

## **Infertility: A Journey Between Hope and Heartache**

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**Objective:** To identify the modifiable risk factors contributing to subfertility and explore strategies for improving fertility outcomes in middle and lower socioeconomic groups.

**Design:** A retrospective study at Chaudhry Muhammad Akram Research and Teaching Hospital. A detailed proforma was developed to collect information on women's age, type of subfertility, duration of attempts to conceive, causes of infertility, education level, body mass index (BMI), sexual health, family structure, treatments received, and outcomes.

**Methods:** A total of 234 couples were recruited. Data was extracted from patient records, and the proformas were filled out accordingly. Women under 17 years and over 46 years of age, as well as couples who had undergone intrauterine insemination (IUI), in-vitro fertilization (IVF), or intracytoplasmic sperm injection (ICSI), were excluded from the study.

**Results:** Among the 234 women recruited, 47% were aged 27–36. Primary subfertility was seen in 58%, while 42% had secondary subfertility. The most common cause was polycystic ovarian syndrome (PCOS) in 22%, followed by tubal blockage due to pelvic inflammatory disease (5%), endometriosis (3%), and male infertility (8%). Additionally, 8% had underlying medical issues, and 9% were in second or multiple marriages. Overall, 21% of the women conceived, with 33% of these having primary subfertility and 67% having secondary subfertility.

**Conclusion:** A comprehensive medical history is essential in diagnosing subfertility and guiding further investigations and treatment options. Improving public education on reproductive health and raising awareness among healthcare providers, spiritual leaders, and policymakers regarding the significance of subfertility can lead to better outcomes.

**Keywords:** infertility, subfertility, lifestyle, stress, exercise, awareness, childlessness

### **Introduction:**

Infertility is the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse<sup>1</sup>. According to WHO (World Health Organization), 1 in 6 people globally is affected by infertility.<sup>2</sup> Subfertility affects millions of couples worldwide resulting in a negative impact on their lives. The main victims are the women, experiencing social stigma, stress, domestic violence, divorce, depression, anxiety, and low self-esteem.

Most infertile couples seek help from a female gynaecologist, hence ignoring the male contribution. Fair and impartial, access to fertility treatment remains a dilemma.

The prevalence of infertility globally varies greatly due to its demographical differences, ranging from 3% to 30%.<sup>3</sup> The reported prevalence of infertility in Pakistan is approximately 22% with 4% primary and 18% secondary infertility.<sup>4</sup> different countries deal with infertility according to their culture, beliefs, and available facilities. It is considered a great failure and setback for the couple particularly women if unable to have children.<sup>5</sup> Infertility management is based on misinformation and ignorance in poor socioeconomic countries. One of the common options for parenthood in males in such countries is divorce for second marriage or polygamy. In developing countries, children are the key to the status in the community, and the wife has the right to her husband's property and wealth. In such countries due to the lack of a social security system, the older population is economically dependent on their children, hence the importance of fertility.

The infertility treatment is time-consuming and expensive. Learning about the risks and rectifying them may improve fertility and reduce the economic burden of infertility treatment.

