

## RISK FACTOR OF SECONDARY INFERTILITY OF WOMEN IN HYDERABAD SINDH, PAKISTAN

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### Abstract

Women are increasingly experiencing secondary infertility these days. The inability to conceive for a year following at least one prior conception is known as secondary infertility. Secondary infertility is further classified into two types. Temporary Secondary Infertility and Permanent Secondary infertility. When couple face difficulty to conceive in order to short duration after first baby and can be treatable so it is known as Temporary Secondary infertility. On other hand, when couple face difficulty to conceive in order to long period after first baby so it is known as Permanent Secondary infertility. This research found the major factors in women i.e. Miscarriages 64%. Some women pull heavy weight and do not take care herself. It can be lead to infection, and cause complication to achieve the pregnancy. In addition show lack of care in C- section or after cesarian do not proper cure herself also play a vital role in order to lead secondary infertility and increases the chances of miscarriage due to effected vaginal tube. In present study the observational record accumulated through the standard survey based research is carried out to the Civil hospital in Hyderabad. I created a survey to get the necessary information from the patients. The WHO- recommended survey on secondary infertility in women was employed. Even many people do not know about the complication of Secondary infertility and they do not have any awareness that it can be treated. It would be controlled in order to getting awareness and avoid the risk factor of Secondary Infertility.

### INTRODUCTION

In developing countries, adhesion from reproductive tract infections that block the Fallopian tubes is the main cause of secondary infertility (N. Sami, et; al., 2012). One risk factor for later infertility was shown to be a previous cesarean section delivery (Momtaz, Flora, & Shirin, 2011). Women's menstrual cycles development and control of reproductive function are significantly influenced by hormones (Seth, Arora, & Singh, 2013).

Miscarriages, future infertility and recurrent miscarriages is linked with depressions (C. Liang,

Chung, et; al., 2024). Compared to women who conceive naturally, infertile women receiving assisted reproduction are more likely to experience a miscarriage, particularly if they are older (Agenor & Bhattacharya, 2015). Two or more failed clinical pregnancies before 20 gestational weeks are considered recurrent miscarriages, which are further divided into main and secondary forms. This condition is commonly referred to as repeated pregnancy loss (Gkeka et; al., 2023). Infertile couples have been found to have a higher frequency of spontaneous miscarriages, and patients with a history of

repeated spontaneous miscarriages are more likely to be infertile (Wang et al., 2016).

The primary cause of secondary infertility in underdeveloped nations is fallopian tube occlusion brought on by adhesions from reproductive system diseases (N. Sami, et al., 2012). Secondary infertility may affect as many as 30% of couples. Ectopic pregnancy, spontaneous abortion, pregnancy termination, and live birth via caesarean section can all have varying effects on future fertility (Kolanska et al., 2022). To look into how being underweight, overweight, or obese affects the likelihood of miscarriage in a subsequent pregnancy in women who have experienced repeated miscarriages (Metwally, et al., 2010).

This may indicate the development of fibroid in the womb or endometriosis, a disorder in which tissue resembling the lining of the womb grows in other areas of the body. Women who have had prior cesarean sections may experience intermenstrual bleeding due to uterine scar diverticula. Doctors should check for these flaws when doing ultrasonography in this clinical context (Erickson & Van Voorhis, 1999).

Our findings suggest that the reproductive state of controls can have a substantial impact on associations observed with menstrual characteristics (Signorello, et al., 1997). The ability to conceive is known as fertility. The decline stage starts and quickens after you reach the age of 40 to 45. Fertility has declined so dramatically that most women are unlikely to conceive naturally. Compared to younger women, elderly women experience infertility for varied reasons (C. Liang et al., 2024).

Infertility affects 5–10% of women in their reproductive years and is linked to interpersonal relationships, eating disorders, anxiety, depression, and sexual dysfunction (Direkvand-Moghadam, et al., 2013). The findings of our study show that there is a dearth of knowledge about infertility and its causes. It is necessary to educate people in Pakistan about infertility and its causes in order to dispel their beliefs and promptly seek treatment if necessary (Ahmed et al., 2020). The findings showed that 33.3% of cases had poly cystic ovaries, 13.3% had

endometriosis, 6.7% had fibroid, 4.4% had ovarian cysts, and 3.3% had pelvic inflammatory disease; PID (Ullah et al., 2025). Sub fertile women frequently have uterine abnormalities, particularly acquired ones like endometrial polyps and submucosal fibroid, which calls for focused diagnostic and therapeutic strategies (Shahid, et al., 2024).

