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Ovary Syndrome in Female Patients Visiting the Obstetrics and Gynecology Department of Abu Ali Sina Regional Teaching Hospital in Balkh Province in 2024

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Abstract: Polycystic Ovary Syndrome (PCOS) is one of the most common hormonal disorders in women of reproductive age, with significant effects on physical and psychological health. This study aims to investigate the prevalence and clinical characteristics of PCOS in women attending the Obstetrics and Gynecology service at Abu Ali Sina Regional Teaching Hospital, Balkh. In this descriptive-analytical study, 40 women were randomly selected, and clinical symptoms and demographic characteristics were collected through medical records. The results showed that 65% of participants experienced irregular menstruation, 55% had weight gain, and 45% experienced hirsutism. Additionally, the mean age of participants was 28 years, with a mean body mass index (BMI) of 25.7, indicating a relatively high weight status in this population. Data analysis was performed using various statistical tests. The independent t-test indicated a significant difference between BMI and the severity of PCOS symptoms ($p = 0.004$). The chi-square test showed a significant relationship between marital status and the prevalence of PCOS ($p = 0.032$). The Pearson correlation test also revealed a weak positive correlation between age and the severity of symptoms ($p = 0.045$). These findings highlight that PCOS significantly impacts women's quality of life and emphasizes the need for greater attention to the diagnosis and management of this disorder. The results of this study can assist healthcare providers in early detection and effective treatment. Finally, this research can serve as a source for improving healthcare services in the field of PCOS and underscores the necessity of further studies in this area. Better identification of symptoms and patient needs can greatly contribute to improving their quality of life and reducing the complications associated with this disorder.

Keywords: prevalence, clinical symptoms, irregular menstruation, quality of life, mental health.

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INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine disorders among women of reproductive age worldwide. The disease was first described by Stein and Leventhal in 1935. Its prevalence ranges from 5% to 15%, depending on the diagnostic criteria applied.

According to reputable specialty guidelines, the diagnosis of PCOS should be based on the presence of at least two of the following three criteria: chronic anovulation, hyperandrogenism (clinical or biological), and polycystic ovaries. It is a diagnosis of exclusion, meaning other conditions with similar symptoms must be ruled out. These conditions include thyroid disorders, hyperprolactinemia, and non-classical congenital adrenal hyperplasia. Some patients may require further evaluation depending on their symptoms(Peterson & colleagues, 2011).

Despite its high prevalence, PCOS is often underdiagnosed, with many patients requiring multiple visits or consultations with different doctors before being identified, a process that typically takes over a year. This delay can be frustrating for the patient. Delays in diagnosis may lead to the progression of associated comorbidities, making it more challenging to implement lifestyle interventions, which are critical for improving the symptoms of PCOS and overall quality of life (spinedi, 2018).

PCOS is associated with several comorbidities, including infertility, metabolic syndrome, obesity, impaired glucose tolerance, type 2 diabetes, increased cardiovascular risk, depression, obstructive sleep apnea, endometrial cancer, and non-alcoholic fatty liver disease/non-alcoholic steatohepatitis (NAFLD/NASH). Specific screening recommendations exist for each of these conditions, but clinicians must have a low threshold for further investigations when any manifestation is present in PCOS patients(servin, 2020).

Problem Statement

Polycystic Ovary Syndrome (PCOS) is one of the most common hormonal disorders in women, particularly in those of reproductive age, and has become a significant public health challenge. Given the high prevalence of this disorder and its impact on the quality of life of women, gaining a better understanding of its characteristics, symptoms, and complications is essential.

At the Abu Ali Sina Educational Regional Hospital in Balkh, many women visit the obstetrics and gynecology service with symptoms related to PCOS. However, there is insufficient information regarding the prevalence and clinical characteristics of this disorder in

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this specific population. This lack of information can lead to misdiagnosis and inappropriate treatment.

Therefore, this study aims to identify the prevalence and clinical characteristics of Polycystic Ovary Syndrome in women visiting this healthcare facility. Additionally, the study will explore the psychological and social impacts of the disorder and the treatment needs of these patients.

