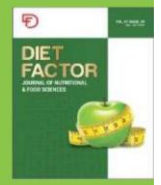




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Original Article

# Determinants of Infertility Among Married Women Visiting Public Hospitals of Lahore

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### ABSTRACT

Infertility can be explained as being unable to get pregnant after a sensible period of time of unprotected intercourse without contraception. **Objective:** To determine the causes of infertility among married women visiting public Hospitals, Lahore **Methods:** This was a cross-sectional study conducted at Public Hospitals, Lahore. A total of 100 married women were selected through the non-probability convenient sampling technique. Data was collected through pretested questionnaire. All adult married infertile women who visited the medicine and gynae units were enrolled. The data were analyzed by SPSS version 21.0. **Results:** Among the participants, 22% of infertile females were between 20-26 years, 54% infertile females were between 27-32 years, 20% infertile females were between 33-38 years, 3% infertile females were between 39-44 years and 1% infertile females were above 45 years. The prevalence of infertility was high in females aged between 27-32 years. 42% were overweight, underweight were 19%, 13% were normal and obese were 26% **Conclusions:** The study concluded that obesity, overweight, underweight, poor eating habits, low socioeconomic status, low family income, repeated mumps, stress, smoking, work overload, polycystic ovary syndrome, use of protection to avoid pregnancy and use of contraceptive pills were the risk factors of infertility. Lack of physical activity, inadequate intake of nutrients, dysmenorrhea, stress, bathing too much, exposure to chemicals through work or lifestyle, increasing age, irregular menstrual cycle, pain, or cramps during the menstrual cycle were also responsible for infertility. The majority of infertile females were not consuming meat, chicken, nuts, eggs, milk, fruits in adequate amounts needed by the body for proper functioning.

## INTRODUCTION

The infertility ratio has variable modifiable etiological factors and these are not easy to assess [1]. Infertility is a disease that affects almost 15% of couples. Seven million females are infertile in the United States. Previous many studies have indicated that ovulatory function and fertility can be affected by insulin sensitivity. As carbohydrates quality and quantity in diet disturb the metabolism of glucose cause insulin sensitivity in healthy persons. Females suffering from polycystic ovary syndrome and diabetes have infertility disorder [2]. The consequences of adult lifestyle that are firstly smoking and eating habits in women and inactive routine commonly are main determinants causing fertility disorders in females as well as in men and can also affect infertility in their future children. This explains that outcome season, altered way of living, and chemicals present in surroundings can disturb human fertility as well as their future generations [3]. Polycystic ovary syndrome is a familiar endocrine disorder with reproductive metabolic outcomes that includes anovulation, diabetes mellitus, and infertility. In reducing insulin



