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PREVALENCE, SYMPTOMATOLOGY, AND PERCEPTION OF POLYCYSTIC OVARY SYNDROME (PCOS) AMONG UNIVERSITY STUDENTS: A CROSS-SECTIONAL STUDY AT THE UNIVERSITY OF CHENAB, GUJRAT

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Abstract

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder among women of reproductive age, characterised by hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology, and is associated with substantial metabolic, reproductive, and psychological morbidity. Despite its high prevalence, awareness of PCOS and its associated risk factors remains limited, particularly among young women in developing countries such as Pakistan. This study aimed to assess the level of awareness, symptom burden, perceived causes, and health-seeking behaviour related to PCOS among students at the University of Chenab, Gujrat, and to evaluate the psychological and lifestyle factors associated with the condition. A cross-sectional,

perception-based survey was conducted using a structured, self-administered questionnaire comprising closed- and open-ended items covering demographic characteristics, awareness, menstrual and dermatological symptoms, metabolic and reproductive complaints, dietary habits, perceived causes, psychological impact, and healthcare-seeking and treatment practices. Data were collected from a simple random sample of 100 students drawn from various departments of the Gujrat campus of the University of Chenab and were analysed using descriptive statistics along with multivariate analysis of variance and correlation tests. The results indicated a moderate level of awareness of PCOS, with a substantial proportion of respondents reporting menstrual irregularities, dermatological symptoms, weight-related concerns, and psychological distress such as stress and depression. Hormonal imbalance and poor dietary habits were the most commonly perceived causes, while healthcare-seeking and treatment uptake remained comparatively low. These findings highlight persistent gaps between symptom experience and clinical management and underscore the need for targeted awareness campaigns, early screening, and accessible reproductive health education among university-going women.

1. INTRODUCTION

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder affecting women of reproductive age, with a global prevalence estimated at 5–20%. It is characterized by three core features: hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology (PCOM) on ultrasound, with excessive ovarian androgen production being a central feature of the disorder. A diagnosis is usually suspected when a patient presents with at least two of the following: oligo/anovulation, hyperandrogenism, and polycystic ovaries. Metabolic dysfunction chiefly insulin resistance with compensatory hyperinsulinaemia is present in the majority of affected women, and PCOS raises the lifetime risk of type 2 diabetes, gestational diabetes, venous thromboembolism, cardiovascular disease, and endometrial cancer (Stener-Victorin et al., 2024; Bai, Ding, & Wang, 2024).

The disorder is also strongly associated with psychological impairment, including depression and mood disorders, which are closely linked to the underlying metabolic derangement. Most affected women are overweight or obese, a state that further enhances androgen secretion while impairing reproductive and metabolic function. In normal physiology, circulating androgens arise from a combination of adrenal and ovarian secretion and peripheral conversion in fat and skin, and both their production rate (PR) and metabolic clearance rate (MCR) vary with age and physiological status. Women with PCOS, particularly those who are obese, show higher production rates of testosterone and androstenedione alongside altered clearance, which helps explain the persistent hyperandrogenaemia seen in the condition (Bulsara, Patel, Soni, & Acharya, 2021; Kempegowda, Melson, Manolopoulos, Arlt, & O'Reilly, 2020).

Clinically, PCOS presents with irregular or missed periods, hirsutism, acne, male-pattern hair thinning, weight gain, acanthosis nigricans, fatigue, mood swings, insulin resistance, and infertility. Its exact cause remains unknown, but insulin resistance, low-grade inflammation, heredity, and excess androgen production are considered the principal contributing factors. Insulin resistance forces the pancreas to secrete more insulin, which in turn drives excess androgen production and disrupts ovulation; heredity and family history further predispose certain women to the condition (Chaudhuri, 2023; Bai et al., 2024).

PCOS is not a single uniform disorder — it is commonly classified into four overlapping phenotypes: insulin-resistant

PCOS, inflammatory PCOS, post-pill PCOS, and adrenal PCOS. Each subtype has a distinct pathophysiological driver — hyperinsulinaemia, chronic low-grade inflammation, temporary hormonal disruption following discontinuation of oral contraceptives, and elevated adrenal DHEA-S output, respectively — and each carries a partly distinct symptom profile, though all converge on the same downstream hormonal imbalance (Xu & Qiao, 2022; Kałuźna et al., 2020; Forslund et al., 2023; Ye, Xie, Song, & Zhou, 2021).

If left unmanaged, PCOS carries important early- and long-term complications. Early complications include infertility — reported in up to 50% of affected women as primary infertility — and obstetric complications related to comorbid obesity and insulin resistance. Long-term risks include an elevated cardiovascular risk profile (hypertension, dyslipidaemia, and raised inflammatory markers such as CRP), an increased risk of endometrial, ovarian, and breast cancer, and a high prevalence of overweight and obesity that compounds all of the above risks (Stener-Victorin et al., 2024).

Diagnosis relies on a combination of clinical history, physical and pelvic examination, transvaginal ultrasound to assess ovarian size and morphology, and blood tests for androgens, glucose, and lipid profile (Rachana et al., 2021). Management is correspondingly multi-pronged: lifestyle modification (diet and exercise) is recommended as first-line therapy regardless of fertility goals; oral contraceptives are used for long-term symptom control in women not seeking pregnancy; and ovulation-inducing agents such as clomiphene citrate, letrozole, and gonadotropins are used for those seeking fertility. Insulin-sensitising agents such as metformin remain central to managing the metabolic dimension of the disease, while newer agents including incretin mimetics and SGLT2 inhibitors are increasingly used for weight and cardiovascular risk reduction. Because no treatment cures PCOS outright, long-term, individualised management remains the mainstay of care (Artini et al., 2010; Ee, Pirotta, Mousa, Moran, & Lim, 2021).

This project examines the prevalence and public perception of PCOS among students at the University of Chenab, with the aim of assessing awareness levels, common symptom patterns, lifestyle contributors, and attitudes toward diagnosis and treatment within this population.

1. Material and Methodology

1.1 Type of Research

Methodology plays an important role in applied research. To achieve objectives and find the answer to a research question, an appropriate research method is always used.

I used a quantitative research methodology for my research because it is a structured, predetermined methodology that is reliable for my objectives and clearly explains my opinion and the nature of the issue. According to this methodology, my results are necessary and verifiable.

1.2 Population

In this study I wanted to find the prevalence of PCOS in Gujrat city. My population was Gujrat City, but due to a shortage of time I gathered perceptions about the prevalence of PCOS from the University of Chenab. My target population is the University of Chenab, and my sampled population, from where I took samples, is the Gujrat Campus of the University of Chenab.

1.3 Sample Size

I took 100 samples because, due to the shortage of time, I was unable to take a larger sample and draw conclusions on the basis of a large sample.

1.4 Sampling Scheme

In my study, the Simple Random Sampling technique was applied. Since the Gujrat Campus formed my population, I selected 100 samples through simple random sampling drawn from a range of different academic departments across the campus, including Statistics, Mathematics, Physics, Computer Science, Pharmacy, Islamic Studies, DPT, and BDNS, so that the resulting data reflected the perceptions of students from multiple disciplines rather than a single field of study.

1.5 Data Collection Tool

A data collection tool is helpful for research because it presents a clear picture of the work being carried out and helps to gather information, clarify the process, and identify appropriate methods. Through a systematic data collection tool, one can obtain good and accurate results for a research study. To obtain more accurate and appropriate results, a variety of data collection tools can be used; broadly, there are six types of data collection tools, namely the questionnaire, interview, focus group discussion, observation, e-mail, and surveys. For this study, I used the method of a questionnaire to collect data, because it offers a structured approach; due to the shortage of time, I was unable to interview 100 people individually and then collect their responses. The questions were framed on a five-point ordinal scale with the categories strongly disagree, disagree, neutral, agree, and strongly agree, alongside a number of categorical yes/no/maybe and short-answer items covering the areas described below.

1.6 Questionnaire

The complete research instrument administered to the 100 respondents of this study, reproduced here as originally circulated, is set out below.