In women sexually aroused suggest that her body follow the series of physical and emotional responses, which play a vital role in fertility (Roushangar & Rad, 2007). In vertebrate key factor is Gonadotropin Releasing Hormone for enhance the reproductivity (Ruiz et al., 1997). Pituitary gland trigger the hypothalamus to release the FSH and LH hormone in order to maintain the reproductive cycle (Sadia, et al., 2009). After 28 days 30 to 40 follicles released but only one follicle is providing the growth of ovum in mostly cases. Reproductive organs further mature by Gonadotropin Hormone (Sami & Ali, 2006). Hormone provide the signals in reproductive organ by the hormone with the help of Pituitary gland and Hypothalamus. Estrogen is secreted by the mature follicle and Estrogen level intensively increase in blood in order to stimulate the anterior pituitary gland and then it secrete the LH hormone. Increasing the level of LH hormone in blood, will take place the ovulation in ovary (Sami & Ali, 2006). Infertility is a reproductive disorder in which women could not able to getting the pregnancy after one year and after the age of 30, despite not use to any contraceptive technique and intercourse the at least three times in a month (Sarkar, Gupta, & infertility, 2016). Infertility may be cause due to male factor or as well as female factor, Primary infertility is the problem to get pregnancy and no any pregnancy in the past but in secondary infertility is considered that couple had not getting pregnancy after at least one previous pregnancy (Sen, et al., 2014). The ovulatory dysfunctions form a hugely varied group of diseases. Sometimes these disorders having lethal chronic effects. ovulatory dysfunction cause infertility in 30% female, According to evidence based study suggests an associatuon among womens weight and disorders of ovulation (Jose-

Miller, 2007). It has been cited that Normogonadotropic anovulation, also known as WHO Group II anovulation, and is the most frequent major cause of primary infertile patient (Kandavel, Cheong, obstetrics, & gynaecology, 2018). According to this survey, most infertile women talk to their spouses about issues connected to infertility. They are, however, less inclined to share test and examination results and the cause of infertility with non-family members (Sormunen, et al., 2018). Women who have experienced miscarriage or stillbirth are more likely to have a stroke; this could be utilized as a contributing risk factor to identify women who are more likely to have a stroke (C. Liang, et al., 2022). Miscarriage is the most common pregnancy problem, and many human conceptions are genetically defective. One percent of couples who are trying to conceive experience recurrent miscarriage, which is the loss of three or more successive pregnancies (Rai & Regan, 2006). Secondary infertile women were more likely to experience sexual dysfunction. When compared to main infertile women, secondary infertile women report lower levels of sexual desire, orgasm, and satisfaction (McMahon et al., 2011). After experiencing repeated miscarriages, 351 women were referred for examination of hemostasis and thrombosis. Once anatomic, hormonal, or chromosomal abnormalities had been ruled out, a high-risk obstetrician or reproductive medicine specialist referred each patient (Bick & Hoppensteadt, 2005). According to epidemiological data, three or more consecutive miscarriages should be considered recurrent miscarriages. Although data should be gathered up to 28 weeks of gestation, analysis up to 20–22 weeks or 500 g of fetal weight should also be feasible (Stirrat, 1990). In contrast, pre-obese women can avoid reproductive issues by leading a healthy lifestyle since the hypothalamic-pituitary-gonadal (HPG) axis is more affected by BMI in obese women, with ovulatory abnormalities being the most common (Dhandapani et al., 2021). Compared to women of normal weight, obese women have a greater rate of miscarriage following euploid embryo transfer, indicating that factors other

than aneuploidy may be at play (Cozzolino et al., 2021). In Henan Province, China, 24.58% of women between the ages of 20 and 49 were infertile, while only 61.17% of these women sought medical attention. Infertility risk factors include age, history of gynecological surgery, and DOR (S. Liang et al., 2021). Due to a lack of evaluation facilities, over half of women who experienced miscarriages had no discernible risk factors. In order to determine the reasons behind the losses, facilities for examining women who had spontaneous abortions in developing nations need to be improved (Adeniran, et al., 2015). Within five years of their initial consultation, almost two thirds of women with recurrent miscarriages who are referred to a tertiary facility go on to have at least one live baby. The course of live birth outcomes in women with recurrent miscarriages can be described in our study, however treatment effectiveness cannot be assessed (Lund et al., 2012). In order to give the right resources, medical professionals must be aware of the variables that could affect how a miscarriage affects a woman and her spouse (Huffman, et al., 2015).

