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American Journal of Psychiatric Rehabilitation

Expert Opinion Article

Psychosocial Impact of Polycystic Ovary Syndrome among adolescent in a tertiary care center

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Abstract

Introduction: Polycystic Ovary Syndrome (PCOS) is a common endocrine condition among teenagers that considerably affects both physical and psychological health. Notwithstanding increasing awareness, the psychosocial aspects of PCOS in teenagers remain under investigated. This study aims to evaluate the psychosocial effects of PCOS in teenagers visiting a tertiary care facility, with particular emphasis on anxiety, sadness, and self-esteem.

Methodology: Cross-sectional research was performed over three months with 52 teenage females aged 11 to 19 years diagnosed with PCOS. Data were gathered using the Hospital Anxiety and Depression Scale (HADS) and Rosenberg's Self-Esteem Scale (RSES). Statistical analysis was conducted with SPSS version 26. Descriptive and inferential statistics were used, with a p-value of <0.05 being statistically significant.

Results: Of the 52 participants, the predominant age group was 17–19 years (42.3%), and a majority lived in rural regions (53.8%). The most prevalent clinical symptoms were menstrual abnormalities (48%), weight gain (38.4%), and acne (19.2%). According to the HADS, 57.6% fell within the borderline range for anxiety/depression, whilst 23% were classified as abnormal. Concerning self-esteem, 19.2% exhibited low self-esteem, 26.9% had medium self-esteem, and 53.8% possessed high self-esteem.

Conclusion: A considerable percentage of teenagers with PCOS have psychosocial challenges, notably anxiety and diminished self-esteem. Timely psychological evaluation and interdisciplinary treatment are essential for enhancing the quality of life in this demographic.

Keywords: PCOS, psychological health, menstrual abnormalities, Hospital Anxiety and Depression Scale, Rosenberg's Self-Esteem Scale

Introduction

Polycystic ovarian syndrome (PCOS) is a common reproductive endocrine disorder marked by diverse clinical manifestations, impacting around 6-8% of women of reproductive age. [1] The many manifestations of PCOS begin at a young age when a girl enters womanhood. throughout this pubertal transition, several traits may alter, leading to countless discoveries that may be transient and later stabilize throughout adolescence. [2] Early diagnosis is essential to prevent both immediate and long-term consequences of the condition. In 2006, the Androgen Excess Society (AES) released a consensus statement characterizing polycystic ovarian syndrome (PCOS) as a hyperandrogenic disorder, highlighting the need for clinical and/or biochemical evidence of hyperandrogenism in conjunction with other PCOS features for diagnosis. [3]

Most research on PCOS focuses on the endocrinopathy in afflicted women, whereas the underlying reasons of the altered reproductive physiology remain little evaluated. Although several relevant assessments have recognized the causal factors, the fundamental pathophysiological issue remains unascertained. The correlation between PCOS and psychiatric disorders has lately attracted the attention of the medical community. Multiple studies have linked certain attributes of PCOS, such as infertility, hirsutism, and acne, to reduced mental well-being. [4]

The research demonstrates that women with PCOS have markedly increased levels of anxiety, psychological discomfort, depressive symptoms, and social phobias. [5] Furthermore, some research suggests that a portion of PCOS patients may have clinically relevant psychopathology and reduced emotional well-being. [6] Sonino et al. shown that anxiety problems are common in people with PCOS and that significant cognitive impairment may occur in these individuals. [7] These women encounter an increased likelihood of psychological discomfort, which may substantially impair their quality of life. The reasons for these women's vulnerability to mental issues remain unclear; the processes behind psychological diseases are not well understood, although they presumably include several pathways. Stress may act as a catalyst for psychiatric disorders

via the hypothalamic-pituitary-adrenal (HPA) axis and circadian rhythm. [8]
Stress modifies this rhythm and disturbs the balance of stress-related neuroendocrine functions, thereby impacting health. Furthermore, research reveals an increased incidence of eating disorders and suicidal inclinations among these women. [9]
The information on mental disorders and emotional well-being in women with PCOS, especially across many countries, including our own, remains unclear. There is much contention and continuous discourse over the social and psychological variables associated with PCOS in the scientific community. This study aims to evaluate the psychosocial effects of PCOS in teenagers visiting a tertiary care facility, with particular emphasis on anxiety, sadness, and self-esteem.