resistance and restoring ovulation and infertility short-term weight loss is beneficial. These problems may arise but by maintaining weight loss benefits can last longer. Further lifestyle modification including alcohol consumption, psychosocial stressors, and smoking is crucial in the long-term treatment of polycystic ovary syndrome [4]. A study was performed by McQuillan J *et al*, on 580 Mid-Western women by using a random sample. The researcher analyzed the hypothesis of the females reported with infertility disorder and had increased mental stress [5]. Living beings are prone to gain weight in the present atmosphere. Both males and females gain fat in various ways and can struggle with many serious health problems. Power ML and Schulkin J, in their study, analyzed dissimilarities in both males and females in the weight gaining pattern, fat deposition pattern and fat metabolism. Females usually have a high percentage of fat on their lower abdomen while males have more fat deposition in their abdominal region. Fat and fertility are linked in females through Leptin. Decrease in Leptin lower fertility. Fatness at birth in adult women is linked with ovarian function [6]. A study was conducted by Sim KA *et al*, to calculate the result of weight loss in overweight and obese females undergoing reproductive technology helping in their succeeding pregnancy outcome. Dietary factors and changes in lifestyle help to attain weight loss. A very low-energy diet was given to females. The pregnancy rate and live birth were increased in obese and overweight females. The menstrual cycle was examined to regulate and the rate of miscarriages was less reported [7]. Another research was conducted by Hammarberg K *et al*, among Australians of reproductive age to spread the facts associated with the effects on fertility was over age, obesity, cigarette smoking, and poor dietary habits. By this study changeable factors that can affect fertility were recognized. These factors were explained in National Education Campaign to encourage knowledge of factors that affect fertility [8]. The study was done by Morgante G *et al*, to highlight the important cure of PCO's by modifying lifestyle and weight should be reduced [9]. A cross-sectional study was performed by Triggianese P *et al*, to examine the role of vitamin D in primary infertility of women having autoimmune diseases. Patients from Poly Medical Center for Prevention of Recurrent Spontaneous Abortion in Italy. 70 females with primary infertility and 105 females non-infertile were registered. Infertile females had low vitamin D and had increased cases of autoimmune diseases than non-infertile females. So, vitamin D supplements can be beneficial for positive pregnancy outcome [10]. Another study was proposed by Darché RL *et al*, to identify the crucial role of antioxidants in productivity health and fertility. During early pregnancy ovulation fertilization and oocytes development can be affected by local cellular environment. Reproductive organs and fertility can influence by reactive oxygen species induced oxidative stress. Reproductive disorder and complications such as endometriosis polycystic ovary, oocyte aging, dysmenorrhea and premenstrual syndrome, abortion and infertility can be affected if relationship between antioxidant and oxidant is inadequate. So, the supplementation of dietary antioxidant can be useful in treating reproductive disorders. Some of antioxidants are isoflavones, antioxidant vitamins and trace elements [11]. The research was proposed by La Vecchia I *et al*, to identify the important role of diet that affects fetal and maternal health. A balanced amount of vitamins and minerals such as folate, homocysteine, vitamin B<sub>12</sub> had been proved to have an important role in infertility treatment. A cross-sectional study was performed by taking a blood sample in fasting in the morning. About 269 females aged 37 years were taken and only 69% and 44% indicated normal levels of homocysteine, vitamin B<sub>12</sub>, 72% females had normal serum folate and only 12% had concentrated RBC folate. Serum levels of vitamin A, E, Iron, Ferritin, were optimal in the majority of females (greater than 80%). So, it is concluded that females going to attend IVF treatment had folate and vitamin B<sub>12</sub> deficiency [12]. The research is aimed to determine the underlying causes of infertility among adult married women so that after highlighting the possible factors leading to infertility awareness could be seated among infertile women so that burden of the disease may be reduced.

## METHODS

In this cross-sectional study, 100 infertile women were enrolled. The study was conducted at Medicine and Gynae Units of Public Hospitals of Lahore. Patients were questioned regarding the demographics, medical history,

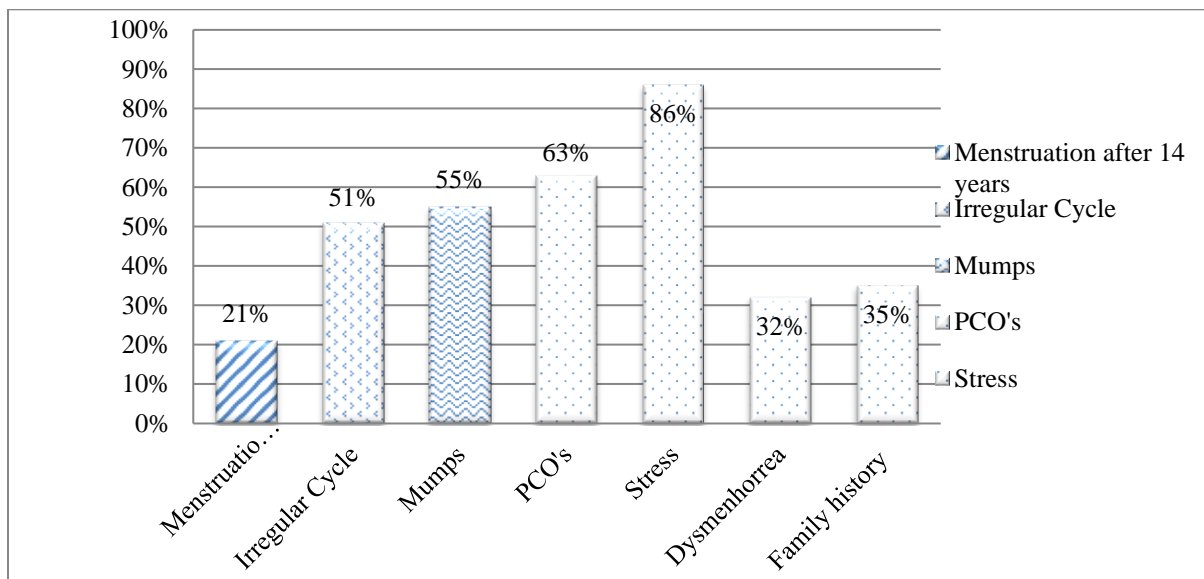
duration of the marriage, previous pregnancies, and parity. The pretested questionnaire was used to collect data. SPSS version 21.0 was used for data analysis.