The primary objective of this research is to increase awareness about PCOS and provide scientific data to improve diagnosis and treatment in healthcare centers. In this way, the findings of this study can contribute to the enhancement of healthcare services and the reduction of complications associated with this disorder.

LITERATURE REVIEW

Polycystic Ovary Syndrome (PCOS) is a complex endocrine disorder, particularly prevalent in women of reproductive age. This disorder is characterized by a combination of clinical and metabolic symptoms and has significant physical and psychological impacts on women's health. In recent years, numerous studies have investigated the prevalence, causes, and complications associated with PCOS.

McKinnon *et al.* (2015) conducted a study in Australia to examine the prevalence of PCOS in young women, reporting a prevalence of approximately 8%. The results indicated that common symptoms included irregular menstruation, weight gain, and skin issues such as acne and hirsutism. This study emphasized the importance of early diagnosis and proper management of the disorder.

Brooks *et al.* (2018) in the United States examined the relationship between PCOS and metabolic problems such as type 2 diabetes and cardiovascular diseases. Their study revealed that women with PCOS are at a higher risk for these issues, suggesting that prevention and treatment strategies should be specifically designed for this group.

Sarvin *et al.* (2020) in Iran studied the prevalence of PCOS in women attending gynecology clinics and found it to be around 10%. Additionally, the study addressed the psychological impacts of the disorder on the patients' quality of life, revealing that many women with PCOS suffer from anxiety and depression.

Harley *et al.* (2016) in Canada conducted a study examining fertility issues in women with PCOS. The results showed that 12% of women with this disorder faced challenges with pregnancy, underscoring the need for fertility considerations in PCOS management.

Peterson *et al.* (2019) in Sweden investigated the psychological impacts of PCOS, finding that women with the disorder typically report higher levels of anxiety and depression. These findings highlight the importance of psychological counseling and social support for these patients.

Johnson *et al.* (2021) in the United Kingdom studied the prevalence of PCOS among Black women, showing that the prevalence of this disorder is higher in this group compared to Caucasian women. This finding emphasizes the need to consider ethnic and racial differences in PCOS-related research.

Zeynep *et al.* (2017) in Turkey examined the nutritional effects on PCOS symptoms, demonstrating that dietary changes could help improve symptoms. This study highlighted the importance of proper nutrition as part of PCOS management.

Khalili *et al.* (2022) in India studied the prevalence of PCOS in different populations and identified genetic and environmental factors contributing to the onset of this disorder. This research emphasized the significance of multi-faceted studies to better understand PCOS across diverse populations.

These studies collectively underscore the importance of early diagnosis, management, and comprehensive care for women with PCOS, emphasizing the need for tailored treatment strategies addressing the diverse symptoms and impacts of this disorder.

Symptoms of Polycystic Ovary Syndrome (PCOS)

The symptoms of Polycystic Ovary Syndrome (PCOS) include the following:

1. Irregular or missed periods: This can include light periods or irregular menstrual cycles.
2. Enlarged ovaries with multiple cysts: Ovaries that appear larger than usual and contain many cysts.
3. Excessive hair growth (Hirsutism): Increased hair growth on areas like the chest, stomach, and back.
4. Weight gain, particularly around the abdomen.
5. Fertility problems or infertility: Difficulty in getting pregnant due to hormonal imbalances.
6. Oily skin and acne: Excess oil production on the skin leading to breakouts.
7. Hair thinning or male-pattern baldness: Thinning hair, especially on the scalp, or hair loss similar to male-pattern baldness.
8. Skin tags: Small pieces of extra skin growing on the neck or under the arms.
9. Darkened or thickened patches of skin: Patches of dark or thickened skin that can appear on the back of the neck, under the arms, and under the breasts(Carvalho, et, al, 2018).

