



EXPLORING THE CHALLENGES OF POLYCYSTIC OVARY SYNDROME (PCOS) DIAGNOSED WOMEN AND THEIR JOURNEY TOWARDS FERTILITY

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Abstract

This research study is designed to examine the challenges faced by polycystic ovarian syndrome (PCOS) diagnosed women and the complications faced during the fertility period. PCOS is the most prevalent endocrine condition impacting female fertility and has been less studied in the context of research. The data has been collected by using qualitative research. For this, the sample of the study consists of N=13 women between 22 to 35 years old and diagnosed with PCOS. The method of sampling used is snowball sampling. Semi-structured interviews were used in the data collection process. The research employed a phenomenological methodology to get firsthand feedback from the participants. The study results revealed an elevated rate of infertility among women with PCOS, suggesting a bidirectional relationship between the physiological aspects of the Syndrome and infertility. It is recommended that integrating infertility considerations into the clinical management of PCOS is crucial, necessitating collaborative efforts among gynaecologists, endocrinologists, and reproductive endocrinologists to provide holistic care that addresses both the endocrine dimensions of infertility and PCOS.

Keywords: Polycystic Ovarian Syndrome, Infertility, Reproductive health, Stress, Disease

Background of the Study

Globally, infertility is a major health issue. Around 40 million couples actively sought treatment for infertility, of whom 36 million were in developing nations (Buriro et al., 2023). There were approximately 50.1 million infertile couples worldwide (Mohan et al., 2023). The highest rate of infertility is said to be in females (Obeagu, Nisar & Obeagu, 2023). Women's characteristics such as education level, age at marriage, underlying disease, and BMI were significantly correlated with these factors, whereas men's characteristics such as occupation, addiction, smoking, and the presence of underlying disease were significantly correlated with these characteristics (de Medeiros et al., 2020). The most frequent causes of female infertility are uterine factors, menstrual and ovulation disorders, and ovarian disorders (Collee et al., 2021). Infertile women may engage in due to severe social, emotional, and psychological distress, including depression and anxiety, increased interpersonal violence, domestic violence, and their desperation to become pregnant (Yilmaz, Yazici & Benli,

2020). The health issues connected to human reproduction, including infertility, are relatively infrequent (Buriro et al., 2023).

Statement of the problem

Hyperandrogenism, polycystic ovaries, and irregular menstrual periods are the main symptoms of Polycystic Ovary Syndrome (Shrivastava & Conigliaro, 2023), a prevalent endocrine condition affecting women of reproductive age (Hassan et al., 2023). An understanding of the dynamic relationship that exists between PCOS and reproductive outcomes is still lacking, despite the condition's widespread occurrence. The amount of research that has already been done offers a patchwork understanding of the different facets of PCOS diagnosis, treatment options, and how they affect the process of conception.

Research Questions

- How does PCOS cause infertility?
- How does hormonal imbalance impact reproductive health and lead to infertility?
- What are specific and effective medications in enhancing the success of conception?

Literature Review

Hormonal Imbalance and Infertility

An important factor in women's infertility when it comes to the intricate management of reproductive processes is hormone imbalance (Faiza et al., 2021). When a woman experiences irregular ovulation or a disturbed menstrual cycle, her hormone balance may be affected, which can seriously impair her fertility (Buriro et al., 2016). Follicle-stimulating hormone (FSH), progesterone, and estrogen interact delicately to control the ovarian cycle and preserve the best possible release of mature eggs (Murray & Orr, 2020). Fertility is compromised by non-ovulation, which is characterized by irregular egg release from the ovaries and can be brought on by an excess or deficiency of these hormones (Zaat et al., 2021). Furthermore, hormone abnormalities aggravate endometriosis and polycystic ovarian syndrome (PCOS), making infertility even more challenging to treat (Salmeri et al., 2023). Our comprehension of the intricate connections between hormone dysregulation and infertility is crucial for the creation of targeted treatments aimed at restoring hormonal balance and increasing the likelihood of successful conception in women impacted by infertility (Kicińska et al., 2023). This study explores the intricate mechanisms underlying hormone imbalances and their implications for female fertility to enhance diagnosis and treatment approaches for reproductive health disorders (Barratt et al., 2022).

