

A Questionnaire based Study on Anxiety, Depression, and Quality of Life in Women with Polycystic Ovarian Syndrome in Reproductive Age Group at Tertiary Care Hospital

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Abstract: Background: Polycystic Ovarian Syndrome (PCOS) is the most prevalent endocrine disorder prominent in reproductive-aged women, affecting around 3.7%–22.5% of the adult Indian women population. PCOS is primarily associated with reproductive, metabolic, and psychological complications, comprising with higher rates of depression, anxiety, and reduced quality of life (QOL). Symptomatic presentation of PCOS are usually infertility, menstrual irregularities, hirsutism and obesity. These symptoms can be highly stigmatizing, attributing for significant emotional distress. Despite the rising awarenesses among women concerning PCOS, psychiatric morbidities remains as an underdiagnosed issue with regards to PCOS patients, highlighting the necessitation to investigate furthermore on their mental health and QOL. Objective: The research examined depression and anxiety levels in women with PCOS before investigating psychiatric symptoms and assessing how PCOS affects their health-related quality of life. Methods: The study used questionnaires to observe 60 non-pregnant females aged 18-45 years who met the Rotterdam criteria (2003) for PCOS at the Department of Obstetrics and Gynaecology in ACS Medical College, Chennai. The Mini International Neuropsychiatric Interview (M.I.N.I.) and a semi-structured questionnaire served to evaluate psychiatric disorders and assess QOL. The researchers applied appropriate statistical methods to analyze the collected data. Results: The research participants had an average age of 27.65 ± 7.60 years. Menstrual irregularities (95%) and weight gain (60%) were the most common symptoms. Psychiatric morbidity was present in 50% of participants, with anxiety (38.3%) and depression (25%) being predominant. PCOS significantly impacted mental health (41.6%) and socio-personal relationships (36.6%), reinforcing the association between PCOS and impaired QOL. Conclusion: Psychiatric morbidity in PCOS patients is significant, affecting their emotional well-being and QOL. Professionals treating patients with PCOS must undertake depression and anxiety screenings as part of their standard care approach. The combination of gynecologists with psychiatrists and nutritionists creates a recommended approach to achieve better long-term health results.

Keywords: Polycystic Ovarian Syndrome; Anxiety; Depression; Psychiatric Morbidity; Quality of Life; Mental Health; Rotterdam Criteria; Women's Health; Endocrine Disorders; Psychological Distress

1. Introduction

Polycystic Ovarian Syndrome (PCOS) stands as the most prevalent gynecological condition and endocrine disorder that affects women between their reproductive years [1]. PCOS exists as a diverse medical condition which combines irregular ovulation with elevated male hormones and cystic ovarian abnormalities. The disorder produces various reproductive and metabolic and psychological complications which negatively affect women's overall health status [2]. PCOS exists as more than a gynecological condition because it creates a higher risk for multiple medical problems including type 2 diabetes mellitus (T2DM), infertility, cardiovascular diseases and psychiatric disorders such as depression and anxiety [3].

PCOS prevalence shows significant differences because population characteristics together with diagnostic criteria play a crucial role. The gynaecological disorder PCOS impacts 6-13% of women in their reproductive years across

the globe (WHO, 2025) [4]. Survey research in India reveals PCOS affects 2-35% of people but urban areas experience higher prevalence because people there have adopted different lifestyles while becoming more aware of the condition [5]. The prevalence rates showed variations because of ethnic differences combined with genetic diversity and geographic locations and environmental elements. Studies suggested Indian women tend to exhibit greater degree of risks associated with metabolic disturbances due to PCOS when on comparison to that of their Western counterparts, which reflects the current scenario and the actual severity of PCOS triggered comorbid conditions and symptoms [6].