Diagnosis of Polycystic Ovary Syndrome (PCOS)

A gynecologist will ask about your medical history and the symptoms you have experienced in the

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past and present. During the visit, the doctor will also perform a physical examination. It is likely that a pelvic exam will be conducted as well. This exam assesses the health of your reproductive organs, both internally and externally. Some of the symptoms of PCOS may overlap with symptoms of other health conditions. Therefore, the following tests may be recommended:

- **Ultrasound**: Used to check the size of the ovaries and detect cysts. This test can also assess the thickness of the uterine lining (endometrium).
- **Hormonal blood tests**: This test looks for elevated levels of androgens and other hormones. Hormonal testing is crucial in diagnosing PCOS. The doctor may also test blood glucose levels as part of the diagnostic process. Additionally, triglyceride and cholesterol levels may be checked to assess metabolic function (Hallajzadeh, *et al.*, 2018).

Symptoms of Polycystic Ovary Syndrome (PCOS)

The symptoms of Polycystic Ovary Syndrome (PCOS) include the following:

1. Irregular periods: This can include missed periods, very light periods, or infrequent cycles.
2. Enlarged ovaries with many cysts: The ovaries may appear larger than usual, and there may be multiple cysts.
3. Excess hair growth (hirsutism): This includes unwanted hair on areas such as the chest, abdomen, and back.
4. Weight gain: This is particularly noticeable around the abdomen.
5. Fertility issues or infertility: Difficulty in becoming pregnant is common in women with PCOS.
6. Oily skin and acne: Increased oil production in the skin can lead to acne breakouts.
7. Male-pattern hair loss: Thinning hair or hair loss on the scalp in a pattern typically seen in men.
8. Skin tags: Small pieces of excess skin that grow on the neck or under the arms.
9. Darkened or thickened skin patches: These may appear on the back of the neck, underarms, or beneath the breasts (khalili & colleagues, 2022).

Complications of Polycystic Ovary Syndrome (PCOS)

Women with Polycystic Ovary Syndrome (PCOS) are at a higher risk of developing serious health problems compared to those without the condition. Some of the conditions that are more likely to affect women with PCOS include:

- Type 2 Diabetes: Women with PCOS are more prone to insulin resistance, which can lead to type 2 diabetes.
- High Blood Pressure (Hypertension): The condition is linked to an increased risk of high blood pressure.
- Cardiovascular Problems: Women with PCOS have a higher risk of heart disease and other cardiovascular conditions due to factors like obesity, diabetes, and hypertension.
- Endometrial Cancer: PCOS increases the risk of cancer in the lining of the uterus (endometrial cancer), especially if periods are irregular.
- Fertility Problems: Women with PCOS often struggle with infertility or difficulty getting pregnant due to irregular ovulation or lack of ovulation.

These complications highlight the importance of early diagnosis and treatment to manage symptoms and reduce the risk of more severe health issues. Regular check-ups with a healthcare provider can help monitor and address these concerns(maya, *et al.*, 2018).

RESEARCH METHODOLOGY

This research will be conducted in a descriptive-analytical manner, aiming to investigate the prevalence and clinical characteristics of Polycystic Ovary Syndrome (PCOS) in women visiting the Obstetrics and Gynecology Department of Abu Ali Sina Teaching Hospital in Balkh Province. The target population for this study includes all women visiting the Obstetrics and Gynecology department at this hospital during the year 1402.

The sampling method used is random and non-probability, with a total of 40 women selected for the study. Data will be collected through patient records, and subsequent analysis will be carried out to assess the clinical features and prevalence of PCOS in the selected sample.

The results of this research will help to understand the extent of PCOS among women in this specific population and provide valuable insights for better diagnosis and treatment planning.

Data Analysis

Table 1: Descriptive Statistics

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Age (years)	28	27	5.4	18	40
Weight (kg)	70	68	12.3	50	100
Height (cm)	165	164	6.2	150	180
Body Mass Index (BMI)	25.7	25.1	3.1	18.5	35
Number of Menstrual Cycles per Year	6	7	2.5	3	12
Androgen Hormone Level (ng/dL)	55	50	10.4	30	90

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Table 1 presents the descriptive statistics that highlight key characteristics of the study population. The mean age of the participants is 28 years, and their average weight is 70 kilograms, reflecting a wide range of ages and body weights within the group. The mean height is 165 centimeters, and the average Body Mass Index (BMI) is 25.7, indicating a relatively high weight status in the population.

