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## Stress and anxiety among adolescent girls suffering with polycystic ovarian syndrome

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### Abstract

**Background:** PCOS negatively affects women's lives as it can lead to many health risks. PCOS manifests through symptoms such as hirsutism, obesity, acne, and irregular menstrual cycles, all of which tarnish body image and impair psychological well-being of adolescents with PCOS by threatening their feminine characteristics.

**Methodology:** A quantitative approach with descriptive co-relational study design was adopted for the study. The samples from the selected PUC and degree colleges from Kalaburagi were selected using convenient sampling technique. The sample consisted of 100 adolescent girls. The tools used for data collection was structured knowledge questionnaire.

**Results:** The study result reveal that, with regard to stress, mean was 36.23, median was 35, mode was 25 with standard deviation 12.91, range was 14-67 and with regard to anxiety mean was 27.42, median was 25, mode was 25 with standard deviation 9.01, range was 11-53. With regard to stress, majority 63 (63%) participants were had moderate level of anxiety, 16 (16%) of participants were had low level of anxiety and remaining 21 (21%) of participants were had high level of anxiety due to PCOS. With regard to anxiety, majority 54(54%) participants were had moderate level of stress, 27 (27%) of participants were had low level of stress and remaining 19 (19%) of participants were had high level of stress due to PCOS. The correlation between stress and anxiety scores of participants living PCOS is 0.128 is positive correlation and found not significant at  $p < 0.05$  levels.

**Conclusion:** Adolescent's girls suffering with PCOS needs counseling and educational interventions to relieve their psychological symptoms related to their condition.

**Keywords:** Stress, anxiety, polycystic ovarian syndrome, adolescent girls

### Introduction

Polycystic ovary syndrome (PCOS) is a common endocrine disorder that occurs in 6%-10% of women of reproductive age with a higher prevalence in obese women [1]. PCOS often presents during adolescence and is characterized primarily by ovulatory dysfunction and hyperandrogenism [2]. The manifestations typically associated with PCOS, including hirsutism (excess facial and body hair), obesity, acne, and irregular menstrual cycles, can cause considerable concern and distress with regard to body image and feminine identity, which can impair the psychological well-being of adolescents with PCOS [3].

PCOS negatively affects women's lives as it can lead to many health risks. PCOS manifests through symptoms such as hirsutism, obesity, acne, and irregular menstrual cycles, all of which tarnish body image and impair psychological well-being of adolescents with PCOS by threatening their feminine characteristics. Moreover, studies have shown an increase in dyslipidemia, obesity, hypertension, and diabetes, consequently increasing the risk of cardiovascular disease and metabolic syndrome in women with PCOS [4].

Numerous adult studies have revealed a higher prevalence of psychiatric disorders, notably increased depression, anxiety, and social phobia, in women with PCOS. Eating disorders and suicidal behavior are also more common among women with PCOS. Furthermore, recent studies reported that comorbid psychiatric disorders challenge the quality of life of PCOS patients. While such psychological consequences of PCOS have been extensively documented, the underlying factors that may predispose women with PCOS to an increased risk of psychiatric disorders still remains unclear. Certain features of PCOS, such as obesity, hirsutism, infertility, and neuroendocrine dysfunction, have been suggested as causal factors, but research findings are not consistent [5].

Mood disorders associated with PCOS are well established in the adult population; however, it is not well known whether these emotional disturbances are already present in adolescents

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with PCOS. Adolescence may have a negative impact on the symptomatology of young patients with PCOS. It represents a period where the concerns about physical appearance are most distinct. Body image and related self-concept arise as important factors associated with health and well-being during this life stage<sup>[6]</sup>.

Any deviation from the ideal body figure can easily result in depressive symptomatology, anxiety, and lower self-esteem, contributing significantly to the higher overall rate of psychiatric disorders among adolescents. Given that the physical manifestations of PCOS start to become evident at younger ages, likely owing to the current childhood obesity epidemic worldwide, and that the sensitivity of girls to their body image is more prevalent during the teen years, evaluating mood disorders among adolescents with PCOS becomes notably pertinent.

Adolescence is the period of life in which the manifestations of PCOS actualize, characterized mainly by ovulatory dysfunction and hyperandrogenism. Adolescence is also a time of increasing incidence of several classes of psychiatric issues. Behaviors and conditions that begin in adolescence affect health and lead to adulthood disorders. Almost 50% of mental disorders in adults started before the age of 18 which aggravates the ramifications of these disorders among young people and later on in their lives<sup>[7]</sup>.

Hence, present study is conducted to assess the stress and anxiety level among the adolescent girls suffering with polycystic ovarian syndrome.