There lies a wider range of clinical manifestations presented as a result of PCOS which in general includes irregularities in the menstrual cycle, obesity, hirsutism, alopecia, acne, and infertility [7]. All such symptoms tend to often contribute for significant degree of emotional distresses, body image concerns, followed by diminished self-esteem, resulting in increased psychological burden associated with PCOS

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disorder [8]. For instance, in certain PCOS cases insulin resistance is observed as a key feature of PCOS which is linked with chronic low-grade inflammation and oxidative stress, which are hypothesized to play key role with development of mood disorders in affected women [9]. Several investigations were reported that PCOS affected women are nearly three times more likely for experiencing certain degree of depression and anxiety disorders compared with general female population [10] [11]. While the exact pathophysiology underlying psychiatric morbidities associated with PCOS remain unclear, systemic inflammation, hormonal imbalances, and insulin resistance are considered as contributing factors for the psychological responses and complications [12]. Literature studies indicated women with PCOS reported with significant level of poor quality of life (QOL) compared with women without PCOS conditions, with emotional and psychological domains being the most affected in such cases [13]. Presence of such psychiatric comorbidities were showcased with negatively impact on the self-care behavioural patterns, and their adherence to take part in treatments, and also affects the overall disease management, emphasizing the need for early psychological assessments and intervention protocols.

Health-related quality of life (HRQoL) is another multidimensional concept that is utilized for evaluating emotional, physical, and social aspects of women's overall well-being and health [14]. Literature studies showed significance of HRQoL scoring and its accuracy in determining PCOS women in terms of their condition by highlighting the substantial burden of the disorder places on social and mental functioning [15]. The most affected domains includes self-perception, emotional well-being, and interpersonal relationships. Bazarganipour et al. [16] reported psychiatric morbidity reduces the QOL significantly among PCOS patients, independent of the severity of their physical symptoms. Indian studies also showed PCOS patients experience significant decline in their HRQoL scores, further reinforcing the need for psychological screening for employing better clinical practice [17] [18] [19].

Despite the increasing prevalence in the psychiatric disorders among women due to PCOS, evaluation of women's mental health has often been overlooked in clinical settings. As majority investigations in India were focused more on PCOS conditions and its impact on metabolic and reproductive consequences, there is a paucity of research concerning the psychological burden and its association with PCOS condition. A comprehensive evaluation of depression and anxiety prevalence among Indian women with PCOS should be conducted because PCOS significantly affects their mental health. The research addresses the existing knowledge gap about anxiety and depression assessment and their prevalence rates in PCOS patients while using standardized tools to evaluate QOL. The current research aims to join existing literature supporting multidisciplinary PCOS management through its identification of psychiatric disorder symptomatology.

Upon understanding the psychological aspects revolving PCOS cases holds to be crucial for developing comprehensive treatment strategies that can greatly aid in integrating gynaecological, endocrinological, and psychiatric care for

improving the overall patient outcomes. The study ultimately underscores the significance for adopting holistic approach for PCOS management that extends beyond reproductive and metabolic health as it encompasses more on the psychological well-being of women.

2. Methodology

The research team conducted a questionnaire-based observational investigation as a cross-sectional study at the Department of Obstetrics and Gynecology within ACS Medical College and Hospital in Chennai. The research took place between June 2024 and July 2024. The research team selected women who visited outpatient clinics and fulfilled the diagnostic requirements for PCOS. The study used Rotterdam criteria (2003) to define PCOS by requiring two of the following conditions: oligoovulation or anovulation and biochemical/clinical hyperandrogenism together with polycystic ovarian morphology seen on ultrasound examination.

Sixty apparently healthy non-pregnant women between 18 and 45 years old participated after giving their written consent. The participants were chosen after clinicians observed their PCOS clinical characteristics. The research investigation excluded women who had psychiatric consultations or mental illness diagnoses or significant medical conditions or refused consent. The study established these strict participant criteria to achieve both representative data and minimal confounding effect on their research findings.

The psychiatric morbidity diagnosis followed Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition (DSM-IV) criteria through the use of Mini International Neuropsychiatric Interview (M.I.N.I., English version 5.0.0). The Department of Psychiatry worked together with researchers to perform this assessment which helped identify anxiety and depressive disorders in study participants. A semi-structured questionnaire evaluated quality of life (QOL) by assessing physical, emotional, and social well-being dimensions through its specific assessment of health-related quality of life. The researchers modified the QOL instrument to assess how PCOS uniquely affects patients by addressing both their physical manifestations and emotional distress.

The structured proforma served as the data collection tool to maintain consistency between psychiatric and clinical and QOL-related information recording. The researchers applied suitable statistical techniques to analyze the gathered data which enabled them to establish depression and anxiety rates and psychiatric morbidity levels among the study participants. The research examined how particular PCOS symptoms and their severity levels affect psychiatric disorders while evaluating their joint influence on QoL.