Methodology
A hospital based cross-sectional study was conducted among 52 adolescent girls with PCOS attending a tertiary care hospital in Chennai, India for a period of three months. All girls aged between 11 to 19 years who had attained menarche and not on psychotropic medication were included in this study. The exclusion criteria were girls <11 years and >19 years, known cases of thyroid disorders, Cushing syndromes and type I diabetes mellitus. The sampling technique adopted was purposive sampling. The research was commenced after approval from the institutional ethics committee permission. Participants were told about the purpose of the study before to the interview, and their signed informed consent was acquired.
Sample size was calculated based on the proportion of patients with PCOS with psychosocial problems (35.6%) conducted by Rassi A et al [10], at a confidence interval of 95% and absolute precision of 13%, the required sample size works out to be 52. Hence, 52 adolescent girls with PCOS were selected for this stud.
Sociodemographic details (age, education, locality, BMI, family income) and clinical symptoms (acne, hirsutism, menstrual disorders, weight gain) were recorded.
Instruments Used:
Hospital Anxiety and Depression Scale (HADS):
The Hospital Anxiety and Depression Scale (HADS) is a 14-item instrument that assesses anxiety and depression, with 7 questions for each condition. Scores ranging from 0 to 7 are deemed normal, 8 to 10 are classified as borderline, while scores of 11 or more are regarded as abnormal.
Rosenberg's Self-Esteem Scale (RSES):
A 10-item Likert scale that measures responses from strongly agree to strongly disagree. Total scores span from 0 to 30, with scores below 15 signifying poor self-esteem, scores between 15 and 25 indicating medium self-esteem, and scores beyond 25 reflecting high self-esteem.
Statistical Analysis: The data collected was entered into Microsoft Excel 2019 spreadsheet, followed by analysis using SPSS version 26 (Statistical package for social science) Windows, Version 26.0. (IBM Corp. Released 2019. IBM SPSS Statistics for Armonk, NY, USA). All variables were represented in frequency and percentages. Charts and graphs were used when necessary

Results
The data was collected from 52 adolescent girls with PCOS attending a tertiary care hospital in Chennai, India for a period of three months.
The most common age group was 17–19 years, comprising 42.3%, followed by 14–16 years at 34.6%, and 11–13 years at 23.1%. A considerable percentage of participants were literate (73.1%) and were from rural regions (53.8%). Educational levels of parents showed a difference, with 61.5% of fathers being literate in contrast to just 36.5% of women. 71.2% of families reported a moderate income, whilst 19.2% were from low-income households. The BMI distribution revealed that 30.8% of the females had a normal BMI, 26.9% were underweight, 23.1% were overweight, and 15.4% were classified as obese.
The data indicate that a significant segment of the research population originates from low- to middle-income rural backgrounds, exhibiting considerable dietary imbalances and a risk of both underweight and overweight conditions.

Table 1: Socio-demographic factors

Variables		Frequency	Percentage
Age	11-13	12	23.1
	14-16	18	34.6
	17-19	22	42.3
Education	Literate	38	73.1
	Illiterate	14	26.9
Locality	Rural	28	53.8
	Urban	24	46.2
Father education	Literate	32	61.5

	Illiterate	20	38.8
Mother income	Literate	19	36.5
	Illiterate	33	63.5
Family income	Good	5	9.6
	Moderate	37	71.2
	Poor	10	19.2
BMI	Underweight	14	26.9
	Normal	16	30.8
	Overweight	12	23.1
	Obese	8	15.4

Menstrual abnormalities were the most commonly reported symptom (48.1%), followed by weight increase (38.4%) and acne (19.2%). Acanthosis nigricans was seen in 9.6% of cases, whereas hirsutism was present in 7.7%. Further, 19.2% reported experiencing depressed symptoms, while 7.7% were diagnosed with eating disorders.

These results highlight the intricate and multifarious characteristics of PCOS in teenagers, with reproductive and dermatological symptoms being the most salient. The occurrence of mood-related disorders and disordered eating, however less prevalent, underscores the rising psychosocial load.