Chronic Infertility

Women's chronic infertility is a complex issue that usually stems from a confluence of lifestyle, environmental, and physiological factors (Holzer et al., 2021). One important reason that might lead to ovulatory dysfunction and anomalies in the menstrual cycle is hormonal imbalance (Zafar, 2020). Follicle-stimulating hormone (FSH), progesterone, and estrogen interact intricately, and when there are disruptions in this interaction, this happens (Shele, Genkil & Speelman, 2020). Long-term infertility is frequently associated with hormonally-driven disorders such as endometriosis and polycystic ovarian syndrome (PCOS) (Guleken et al., 2021). Structural abnormalities of the reproductive organs, such as fallopian tube abnormalities or uterine tumours, may prevent conception. Given that ovarian reserve declines and low-quality eggs become more prevalent with age, advanced maternal age is a major contributing factor (Akhtar et al., 2020). Moreover, lifestyle variables such as high-stress levels, poor food, and exposure to pollution from the environment may make it harder to become pregnant (Aly & Decherney, 2021). The complex interplay of biological, environmental, and behavioural variables that leads to chronic infertility emphasizes the need for an all-encompassing approach to identify and address the different but related causes of infertility in women (Assidi, 2022).

The Age-dependent Dynamics of Fertility

A crucial aspect of reproductive health that has significant effects on both people and society as a whole is the age-dependent dynamics of fertility (Pettay et al., 2020). The amount and quality of eggs available for fertilization decrease as women age due to a natural decrease in their ovarian reserve (Busnelli et al., 2021). This biological fact adds to age-related infertility, which raises the risk of chromosomal abnormalities and miscarriage while decreasing the chance of conception (Bühler, 2021). While everyone's age at which fertility starts to fall is different, it is generally agreed that fertility starts to decline dramatically after the age of 35 (Demirkol, 2021). The complex variables affecting age-dependent reproductive dynamics are examined in this study, including oocyte quality, hormonal fluctuations, and the effects of ageing on both male and female partners (Derry, 2022). Comprehending the complex interactions among these factors is essential for making well-informed decisions regarding family planning and can direct the creation of fertility preservation plans for those who wish to become parents at a later age. Furthermore, this study adds to the larger discussion on family planning education, societal trends, and the improvement of reproductive healthcare for women in all age groups (Davidson et al., 2022).

The Screening and Diagnosis of Fertility

Crucial components of reproductive healthcare are fertility screening and diagnosis, which direct the discovery of underlying issues that may obstruct conception (Rasmussen et al., 2022). To effectively personalize therapies and support individuals or couples on their fertility journey, a thorough and accurate assessment is necessary (McGuire, 2021). This study assesses the state of screening and diagnostic approaches now in use, looking at their applicability, accessibility, and accuracy in a range of demographics (Chen et al., 2021). Alongside the development of assisted reproductive technologies, the study explores the application of cutting-edge instruments to improve diagnosis, including hormone tests, imaging methods, and genetic testing (Delot & Vilain, 2021). Additionally, the study intends to uncover sociocultural factors and discrepancies in healthcare access as potential impediments to early and correct diagnosis. Through a thorough analysis of current screening techniques and diagnostic procedures, this study advances the field of fertility-related medicine by promoting a more sophisticated comprehension of the complex nature of infertility and enhancing the overall reproductive outcomes for individuals and couples attempting to conceive (Chronopoulou et al., 2021).

Patient-centered Approaches

Reproductive healthcare increasingly recognizes patient-centered approaches to infertility as essential elements (Patra & Unisa, 2021). It is crucial to provide the complete well-being of individuals and couples navigating this journey priority because fertility issues can be emotionally and physically exhausting (D'Sa et al., 2023). This study examines how well patient-centred approaches meet the requirements and preferences of infertile individuals (Nagórska et al., 2021). It examines the effects of compassionate and individualized communication between patients and healthcare professionals, emphasizing emotional support, collaborative decision-making, and incorporating patient viewpoints into treatment planning. Furthermore, Meherali et al. (2021) assess how mental health services, support groups, and instructional materials might empower people dealing with infertility. Comprehending the psychosocial dimensions and inclinations of patients augments the creation of customized interventions, cultivating a more empathetic and comprehensive healthcare milieu. This research emphasizes the value of empathy, communication, and individualized care in reproductive healthcare settings, and it contributes to the ongoing efforts to improve the overall experience of individuals undergoing infertility treatments by shedding light on patient-centred approaches (Ismayilova, 2021).