PCOS (Polycystic Ovarian Syndrome)

I, Maham Amjad Khan, and my group members (Anum, Afshan, Hadiya, Jannat, Muskan and Romesa) are conducting a research about females having symptoms and are unidentified or identified. We are also spreading awareness about PCOS. Kindly share your views. We assure you that all the information will remain confidential and will only be used for research purposes. Thank you in advance for your participation.

Section 1: Demographic Information

Demographic information refers to statistical information about a population, including characteristics such as age, gender, ethnicity, income, education level, marital status, occupation, and geographic location. Demographic data is often collected through surveys and censuses.

1. **Name** *(Short-answer text)*
2. **Age** *(20–30 / 30–40 / Above 40)*
3. **Gender** *(Female / Male / Other)*
4. **Weight** *(Below 40 / 40–50 / 50–60 / 60–70 / Above 70)*
5. **Marital status** *(Unmarried / Married / Divorced / Widow)*

Section 2: Awareness of PCOS

6. **Have you ever heard about PCOS?** *(Yes / No / Maybe)*
7. **If yes, from where?** *(Friend or colleague / Newspaper / TV / Other)*

Section 3: Signs and Symptoms of PCOS

Let's check through signs and symptoms if you have PCOS or not.

8. **Are your periods unpredictable?** *(Yes / No / Maybe)*
9. **Do you face a large gap in your menstrual cycle?** *(Yes / No / Maybe)*
10. **Are your periods heavy and do they last longer than a week?** *(Yes / No / Maybe)*
11. **Do you face severe menstrual cramps during your periods?** *(Yes / No / Maybe)*
12. **Are you facing any other periods-related problem?** *(Short-answer text)*
13. **Do you have excessive hair growth on different parts of the body?** *(Yes / No / Maybe)*
14. **Do you face excessive acne and oily skin issues?** *(Yes / No / Maybe)*
15. **Do you have excessive hair loss from the scalp?** *(Yes / No / Maybe)*

16. **Are you dealing with excessive weight gain issues?** *(Yes / No / Maybe)*
17. **Do you have insulin resistance?** *(Yes / No / Maybe)*
18. **Are you facing infertility issues?** *(Yes / No / Maybe)*
19. **Does PCOS affect milk production?** *(Yes / No / Maybe)*
20. **Are you facing any other health-related complications?** *(Short-answer text)*
21. **Are you vegetarian or non-vegetarian?** *(Short-answer text)*
22. **Do you have anaemia (blood deficiency)?** *(Yes / No / Maybe)*
23. **Do you have proper dietary habits?** *(Yes / No / Maybe)*
24. **Which type of food do you like?** *(Fast food / Milk products / Other)*

Section 4: Causes of PCOS

Let's see what can be the cause of PCOS in your opinion.

25. **Do you think PCOS is related to family history?** *(Yes / No / Maybe)*
26. **Do you think PCOS is caused by poor diet?** *(Yes / No / Maybe)*
27. **Do you think it's caused by hormonal imbalance?** *(Yes / No / Maybe)*
28. **Do you think stress or anxiety can also be a cause of PCOS?** *(Yes / No / Maybe)*

Section 5: Psychological and Social Impact

29. **Concerned about being overweight?** *(Yes / No / Maybe)*
30. **Concerned about infertility problems?** *(Yes / No / Maybe)*
31. **Do you think PCOS can occur in divorced and widowed women as well?** *(Yes / No / Maybe)*
32. **If yes, then what can be the cause of PCOS in divorced and widowed women?** *(Insulin resistance / Hormonal changes / Environmental factors / All of these / No idea)*

Section 6: Healthcare-Seeking Behaviour

33. **Have you started any treatment as a result of having any of these PCOS-related problems?** *(Yes / No / Maybe)*
34. **Have you consulted any healthcare professional as a result of having any of these symptoms?** *(Yes / No / Maybe)*

Section 7: Treatment and Lifestyle Modification

35. **Are you using some kind of medication to treat PCOS-related problems?** *(Yes / No / Maybe)*

36. Which medication are you using for treating these problems? *(Short-answer text)*

37. Have you adopted some kind of lifestyle modification to treat PCOS-related problems? *(Yes / No / Maybe)* **38. If yes, then what is it?** *(Short-answer text)*

39. Is folic acid medication normally used in the treatment of PCOS or related problems? *(Yes / No / Maybe)*

1.7 Hypothesis

Polycystic Ovary Syndrome (PCOS) is a complex hormonal disorder affecting women of reproductive age, characterized by various symptoms such as irregular menstrual cycles, excess hair growth, weight gain, and hormonal imbalances. The research conducted in this study aims to explore the prevalence and associated factors of PCOS among women across different age groups, weight categories, affected symptoms, lifestyle habits, and psychological concerns.

The first observation pertains to age demographics, suggesting a higher prevalence of PCOS in women aged 30 to 40, with a significant increase in occurrence in the post-menopausal phase, indicating a potential hormonal influence throughout different life stages. This implies a need for early detection and management strategies, especially in younger age groups, to mitigate long-term complications.

Furthermore, the association between weight and PCOS is evident, with a progressive increase in PCOS prevalence observed as weight category rises. This underscores the interplay between metabolic factors, obesity, and hormonal dysregulation in the pathogenesis of PCOS. Addressing weight management through lifestyle interventions and dietary modifications may serve as crucial therapeutic approaches in PCOS management.

The study also explores various symptoms associated with PCOS, including menstrual irregularities, heavy periods, unpredictable cycles, and severe menstrual cramps. These symptoms not only impact reproductive health but also contribute to psychological distress, as evidenced by the prevalence of depression and concerns about infertility among affected individuals. This highlights the multifaceted nature of PCOS, necessitating a comprehensive approach that addresses the physical and mental health aspects.

Moreover, the research delves into lifestyle factors such as dietary habits, stress levels, and healthcare-seeking behaviours, revealing potential modifiable risk factors and areas for intervention. The high prevalence of poor dietary habits, stress, and lack of healthcare utilisation

underscores the importance of holistic management strategies encompassing lifestyle modifications, stress reduction techniques, and regular medical follow-ups.

In conclusion, the findings from this research provide valuable insight into the epidemiology, clinical presentation, and psychosocial impact of PCOS among women. By elucidating the intricate interplay between the various factors contributing to PCOS, this study paves the way for targeted interventions, personalised treatment approaches, and enhanced support services aimed at improving the quality of life and reproductive outcomes for affected individuals (Wekker et al., 2020).

1.8 Aims and Objectives

This study aims to investigate the experiences, emotional coping strategies, and help-seeking needs of women with PCOS from their own perspective, considering common psychological issues such as stress, anxiety, and depression that are prevalent among individuals with PCOS. There are also several specific objectives for this research project on PCOS, which include the following:

- The relationship between genetic and environmental factors that help explain and diagnose PCOS.
- Changes in PCOS across life stages and with aging.
- Depression in PCOS and its relationship with insulin resistance, obesity, and hormones.
- The role of eating disorders in PCOS.
- The best types of exercise to help manage the symptoms of PCOS.
- To assess the level of knowledge regarding PCOS among students at the University of Chenab and nearby areas.
- To administer Information, Education and Communication (IEC) regarding PCOS.
- To determine the effectiveness of Information, Education and Communication on the level of knowledge regarding PCOS among people.
- To find out the association between the post-test level of knowledge regarding PCOS.
- Examining early signs of PCOS in adolescents to better understand the relationships among obesity, high androgen levels, and PCOS.
- This knowledge could help develop early interventions to manage or slow the development of PCOS.
- New treatment strategies for PCOS.
- Evaluating the efficacy of both existing and new treatments for PCOS.

(Ee et al., 2021).