Table 2: Frequency of clinical symptoms

Variables	Frequency	Percentage
Acanthosis nigricans	5	9.6
Hirsutism	4	7.7
Menstrual disorders	25	48.1
Weight gain	20	38.4
Acne	10	19.2
Depression	10	19.2
Eating disorders	4	7.7

Figure 1: Frequency of clinical symptoms

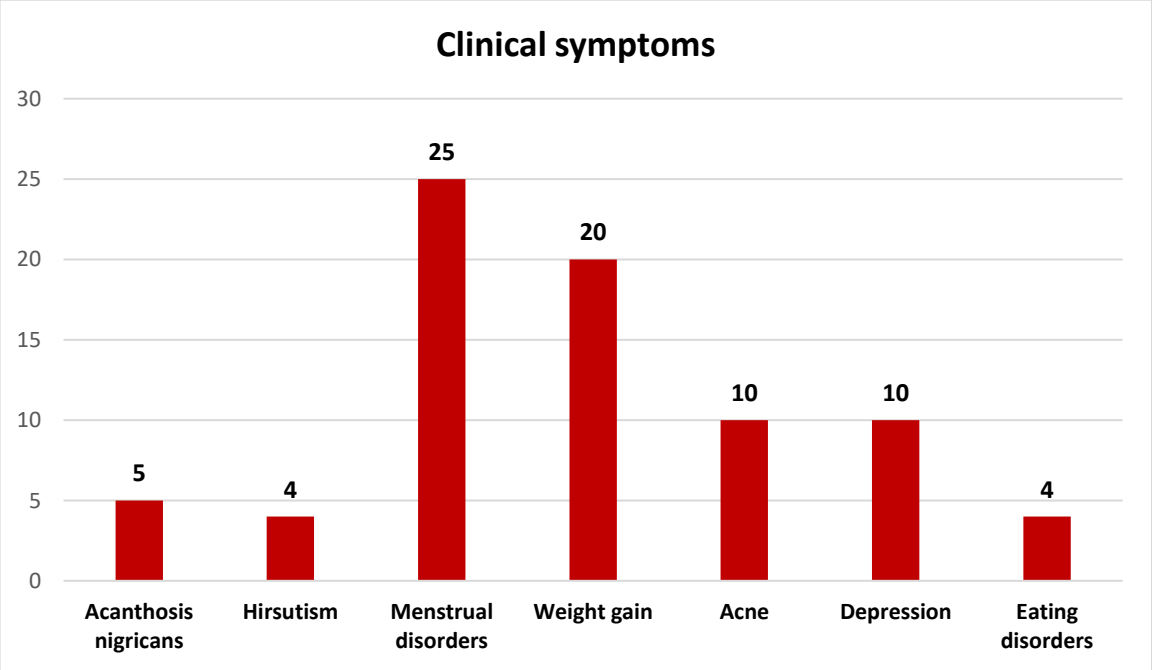


Table 3 indicates the range of anxiety and depression symptoms as assessed by the Hospital Anxiety and Depression Scale (HADS). About 19.2% of the individuals were within the normal range (0–7). A considerable percentage (57.6%) were within the borderline range (8–10), while 23% exhibited scores indicative of clinical symptoms of anxiety or depression (>11).

This indicates a significant level of psychological suffering in teenagers with PCOS, since approximately 80% of subjects had at least borderline emotional disturbance. The high prevalence of borderline and abnormal scores underscores the need for comprehensive psychological assessment.

