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Original Research Article

Prevalence of depression and anxiety among polycystic ovarian syndrome patients: a cross-sectional study

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ABSTRACT

Background: Polycystic ovarian syndrome (PCOS) is one of the most common Hormonal disorder among women in reproductive age group. According to Indian fertility society prevalence of PCOS ranges from 3.7% to 22.5%. Women with PCOS have experienced adverse social, physical, emotional, and psychological consequences and they are at risk of developing depression, anxiety, sadness, and loneliness which had negative impact on their health. The problem was often overlooked and limited literature is available in this aspect. The objectives of this study was (a) to estimate the prevalence of anxiety and depression among women suffering from PCOS; (b) to assess the socio demographic factors among women with PCOS; and (c) to determine the association between depression, anxiety with clinical manifestations of PCOS.
Methods: A cross-sectional study was conducted among 65 women effected with PCOS. International classification of disease-10, Hamilton depression rating scale and anxiety rating scale was used to assess the depression and anxiety. The required data was collected by semi structured, pilot tested questionnaire in local language. Data collected was analysed using MS excel 2019 and Epi-info version 7.2 software.
Results: The mean age of the study population was 24.2±4.7 years. The prevalence of depression and anxiety among the study population was 66.1%, and 56.9% respectively. Menstrual irregularities 86.6% was the most common symptom.
Conclusions: Higher prevalence of depression, anxiety was found among the PCOS patients, and associated with clinical manifestations. Thus, an appropriate approach towards psychological management should be implemented.

Keywords: Depression, Anxiety, Polycystic ovarian syndrome

INTRODUCTION

Polycystic ovary syndrome (PCOS) is one of the most common hormonal disorders among women in reproductive age group, and defined as a complex metabolic, endocrine, and reproductive disorder that results in hyper androgenism, polycystic ovaries, oligomenorrhoea or amenorrhoea and is associated with insulin resistance.[1]

According to Indian fertility society prevalence of PCOS ranges from 3.7% to 22.5%. Majority of the women with PCOS presents with overweight which can contribute to clinical hyper androgenism or alteration in sex steroid hormone synthesis.[2] In addition to gynaecological, endocrine, metabolic features of PCOS many mental complications are also associated with PCOS.[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. Moreover, obesity, hirsutism, hair loss, menstrual abnormalities, and facial acne harmed their physical health. Furthermore, impaired infertility

makes them humiliated and lowers their self-confidence, and the available literature was showing that they are at risk of having psychological issues such as anxiety, depression, sadness, and loneliness than others. Hence, the present study was conceptualised to estimate the prevalence of depression and Anxiety including their socio demographic factors among women suffering from PCOS, attending the Gynaecology outpatient department of Gandhi Hospital, Hyderabad. And this obtained data can be utilised by the stakeholders to prepare the services which can help in early diagnosis and treatment of depression and anxiety among the PCOS women.

METHODS

The present study on depression and anxiety among women effected with PCOS at Gandhi Medical College, Telangana was conducted by using following material and methodology. A descriptive crossectional study was conducted among the women diagnosed with PCOS as per (Rotterdam criteria) who were in the age group of 18 to 45 years attending the gynaecology outpatient department Gandhi hospital, Secunderabad, for a period of 3 months (April to June 2022).[5]

The study sample was selected from the women affected with PCOS, who were fulfilling the inclusion criteria, through Convenient sampling method, resulting in a sample size of 65. Women with Pregnancy, mental illness prior to PCOS and PCOS women who has not given consent were excluded from the study. The present study was approved by the Institutional ethical committee.

The data was collected by using study tools (i) pre designed, semi structured and pilot tested questionnaire in local language; (ii) international classification of disease-10 was used for the diagnosis of depression and anxiety among PCOS women; (iii) Hamilton depression and anxiety rating scales was used to assess the severity.[6-8] Data entry and processing was done using Microsoft excel and it was statistically analysed using Microsoft excel version 2010, Epi info software 3.01, and Statistical package for social sciences (SPSS Version 26).

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.

The difference in two groups was tested for statistical significance using the Chi-square test, p value less than 0.05 was considered to be statistically significant.

RESULTS

Socio-demographic profile

A total of 65 women already diagnosed with PCOS as per Rotterdam criteria attending the gynaecology outpatient department, Gandhi Hospital, Secunderabad were included in the present study.