### Objectives

1. To assess the level of stress and anxiety among adolescent girls suffering with polycystic ovarian syndrome.
2. To find the correlation between stress and anxiety among adolescent girls suffering with polycystic ovarian syndrome.
3. To find the significant association between the level of stress, anxiety and selected socio-demographic variables.

### Hypothesis

**H<sub>1</sub>:** There will be significant correlation between the stress and anxiety experienced by the adolescent girls suffering with polycystic ovarian syndrome

**H<sub>2</sub>:** There will be significant association between the stress score of adolescent girls suffering with polycystic ovarian syndrome and selected demographic variables

**H<sub>3</sub>:** There will be significant association between the anxiety score of adolescent girls suffering with polycystic ovarian syndrome and selected demographic variables.

### Methodology

- **Research Approach:** Quantitative Research Approach
- **Research Design:** Descriptive co-relational study
- **Sampling technique:** Non-Probability; Convenient Sampling Technique
- **Sample size:** 100
- **Setting of study:** Selected PUC and Degree colleges of Kalaburagi

**Tool used for data collection:** Following tools used for the data collection

- **Part I: Demographic data:** It consists of 10 items related to demographic data of participants
- **Part II: A modified stress scale:** A modified stress scale consisted of 19 statements regarding factors causing stress among the patients living with PCOS. There are five alternative response columns; Not at all, a little bit, moderately, quite a bit and extremely. all statements are scored as; 0 score for not at all, 1 score for a little bit, 2 score for moderately, 3 score for quite a bit and 4 score for extremely responses. The total score range from 19 to 76.
- **Part III: Modified Hamilton anxiety rating scale:** A modified Hamilton Anxiety rating scale consisted of 13 statements regarding experiencing of anxiety symptoms among girls suffering with PCOS. There are five alternative response columns; not present, mild, moderate, severe and very severe.

### Procedure of data collection

Formal administrative permission was obtained by college administration. Samples were selected as per the sampling criteria. The purpose of the study was explained and co-operation required from the respondents was explained to them. Confidentiality was assured. Consent to participate in the study was obtained from each sample. The data was collected by mixed method of self administration and interview method and it took 30-40 minutes to collect data by each sample.

### Results

#### Section 1: Socio-demographic profile

**Table 1:** Frequency and percentage distribution of participants according to socio demographic variables

		n= 100	
Parameters		Frequency	Percentage
Age (Yrs)	10-12	10	10
	12-14	38	38
	15-17	40	40
	18-19	12	12
Religion	Hindu	43	43
	Muslim	32	32
	Christian	20	20
	Any other	05	05
Type of family	Nuclear	47	47
	Joint	41	41
	Extended	12	12
Members in family	2	05	05

	3	14	14
	4	26	26
	>4	55	55
Education	No formal edn	06	06
	Primary school	57	57
	High school	29	29
	PUC	08	08
Family income	Below 5000	10	10
	5001-10,000	29	29
	10001-15000	43	43
	>15000	18	18
Dietary pattern	Vegetarian	64	64
	Mixed diet	36	36
Age of menarche	12-13 years	21	21
	14-15 years	61	61
	Above 15 years	18	18
Previous knowledge regarding PCOD	Yes	39	39
	NO	61	61
Sources of information	News paper	11	11
	Social media	35	35
	Family & friends	39	39
	Others	15	15

**Section II**  
**Findings related to stress and anxiety scores of participants**

**Table 2:** Mean stress and anxiety scores of participants n=100

Area	Mean	Median	SD	Mode	Range
Stress scores	36.23	35	12.91	25	14-67
Anxiety scores	27.42	25	9.01	25	11-53

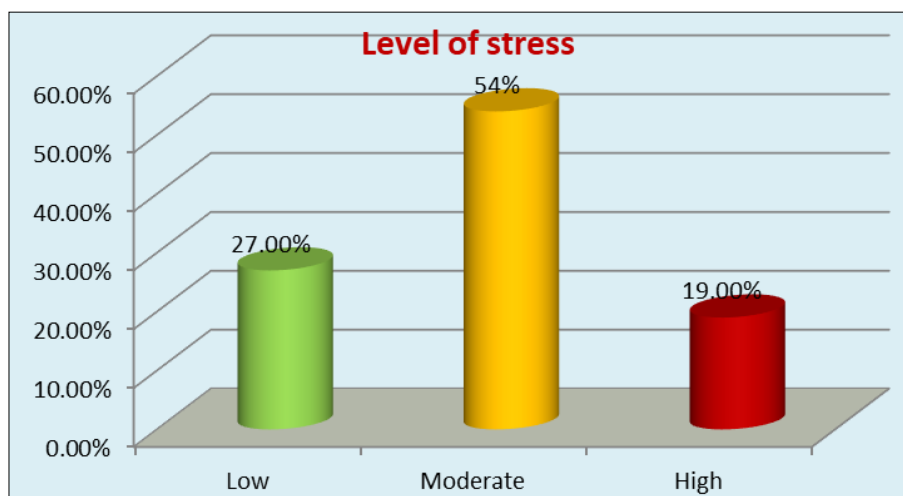
Table 2 reveals findings related to stress and anxiety scores of participants suffering with PCOS - With regard to stress, mean was 36.23, median was 35, mode was 25 with standard deviation 12.91, range was 14-67. With regard to anxiety mean was 27.42, median was 25, mode was 25 with standard deviation 9.01, range was 11-53.