#### Methods:

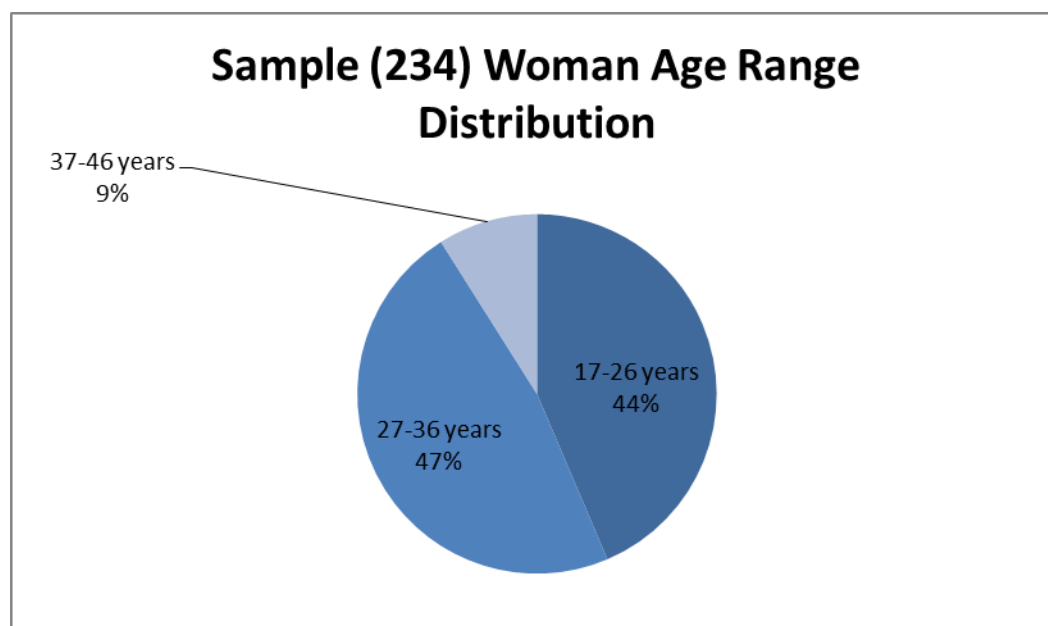
A retrospective study was conducted at Chaudhry Muhammad Akram Research and Teaching Hospital, located on the outskirts of Lahore. Clinical records from the hospital's infertility clinic were used to gather patient histories. This clinic provides basic infertility services, including semen analysis, hormonal assays, follicular scanning, hysterosalpingography, laparoscopy dye tests for tubal patency, and ovulation induction.

The study covered two years and included 234 patients, selected through simple random sampling. Data collection spanned 24 months, and the study followed a quantitative, descriptive design. Microsoft Excel was used for statistical analysis, while the sample size calculation was performed using Software (calculator.net) with a 6 % margin of error and a 95% confidence level. Questionnaires were completed based on the infertile couples' history, investigations, treatments, and outcomes. Women under 17 and over 46 years of age, as well as those who had previously undergone intrauterine insemination (IUI) or in-vitro fertilization (IVF), were excluded from the study.

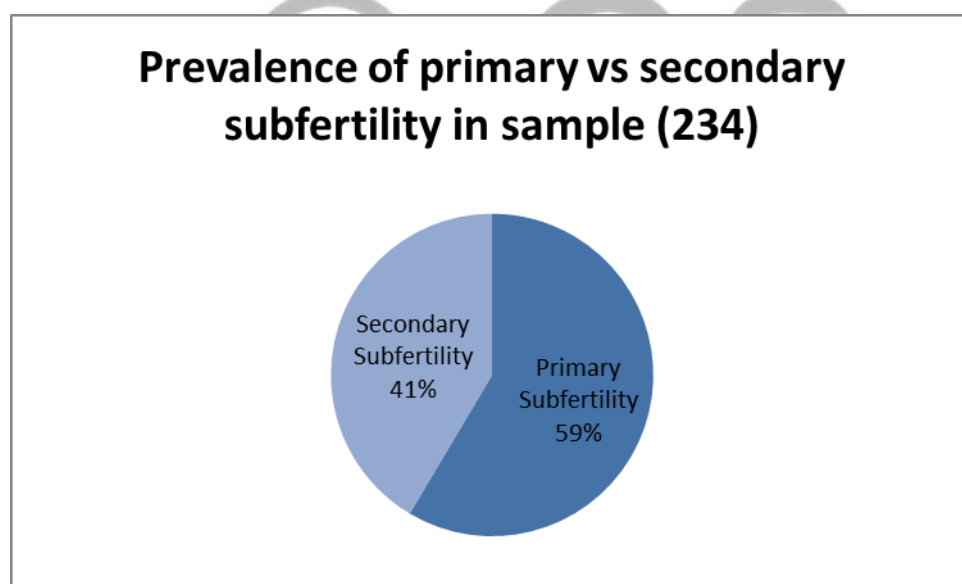
The proforma gathered detailed information, including age, type of subfertility, years of trying to conceive, education level, causes of infertility, body mass index, sexual health, family structure, treatments received, and outcomes. The institution's ethics committee approved the study.

