	36(43.4%)
Menstrual Cycle:	
Less than 22 days (Irregular)	19(22.9%)
between 22-35 days (Regular Cycle)	43 (51.8%)
Greater than 35 days (Irregular)	21(25.3%)
Irregular Periods	45(54.2%)
Women who passed Clots during menstruation	48(57.8%)

Out of total 83 respondents, uterine fibroids occurred in majority of those women who used Birth control pills (57.8%) as compared to those women who didn't use birth control pills (42.2%). Other methods used for family planning were IUDs by 15.7% of women, Rhythm method by 6% of the women and Terminal method by 13.3% of the women. It was found out that almost one half of the women (49.4%) had undergone some treatment for infertility.

Table 3: shows the various birth control methods practiced by the respondents (n=83)

Birth control method	Yes (percentage)	No (percentage)
Birth control pills	48(57.8%)	35(42.2%)
Intrauterine devices (IUDs)	13 (15.7%)	70 (84.3%)
Rhythm method	5 (6%)	78 (94%)
Terminal methods	11(13.3%)	72 (86.7%)

Out of all the women who presented with uterine fibroids, 78 of them (94%) had undergone Ultrasound test at least once in their life whereas only 5% of them had undergone MRI test and a large majority of them had never undergone MRI test (95%). Regarding the Familial association of uterine fibroids, we found out that 26.5% of the women had female relatives with diagnosed

Uterine fibroids and most of them (73.5%) had no female relatives with diagnosed fibroids.

16.9% of the respondents smoked Cigarette/hookah and 21.7% of the women in our study consumed excessive red meat. When questioned about the lifestyle, only 47% of the women said that they had an active lifestyle while 32.5% of the women said that they had a sedentary lifestyle. Out of the total 83 respondents, 48 of them (58%) had a BMI greater than 28.6 while 42% of them had a BMI less than 28.6. Only 34.9% of the total respondents did outdoor exercise while 45.8% of them did indoor exercise.

Table 4: shows the respondents answers regarding lifestyle, BMI and exercise. (n=83)

DISCUSSION:

Uterine fibroids is a common gynecological problem in married females, however the data on the

menarche at age greater than 13 years. Schwartz also reported an increased risk of fibroids with earlier age of menarche [24]. Similarly, Marshall LM, et al

Lifestyle and BMI	Yes (percentage)	No (percentage)
Sedentary lifestyle	27 (32.5%)	56 (67.5%)
Active lifestyle	39 (47%)	44 (53%)
BMI more than 28.6	48 (57.8%)	35 (42.2%)
Indoor exercise	38 (45.8%)	45 (54.2%)
Outdoor exercise	29 (34.9%)	54 (65.1%)

prevalence in Pakistani female population is lacking. Therefore the aim of our study was to determine the risk factors for uterine fibroids among married women and develop their association with family planning.

Age of the patients was significantly related with the incidence of fibroids. Our study showed that the percentage incidence increased with age till the age of 50 but drastically dropped afterwards. The prevalence of fibroids in women 21-30 years of age was 25.3%; in women 31-40 years of age it increased up to 32.5%; in women 41-50 years of age it reached the maximum figure of 38.6%; in women 51-60 years of age, however, it dropped to a mere 3.6%. This is consistent with findings reported by a research undertaken in Israel which reported a prevalence of 4.5% in age group 21-30, 11.7% in group 31-40 and 33.0% in group 41-50 [22].

Our study showed that less menopausal women had fibroids (15.7%) compared with those still undergoing the menstrual cycle (84.3%). Of the 15.7% postmenopausal, 14.5% experienced menopause before the age of 45 years and 1.2% had menopause after the age of 45. Similar finding were reported in BJOG [23]. Patients who had menarche at age less than 13 years showed a prevalence of 59.0% in our study compared with 41.0% of those who had

reported increased risk of developing uterine fibroids with early age at menarche. [25].

According to our study there was an uncertain association of irregular menstruation with uterine Fibroids since almost half (54.2%) had menstrual irregularity while others did not. This co-relates with another study conducted in America. [26] Furthermore, a negative association also exists between both short (less than 24 days) and long (greater than 38 days) menstrual cycle i-e 22% and 25% respectively, which is consistent with another study [27] published in 2012. Also, according to our study, women who passed clots during menstruation were at increased risk of uterine fibroids as indicated by our result that 57.8% of the women passed clots during menstruation, which is synchronous with another study. [28].