2. Conclusion

This chapter presents the results obtained from the survey conducted to assess the prevalence, symptomatology, and perception of polycystic ovary syndrome (PCOS) among the study population, with each finding discussed in relation to the existing clinical and epidemiological literature. The survey was conducted among 100 students of the University of Chenab, Gujrat Campus, selected through simple random sampling, in order to capture a representative crosssection of perceptions, symptom experiences, and health-seeking behaviours related to PCOS within a universitygoing population. The findings are organised thematically, beginning with the demographic profile of respondents, followed by their awareness and perceived susceptibility to PCOS, and subsequently their menstrual, dermatological, metabolic, and reproductive symptoms. Dietary and nutritional habits, perceived causes of PCOS, and the psychological and emotional impact of the condition are then examined, before concluding with an assessment of healthcare-seeking behaviour and current treatment and management practices. Taken together, the results reveal that while a considerable proportion of the sample was aware of PCOS and could correctly identify hormonal imbalance and poor dietary habits as likely contributing factors, self-reported affliction, symptom burden, and treatment-seeking behaviour remained comparatively modest, reflecting both the predominantly young and unmarried composition of the sample and a persistent gap between symptom experience and formal healthcare utilisation. The high prevalence of menstrual irregularity, dermatological symptoms, and psychological distress such as stress and depression underscores the multisystem nature of PCOS and its wide-ranging impact on physical and mental wellbeing, even among a largely asymptomatic student population. These findings, discussed in detail in the following sections, provide a useful snapshot of PCOS-related knowledge, symptomatology, and health behaviour among university students, and offer a foundation for designing targeted awareness campaigns, early screening initiatives, and accessible counselling services aimed at improving reproductive and psychological health outcomes in this population.

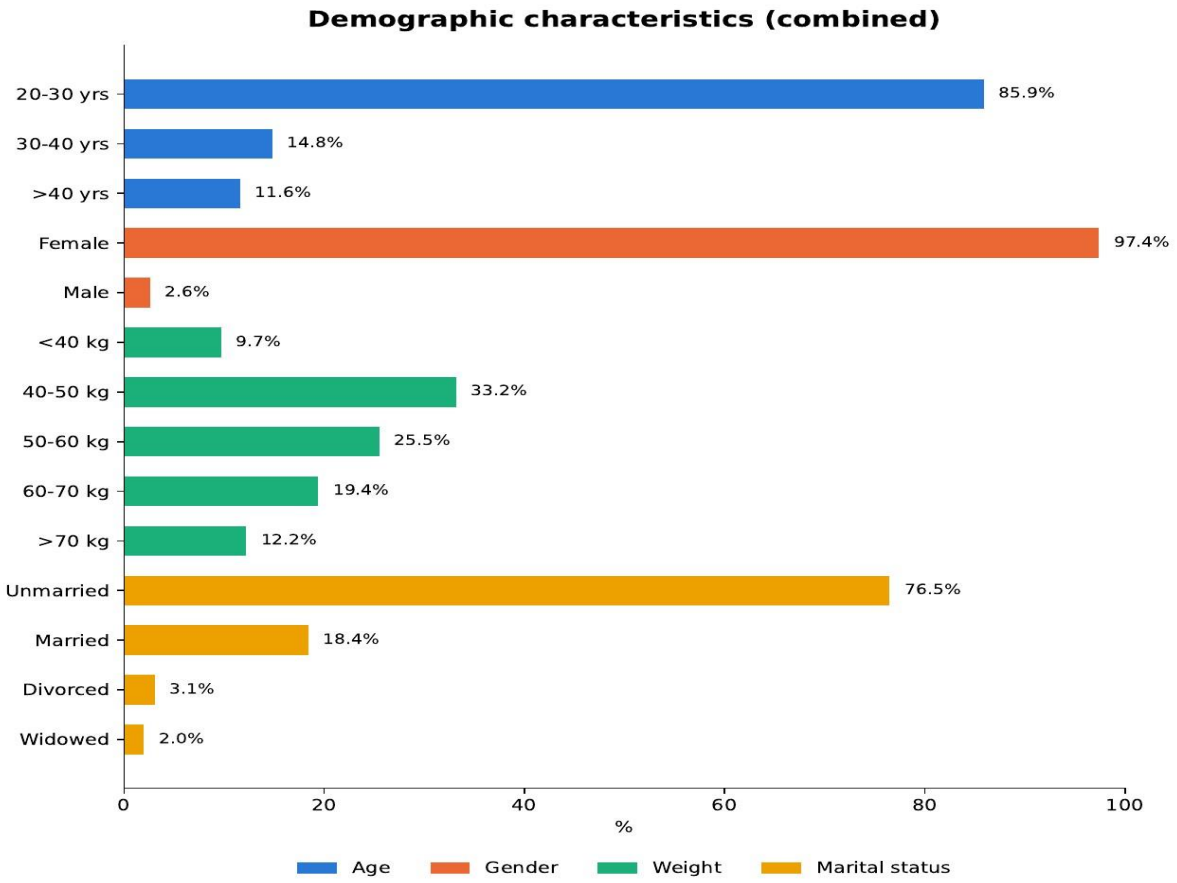
2.1 Demographic Characteristics

This section presents the demographic profile of the study participants, comprising age, gender, weight, and marital status. With respect to age distribution, the majority of the study population (85.9%) fell within the 20–30-year age bracket, 14.8% were aged between 30 and 40 years, and

11.6% were above 40 years of age, a stage corresponding to the perimenopausal transition, indicating that the reported symptom burden was concentrated predominantly among women in early reproductive age. Regarding sex distribution, 97.4% of participants were female, with the remaining proportion identifying as male; given that PCOS is a female-specific endocrine and reproductive disorder, this nearexclusive female representation was expected and supports the internal validity of the data obtained. Analysis of body weight revealed that 9.7% of participants weighed below 40 kg, 33.2% weighed between 40 and 50 kg, 25.5% between 50 and 60 kg, 19.4% between 60 and 70 kg, and 12.2% weighed above 70 kg; the clustering of respondents within the 40–60 kg range indicates that most of the sample fell within a normal-to-moderately-elevated weight range, consistent with the well-documented association between adiposity and PCOS pathogenesis. With regard to marital status, 76.5% of respondents were unmarried, 18.4% were married, 3.1% were divorced, and 2.0% were widowed; the predominance of unmarried participants reflects the largely student-based composition of the sample and indicates that most participants had not yet encountered the fertility-related sequelae of PCOS, although a considerable proportion remain at future risk.

Table 3.1: Summary of Demographic Characteristics

Variable	**Response Distribution (%)**
Age	20–30 yrs: 85.9%; 30–40 yrs: 14.8%; >40 yrs: 11.6%
Gender	Female: 97.4%; Male: 2.6%
Weight	<40 kg: 9.7%; 40–50 kg: 33.2%; 50–60 kg: 25.5%; 60–70 kg: 19.4%; >70 kg: 12.2%
Marital status	Unmarried: 76.5%; Married: 18.4%; Divorced: 3.1%; Widowed: 2.0%