#### Results:

Of the 234 women recruited, nearly 47% (111) were aged 27–36 years, 44% (102) were aged 17-26 yrs. and 9% (21) were aged 37 yrs. to 46 yrs.



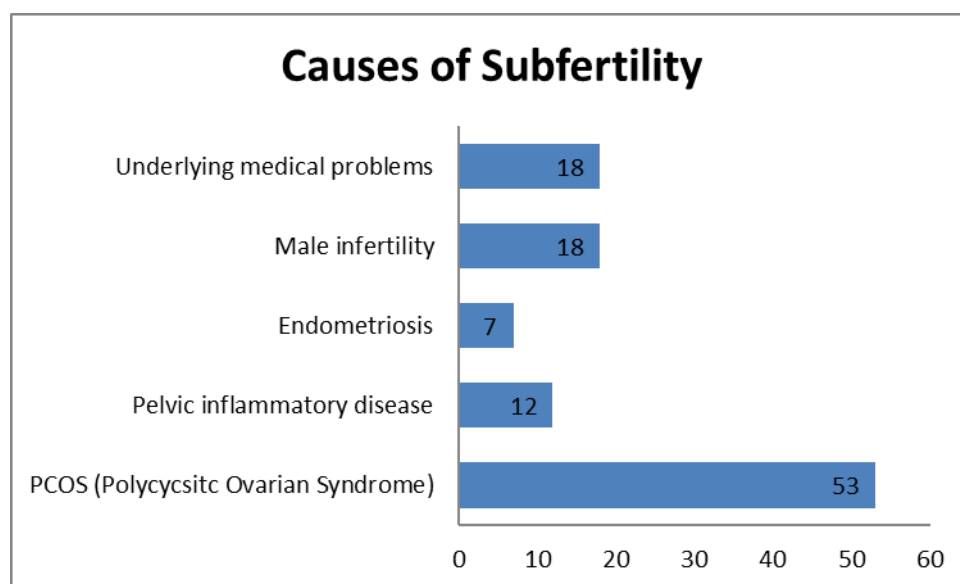
The prevalence of primary subfertility was 59% (137) and secondary subfertility was 41% (97).



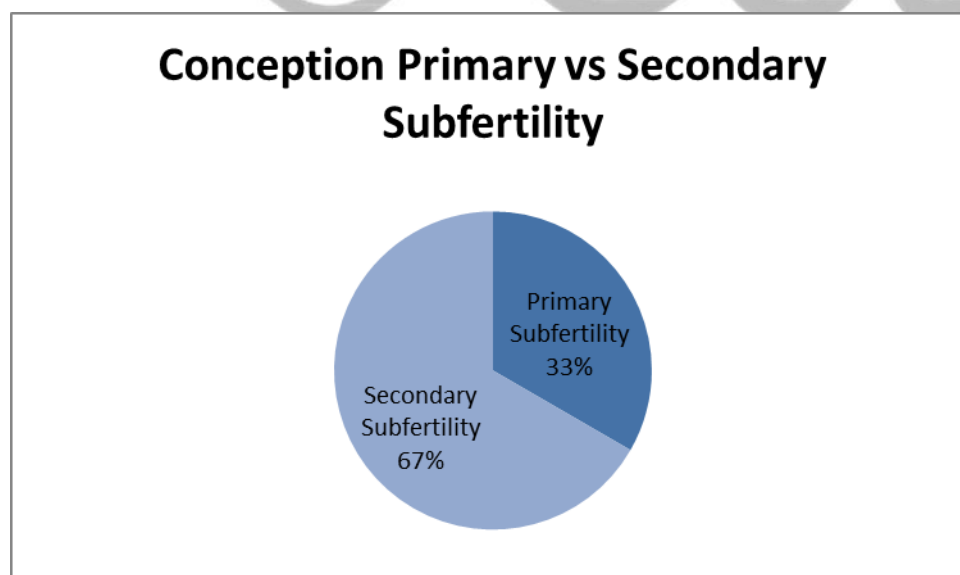
In primary infertility the majority of couples 72% (98) were trying to conceive for 2-5 yrs.19% (26) for 6-10 yrs,8% (11) for 11-15 yrs. and 1% (2) for 16 yrs. and more. In secondary subfertility, the majority 82 % (82) were trying for 2-5yrs and 11% (11) for 6-10 years.3 % (3) for 11-15yrs and 1 % (1) for more than 16 years. Regarding education, the majority 41% (96) had attended secondary school, 28 % (66) had the minimum level of education till primary school, whereas 23 % (54) went to college and 8 % (18) were postgraduates.