## Materials and Methods

### Study Area

Study area selected the Civil Hospital, Hyderabad. It is also known as Liaquat University Hospital or LUHMS Civil Government Hospital for the research project in Hyderabad. It is one of the biggest teaching hospitals connected to Jamshoro's Liaquat University of Medical and Health Science. Pakistan's first public medical university. Hyderabad, Sindh, has a tertiary care hospital with 2200 beds. This area chosen that because there were not find any research about secondary infertility. It is an ideal region for secondary infertility studies. One of the most effective methods for gathering data is investigation. Therefore 100 patients were questioned and asked about their medical reports in order to understand the fact and nature about secondary infertility

**Sampling**

This research conducted in Dec 2024 to March 2025. Cross questioning is an authentic way to collect data and collect useful information from patients. It extracted more information about the patients medical history, symptoms and factors by asking certain questions. On the other hand, the other steps of diagnostic is necessary just like Ultrasound, Hormonal level reports, Blood test and Physical examination. To sum up cross questioning provides many details and helps to study of Secondary Infertility about Miscarriages.

**Reference material**

The information has been taken by medical reports. This research result confirmed with the guidance of expert of endocrinology from University of Sindh and concerned consultant.

**Analysis**

To investigate and observe the risk factor also performed some hormonal tests in medical research laboratory and got medical history to known the main reason behind the miscarriage which took major part to promote Secondary Infertility.

**Questionnaire**

Questionnaire is prepared according to own topic and under supervision of my supervisor. The

questionnaire is composed of 36 questions. The result of the study were concerned after taking opinion of gynecologist and healthcare providers.

**RESULTS**

According to this study, which involved evaluating 100 patients, this study observed a variety of causes of secondary infertility in all of them. This research discovered that the primary cause of secondary infertility in women is abnormal levels of FSH and LH, which are essential for maintaining reproductive health. These levels are also found in women who have miscarriages 64%. There are maximum number of patients facing Miscarriages again and again. Miscarriage affect the reproductive organs and make a problem to conceive baby. It cause negative impact to female's reproductive process. This research found miscarriage ratio is more than other factors. In addition Large number of patients data of urban collected than the rural, The findings shows differences due to Health care accessibility, lifestyle, awareness and reporting procedure between two location rather than higher incidence of secondary infertility in urban population, Infertility problem are mostly diagnosed as well documented in urban population due to easier access to specialized reproductive health services.