The mean age of the study population was 24.2±4.7 years. About 66.1% were living in urban areas and 33.9% were from urban slums. Majority 69.2% of the study participants were Hindus followed by Muslims and Christians. About 44% of the study participants studied graduate followed by intermediate and high school and 40% of the study population were from upper middle class.

About 66.1% of the study population were married and 7.6% were having children. Majority 66.2% of them were not doing physical activity and 80% were having junk food consumption.

The prevalence of depression and anxiety among the study population was 66.1% (n=43), 56.9% (n=37) respectively. The prevalence of mild and moderate depression among the study population was 13.9% and 12.3% respectively where as 9.3% and 30.7% presented with severe and very severe depression. Among the study population around 32.4% presented with mild anxiety, 27.1% and 40.5% presented with moderate and severe anxiety respectively.

Among the study population menstrual irregularities 86.6% was the most common symptom followed by alopecia 73.1%, weight gain 61.2%. Among the study participants, symptoms of acanthosis, alopecia, and infertility are associated with higher proportion of depression.

This association was found to be statistically significant (p value=0.01, 0.0008, 0.01). Study participants presented with acanthosis, alopecia, weight gain, infertility, and menstrual irregularities, had higher prevalence of anxiety. This association was found to be statistically significant (p value=0.005, 0.002, 0.02, 0.00001, 0.006).

Table 1: Distribution of study population based on severity of depression.

Depression	N	%
Normal	22	33.8
Mild	9	13.9
Moderate	8	12.3
Severe	6	9.3
Very severe	20	30.7
Total	65	100.0

Table 2: Distribution of study population based on the severity of anxiety.[8]

Anxiety	N	%
Mild	12	32.4
Moderate	10	27.1
Severe	15	40.5
Total	37	100.0

Table 3: Association between depression and clinical manifestations of PCOS.

PCOS clinical manifestations	Depression N (%)		Chi square value	P value
	Present	Absent		
Acanthosis	24 (45.2)	29 (54.8)	5.64	0.01
Alopecia	43 (81.1)	10 (18.9)	11.16	0.0008
Hirsutism	25 (47.1)	28 (52.9)	0.75	0.38
Acne	32 (60.3)	21 (39.7)	2.8	0.08
Weight gain	36 (67.9)	17 (32.1)	2.8	0.08
Infertility	31 (64.5)	17 (35.5)	6.2	0.01
Menstrual irregularities	30 (60.1)	16 (39.9)	0.4	0.5

Table 4: Association between anxiety and clinical manifestations of PCOS.

PCOS clinical manifestation	Anxiety N (%)		Chi square value	P value
	Present	Absent		
Acanthosis	21 (51.2)	20 (48.8)	7.6	0.005
Alopecia	36 (87.8)	5 (12.2)	9.2	0.002
Hirsutism	20 (48.7)	21 (51.3)	0.7	0.3
Acne	24 (58.5)	17 (41.5)	0.4	0.5
Weight gain	29 (70.7)	12 (29.3)	5.3	0.02
Infertility	36 (87.8)	5 (12.2)	39.3	0.00001
Menstrual irregularities	39 (95.1)	2 (4.9)	7.48	0.006