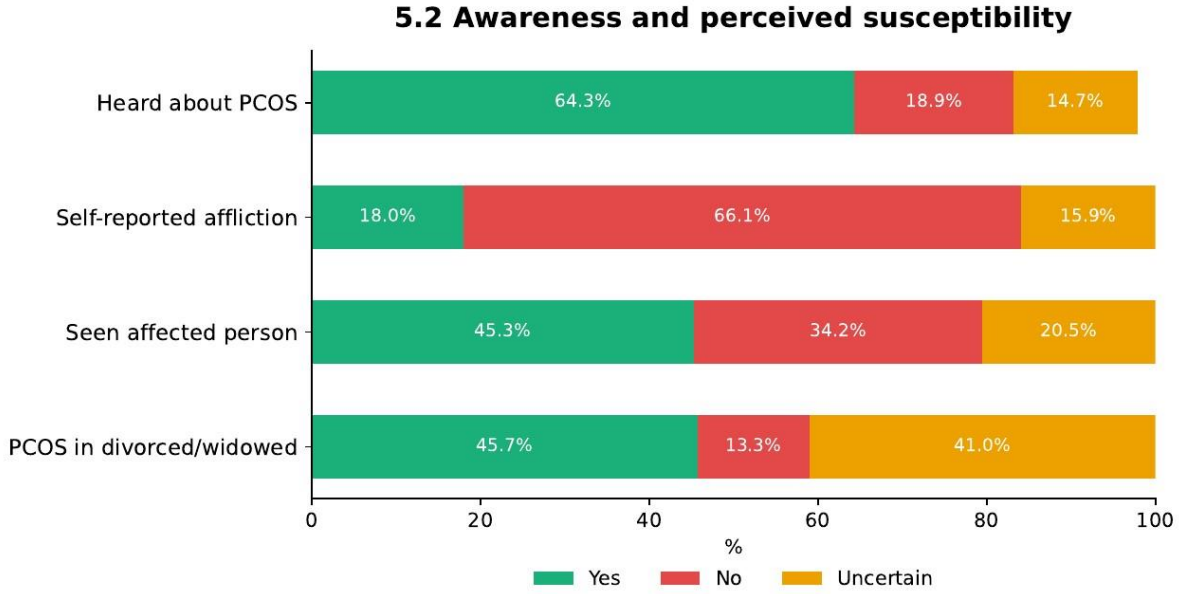


2.2 Awareness and Perceived Susceptibility to PCOS

This section combines findings on participants' prior awareness of PCOS, self-reported affliction, indirect exposure to the condition, and perceived susceptibility among divorced or widowed women. When queried regarding prior awareness, 64.3% of respondents reported having heard of PCOS, 18.9% had not, and 14.7% were uncertain, suggesting a moderate level of disease awareness alongside a persistent gap in public health education. Self-reported affliction with PCOS was recorded in 18.0% of participants, while 66.1% reported no such diagnosis and 15.9% were uncertain of their status, a prevalence approximating figures cited in the broader epidemiological literature. Regarding indirect exposure, 45.3% of respondents reported having encountered an individual affected by PCOS, 34.2% had not, and 20.5% were unsure, indicating that PCOS is a widely recognised condition within participants' social networks independent of personal diagnosis. Finally, when asked whether PCOS may occur in divorced or widowed women, 45.7% of participants responded affirmatively, 13.3% disagreed, and 41.0% were uncertain, reflecting limited confidence among respondents regarding the relationship between marital and life-stage factors and PCOS risk relative to more widely recognised factors such as diet or heredity.

Table 3.2: Summary of Awareness and Perceived Susceptibility

Variable	Response Distribution (%)
Heard about PCOS	Yes: 64.3%; No: 18.9%; Uncertain: 14.7%
Self-reported affliction with PCOS	Yes: 18.0%; No: 66.1%; Uncertain: 15.9%
Seen/known an affected person	Yes: 45.3%; No: 34.2%; Uncertain: 20.5%
PCOS possible in divorced/widowed women	Yes: 45.7%; No: 13.3%; Uncertain: 41.0%

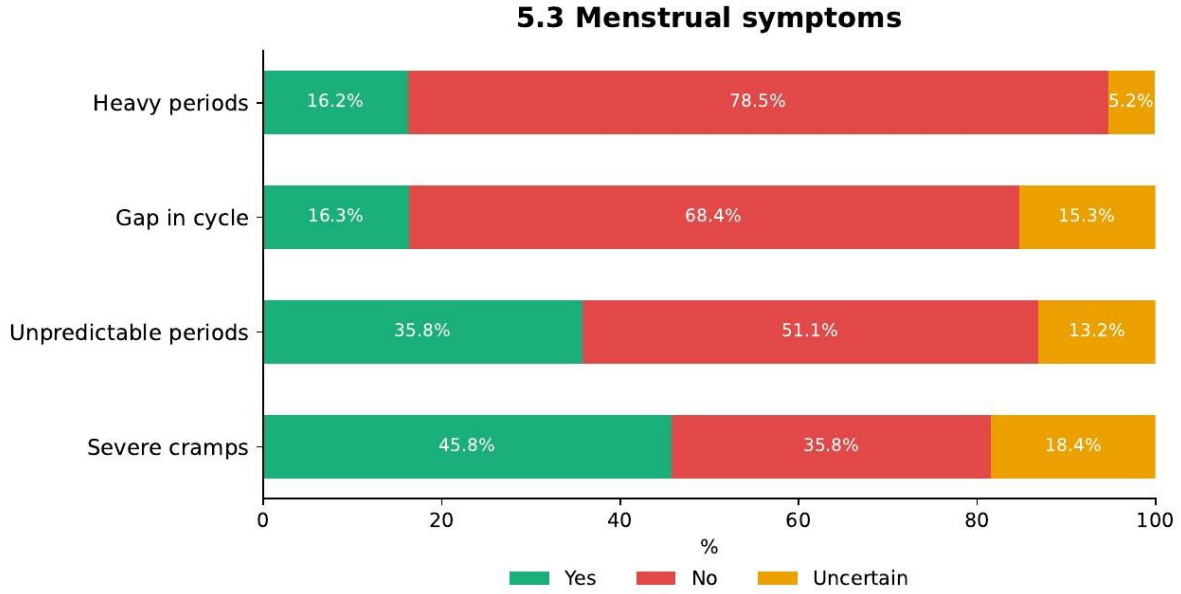


2.3 Menstrual Symptoms

Menstrual disturbances were assessed across four indicators: menorrhagia, oligomenorrhea, cycle unpredictability, and dysmenorrhea. Heavy menstrual bleeding persisting beyond seven days was reported by 16.2% of respondents, while 78.5% reported no such symptom and 5.2% were uncertain. An extended interval between menstrual cycles (oligomenorrhea) was reported by 16.3% of participants, 68.4% reported no such gap, and 15.3% were uncertain, indicating that a clinically relevant subset exhibited infrequent menstruation, a diagnostic hallmark of PCOS. Cycle unpredictability was reported by 35.8% of participants, while 51.1% reported regular, predictable cycles and 13.2% were uncertain, reflecting the anovulatory and oligo-ovulatory dysfunction that constitutes a core diagnostic criterion of PCOS. Severe dysmenorrhea was reported by 45.8% of participants, 35.8% reported no significant menstrual pain, and 18.4% were uncertain, emerging as one of the more prevalent complaints in this cohort. Collectively, these findings indicate a substantial burden of menstrual irregularity within the study population.

Table 3.3: Summary of Menstrual Symptoms

Variable	Response Distribution (%)
Heavy periods (menorrhagia)	Yes: 16.2%; No: 78.5%; Uncertain: 5.2%
Gap in menstrual cycle (oligomenorrhea)	Yes: 16.3%; No: 68.4%; Uncertain: 15.3%
Unpredictable periods	Yes: 35.8%; No (regular): 51.1%; Uncertain: 13.2%
Severe cramps (dysmenorrhea)	Yes: 45.8%; No: 35.8%; Uncertain: 18.4%

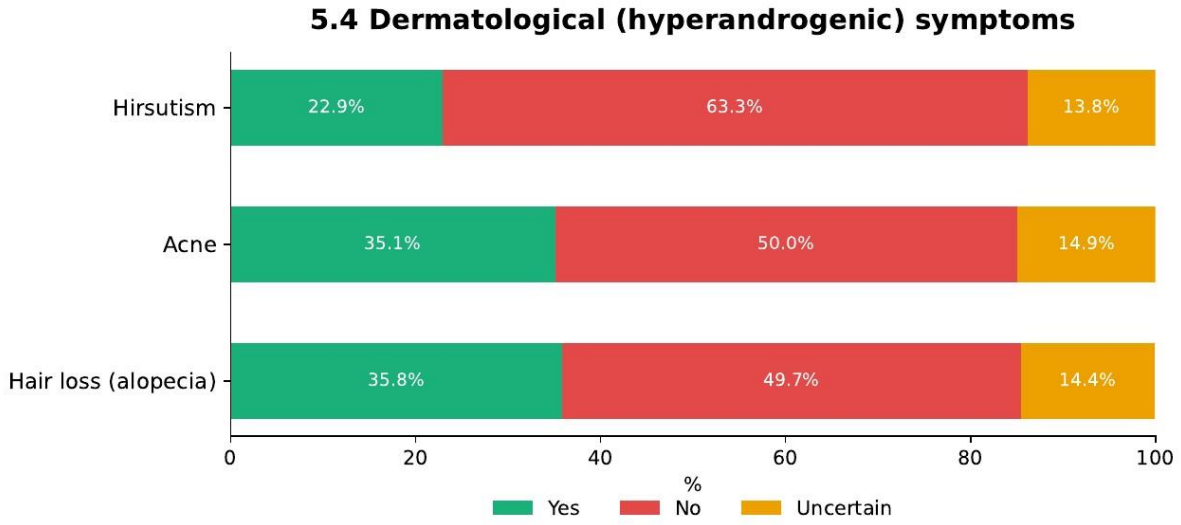


2.4 Dermatological (Hyperandrogenic) Symptoms

Cutaneous manifestations of hyperandrogenism were assessed through hirsutism, acne, and androgenic alopecia. Excessive hair growth (hirsutism) was reported by 22.9% of participants, 63.3% reported no such symptom, and 13.8% were uncertain. Acneiform lesions were reported by 35.1% of participants, 50.0% reported no such symptom, and 14.9% were uncertain, consistent with androgen-mediated sebaceous gland activity. Excessive hair thinning or loss (androgenic alopecia) was reported by 35.8% of participants, 49.7% reported no such symptom, and 14.4% were uncertain. Together, these dermatological markers affected a substantial minority of the sample, consistent with the hyperandrogenic component of PCOS pathophysiology.