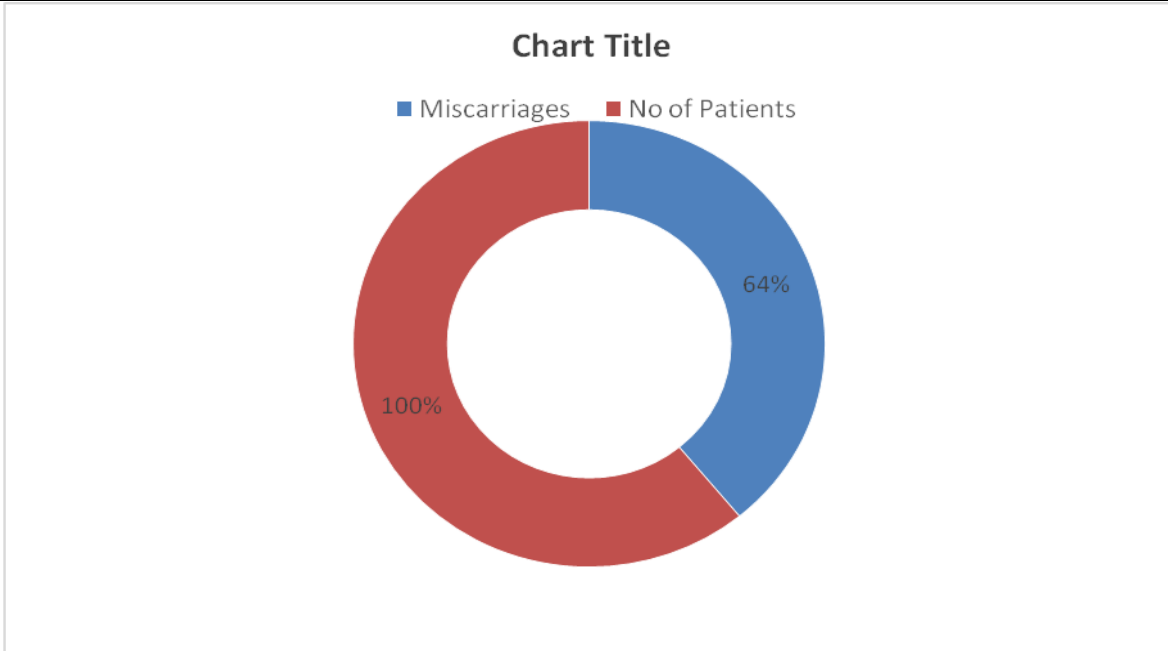


Fig 1 Shows the percentage of Miscarriage

**Diet plan**

Mostly women do not take proper diet. They eat unhealthy food and do not take insufficient proteins and vitamins which are needed at the time of pregnancy. Lack of awareness creates complication for the foetus and move towards miscarriage.

**Negligence**

Female show carelessness and pull heavy weight this is the main reason behind the miscarriage. They intake heavy dose of medicine without concern the gynecologist.

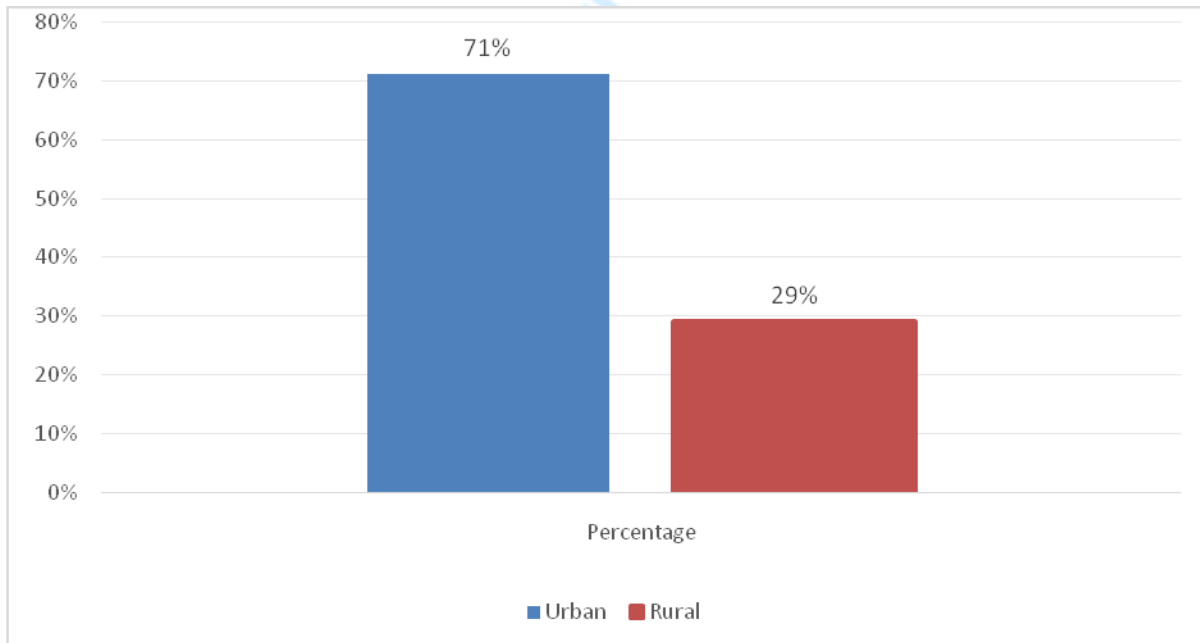




FIGURE 2 CHART SHOWING AREA WISE DISTRIBUTION OF SECONDARY INFERTILITY'S PATIENTS

Table 1 shows major causes of Secondary Infertility according to age wise group

Group Patient	1	Ages	Maximum Patients	Major Cause	Percentage
45		18-30	22	Weight gain	48.8
Group Pateints	2	Ages	Maximum Patients	Major Cause	Percentage
42		31-40	26	Miscarriages	61.9
Group Pateints	3	Ages	Maximum Patients	Major Cause	Percentage
13		41-50	9	Miscarriages	69.2