The mean number of menstrual cycles per year is 6, which suggests irregular menstruation in these women, a common feature of PCOS. The average androgen hormone level is 55 ng/dL, which falls within a range likely associated with the clinical symptoms of PCOS.

These data help identify important patterns and trends within the population with PCOS. The relatively high standard deviations for weight and the number of menstrual cycles per year indicate considerable variation in these characteristics, suggesting the potential for differing treatment needs among the participants. The information gathered from this analysis can enhance our understanding of the clinical status of women with PCOS and guide the development of appropriate therapeutic interventions.

Table 2: Prevalence of PCOS Symptoms

Symptom	Frequency (%)
Irregular menstruation	65
Weight gain	55
Hirsutism	45
Acne	40
Hair loss	30
Fertility issues	25

Table (2) illustrates the prevalence of symptoms of Polycystic Ovary Syndrome (PCOS) among the participants. Irregular menstruation, being the most common symptom with a frequency of 65%, indicates the significant impact of this disorder on women's menstrual cycles. This symptom could be considered as one of the key criteria for diagnosing PCOS.

Weight gain, with a prevalence of 55%, and hirsutism (excessive hair growth), at 45%, rank next. These signs clearly demonstrate the relationship of the disorder with hormonal and metabolic changes. Additionally, acne (40%) and hair loss (30%) are also common symptoms that can affect the quality of life of patients. Fertility problems, with a 25% frequency, highlight the serious impact of PCOS on women's ability to conceive. These data can assist physicians in better diagnosing and managing this disorder.

Table 3: Statistical Tests

Test	Variable 1	Variable 2	p-value	Result
Independent t-test	BMI	Severity of PCOS symptoms	0.004	Significant difference
Chi-square test	Marital status	PCOS prevalence	0.032	Significant relationship
Pearson correlation	Age	Severity of symptoms	0.045	Weak positive correlation
ANOVA	Age	Number of menstrual cycles	0.021	Significant difference
Chi-square test	Androgen level	Hirsutism	0.015	Significant relationship

Table (3) of Inferential Statistics presents the results of various statistical tests that examined the relationships and significant differences between variables in the PCOS-affected population. The independent t-test results show a significant difference between BMI and the severity of PCOS symptoms ($p = 0.004$), indicating that an increase in BMI may lead to a worsening of the symptoms of this disorder. Additionally, the Chi-square test shows a significant relationship between marital status and the prevalence of PCOS ($p = 0.032$), which may suggest the social and psychological impacts of the disorder on married women.

Furthermore, the Pearson correlation test reveals a weak positive correlation between age and the severity of PCOS symptoms ($p = 0.045$), meaning that as age increases, the severity of symptoms may also increase. The ANOVA test results indicate a significant difference between age and the number of menstrual cycles per year ($p = 0.021$), highlighting the impact of age on menstrual patterns. Finally, the Chi-square test between androgen levels and hirsutism shows a significant relationship ($p = 0.015$), confirming the effect of androgen hormones on the development of hirsutism. These results contribute to a better understanding of the clinical aspects of PCOS and its management.

RESULTS

The results of this study focus on examining the prevalence and clinical characteristics of polycystic ovary syndrome (PCOS) among women attending the Obstetrics and Gynecology service at the Abu Ali Sina Provincial Educational Hospital in Balkh. The findings include descriptive statistics, the prevalence of symptoms, and results from inferential statistical tests, as follows:

Descriptive Statistics

1. Age: The mean age of participants was 28 years with a standard deviation of 5.4 years.
2. Weight: The mean weight was 70 kg with a standard deviation of 12.3 kg.
3. Height: The mean height was 165 cm with a standard deviation of 6.2 cm.

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4. Body Mass Index (BMI): The mean BMI was 25.7 with a standard deviation of 3.1.
5. Number of Menstrual Cycles: The average number of menstrual cycles per year was 6.
6. Androgen Hormone Level: The mean level of androgen hormone was 55 ng/dL with a standard deviation of 10.4 ng/dL.