Table 3.4: Summary of Dermatological Symptoms

Variable	Response Distribution (%)
Excessive hair growth (hirsutism)	Yes: 22.9%; No: 63.3%; Uncertain: 13.8%
Excessive acne	Yes: 35.1%; No: 50.0%; Uncertain: 14.9%
Excessive hair loss (alopecia)	Yes: 35.8%; No: 49.7%; Uncertain: 14.4%

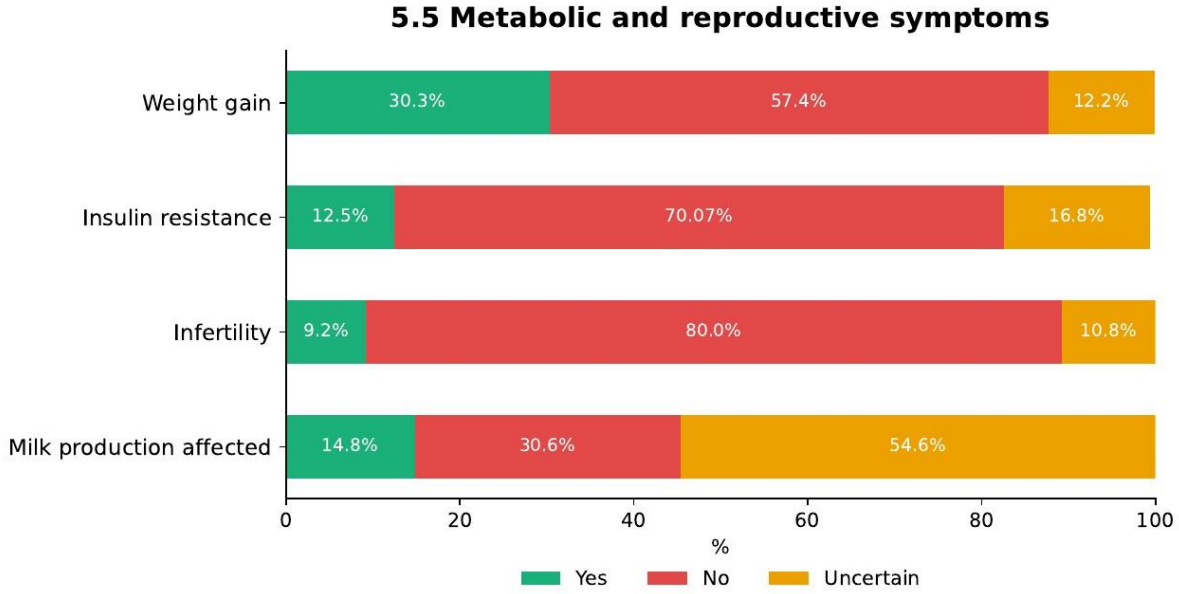


2.5 Metabolic and Reproductive Symptoms

This section presents findings related to metabolic and reproductive symptoms, namely excessive weight gain, insulin resistance, infertility, and effects on lactation. Excessive weight gain was reported by 30.3% of participants, 57.4% reported no such issue, and 12.2% were uncertain, underscoring the close interrelationship between PCOS and metabolic dysregulation. Insulin resistance was self-reported by 12.5% of participants, 70.07% reported no such issue, and 16.8% were uncertain, with the considerable proportion of uncertain responses suggesting limited awareness of this often-subclinical metabolic feature. Infertility was reported by 9.2% of participants, 80.0% reported no such issue, and 10.8% were uncertain; although comparatively low, attributable in part to the predominantly young, unmarried composition of the cohort, infertility remains one of the most consequential long-term sequelae of untreated PCOS. Regarding lactational function, 14.8% of participants reported that PCOS adversely affected milk production, 30.6% reported no such effect, and the majority, 54.6%, were uncertain, indicating limited awareness of the potential impact of PCOS on lactation.

Table 3.5: Summary of Metabolic and Reproductive Symptoms

Variable	Response Distribution (%)
Excessive weight gain	Yes: 30.3%; No: 57.4%; Uncertain: 12.2%
Insulin resistance	Yes: 12.5%; No: 70.07%; Uncertain: 16.8%
Infertility	Yes: 9.2%; No: 80.0%; Uncertain: 10.8%
Milk production affected	Yes: 14.8%; No: 30.6%; Uncertain: 54.6%