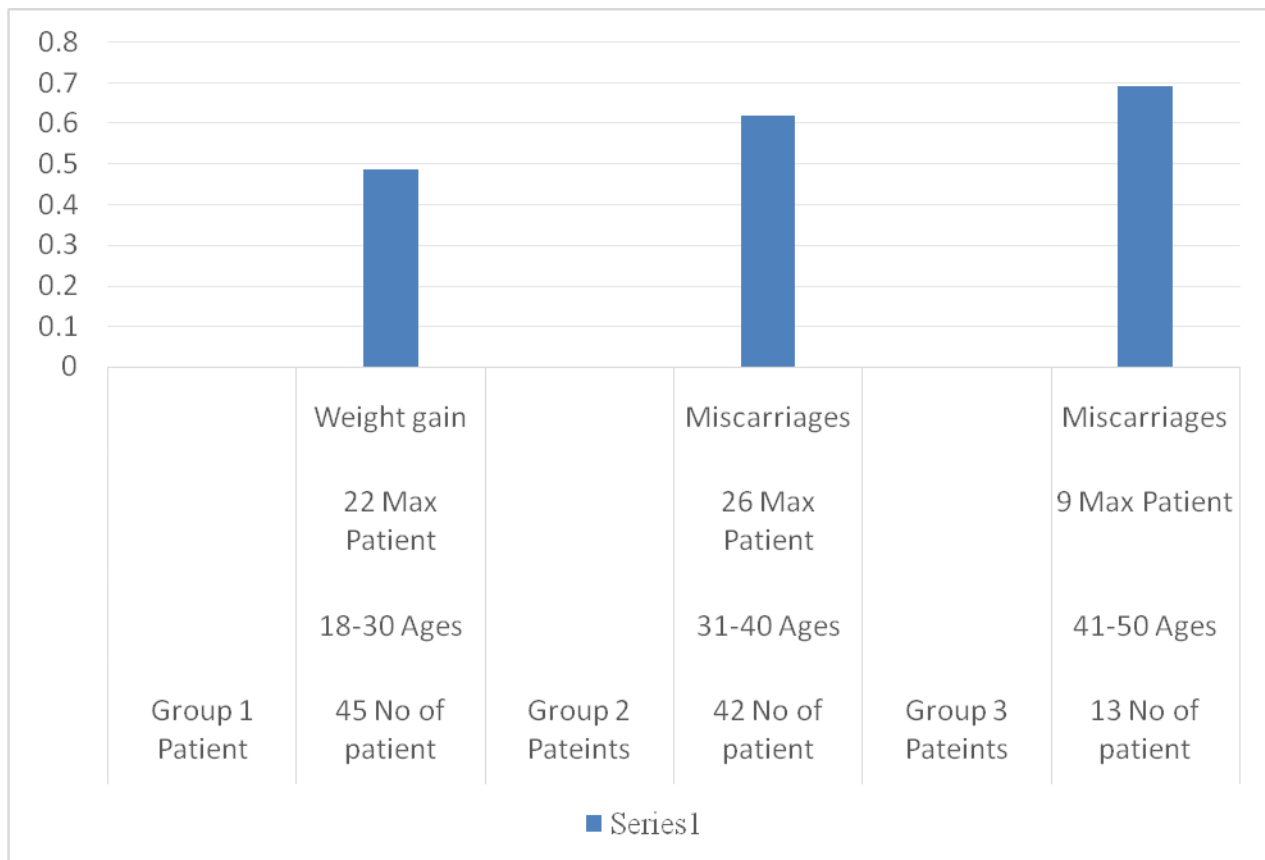


Fig 3 shows age wise causes of secondary infertility

**DISCUSSION**  
**MAJOR FACTOR**

This research shows major factor of secondary infertility is about 64 percentage. It occur due to

disturbance in reproductive system. A common pregnancy problem that frequently results in psychological suffering is miscarriage. The goal of the current study is to ask women about their

desire for support after miscarriage as well as particular aspects of the style, content, and timing of that assistance (Ghimire, et al., 2020). These results confirm that early pregnancy loss is a major emotional burden for women and, to a lesser extent, for males, particularly in terms of worry (Cumming et al., 2007).