The institutional review board of ACS Medical College and Hospital provided ethical approval for this research investigation. The research followed Declaration of Helsinki ethical guidelines to protect participant rights while maintaining complete confidentiality throughout the research period.

3. Result

The research included 60 women who were not pregnant and had ages between 18 - 45 years and received a PCOS diagnosis through Rotterdam criteria. The participants' observed mean age was 27.65 ± 7.60 years. Among the study population, menstrual irregularities were observed majorly as prominent and prevalent symptom affecting 95% participants. Other commonly observed clinical features comprised of weight gain in 60% of cases, 38.3% with hirsutism, and infertility in 51.6% of married women. Acanthosis nigricans was the least commonly reported clinical manifestation presented in only 13.3% of the cohort. The comprehensive distribution of age and symptomatology is presented (Table 1).

Table 1: Patient's demographics & symptomology in PCOS patients

Demographic attributes	Age (in years)	No. of participants (%)
	18-25	27 (45%)
	26-35	23 (38.3%)
	36-45	10 (16.7%)
PCOS Symptomology	Signs & Symptoms	No. of participants (%)
	Hirsutism	23 (38.3%)
	Weight Gain	36 (60%)
	Menstrual Irregularities	57 (95%)
	Acanthosis	8 (13.3%)
	Infertility	31 (51.6%)

Psychiatric morbidity affected half of the study participants because 50% of them reported experiencing psychiatric disturbances. The research showed that anxiety disorders affected 38.3% of participants while depressive disorders impacted 25% of the study group (Table 2).

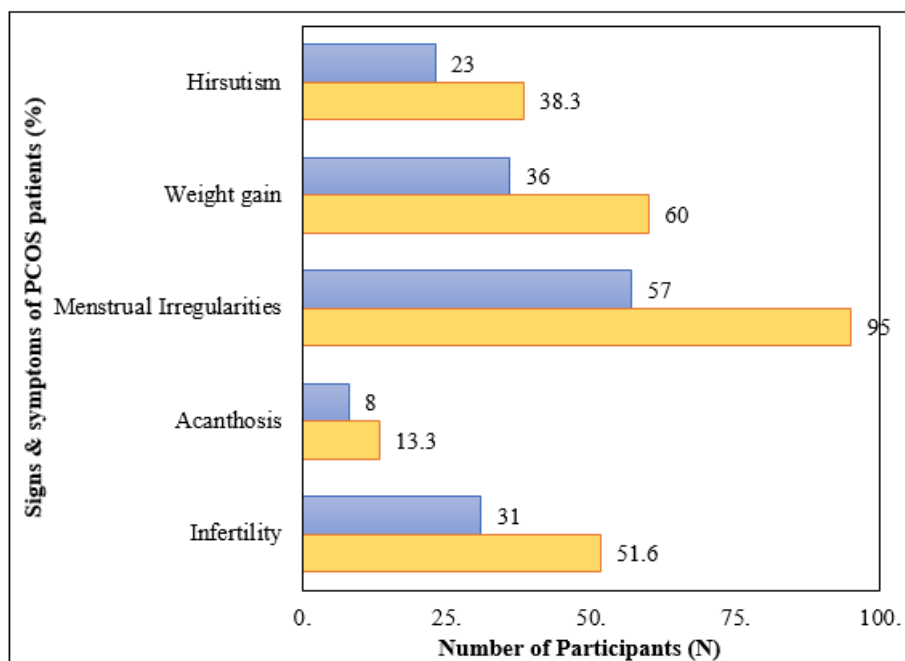
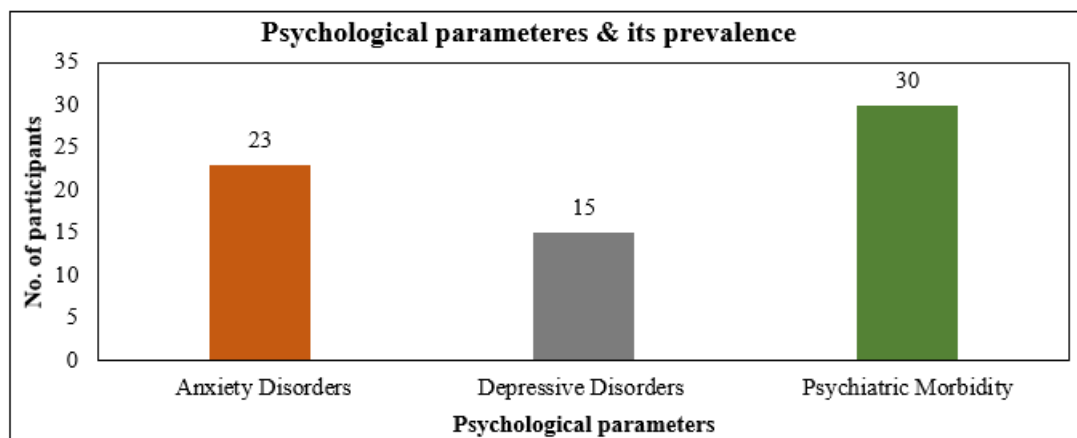