Our research shows an important role of contraceptives on the prevalence of fibroids. The prevalence of fibroids was higher in women who have used pills (57.8%) than in women who have never used birth control pills at any point in their lives (42.2%), from which we could conclude that taking birth control pills might increase the risk of fibroids. This is consistent with another study which states that a significantly elevated risk of fibroids has been reported among women who first used pills in

their early life compared with those who had never used them.(29).

According to our research the association of infertility and uterine fibroids is uncertain as half of women with infertility (49.4%) had fibroids and the other half (50.6%) were fertile. This insignificant association is consistent with the findings in previous studies . [30,31] An explanation for this finding is that pregnancy reduces the time of exposure to unopposed oestrogens, whereas nulliparity or reduced fertility may be associated with an ovulatory cycle characterized by long term unopposed oestrogens. The alternate possibility exist that uterine fibroids are actually the cause of infertility, rather than the consequence of it. According to our study, a negative association has been observed between the use of IUDs and uterine fibroids, as 84.3% of the participants did not undergo IUD insertion but still developed fibroids, which is consistent with a study carried out in Georgia, USA in 2010 in which a majority of women experienced alleviation of symptoms of fibroids after the insertion of the IUD. [32] According to another study conducted in the United States, the blood loss by fibroids was decreased up to 94% after the insertion of the IUD. [33]

There is a positive association between fibroids and seeking terminal treatment as 13% of our participants had sought terminal measures. According to a study carried out by Aamir T Khan, et al, many women seek to undergo hysterectomy, myomectomy and hysteroscopic myomectomy for the cessation of fibroid recurrence. [34] In another study carried out by Elizabeth A Stewart, et al, it was stated that 33% of women underwent terminal procedures following uterine fibroids. [35].

In our study, 94% of our participants were diagnosed for fibroids through ultrasound. It is the most common method of diagnosis due to its low cost and easy availability and wide accessibility. [36] and because it is reasonably straightforward [37] and 4.8% of patients had undergone MRI. Magnetic resonance imaging, while more costly, has been touted as the most sensitive modality for evaluating uterine myomas [38]. In the study we conducted, 26.5% of the women had family history of fibroids as documented by M.A Adegbesan-omilabu et al in a study they conducted in lagos Nigeria. This shows familial predisposition to uterine fibroids[39].

A negative association between cigarette smoking and uterine fibroids in our study is consistent with

the findings in a previous study conducted by Ron K Ross,et al.This is due to the low levels of estrogen. [40] 16.9% of the women smoked cigarette or hookah in our study. However another study conducted by Chen C et al showed that average lifetime smoking of one or more packs per day increased the risk of fibroids. [41] The Body mass Index is an index that's calculated from weight and height of an individual. Our study showed that most of the women (57.8%) who suffered from fibroids had BMI greater than 28.6 which meant they belonged to the category of obese women. This was similar to another study conducted by Marshall LM, et al[42] that concluded that increased risk was related to increased BMI. This was also supported by a study conducted in US black women [43]. A Diet higher in red meat was linked to increased risk for development of fibroids and our study showed that about 21.7% of women consumed red meat. Another study[44] also highlighted the same fact that more frequent consumption of beef and other red meat and less frequent consumption of green vegetables, fruit, and fish lead to an increased risk for uterine fibroids. Lifestyle also had a greater impact on development of fibroids.

47% of the respondents in our study had an active lifestyle while 45.8% and 34.9% exercised indoor and outdoor respectively. This was comparable to a study by Wyshak G, et al [45] that also stated that benign tumors of the reproductive system including the uterus were less common in athletes than non athletes.

CONCLUSION:

In this research we have attempted to analyze the present prevailing determinants of fibroids as well as the hurdles they cause in family planning. Fibroids are an extremely common problem in women in the perimenopausal years and can cause adverse reproductive outcome. Hence it had become necessary to point out its causative factors and its consequences in relation to family planning. The most common symptom is menorrhagia and ultrasonography is the most frequently used technique for its diagnosis. According to this study, several modifiable and nonmodifiable determinants were recognized. The most important non-modifiable factors were the age of 41-50 and genetic predisposition, followed by early menarche and irregular menstrual cycle. The modifiable determinants were excessive use of oral contraceptives, which was viewed as the most important, especially if taken in an early age, followed by excessive red meat intake, obesity, BMI over 28.6, and sedentary lifestyle. Fibroids in several

of the participants prompted the need for hysterectomy. Although several researches have pointed out the positive association between the occurrence of fibroids and onset of infertility, either as a cause or consequence, our research shows an insignificant association. Further study should be undergone to confirm whether fibroids is associated with infertility in any way.

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