Pharmacological Interventions for Fertility

Reproductive healthcare medicine includes pharmaceutical therapies for fertility as a significant component since they offer numerous ways to address underlying issues that may prevent pregnancy (Varlas et al., 2021). The purpose of this study is to evaluate the efficacy and safety of pharmacological treatments meant to increase fertility. These interventions include hormone therapy, ovulation-stimulating drugs, and pharmaceuticals for specific reproductive diseases like as endometriosis and polycystic ovarian syndrome (PCOS) (Palomba, Piltonen & Giudice, 2021). The purpose of this study is to evaluate the efficacy and safety of pharmacological treatments meant to increase fertility. These interventions include hormone therapy, ovulation-stimulating drugs, and pharmaceuticals for specific reproductive diseases like as endometriosis and polycystic ovarian syndrome (PCOS) (Palomba, Piltonen & Giudice, 2021). The goal of the study is to provide a comprehensive overview of the rates of effectiveness, mechanisms of action, and potential side effects associated with various drug treatments. Additionally, it looks into how these medications work with assisted reproductive technologies (ART), like intracytoplasmic sperm injection (ICSI) and in vitro fertilization (IVF). Additionally, the study looks at patient-centred variables like treatment adherence and the psychosocial impacts of medication on singles and couples. This study examines the available medications for fertility and offers important new information to medical professionals and patients. It supports innovations in the field of reproductive medicine and provides information for evidence-based decision-making.

Impact of PCOS on Fertility

A significant contributor to decreased fertility that impacts every aspect of the reproductive process is Polycystic Ovary Syndrome (PCOS) (Palomba, 2021). This research delves into the intricate relationship between PCOS and fertility, emphasizing the hormonal dysregulation that characterizes the condition, including elevated androgen levels and insulin resistance. These disruptions often lead to anovulation and irregular menstrual periods, which hinder the release of fully formed eggs needed for fertilization. The ovulatory process is made worse by the presence of several small cysts on the ovaries (Mimoune et al., 2021). The goal of the study is to clarify the exact mechanisms through which PCOS affects fertility by examining the relationship between the condition and illnesses like hyperinsulinemia and chronic inflammation. Furthermore, the study looks at how polycystic ovarian syndrome (PCOS) affects the results of assisted reproductive technologies (ART), offering insights into the challenges and potential solutions for PCOS-afflicted women receiving fertility treatments. To improve the diagnosis and treatment of infertility in individuals afflicted by this prevalent hormonal illness, a thorough understanding of the complex impact of PCOS on fertility is necessary to develop targeted and effective medicines.

Methods and Procedure

The study employs a qualitative methodology. To gather robust data for the study, a phenomenological technique was employed as the research strategy. The study used a snowball sampling technique to assess the participants. The criteria of the study sample are women diagnosed with PCOS. The study sample is taken from the Civil Hospital Karachi, females who are between 22 and 35 years old. While collecting the data, ethical measures were taken, and the anonymity of the actual record of the participants was ensured. The study followed the willingness of the participants, and they were given the freedom to quit at any time if they wished to. Semi-structured interviews were used for the collection of the data. The interviews were recorded and transcribed. The codes were generated, and themes were developed. The study used thematic analysis by following Braun and Clark's (2012) thematic analysis procedure. Themes were drawn objectively to explain phenomena. The researcher has ensured objective positionality in data collection and analysis.



Fig 1. Braun & Clark 2013, Thematic Analysis picture

The data analysis process, as outlined by Braun and Clarke in 2013, consists of six distinct steps and provides a comprehensive structure for doing qualitative research. In the first stage, researchers engage in a thorough review of the raw data to build a deep understanding of its content. This process is called data familiarization. Next, the second stage entails generating codes by identifying and assigning labels to crucial concepts and patterns. During the third phase, the codes are methodically classified into overarching themes. At this stage, the linked codes are combined to create a coherent story. The fourth stage in the research process entails the meticulous assessment of themes, emphasizing the need for researchers to thoroughly analyze the accuracy and relevance of the selected subjects. Once the themes have been established, the next step involves assessing their significance and examining the broader meanings and connections within the gathered material. The last stage of the research process is the dissemination of findings, wherein researchers proficiently elucidate their conclusions in a manner that is comprehensible and compelling, ensuring the study's importance and practicality. Employing a methodical approach in analyzing qualitative data ensures the maintenance of strictness and clarity, hence improving the trustworthiness and dependability of the research.