Figure 1: Signs and symptoms of PCOS patients

Table 2: Prevalence of Psychological Parameters Among Women with PCOS

Psychological parameters	No. of participants (%)
Anxiety Disorders	23 (38.3%)
Depressive Disorders	15 (25%)
Psychiatric Morbidity	30 (50%)



Psychiatric conditions affected the overall quality of life (QOL) substantially even though most cases presented with mild severity.

The psychological domain of QOL was the most affected, with 41.6% of women reporting limitations in mental health. Limitations in physical health were noted in 36.7%, while socio-personal relationships were affected in 36.6%. Among the PCOS study population, 26.7% of the participants reported difficulties related to environmental and financial constraints, as summarized in Table 3. These findings suggest a considerable burden of psychological distress among women with PCOS, further corroborated by similar studies that have reported high rates of psychiatric morbidity and impaired QOL in this population.

This study confirms existing research which demonstrates that PCOS creates a two-way connection with psychiatric health problems. The Kashmir study reported psychiatric morbidity at 52.7% which matches the results obtained in this investigation. Women with PCOS experience higher psychiatric conditions because of both psychosocial elements and pathophysiological factors. PCOS symptoms that appear on the surface including hirsutism, acne, alopecia, menstrual irregularities, infertility and obesity create substantial distress and social anxiety and stigma. The aetiology of psychiatric disorders in PCOS may be influenced by both metabolic and inflammatory disturbances which further worsen existing concerns.

The negative effect of psychiatric morbidity on QOL requires comprehensive management strategies that unite gynaecological care with endocrinological care and psychiatric care.

Barnard et al.'s research along with other studies shows psychiatric comorbidities in PCOS cause substantial QOL deterioration regardless of the presenting symptoms. The research results support regular psychiatric screening for PCOS-diagnosed women because early detection enables better disease management and psychological health improvement. PCOS being a chronic evolving condition requires ongoing psychiatric morbidity evaluation instead of single-time screening.

Table 3: Distribution of Quality of Life (QOL) Impairments in Women with PCOS

QOL	No. of participants (%)
Limitation in physical health	22 (36.7%)
Limitation on mental health	25 (41.6%)
Socio-personal relationship	22 (36.6%)
Environmental and Financial problems	16 (26.7%)

The study confirms the need for therapeutic approaches to manage the dual aspects of PCOS clinical manifestations and psychologic impacts. The optimal patient outcomes require a team of gynaecologists, endocrinologists, psychiatrists, nutritionists and mental health therapists working together. Future investigations need to track psychiatric symptoms across time to determine their duration and evaluate different treatment approaches that enhance mental health and life quality for women with PCOS.

4. Discussion

This research study demonstrated the critical importance of psychiatric morbidity and QOL impairment among women who have received PCOS diagnosis. The mean age of study participants was 27.65 ± 7.60 years, consistent with prior studies that indicated PCOS predominantly affecting those women in reproductive years [1] [20]. With high in menstrual irregularities (95%) observed from the study shows the commonest symptomatic presentation which is in line with the previous research that has established oligomenorrhea and amenorrhea as hallmark features on PCOS, driven by hormonal dysregulation involving insulin resistance, hyperandrogenism, and hypothalamic-pituitary-ovarian axis dysfunction [21].