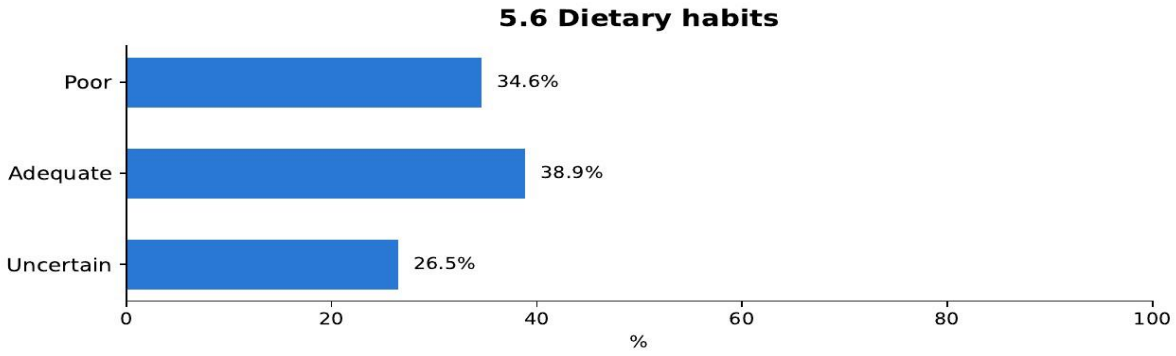


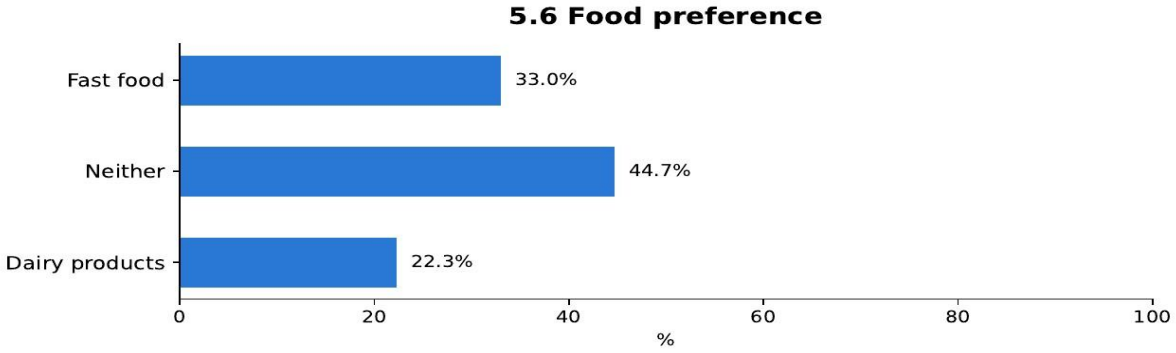
2.6 Dietary and Nutritional Factors

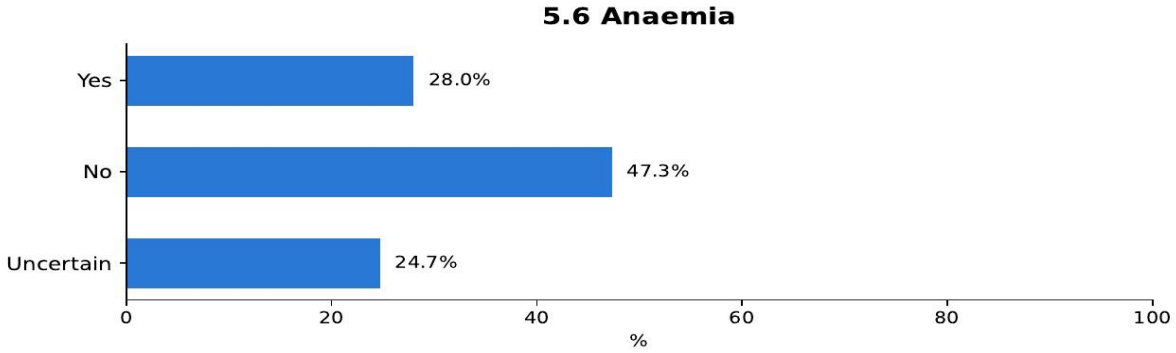
With regard to dietary habits, 34.6% of participants reported poor dietary practices, 38.9% reported adequate dietary practices, and 26.5% were uncertain, identifying dietary behaviour as a modifiable factor recognised by a substantial proportion of the study population. Regarding dietary composition, 33.0% of participants reported regular consumption of fast food, 44.7% reported no such consumption, and 22.3% reported a preference for dairy products; given the established association between fast-food consumption, low-grade inflammation, and insulin resistance, habitual fast-food consumption represents a modifiable dietary risk factor within this cohort. Anaemia was reported by 28.0% of participants, 47.3% reported normal haemoglobin status, and 24.7% were uncertain, suggesting that nutritional deficiency frequently coexists with PCOS-related symptomatology within this population.

Table 3.6: Summary of Dietary and Nutritional Factors

Variable	Response Distribution (%)
Dietary habits	Poor: 34.6%; Adequate: 38.9%; Uncertain: 26.5%
Food preference	Fast food: 33.0%; Neither: 44.7%; Dairy products: 22.3%
Anaemia	Yes: 28.0%; No: 47.3%; Uncertain: 24.7%







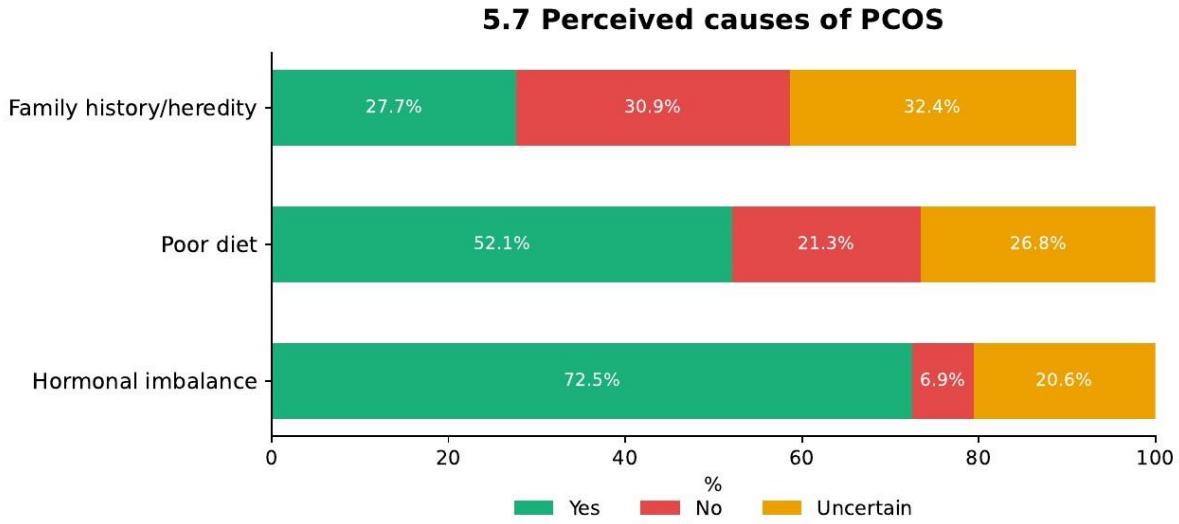
2.7 Perceived Causes of PCOS

Participants' perceptions regarding the aetiology of PCOS were assessed across three domains: heredity, diet, and hormonal imbalance. A perceived genetic basis for PCOS was reported by 27.7%

of participants, 30.9% did not attribute their condition to heredity, and 32.4% were uncertain, reflecting genuine uncertainty surrounding the heritability of PCOS despite the well-documented genetic predisposition established in the literature. A perceived dietary aetiology was endorsed by 52.1% of participants, 21.3% disagreed, and 26.8% were uncertain, consistent with the recognised contribution of nutrition to the pathogenesis and management of PCOS. Hormonal imbalance was identified as the perceived cause by 72.5% of participants, while only 6.9% reported no hormonal disturbance and 20.6% were uncertain, an overwhelming endorsement consistent with the endocrine dysregulation that constitutes the core pathophysiology of PCOS.

Table 3.7: Summary of Perceived Causes of PCOS

Variable	Response Distribution (%)
Family history / heredity	Yes: 27.7%; No: 30.9%; Uncertain: 32.4%
Poor diet	Yes: 52.1%; No: 21.3%; Uncertain: 26.8%
Hormonal imbalance	Yes: 72.5%; No: 6.9%; Uncertain: 20.6%



2.8 Psychological and Emotional Impact

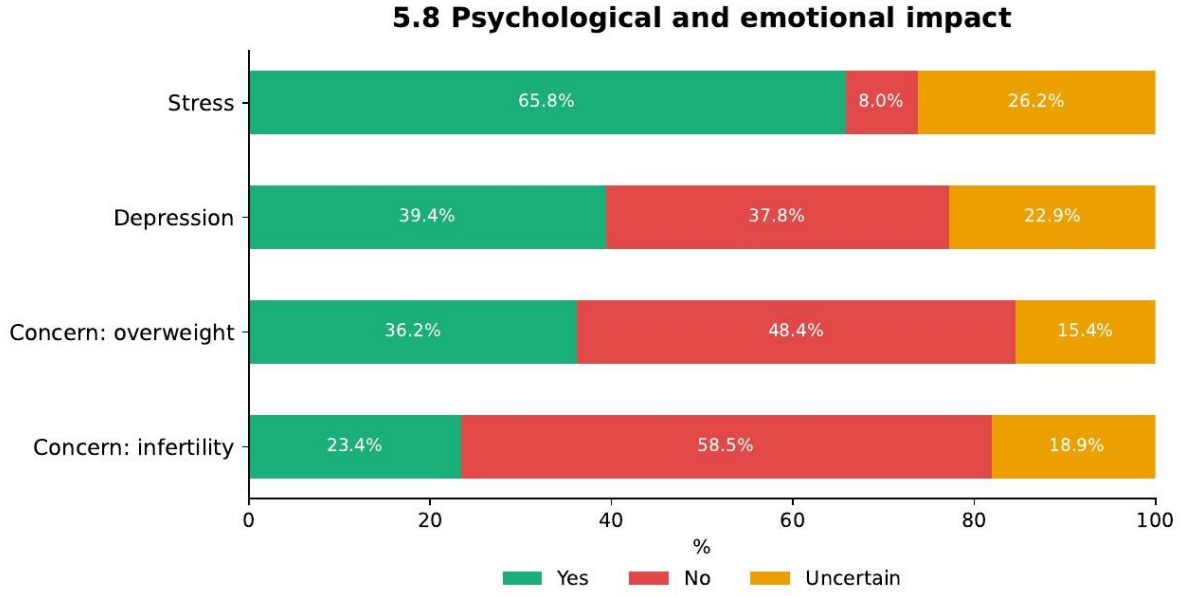
This section presents the psychological and emotional impact of PCOS-related symptoms, encompassing stress, depression, and concern regarding overweight and infertility. Self-reported stress was noted in 65.8% of participants, while only 8.0% reported no such issue and 26.2% were uncertain, consistent with the well-established bidirectional relationship between psychological stress and hypothalamic-pituitary-ovarian axis dysregulation in PCOS. Depressive symptomatology attributed to PCOS was reported by 39.4% of participants, 37.8% reported no

such symptoms, and 22.9% were uncertain, highlighting the considerable psychological burden associated with PCOS symptomatology.