44 % (103) women were overweight or obese with a Body mass index (BMI) of 30 and above whereas 57 % (131) had a body mass index of 18.5-29. The majority of the couples 65% (151) were not having regular sex. 73% of the couples had previous treatment with spiritual healers, traditional birth attendants, local quacks, and herbal methods. Most of the males (78%) were non-smokers.

22 % (53) had polycystic ovarian syndrome (PCOS) in the underlying causes, 5% (12) had pelvic inflammatory disease resulting in tubal blockage, and endometriosis 3% (7). Male infertility was detected in 8% (18). The underlying medical problem was in 8% (18).



9 % (20) couples had second or multiple marriages.



21 % (48) women conceived of which 33 % (16) had primary subfertility and 67 % (33) had secondary subfertility.

38% (18) conceived after regular sex, 29% (14) with ovulation induction, 17% (8) after weight loss, 8% (4) after stopping contraception, and 8% (4) male change in lifestyle. Only 40 % (95)

were accompanied by their husbands on the first visit. 85 % (198) couples were living together. 75 % (176) were living in the extended family system with less privacy.

#### Discussion:

Infertility is a catastrophe affecting millions of couples globally. The exploding population is a major problem in developing countries and improving fertility is not in the interest of these countries. Still, every human has a reproductive right and deserves to have treatment options like in a developed country. There is a difference in the experience of infertility in developed and developing societies. In developed countries voluntary not having a child is accepted whereas in developing countries it is considered as infertility and a stigma. Infertility may result in psychological issues like depression, anxiety, and distress. The majority of infertile women do not share their issues with family because of shame and low self-esteem.<sup>6</sup> Infertility care includes the prevention, diagnosis, and treatment. A diagnosis is made based on the history, examination, and investigations. Infertility evaluation is needed in women with unsuccessful pregnancies after 12 months of unprotected regular intercourse or 6 months if they are over 35 years old and earlier for women older than 40 years<sup>7</sup>. In the female, infertility may be caused by abnormalities of the ovaries, uterus, fallopian tubes, and the endocrine system. The women having regular cycles are ovulating whereas women with irregular, scanty, and absent cycles are anovulatory.<sup>8</sup> In the male, infertility is most commonly caused by abnormalities in semen analysis. Males with abnormal semen analysis or presumed male infertility should be evaluated by the andrologist.<sup>9</sup> The basic investigation for infertility in females is by serum hormone profile, assessment of uterine cavity and fallopian tube, and assessment of ovarian function and reserve. The semen analysis is the key diagnostic evaluation in males. Infertility is a primary or secondary type. Primary infertility is when a pregnancy has never been achieved and secondary infertility is when previous pregnancy has been achieved irrespective of outcome. Most of the patients in our study were from middle and lower socioeconomic status and were financially helped by institutions regarding the completion of investigations for diagnosis. Infertility increases with the increasing age of women. A woman younger than 30, has an 85% chance to conceive in the first year and a 75% chance at the age of 30. This is reduced to 66% at the age of 35 and 44% at the age of 40<sup>10</sup> In this study 78% of women aged 17 to 31 years and 22% of women aged 32 years to 46 years presented with infertility. The possible reasons for the low prevalence of infertility with increased women's age in this study may be associated with the fact that males had divorced and had second or multiple marriages, polygamy, adoption, or did not have the desire for a child anymore. The prevalence of primary subfertility was more than secondary subfertility which correlates with many research studies.<sup>11,12,13</sup>