**RESULTS**

Demographics	Percentage
Age	20-45 years
<b>Education</b>	
Graduate	77
Undergraduate	23
<b>Residential status</b>	
Rural	71
Urban	29
<b>Socioeconomic status</b>	
Lower class	62
Middle class	35
High class	3
<b>Total</b>	<b>100</b>

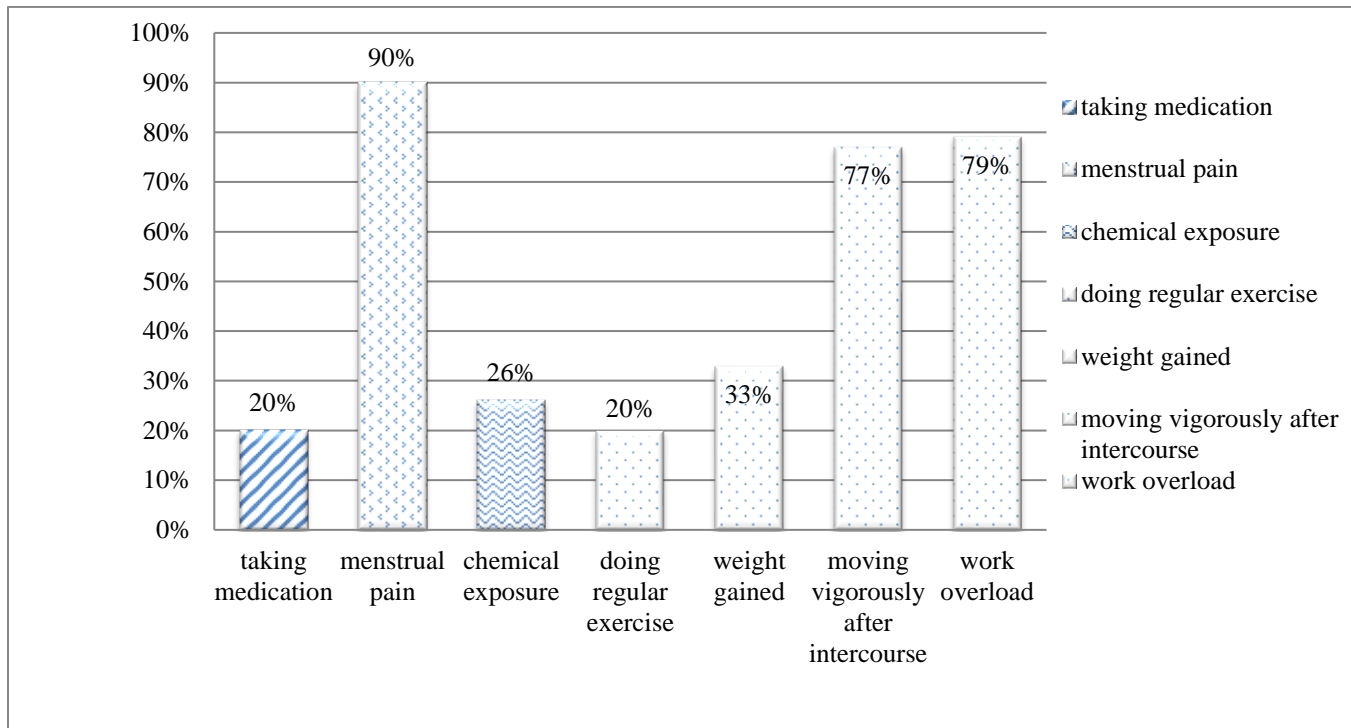
**Table I.** Distribution of Demographic Profile