**Level of stress and anxiety**

**Table 3:** Frequency and Percentage distribution of participants according to level of Stress n=100

Level of Stress		
Low (0-25)	Moderate (26-50)	High (51-76)
27 (27%)	54 (54%)	19 (19%)

The data presented in the Table 3 shows that, majority 54 (54%) participants were had moderate level of stress, 27 (27%) of participants were had low level of stress and remaining 19 (19%) of participants were had high level of stress due to PCOS.

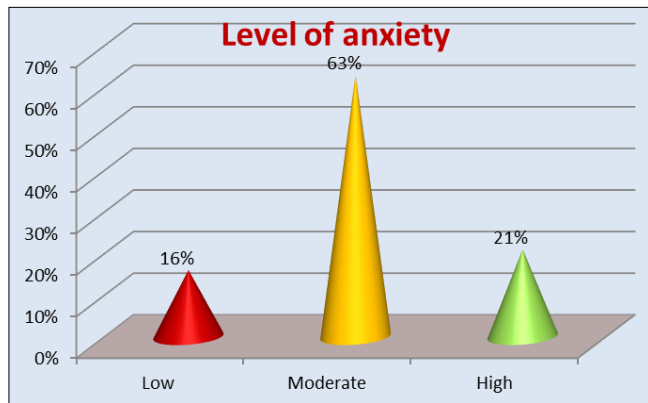


**Fig 13:** Bar diagram shows the percentage distribution of respondents with respect to level of stress

**Table 4:** Frequency and Percentage distribution of respondents according to level of anxiety n=100

Level of Anxiety		
Low (0-17)	Moderate (18-34)	High (35-52)
16 (16%)	63 (63%)	21 (21%)

The data presented in the Table 4 shows that, majority 63 (63%) participants were had moderate level of anxiety, 16 (16%) of participants were had low level of anxiety and remaining 21 (21%) of participants were had high level of anxiety due to PCOS.



**Fig 2:** Cone graph shows the percentage distribution of respondents regarding level of anxiety

**Section III**

**Findings related to relationship between stress and anxiety among participants suffering with PCOS**

In order to, find out the correlation of stress and anxiety scores of participants, a correlation coefficient was computed by using Karl Pearson’s Co efficient of correlation.

**Table 5:** Correlation coefficient of stress and anxiety scores of participants n=100

Score	Mean score	Correlation coefficient
Stress scores	36.23	0.128
Anxiety score	27.43	

$r(198) = 0.195$   $P < 0.05$

The data presented in Table 5 shows that the correlation between stress and anxiety scores of participants suffering with PCOS is 0.128 is positive correlation and found not significant at  $p < 0.05$  levels. Thus the hypothesis  $H_1$  is rejected, indicating no correlation between stress and anxiety.

**Section IV**

**Association between stress and anxiety scores with selected demographic variables of participants**

**Stress and demographic variables:** The computed Chi-square value for association between level of stress of participants suffering with PCOS is found to be statistically significant at 0.05 levels for dietary pattern and is not found significant at 0.05 level for other selected socio demographic variables. Therefore, the findings partially support hypothesis  $H_2$ , hence  $H_2$  is partially accepted inferring that participant’s level of stress is significantly associated with their dietary pattern.

**Anxiety and demographic variables:** The computed Chi-square value for association between level of anxiety of participants suffering with PCOS is found to be statistically significant at 0.05 levels for family income and is not found significant at 0.05 level for other selected socio demographic variables. Therefore, the findings partially support hypothesis  $H_3$ , hence  $H_3$  is partially accepted inferring that participant’s level of anxiety is significantly associated with their family income.

**Conclusion**

Findings of the present study revealed that, majority of the

participants were had moderate level of stress and anxiety due to PCOS and there was no relationship found between stress and anxiety scores. Adolescent’s girls suffering with PCOS needs counseling and educational interventions to relieve their psychological symptoms related to their condition.

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