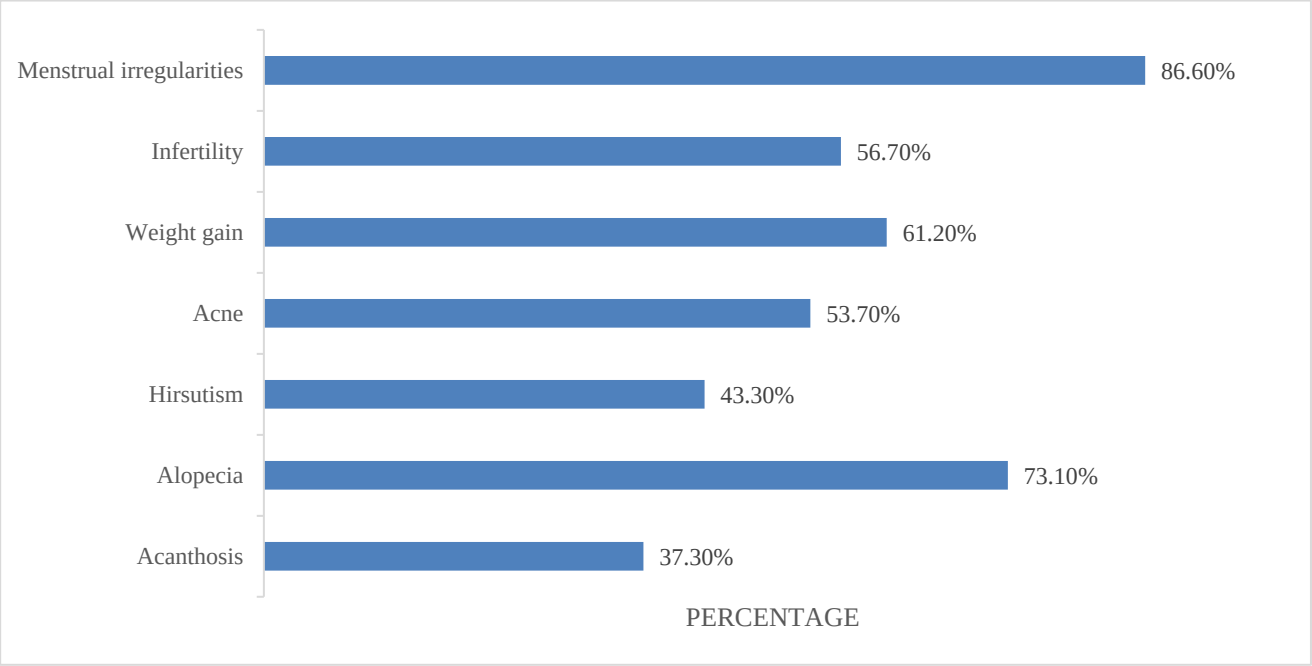

Figure 1: Clinical presentation of PCOS among the study population (multiple responses).

DISCUSSION

Present study has shown the mean age of study population was 24.2±4.7 years, which was almost same in Hussain et al in Kashmir valley 24.7±2.3 years and Upadhyaya et al, Uttarakhand i. e.; 25.2±3.6 years.[9,10]

In the present study about 66.1% of the study participants were married and 7.6% were having children. Whereas Chaudhari et al study (Mumbai) revealed that 50% and 48.57% of the study participants were married and having children respectively.[11] Majority of the study participants were graduates (44.6%); similar results were also observed in Saima et al study in Pakistan where majority of the study participants were graduates (44.5%).[12] The present study revealed that more than half of study participants were belonged to the middle class (52.3%) followed by lower class (29.2%). Similar results were observed in Prathap et al study in Kerala (middle class 49.5 %, lower class 19.4%).[13]

Among the PCOS affected women the prevalence of depression and anxiety was found to be 66.1 % and 56.9% respectively. And almost similar findings were given by Vishnubhotla in Telangana that was 62.9% whereas Habib et al reported low prevalence of anxiety and depression with 25% and 20% respectively this difference may be due to different study tools used in their study.[14,15] In the present study menstrual abnormalities were the most common symptoms 86.6% and acanthosis, alopecia, infertility, weight gain was associated with depression and anxiety. Similar findings were observed by Chaudhari et al where menstrual abnormality was the most common symptom and infertility, alopecia were associated with anxiety and acne was associated with depression.[11]

Limitations

Due to the cross-sectional nature of the study, causal relationships cannot be established, and some of the data may be subject to recollection bias.

CONCLUSION

Mean age of the study population was 24.2±4.7 years and 2/3rd of them were from urban area whereas nearly half of them were graduated and hailing from middle class. And 2/3 were married. The present study shown that 2/3rd of them were having depression and more than half of the study population were presented with anxiety. Menstrual abnormalities were found to be most common symptom followed by alopecia, weight gain, acne.

Recommendations

Symptoms of acanthosis, alopecia, and infertility are associated with higher prevalence of depression and study participants presented with acanthosis, alopecia, weight gain, infertility, and menstrual irregularities, had higher prevalence of anxiety. As most of the symptoms of PCOS are associated with depression and anxiety. Hence, the present study recommends for regular screening of PCOS patients for psychiatric morbidities. Health education should be done regarding the diet modification, regular physical activity, early diagnosis, and treatment in PCOS patients

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