Ovulation disorder PCOS (22%), underlying medical problems (8%), and male factor infertility (8%) were the main causes of infertility followed by pelvic inflammatory disease (5%) resulting in tubal blockage and endometriosis (3%). PCOS is the most common cause of anovulatory infertility which has been observed in many studies.<sup>14,15,16</sup> This was also observed in this study. It was also observed that infertility can be associated with an underlying chronic disease.<sup>14</sup> Lifestyle and environmental factors, such as smoking and

obesity, can adversely affect fertility.<sup>17,18</sup> The males contribute to 40% of infertility but are reluctant to do infertility investigation regarding themselves resulting in underreporting of male infertility<sup>19</sup>. This is further compounded by cultural beliefs that women solely are responsible for infertility.<sup>20</sup> Obesity in women is associated with ovulatory dysfunction and in males with impaired reproductive function. The weight loss improves the chance of spontaneous conception.<sup>21,22</sup> 44% of women in the study were obese whereas 78% of the males were non-smokers and 8% conceived after a change in lifestyle by reducing weight, stopping smoking, regular exercise, and healthy eating. Many couples who are unable to conceive feel frustrated, angry, anxious, and depressed which affects their sexual activity. The stress of infertility can cause sexual difficulties for the couple.<sup>23</sup> The majority of the couples 65% were not having regular sex in this study. Most of the couples had sex once in two weeks, a couple of times in 2-3 months, and in a few women husbands lived abroad and came once or twice a year for 1-2 months. This does not fit into infertility according to the Western definition, but these women are pursuing conception. It seems unjustifiable for couples to do expensive investigations and treatment when simple, clear questions about their sexual lives may indicate the cause of infertility thus preventing the ordeal. 38% conceived after having regular sex and 8% became pregnant after stopping contraception. All this indicates the importance of detailed history. Couples should be seen separately as well as together because one of them may have an important issue that one does not want to disclose to the other. The detailed history of the couple usually highlights the underlying problem. In this study, it was noted that 73% of the couples had taken alternative medicine options with spiritual healers, traditional birth attendants, local quacks, and herbal methods before seeing the doctors indicating a lack of knowledge of infertility and a strong belief that infertility does not need medical treatment. Therefore, adequate knowledge of the infertile couple is important for timely treatment and to prevent myths and misconceptions. Many studies have observed a lack of fertility awareness in the general population as well as medical students and health care providers<sup>24, 25, 26</sup>. Adequate knowledge needs to be provided to the couple for timely treatment and to prevent myths and misconceptions. Many infertile causes are preventable like infection, unhygienic menstrual practices, obesity, smoking maternal age, socioeconomic status, and occupational hazards. The hygienic practice during menstruation is important to prevent reproductive tract infections. The unhygienic menstrual practices such as reusing cotton clothes, not using soap to wash and using dirty water to wash and dry them indoors, and changing them after prolonged intervals, predisposes to lower reproductive tract infections resulting in infertility<sup>27,28</sup>. In developing countries, there is limited access to infertility care.<sup>29</sup> Infertility is a factual issue in Pakistan due to the social stigma. The study confirmed detailed history, regular intercourse, and lifestyle changes improve the chance of conception.

#### Conclusion:

Basic medical care is the fundamental right of all; therefore, infertility care is a human right, considering the socio-cultural, ethical, and religious beliefs. A thorough history has an important role in diagnosing subfertility and advising further investigations and treatment options. The initial infertility appointment is pivotal, requiring sufficient time for a detailed

history, appropriate physical examination, and proper counselling. The success rate is dependent on the accurate diagnosis and proper treatment. It was seen in this study the knowledge among the general population regarding infertility is lacking. Raising awareness through better education on the reproductive health of the public, healthcare providers, spiritual leaders, and politicians will give a better understanding of the problems. Sex education should be in the school curriculum which will result in better knowledge of reproductive health. Social media, television, and newspapers can play a powerful role in imparting knowledge and communicating with the sub-fertile population. The diagnosis and treatment of infertility are usually not prioritized in the national population and are not covered through national financing. The national comprehensive sexuality education incorporated with infertility awareness will enable people to protect their health and promote healthy lifestyles to reduce the risk factors affecting their fertility.

Limitation of the study: Data collected from a single site may not accurately represent the community at large. More data is required from different centers, as convenient sampling is a limitation, as this study may not represent the general population.

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