Table 3: Hospital Anxiety and Depression scale

Variables	Frequency	Percentage
Normal	10	19.2
Borderline	30	57.6
Abnormal	12	23

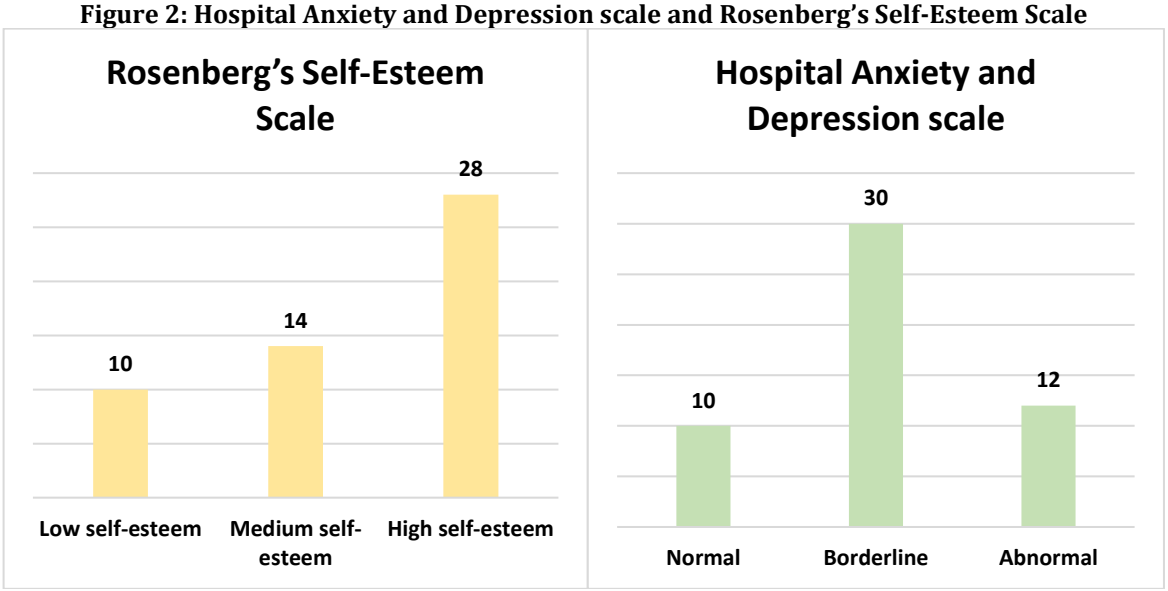
Table 4 presents the findings of the Rosenberg Self-Esteem Scale (RSES). More than half of the individuals (53.8%) had elevated self-esteem (scores >25). Nevertheless, 26.9% exhibited moderate self-esteem, while 19.2% had poor self-esteem (score <15), suggesting a possible susceptibility to psychological challenges such as social retreat or adverse self-perception.

The findings indicate that while many teenagers with PCOS possess a generally positive self-concept, a notable subset has reduced self-esteem, possibly affected by PCOS symptoms such as hirsutism, acne, and monthly abnormalities.

Table 4: Rosenberg's Self-Esteem Scale (Likert scale)

Rosenberg's Self-Esteem Scale	Frequency	Percentage
Low self-esteem	10	19.2
Medium self-esteem	14	26.9
High self-esteem	28	53.8

Figure 2: Hospital Anxiety and Depression scale and Rosenberg's Self-Esteem Scale



Discussion

This research underscores the considerable psychological cost experienced by teenagers with PCOS. Approximately 81% of the patients indicated borderline to abnormal scores on the Hospital Anxiety and Depression Scale, indicating a significant prevalence of emotional discomfort. Hussain et al. published same results, indicating that anxiety and sadness levels were considerably higher in PCOS patients compared to controls ($p<0.001$) [11].

The self-esteem assessments indicated that more than half of the individuals exhibited strong self-esteem, while a significant 19% expressed poor self-esteem. These results corroborate research by Bazarganipour et al., which indicated that self-esteem was markedly diminished in women with PCOS relative to their healthy counterparts [12].

Menstrual abnormalities and weight gain were among the most common symptoms, often leading to body image issues and social shame, thereby intensifying psychological suffering. Hirsutism and acne, however less prevalent in this generation, have been linked to diminished self-image and sadness in teenage females [13].

The association between PCOS and mental health is probably multifaceted. Endocrine disorders, including hyperandrogenism and insulin resistance, may affect mood regulation via neuroendocrine mechanisms [14]. Furthermore, the stress linked to chronic disease, stigma, and the perceived loss of femininity may exacerbate mental distress [15].
Timely detection and management, including psychological counseling and lifestyle changes, may significantly enhance health-related quality of life (HRQoL) in adolescents with PCOS.

Conclusion

Adolescents with PCOS are susceptible to several psychological issues, including anxiety, sadness, and diminished self-esteem. The results highlight the need of integrating mental health evaluation and assistance into conventional PCOS treatment methods. A comprehensive strategy including gynecologists, psychologists, and dietitians is crucial for integrative treatment and enhanced long-term results.

Conflict of interest: No
Funding: Self-funding

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