Table 2 presents the prevalence of PCOS symptoms among participants:

- Irregular Menstruation: 65%
- Weight Gain: 55%
- Hirsutism: 45%
- Acne: 40%
- Hair Loss: 30%
- Fertility Problems: 25%

The most common symptom was irregular menstruation, indicating a significant impact of this disorder on the menstrual cycle of women.

Results of Statistical Tests:

- **Independent t-test:** A significant difference was found between BMI and the severity of PCOS symptoms ($p = 0.004$).
- **Chi-square test:** A significant relationship was observed between marital status and the prevalence of PCOS ($p = 0.032$).
- **Pearson Correlation Test:** A weak positive correlation was found between age and the severity of symptoms ($p = 0.045$).
- **ANOVA:** A significant difference was found between age and the number of menstrual cycles per year ($p = 0.021$).
- **Chi-square test:** A significant relationship was found between androgen hormone levels and hirsutism ($p = 0.015$).

These results highlight significant differences and relationships between various variables in the PCOS-affected population, contributing to a better understanding of the clinical characteristics of this disorder.

DISCUSSION

Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine disorders in women, particularly during their reproductive years. Over recent years, it has attracted significant attention due to its widespread impact. Despite extensive research in this field, significant challenges and debates remain regarding the diagnosis, prevalence, and management of this disorder.

1. **Prevalence and Diagnosis**
   Numerous studies, including those by McKinnon *et al.* (2015) and Servin *et al.* (2020), report a high prevalence of PCOS in various populations. However, there are considerable differences in the data, which can be attributed to the use of different diagnostic criteria and the cultural and social diversity within different populations. These differences can lead to misdiagnosis and inadequate treatments. The variability in diagnostic standards further complicates efforts to establish a universal approach to diagnosing and managing PCOS.

2. **Symptoms and Clinical Features**
   While multiple symptoms are associated with PCOS, such as irregular menstruation and hirsutism, studies like that of Brock *et al.* (2018) suggest that these symptoms can vary widely and are influenced by environmental and genetic factors. The diversity of symptoms may make it challenging for clinicians to diagnose and manage this disorder effectively. Furthermore, the range of symptoms experienced by patients can lead to delays in diagnosis, resulting in inadequate care and treatment plans.

3. **Psychological and Social Impacts**
   Research such as the study by Peterson *et al.* (2019) indicates that PCOS can have significant psychological impacts, including increased rates of depression, anxiety, and diminished quality of life. However, attention to these psychological aspects in the clinical management of PCOS remains insufficient. A more holistic approach to treatment, which addresses the emotional and social aspects of the disorder, is crucial. In addition to physical treatment, supporting patients in managing the mental health challenges associated with PCOS should be a key component of care.

4. **Need for Effective Treatment Strategies**
   In conclusion, while progress has been made in understanding PCOS, addressing the complexities of its diagnosis, symptoms, psychological impacts, and treatment remains a significant challenge. A multidisciplinary approach that encompasses medical, psychological, and social dimensions is essential for improving the quality of care and outcomes for women affected by PCOS.

CONCLUSION

Polycystic Ovary Syndrome (PCOS), as one of the most common hormonal disorders in women, has profound effects on the physical and psychological health of patients. This study investigated the prevalence and clinical characteristics of PCOS among women visiting the Obstetrics and Gynecology department of Abu Ali Sina Regional Teaching Hospital in Balkh, and the results highlight the importance of addressing this disorder in healthcare centers.

The findings indicate that symptoms of PCOS, such as irregular menstruation and weight gain, are significantly prevalent in the studied population. Additionally, the statistical tests reveal meaningful relationships between various variables, including age

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and symptom severity, as well as the impact of BMI on the intensity of PCOS symptoms.

Given these results, it is essential for healthcare providers, particularly in less-developed areas, to give greater attention to the identification and management of PCOS. Furthermore, increasing public awareness about this disorder and its symptoms could assist in early diagnosis and more effective treatment of patients.

Ultimately, this research can serve as an informational resource to improve healthcare services related to PCOS and underscores the need for further studies in various aspects of this disorder.

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