### Area wise distribution of Secondary Infertility's Patients

This research study on condition of female secondary infertility, Large number of patients data of urban collected than the rural, The findings shows differences due to Health care accessibility, lifestyle, awareness and reporting procedure between two location rather than higher incidence of secondary infertility in urban population, Infertility problem are mostly diagnosed as well documented in urban population due to easier access to specialized reproductive health services. On the other hand, Rural women face difficulty to access the diagnostic facilities, gynecologists and infertility clinics. In rural areas, lack of awareness and lack of diagnosis may also be reason behind under reporting. It had became the cultural stigma due to lack of health knowledge and traditional beliefs. They also have financial issue to maintaining their healthy life style. Furthermore, Urban hospitals and clinics have more advanced and digitalize the health information system regarding the treatment, which provide facilities of data gathering and reporting. Because it represent the behavior of healthcare seeking and infrastructure capability than the true prevalence of condition of secondary infertility, the difference in observed data should be regarded cautiously. Compared to people living in rural areas, infertility was more common in metropolitan areas (Udgiri & Patil, 2019). Misconceptions about infertility are more common among rural communities than among urban ones (Kusuma et al., 2025).

### COMPARISON OF AGES AND CAUSES OF SECONDARY INFERTILITY PATIENTS

This study evaluated 100 patients in reference to their ages we have grouped them in 3 different

group ages. Group 1 includes individuals aged between 18 and 30 years. Within this group, a total of 45 patients were observed. Among them, 22 were found to have weight gain primarily due to lack of physical activity.

Group 2 (31-40 years) we have total 42 patients, out of which 26 patient are having miscarriage.

Group 3 (41-50 years) we have total 13 patients, among them 9 are suffering from miscarriage. Overall found 64 number of patients face miscarriages out of 100 patients. The majority of women with secondary infertility fall within the age range of 30 to 39, according to the age distribution of these women (Jabeen, et al., 2022). Infertility that cannot be explained is almost twice as common in women over 35 (Maheshwari, et al., 2008).

### CONCLUSION

Secondary infertility is one of the common diseases affecting the women between 18- 50 years old. It is a disorder of reproductive system it is defined as failure to get pregnant or conceive baby for a year or more following having previously gotten pregnant once or more than once. If you have been pregnant before and unable to conceive again it is the sign of secondary infertility. Causes of secondary infertility varies on number of variables, anatomical, physiological, hormonal, and psychological issues. Secondary infertility can be the disease may be adversely affecting reproductive process and causing secondary infertility, anatomical defects like underdeveloped or absence of the uterus or vagina are another relevant cause. One of the major factor found this research is miscarriage. Bleeding at the time of menstruation is avoided in these situations even if the ovaries are properly functioning since the vagina or uterus is absent. Hormonal disorders are also the cause of secondary infertility. The production and secretion of FSH and LH, necessary for ovulation and menstruation, can also be disrupted by hypothalamus or pituitary not to function normally.

Functional causes of secondary infertility are those conditions like excessive physical or emotional stress, or excessive weight gain that can cause problems with a woman's normal menstrual cycle. These factors can disrupt the body's hormonal balance and disrupt menstruation and ovulation phase. Besides, a complete evaluation with extensive medical history, physical examination, hormonal evaluation, and imaging tests such as ultrasound is needed to diagnose the cause of secondary infertility.

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#### Ethical Statement

This study did not involve any kind of environmental risk or unethical act. All data collected with international ethical guidelines for research.

#### Generative AI and AI- assisted technology statement

The study's design, data gathering, analysis, and writing did not make use of generative AI or AI-assisted technologies. The authors completed all of the work by manually.

#### Data availability of statement

The article contains all of the data created or examined during this investigation.

#### Statement of conflict of interest

No conflict of interest was disclosed by the author.

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