Concern regarding overweight status was reported by 36.2% of participants, 48.4% reported no such concern, and 15.4% were uncertain, reflecting the psychosocial impact of PCOS-associated weight gain on body image. Concern regarding infertility was reported by 23.4% of participants, 58.5% reported no such concern, and 18.9% were uncertain; given the predominantly young and unmarried composition of the sample, this comparatively low level of concern may be anticipated to increase as participants approach childbearing age.

Table 3.8: Summary of Psychological and Emotional Impact

Variable	**Response Distribution (%)**
Stress	Yes: 65.8%; No: 8.0%; Uncertain: 26.2%
Depression	Yes: 39.4%; No: 37.8%; Uncertain: 22.9%
Concern about being overweight	Yes: 36.2%; No: 48.4%; Uncertain: 15.4%
Variable	**Response Distribution (%)**
Concern about infertility	Yes: 23.4%; No: 58.5%; Uncertain: 18.9%



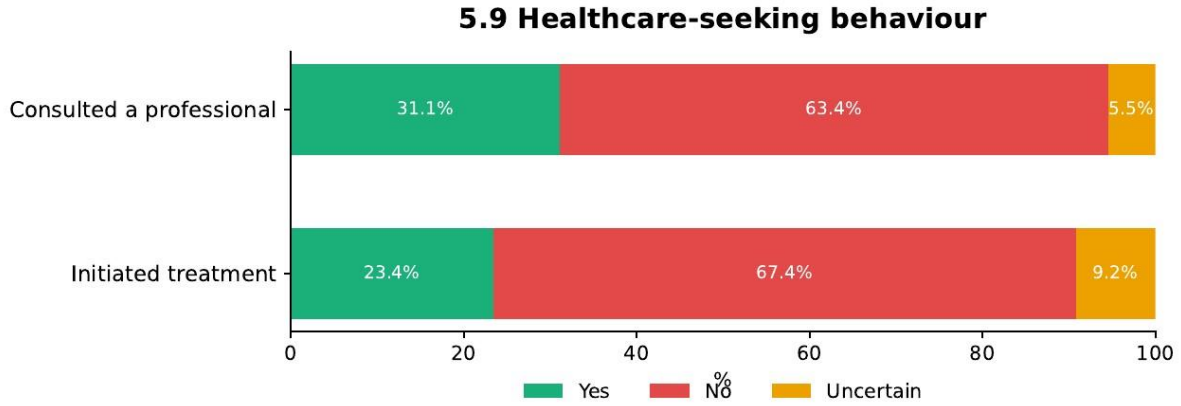
2.9 Healthcare-Seeking Behaviour

With respect to healthcare-seeking behaviour, 31.1% of participants reported regular consultation with a healthcare professional in response to symptoms, while the majority, 63.4%, reported no such consultation, and 5.5% were uncertain, indicating a significant disparity between symptom

experience and healthcare-seeking behaviour within the cohort. Regarding treatment uptake, 23.4% of participants reported having initiated treatment for PCOS-related complaints, while the majority, 67.4%, had not, and 9.2% were uncertain, suggesting that a substantial proportion of symptomatic individuals are not receiving formal clinical management.

Table 3.9: Summary of Healthcare-Seeking Behaviour

Variable	Response Distribution (%)
Consulted a healthcare professional	Yes: 31.1%; No: 63.4%; Uncertain: 5.5%
Initiated treatment	Yes: 23.4%; No: 67.4%; Uncertain: 9.2%

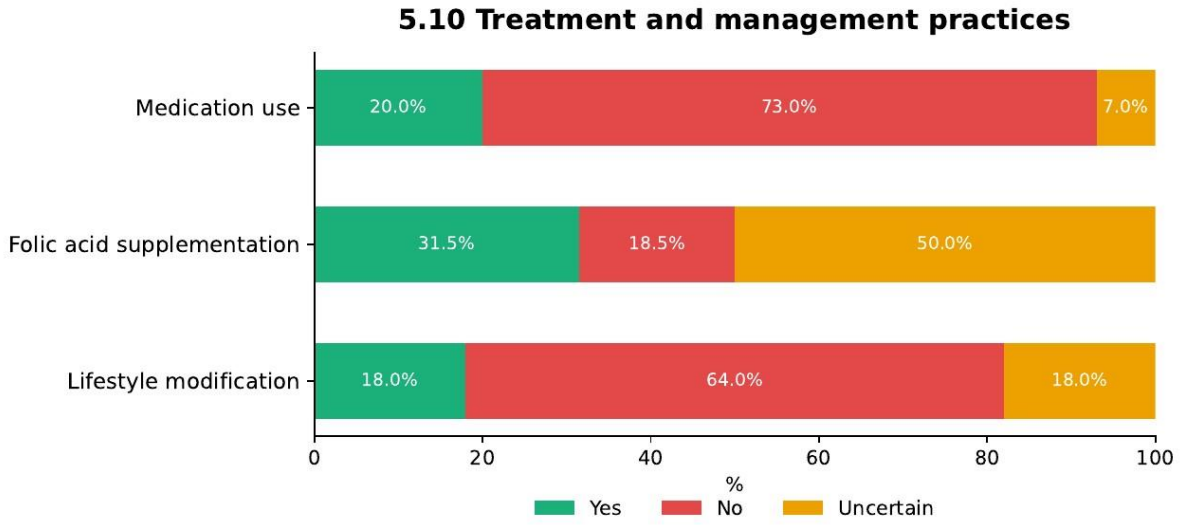


2.10 Treatment and Management Practices

With regard to pharmacological management, 20.0% of participants reported current use of medication for PCOSrelated complaints, 73.0% reported no medication use, and 7.0% were uncertain, corroborating that most symptomatic respondents are not currently receiving pharmacotherapy. Folic acid supplementation was reported by 31.5% of participants, 18.5% reported no such supplementation, and exactly half, 50.0%, were uncertain, suggesting limited awareness among affected women regarding its role in reproductive and metabolic health. Finally, with respect to lifestyle modification, 18.0% of participants reported having adopted lifestyle changes in response to PCOS-related complaints, while the majority, 64.0%, had not, and 18.0% were uncertain; despite lifestyle modification being widely endorsed in the clinical literature as first-line management for PCOS, this low adoption rate indicates a considerable disparity between recommended clinical practice and actual health behaviour among respondents.

Table 3.10: Summary of Treatment and Management Practices

Variable	Response Distribution (%)
Medication use	Yes: 20.0%; No: 73.0%; Uncertain: 7.0%
Folic acid supplementation	Yes: 31.5%; No: 18.5%; Uncertain: 50.0%
Lifestyle modification	Yes: 18.0%; No: 64.0%; Uncertain: 18.0%



2.11 Future Recommendation

This research study can be used in different ways in further research, as it reflects the increasing trends of PCOSrelated concerns worldwide. If anyone wants to know the impact of PCOS in Gujrat, Pakistan, this research will be helpful for that person, who can use it as a source of literature to support their own research. If anyone wishes to conduct a study on this research topic, they may build on it by exploring different contributing factors in greater depth.

2.12 Research Implications

The research conducted here is beneficial for those seeking to determine the impact of medication use on women affected by PCOS, and for those researchers who wish to identify the relationship between PCOS and women's health within their own areas of interest.

3. References

Ajmal, N., Khan, S. Z., & Shaikh, R. (2019). Polycystic ovary syndrome (PCOS) and genetic predisposition: A review article. European Journal of Obstetrics & Gynecology and Reproductive Biology: X, 3, 100060.

Artini, P. G., Di Berardino, O., Simi, G., Papini, F., Ruggiero, M., Monteleone, P., & Cela, V. (2010). Best methods for identification and treatment of PCOS. Minerva Ginecologica, 62(1), 33.

Azziz, R., Woods, K. S., Reyna, R., Key, T. J., Knochenhauer, E. S., & Yildiz, B. O. (2004). The prevalence and features of the polycystic ovary syndrome in an unselected population. Journal of Clinical Endocrinology and Metabolism, 89(6), 2745–2749.

