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Study to assess depression and anxiety among polycystic ovarian syndrome patients attending in tertiary care centre, South India: A hospital based cross-sectional study

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Abstract

Background: Polycystic ovary syndrome (PCOS) highly prevalent in India. Recent studies reported that prevalence of PCOS is 20-25% among reproductive age group and other age group is 3.7 to 22.5%.

Objectives: To estimate the prevalence of anxiety and depression among women with PCOS and to explore the association between depression, anxiety, and clinical manifestations of PCOS.

Methodology: A hospital based cross sectional study is done in tertiary hospital, Srikakulam from May to July 2024. A total of 100 Participants is recruited by convenient sampling and data was collected by semi structured questionnaire through interview. International classification of disease (ICD)-10 and Hamilton depression and anxiety rating scales are used for to know the prevalence and severity of depression and anxiety among participants.

Results: This study is found that the prevalence of depression among study participants is 65% and 58% were presented with anxiety.

Conclusion: PCOS is increasingly recognized as a significant public health issue, especially in urban areas where lifestyle factors are plying major role.

Keywords: PCOS, anxiety, depression, maternal health, cross sectional study

Introduction

Polycystic ovary syndrome (PCOS) is a complex condition influenced by multiple factors and genetic predispositions, characterized by a range of symptoms affecting reproductive, endocrine, and metabolic functions. Key pathological features include obesity and insulin resistance among patients with PCOS^[1]. Polycystic ovarian disease (PCOD), a prevalent reproductive endocrine disorder, affects 5% to 10% of women of reproductive age^[2, 3]. Women with PCOS have experienced adverse social, physical, emotional, and psychological consequences that negatively impacted their health. Eating disorders and suicidal behaviours are also noticed among the women with PCOS^[4]. As a result, their social and interpersonal relationships are hampered. Hirsutism, acne, menstrual irregularities, and infertility are commonly cited as distressing symptoms in adult women with PCOS^[5]. Conversely, weight gain has been identified as the most distressing symptom among adolescents and young women with PCOS^[6-8]. Additionally, they frequently report higher levels of depression and psychological distress, likely influenced by physical manifestations such as hyperandrogenism, obesity, hirsutism, cystic acne, seborrhoea, and hair loss, which can impact their feminine identity^[9-11]. Hence, the present study was done to estimate the prevalence of depression and Anxiety including their socio demographic factors among women suffering from PCOS.

Methodology

A hospital based cross sectional study is conducted at Government hospital, Srikakulam from May 2024 to July 2024. Women those who are attending to the tertiary centre, diagnosed with PCOS belonging to the age between 18-45 years fulfilling Rotterdam criteria and willing to participate were recruited in this study. And included 100 women those are attending to the tertiary hospital by convenient sampling method.

Women with pregnancy, mental illness prior to PCOS and not willing to participate were excluded from this study. Data collection started after institute ethical committee approval. Data collection is done through Pre designed, semi structured and pilot tested questionnaire in local language. International classification of disease (ICD)-10 was used for the diagnosis of depression and anxiety among PCOS women and Hamilton depression and anxiety rating scales was used to assess the severity. Data information like sociodemographic details, depression and anxiety levels among women with PCOS was collected. The study categorical variables were summarized with frequencies and percentages, while quantitative variables were summarized by means and standard deviation. All results were presented in tabular form and represented graphically. Chi square test is used for to know the association between PCOS and Depression, anxiety levels among the participants. Analysis is done by SPSS software version 25.

Results

This study is found that, Mean age of the study population is 26.3 ± 5.4 years. Around 68% participants were living in rural areas followed by 32% in urban slums, around 48% were graduate and 46% belongs to upper middle class. About 58% of the study population were married and 10% were having

children. Majority of them (72%) were not doing physical activity and 86% were having junk food consumption. The prevalence of depression and anxiety among the study population was 65% and 58% respectively.

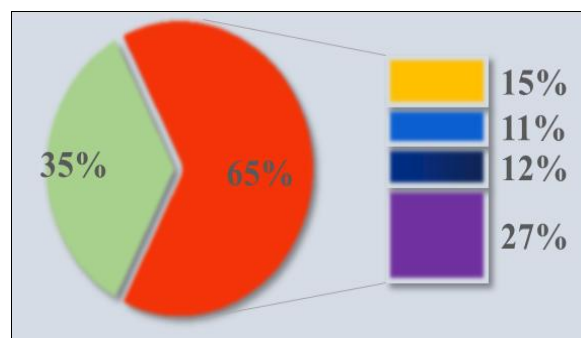


Fig 1: Distribution of study population based on severity of depression

The above Fig 1: reported that, the prevalence of depression among study participants is 65% and 35% participants are normal. Among them, very severe depression is 27% followed by mild depression (15%), severe depression (12%) and moderate depression (11%).