Results

The results of the study are very important regarding the reproductive health of women. The civil hospital Karachi authorities were approached for permission to collect data. All ethical measures were taken to ensure the ethics in research. Permission was sought from the head of the department and the relevant respondents.

PCOS is the Major Factor Contributing to Infertility

The results of the study are interesting. One of the respondents has shared very important detailed results regarding the factors contributing to infertility. The respondents shared their life experiences regarding their feelings after being diagnosed with PCOS which led to Infertility.

R1: "I was suffering from PCOS for many years. I have been trying to conceive.... for a decade but now become hopeless. Aaaaaa... the doctor gives me many medicines, after every visit but they seem useless. Aaaa (unhappy) Until I can't recover from PCOS, I can not be a mother... the doctors have disappointed me. Not only this, but I am also aaa... I am facing a delay in my menstrual cycle.

The interview transcription of the respondent expresses that PCOS is directly associated with infertility, hormonal imbalance, and delayed periods. PCOS leads to many health issues as well which impact the psychological

R2: " aaa..... PCOS was diagnosed 7 years ago... continuously I am visiting doctors.... aaaa... I am facing many health issues like heavy flow of blood during periods, and strong pain during the cycle.... It is a painful journey for me as a married women...

The transcription of the respondent expresses that PCOS continues for a long period. The patients visit doctors regularly, but the diagnosed disease has long-lasting effects on the mental as well as physical health of the diagnosed patients. They face severe health issues like heavy blood flow and, a strong sense of pain during the cycle and it is difficult for married women to face such issues.

R3: "I am a PCOS patient and fighting against infertility for 12 years aaaa... I conceived after 10 years. Wish I would not have been diagnosed with PCOS earlier..... I would have older kids today.

The respondent expresses that she has been fighting the disease for more than 12 years because of PCOS she conceived after continuous treatment for 10 years. PCOS is the main reason for the delayed pregnancy of 10 years.

R4: *"I have been trying to conceive for 2 years and tried different medicines, but the result was zero, then the doctor suggested some tests I was diagnosed with PCOS now I am on my way to controlling my PCOS.*

The respondent has shared very insightful details about her mental stress caused due to PCOS. She has expressed that for two years PCOS has been the major cause of her infertility. She has realized that conceiving is directly related to addressing PCOS.

R5: *"PCOS is common now out of 10, 4-5 women are PCOS patients, I am also facing this problem because endometriosis, UTI and PCOS combined make a hurdle in my journey to be a mother.*

The findings of research examining the correlation between Polycystic Ovary Syndrome (PCOS) and infertility in women shed light on a multifaceted interaction between physiological well-being. The analysis of the transcription suggests the intricate mechanisms via which Polycystic Ovary Syndrome (PCOS) may contribute to elevated levels of infertility.

As part of an effort to thoroughly examine the outcomes-oriented discourse, it is imperative to acknowledge that there is a strong relationship between polycystic ovary syndrome (PCOS) and infertility. Once PCOS is diagnosed, it is difficult for them to overcome and continuously face the issues related to their health issues. Furthermore, it is crucial to underscore the significance of adopting a holistic healthcare framework that incorporates therapies targeting both infertility and PCOS. The respondent's experiences regarding PCOS are varied regarding impacts on health but the major reason for the Engaging in such discussions enhances comprehension of the wider ramifications of Polycystic Ovary Syndrome (PCOS) beyond its physiological dimensions, hence facilitating the development of comprehensive and compassionate healthcare approaches.

Reproductive health affects fertility

The study's findings are intriguing. Significant insightful experiences have been recorded by the participants. How respondents' reproductive health has impacted their fertility was a common theme throughout their stories.