A total number of 100 adult married women were taken in this study. 54% were between 27-32 years, overweight were about 42%, 62% belonged from low socioeconomic status, 64% were living in their own house, 71% were from rural areas and 77% infertile females were educated. As shown in Table I.



**Figure 1.** Distribution of Determinants of Infertility

21% infertile females had started menstrual cycle above 14 years, 51% were having irregular cycle, 55% were having childhood history of repeated mumps, 63% females were suffering from PCO's, 86% were having stress about their infertility and 32% infertile were having dysmenorrhoea, 35% were having family history of infertility. As shown in Figure 1.



**Figure 2.** Distribution of Risk Factors of Infertility

90% had pain during menstrual cycle, 26% had exposure to chemicals or radiations, out of 100 only 20% were doing exercise on daily basis, 33% infertile women had an increase in their weight, 79% had work overload, 20% were taking steroid and 77% females were moving vigorously just after intercourse. As shown in Figure 2.

## DISCUSSION

According to current results, infertility was more prevalent in overweight 42% and obese 26% as compared to healthy 13% and underweight 19% due to excessive weight gain, mostly females had suffered from Polycystic Ovary Syndrome i.e., 63% and 37% females had not suffered from PCO's. 51% of females had irregular menstrual cycles and 49% of females had regular menstrual cycles and 56% had heavy bleeding during menses and 44% had not. Ruder EH *et al*, in 2009 also conducted that gaining excessive weight may disturb females' infertility [13]. Another similar result was observed by Jungheim ES *et al*, during 2013 that obesity increased the prevalence of infertility in women [14]. Another similar finding was observed by Luke B *et al* [15]. Aviram A *et al*, during 2011 concluded that infertility was high in obese women [16]. Joham AE *et al*, also concluded by cross-sectional study concluded that the ratio of infertility in females with polycystic ovary syndrome was higher [17]. Milone M *et al*, also conducted that obesity interfered in female fertility [18]. Pasquali R *et al*, explained that polycystic ovary syndrome is a well-known reason to cause infertility due to anovulation in females, and by healthy weight loss it can be cured [19]. The results showed that women aged between 27-32 years had a high ratio of infertility with 54% as compared to women aged between 22-26 years (22%), women aged between 33-38 years (20%), women aged between 39-44 years (3) and women aged above 45 years (only 1%). So, it is concluded that women fertility decreased by age. A similar study was designed by Maheshwari A *et al*, increased age and infertility among women caused infertility [20]. Bretherick KL *et al*, showed that women's fertility drops with age [21]. Research conducted by Chavarro JE *et al*, concluded that modification of dietary factors and lifestyle, majority of infertility cases were cured [22].

## CONCLUSION

Study concluded that obesity, overweight, underweight, poor eating habits, low socioeconomic status, low family income, repeated mumps, stress, smoking, work overload, polycystic ovary syndrome, use of protection to avoid pregnancy, and use of contraceptive pills were the risk factors of infertility. Lack of physical activity, inadequate intake of nutrients, dysmenorrhea, stress, bathing too much, exposure to chemicals through work or lifestyle, increasing age, irregular menstrual cycle, pain or cramps during the menstrual cycle were also responsible for infertility. The majority of infertile females were not consuming meat, chicken, nuts, eggs, milk, fruits in adequate amounts needed by the body for proper functioning.

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