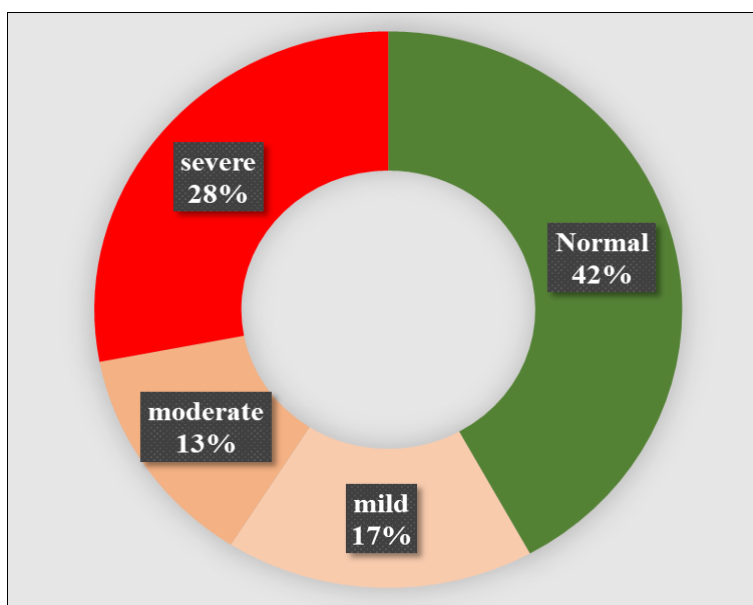


Fig 2: Distribution of study population based on the severity of anxiety.

The Fig 2: reported, the severity of anxiety levels among study participants. Out of total, 42% are normal, and 58% were

presented with anxiety. Among the 58%, severe anxiety is 28% followed by mild anxiety (17%) and moderate anxiety (13%).

Table 1: Association between depression and clinical manifestations of PCOS, (N=65)

PCOS clinical manifestations	Depression N (%)		P-Value
	Present	Absent	
Acanthosis	27 (41.5)	38 (58.5)	0.01
Alopecia	41 (63.1)	24 (36.9)	0.001
Hirsutism	38 (58.5)	27 (41.5)	0.42
Acne	41 (63.1)	24 (36.9)	0.09
Weight gain	52 (80.0)	13 (20.0)	0.07
Infertility	39 (60.0)	26 (40.0)	0.02
Menstrual irregularities	44 (67.7)	21 (32.3)	0.5

The above table 1; reported that participants those who are having alopecia, infertility, acanthosis they are presented with depression 63.1%, 60% and 41.5% respectively with statistically

significant. Majority of participants are depression present with weight gain is 80% and menstrual irregularities is 67.7% but statistically not significant.

Table 2: Association between anxiety and clinical manifestations of PCOS, (N=58)

PCOS clinical manifestations	Anxiety N (%)		P-Value
	Present	Absent	
Acanthosis	30 (51.7)	28 (48.3)	0.005
Alopecia	44 (75.9)	14 (24.1)	0.001
Hirsutism	28 (48.3)	30 (51.7)	0.35
Acne	32 (55.2)	26 (44.8)	0.5
Weight gain	38 (65.5)	20 (34.5)	0.02
Infertility	44 (75.9)	14 (24.1)	0.001
Menstrual irregularities	54 (93.1)	4 (6.9)	0.005

Table 2, given a report, the participants those who are having acanthosis, alopecia, infertility, weight gain they are presented with anxiety 51.7%, 75.9%, 75.9% and 65.5% respectively with statistically significant. And Majority of the participants are having anxiety with menstrual irregularities is 93.1% which is significant.

Discussion

58% of the participants were married, while 10% had children. In the research conducted by Chaudhari *et al.*, it was found that 50% of the participants were married and 48.57% had children.^[12] This finding is consistent with the findings of a study conducted by Saima *et al.* in Pakistan, where the majority of participants were likewise graduates (44.5%)^[13]. The majority of the research participants were found to be graduates (48%). Vishnubhotla's research done in Telangana also found similar results, with a prevalence rate of 62.9% for anxiety. However, Habib *et al.* observed lower rates of anxiety (14%) and depression (20%)^[14]. The variances seen in these investigations. Within the population of women afflicted with PCOS, the occurrence of sadness and anxiety has been shown to be as high as 65% and 58% respectively.

The results of this study are consistent with the research conducted by Chaudhari *et al.*, which found that monthly irregularities were the most common issue, and anxiety was connected to infertility and hair loss, while sadness was related to acne.^[14, 15] The research found that the most often reported symptom was menstrual irregularities, with a prevalence of 88%. Additionally, diseases such as acanthosis (skin darkening), alopecia (hair loss), infertility, and weight increase were shown to be related with greater rates of sadness and anxiety. Due to the substantial influence of mental health problems in PCOS, it is imperative to fight for the incorporation of psychiatrists in the multidisciplinary teams that provide therapy for these patients. Scientific research firmly backs therapies targeting mental health, such as early identification, timely treatment of psychiatric symptoms, and the incorporation of different stress management techniques to decrease anxiety, depression, and total stress levels in persons with PCOS.

Conclusion

The study population exhibited a prevalence rate of 65% for depression and 58% for anxiety. These observations highlight the diverse and complex influence of PCOS on mental well-being, emphasizing the need for thorough evaluation and customized therapies that target both the medical and psychological dimensions of this disorder.

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Not available

Conflict of interest

Not available

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