The presence of metabolic complications such as weight gain (60%) aligns with previous epidemiological findings that associate PCOS with increased adiposity, particularly central obesity, even in women with a normal body mass index (BMI) [22] [23]. This weight gain is further implicated in the pathophysiology of PCOS, exacerbating insulin resistance and contributing to the risk of type 2 diabetes mellitus and cardiovascular disease [23]. The observed prevalence of hirsutism (38.3%) and infertility (51.6%) among married women further supports existing literature that recognizes these symptoms as distressing consequences of hyperandrogenism and ovulatory dysfunction, respectively [24]. The relatively lower prevalence of acanthosis nigricans (13.3%) could be attributed to variability in genetic predisposition and differences in the metabolic profiles of the study population (Yildiz et al., 2012).

The study revealed a significant psychiatric morbidity rate of 50% among participants who also exhibited anxiety disorders at 38.3% and depressive disorders at 25%. The research findings matched those from Kashmir where psychopathology morbidity affected 52.7% of the population [25]. PCOS patients experience psychological distress because of physiological factors and psychosocial elements. PCOS has been confirmed to generate psychiatric disorders through a two-way link thanks to evidence showing hormonal shifts that cause neurobiological changes leading to mood irregularities [26]. The physical symptoms of PCOS such as hirsutism and acne and alopecia result in body image concerns and social stigma and lowered self-esteem which substantially increase anxiety and depression levels [27].

The domain of mental health limitations showed the strongest impact from psychiatric morbidity because 41.6% of women experienced such limitations. Research by Barnard et al.[28] supports the finding that psychiatric conditions in PCOS create substantial impairment to multiple dimensions of QOL. The study revealed that physical health limitations (36.7%) and socio-personal relationship difficulties (36.6%) affected a significant number of women who have PCOS. PCOS patients experience reduced QOL because of the combination of persistent symptoms along with metabolic risks and infertility challenges and social isolation (Jones et al., 2008). The economic strain of managing a chronic condition that needs ongoing multidisciplinary care was likely the reason 26.7% of participants mentioned environmental and financial constraints [29].

The clinical management of PCOS requires immediate implementation of psychiatric screening tests based on these research results. Research demonstrates that treating psychiatric issues at an early stage results in notable improvements of mental health outcomes among PCOS women according to [30]. A comprehensive treatment approach requires gynecologists and endocrinologists to work with psychiatrists and mental health therapists to address physical and psychological symptoms of the condition [31].

Lifestyle interventions, including dietary modifications and structured exercise programs, have also been shown to mitigate both metabolic and psychological symptoms in PCOS patients [32]. Future extended research needs to explore how psychiatric symptoms persist through time while assessing the success of specific therapeutic methods designed to increase mental health along with QOL within this group of patients.

Research findings support previous evidence which demonstrates that PCOS creates substantial psychological distress beyond its reproductive and metabolic conditions. Depression and anxiety affect a large number of people in this population creating an urgent need for integrated care strategies that enhance endocrine treatment with psychiatric care. The ongoing nature of PCOS as a disorder requires ongoing psychiatric evaluation instead of one-time screening to achieve better long-term health results for affected women.

5. Conclusion

The findings from the current investigation underscored the substantial burden on psychiatric morbidity and impaired QoL among PCOS women. With 50% participants exhibiting psychiatric disturbances, including anxiety disorders (38.3%) and depressive disorders (25%), the research highlighted the overall significance governing with the psychological burden and impact of PCOS beyond reproductive and metabolic manifestations. As there lies a strong association between PCOS symptoms, especially with symptoms associated with menstrual irregularities, weight gain, infertility, and psychiatric conditions, aligned to the existing literature sources, reinforcing needs with the integrated clinical management. The deterioration of QoL, predominantly in psychological domains, further substantiates necessity on the routine mental health screening in PCOS women. Given that the chronic as well as the evolving nature of disorders, multidisciplinary interventions, including gynaecological, endocrinological, psychiatric, and nutritional guidance and support needs to be emphasized for mitigation of both psychological and physical burdens. Future longitudinal studies can be devised in a manner for assessing the progression of psychiatric morbidity with time and further evaluation of study and its effectiveness of targeted interventions in improving the overall mental health outcomes and QoL in PCOS women.

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