Bai, H., Ding, H., & Wang, M. (2024). Polycystic ovary syndrome (PCOS): symptoms, causes, and treatment. Clinical and Experimental Obstetrics & Gynecology, 51(5), 126.

Barry, J., Leite, N., Sivarajah, N., et al. (2017). Relaxation and guided imagery significantly reduces androgen levels and distress in Polycystic Ovary Syndrome: Pilot study. Contemporary Hypnosis and Integrative Therapy, 32(1), 21–29.

Bazarganipour, F., Ziaei, S., Montazeri, A., et al. (2013). Psychological investigation in patients with polycystic ovary syndrome. Health and Quality of Life Outcomes, 11, 141.

Behboodi Moghadam, Z., Fereidooni, B., Saffari, M., & Montazeri, A. (2018). Measures of health-related quality of life in PCOS women: a systematic review. International Journal of Women's Health, 10, 397–408.

Bulsara, J., Patel, P., Soni, A., & Acharya, S. (2021). A review: brief insight into polycystic ovarian syndrome. Endocrine and Metabolic Science, 3, 100085.

Chaudhuri, A. (2023). Polycystic ovary syndrome: Causes, symptoms, pathophysiology, and remedies. Obesity Medicine, 39, 100480.

Coffey, S., Bano, G., & Mason, H. D. (2006). Health-related quality of life in women with polycystic ovary syndrome: A comparison with the general population using the Polycystic Ovary Syndrome Questionnaire (PCOSQ) and the Short Form-36 (SF-36). Gynecological Endocrinology, 22(2), 80–86.

de Groot, P. C. M., Dekkers, O. M., Romijn, J. A., Dieben, S. W. M., & Helmerhorst, F. M. (2011). PCOS, coronary heart disease, stroke and the influence of obesity: a systematic review and meta-analysis. Human Reproduction Update, 17(4), 495–500.

Di Lorenzo, M., Cacciapuoti, N., Lonardo, M. S., Nasti, G., Gautiero, C., Belfiore, A., ... Chiurazzi, M. (2023). Pathophysiology and nutritional approaches in polycystic ovary syndrome (PCOS): a comprehensive review. Current Nutrition Reports, 12(3), 527–544.

Ee, C., Pirotta, S., Mousa, A., Moran, L., & Lim, S. (2021). Providing lifestyle advice to women with PCOS: an overview of practical issues affecting success. BMC Endocrine Disorders, 21(1), 234.

Elsenbruch, S., Hahn, S., Kowalsky, D., et al. (2003). Quality of life, psychosocial well-being, and sexual satisfaction in women with polycystic ovary syndrome. Journal of Clinical Endocrinology and Metabolism, 88(12), 5801– 5807.

Farshchi, H., Rane, A., Love, A., & Kennedy, R. (2007). Diet and nutrition in polycystic ovary syndrome (PCOS): pointers for nutritional management. Journal of Obstetrics and Gynaecology, 27(8), 762–773.

Forslund, M., Melin, J., Alesi, S., Piltonen, T., Romualdi, D., Tay, C. T., ... Teede, H. (2023). Combined oral contraceptive pill compared with no medical treatment in the management of polycystic ovary syndrome: a systematic review. Clinical Endocrinology, 99(1), 79–91.

Garry, A., White, D. M., & Franks, S. (2006). Infertility in polycystic ovary syndrome. Endocrine, 30(1), 27–33.

Kałużna, M., Człapka-Matyasik, M., Wachowiak-Ochmańska, K., Moczko, J., Kaczmarek, J., Janicki, A., ... Ziemnicka, K. (2020). Effect of central obesity and hyperandrogenism on selected inflammatory markers in patients with PCOS: a WHtR-matched case-control study. Journal of Clinical Medicine, 9(9), 3024.

Kataoka, J., Tassone, E. C., Misso, M., Joham, A. E., Stener-Victorin, E., Teede, H., & Moran, L. J. (2017). Weight management interventions in women with and without PCOS: A systematic review. Nutrients, 9(9), 996.

Kempegowda, P., Melson, E., Manolopoulos, K. N., Arlt, W., & O'Reilly, M. W. (2020). Implicating androgen excess in propagating metabolic disease in polycystic ovary syndrome. Therapeutic Advances in Endocrinology and Metabolism, 11, 2042018820934319.

Kitzinger, C., & Willmott, J. (2002). 'The thief of womanhood': Women's experience of polycystic ovarian syndrome. Social Science & Medicine, 54(3), 349–361.

Kshetrimayum, C., Sharma, A., Mishra, V. V., & Kumar, S. (2019). Polycystic ovarian syndrome: Environmental/occupational, lifestyle factors; an overview. Journal of the Turkish German Gynecological Association, 20(4), 255.

Malik-Aslam, A., Reaney, M. D., & Speight, J. (2010). The suitability of polycystic ovary syndrome-specific questionnaires for measuring the impact of PCOS on quality of life in clinical trials. Value in Health, 13(4), 440– 446.

Misso, M. L., Wong, J. L., Teede, H. J., Hart, R., Rombauts, L., Melder, A. M., Norman, R. J., & Costello, M. F. (2012). Aromatase inhibitors for PCOS: a systematic review and meta-analysis. Human Reproduction Update, 18(3), 301–312.

National Institutes of Health (NIH). (2012). Evidence-Based Methodology Workshop on Polycystic Ovary Syndrome: Final Report. Available at: https://prevention.nih.gov/docs/programs/pcos/FinalReport.pdf

Ndefo, U. A., Eaton, A., & Green, M. R. (2013). Polycystic ovary syndrome: a review of treatment options with a focus on pharmacological approaches. Pharmacy and Therapeutics, 38(6), 336.

Pachiappan, S., Ramalingam, K., & Balasubramanian, A. (2020). A review on phytomedicine and their mechanism of action on PCOS. International Journal of Current Research and Review, 12(23), 81.

Peitsidis, P., & Agrawal, R. (2010). Role of vascular endothelial growth factor in women with PCO and PCOS: a systematic review. Reproductive Biomedicine Online, 20(4), 444–452.

Rachana, B., Priyanka, T., Sahana, K., Supritha, T., Parameshachari, B., & Sunitha, R. (2021). Detection of polycystic ovarian syndrome using follicle recognition technique. Global Transitions Proceedings, 2(2), 304–308.

Stener-Victorin, E., Teede, H., Norman, R. J., Legro, R., Goodarzi, M. O., Dokras, A., ... Piltonen, T. T. (2024). Polycystic ovary syndrome. Nature Reviews Disease Primers, 10(1), 27.

The Amsterdam ESHRE/ASRM-Sponsored 3rd PCOS Consensus Workshop Group. (2012). Consensus on women's health aspects of polycystic ovary syndrome (PCOS). Fertility and Sterility, 97(1), 28.e25–38.e25.

The WHOQOL Group. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychological Medicine, 28(3), 551–558.

Wekker, V., van Dammen, L., Koning, A., Heida, K. Y., Painter, R. C., Limpens, J., ... Hoek, A. (2020). Long-term cardiometabolic disease risk in women with PCOS: a systematic review and meta-analysis. Human Reproduction Update, 26(6), 942–960.

Williams, S., Sheffield, D., & Knibb, R. C. (2015). 'Everything's from the inside out with PCOS': Exploring women's experiences of living with polycystic ovary syndrome and co-morbidities through Skype™ interviews. Health Psychology Open.

Xu, Y., & Qiao, J. (2022). Association of insulin resistance and elevated androgen levels with polycystic ovarian syndrome (PCOS): a review of literature. Journal of Healthcare Engineering, 2022(1), 9240569.

Ye, W., Xie, T., Song, Y., & Zhou, L. (2021). The role of androgen and its related signals in PCOS. Journal of Cellular and Molecular Medicine, 25(4), 1825–1837.

Zawadski, J. K., & Dunaif, A. (1992). Diagnostic criteria for polycystic ovary syndrome: Towards a rational approach. In A. Dunaif, J. R. Givens, F. P. Haseltine, et al. (Eds.), Polycystic Ovary Syndrome (pp. 377–384). Blackwell Scientific Publications.