R1: *aaa... I am facinghormonal imbalance, and delayed periods for 5 years. I am infertile because of these reasons..... and have put me in a different situation for my married life. Doctors have said that fertility depends on reproductive health, including hormonal balance, period regularity, and reproductive system function.*

R2: *Reproductive health is overall complete physical, social, and mental well-being for meaaa...so in my situation, I am facing hormonal imbalance..... facial hair, my overweight and at the same time primary infertility.*

R3: *A lot of things matter..... which we ignore but when we are on our fertility journey..... each and everything should be on the path..... hormonal imbalance is a very common problem among women and results in infertility stress. I am also fighting against hormonal imbalance and improving my reproductive health.*

The respondents' experiences show that infertility is a complex phenomenon. The live experiences of the respondents covered the complex connection between general reproductive health and the capacity to become pregnant. Menstrual regularity, hormonal balance, and the effect of diseases like polycystic ovarian syndrome (PCOS) on reproductive results were among the aspects that participants highlighted as being important. The discussion emphasised the significance of mental health and the necessity of a comprehensive strategy for reproductive health that includes lifestyle decisions, medical interventions, and treatments. In sharing their individual stories, the respondents shed light on the difficulties they encountered and the methods they used to deal with reproductive health-related concerns. In summary, the transcription provided a sophisticated comprehension of the relationship between reproductive health and fertility, underscoring the significance of comprehensive treatment for those wishing to become parents.

Discussion

The interview transcriptions yielded significant insights into the profound influence of Polycystic Ovary Syndrome (PCOS) on women's fertility. Respondents repeatedly reported a common theme, connecting PCOS with delayed menstrual cycles, increased blood flow, and persistent pain during menstruation. The physical symptoms highlight the disruptive impact of PCOS on the menstrual cycle, presenting substantial obstacles for women trying to get pregnant.

Moreover, the interviews shed light on the sometimes disregarded emotional and psychological burden that PCOS imposes on women, particularly within the framework of their marital relationships. The participants expressed feelings of emotional vulnerability and psychological discomfort resulting from the challenges of controlling PCOS and its impact on fertility. The combination of dealing with fertility difficulties and the emotional toll it takes puts a significant weight on their general state of well-being, affecting not just their mental health but also their marital relationships.

The interviews emphasize the emotional and psychological elements of PCOS, indicating the necessity of a comprehensive strategy for managing the condition that recognizes the interdependence of physical and mental health. This debate emphasizes the significance of considering both the physiological and psychological aspects while dealing with fertility problems associated with PCOS. In conclusion, the results obtained from analyzing the interview transcriptions highlight the complex and diverse characteristics of PCOS and its significant influence on the reproductive abilities of women affected by the condition. The observed physical manifestations, such as prolonged intervals between menstrual cycles, excessive blood discharge, and discomfort during menstruation, were repeatedly documented, corroborating the findings of established medical literature on Polycystic Ovary Syndrome (PCOS). Nevertheless, the interviews delved into more than just the physiological aspects, revealing the emotional and psychological challenges experienced by women coping with PCOS, particularly concerning their efforts to conceive.

Conclusion

Ultimately, the findings from the transcriptions of the interviews shed light on the varied nature of polycystic ovary syndrome (PCOS) and the devastating influence it has on the fertility of women who are affected by it. Physical symptoms, such as menstrual pain, high blood flow, and delayed menstrual cycles, were regularly reported, which is congruent with the medical literature that is currently available on polycystic ovary syndrome (PCOS). The interviews, on the other hand, went beyond the physiological aspects and shed light on the emotional and psychological problems that women who cope with PCOS confront, particularly in the context of their attempts to make a pregnancy.

According to the findings of this study, it is essential to take a holistic and integrated approach to the therapy of polycystic ovary syndrome (PCOS), which includes both medical interventions and psychological assistance. It is essential to address the emotional well-being of women who have polycystic ovary syndrome (PCOS) to improve their overall reproductive health and to build healthier relationships within marriage. To move forward, healthcare professionals and policymakers must acknowledge the complex relationship that exists between polycystic ovary syndrome (PCOS), fertility, and mental health. This will allow for the development of more effective interventions that provide women with holistic support on their journey toward conception and overall well-being.

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