



# Eating Behaviour, Sleep Quality, and Emotional Disturbance in women with Poly Cystic Ovary Syndrome (PCOS)

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## Abstract

Polycystic ovary syndrome (PCOS) a hormonal condition which can lead to many other issues including physical and psychological among women. Disturbance in sleep quality, eating pattern, and difficulty in mood regulation is reported by large number of PCOD patients. Psychological and neurological factors play a imperative role in PCOS (Shi, *et al.*, 2011). The present study aimed at comprising the Eating Behaviour, Sleep Disorder and Emotional Disturbance among PCOS & Non- PCOS women. Research was conducted with cross sectional research design. 200 females (100 PCOS, 100 Non- PCOS) were selected by using purposive sampling method from Delhi- NCR region. Measures used were Eating Disorder Diagnostic Scale (EDDS), Sleep Quality Scale and Emotional Regulation Questionnaire. **Result under** Independent *t*-test analysis revealed that PCOD and Non- PCOD group were significantly different on sleep quality, eating behaviour, and Emotional disturbance. PCOD group were found with poor sleep quality and eating habit and when compared with Non- PCOs. Emotional disturbance was reported to be high in PCOD women than Non- PCOD group.

**Key Words:** Polycystic ovary syndrome (PCOD), Non- PCOS, Eating Behaviour, Emotional disturbance, & Sleep Quality

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**Public Significance** - The present finding has its practical implementation in planning and providing the intervention oriented towards improving the QoL of women with PCOS through emphasizing on psychological aspects to improve.

## Introduction

Polycystic ovary syndrome one of the leading issue in women, one in 5 every Indian women is dealing with PCOS. This is not only a physical health issue but also affecting mental health. PCOS is associated with several mental health issues like, depression, anxiety, body image problems,

social anxiety, eating disorder, sleep disorder. Psychological and neurological factors play a crucial role in PCOS (Shi, *et al.*, 2011). The clinical manifestations of PCOS range from mild menstrual disorders to the development of growth and metabolic dysfunction. Women with PCOS are at risk of developing type-2 diabetes or



heart disease. There are few medications which are given to PCOS women first Met form in (Glucophage) which is first medicine to help PCOS women from insulin resistance, Clomifene which helps PCOS women for their ovulation, Birth control pills to regulate their mensuration cycle, statins to control high cholesterol level, Laser treatment for excessive facial hair growth. There are many opinions on this subject, and they often complement each other. The most widely accepted theory is that PCOS develops due to insulin resistance and hyper insulinemia, followed by hyper androgenemia.

Polycystic ovary disease (PCOS) is an endocrine (hormonal) problem that affects women. "Sleep disturbance may influence lifestyle women with self-reported polycystic ovary disorder (PCOS) is related with the next predominance of rest unsettling influences and weight (Shah, & Bhatia, 2022). "Increased prevalence of eating disorders, low self-esteem, and psychological distress in women with polycystic ovary syndrome has been reported in a community-based cohort study by Christietal., (2021). The predominance of eating disarranges in ladies with polycystic ovary disorder (PCOS) compared with women without PCOS. Moreover, the study addressed the relationship between PCOS, body mass list, self-esteem, and mental trouble scores. Additionally, in same study Cognitive Behavioural Therapy for Physical and Emotional Disturbances in Adolescents with Polycystic Ovary Syndrome was highlighted (Dana, et al., 2009).

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder affecting women of reproductive age. It is estimated that approximately 10% of women worldwide suffer from PCOS. The condition is characterized by hormonal imbalances, which can lead to a range of symptoms, including irregular menstrual cycles, infertility, excess hair growth, and weight gain. In addition to these physical symptoms, there is also evidence to suggest that PCOS may be associated with psychological and behavioural issues. For example, women with PCOS have been found to have higher rates of depression, anxiety, and other emotional disturbances compared to women without the condition. They may also be

more likely to engage in disordered eating behaviour and experience sleep disturbances.

Despite the growing recognition of these potential links between PCOS and psychological and behavioural issues, there is still relatively little research that has examined these relationships in depth. In aforesaid framework, in the present study an attempt was made to examine the eating behaviour, sleep disorder and emotional disturbance in relation to PCOS condition.

#### **Objective**

To study the sleep disorder, eating behaviour and emotional disturbance among PCOS & Non- PCOS women.

#### **Methods**

Research is conducted with cross sectional research design.

#### **Sample:**

200 females (100 PCOS, 100 Non- PCOS) were selected by using purposive sampling method from Delhi- NCR region.

#### **Research Design:**

The present study is comprised of cross sectional research design.

#### **Tests and Tool:**

**Sleep Quality Scale (SQS):** This scale was introduced by Chol Shin Division of Pulmonary and Critical Care Medicine Department of Internal Medicine Korea University Ansan Hospital. This scale Consisting of 28 items, the SQS evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty in waking, and sleep satisfaction.

**Eating disorder diagnostic scale (EDDS):** Eating disorder diagnostic scale which was given by Stice, Telch and Rizvi in 2000. It is a 22 item self-report questionnaire designed to measure Anorexia nervosa, Bulimia nervosa, and Binge-eating disorder symptomatology aligned with the DSM-IV diagnostic criteria. The scale is comprised of a combination of Likert ratings, dichotomous scores, behavioural frequency scores, and open-ended questions asking for weight and height.

**Emotional Regulation Questionnaire (ERQ):** This measure was given by Gross, & John, (2003). A 10-item scale designed to measure respondents'

tendency to regulate their emotions in two ways: (1) Cognitive Reappraisal and (2) Expressive Suppression. Respondents answer each item on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). This questionnaire involve two distinct aspects of emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave.

**Demographic data Sheet:** Participants will be asked to report their gender, age, education, occupation, ethnicity, and religion.

**Procedure**

In the present study sample of 100 female with PCOS and 100 Non- PCOS were selected through purposive sampling technique. To fill the responses on different scales to measure eating habits, sleep pattern and emotional regulation, informed consent was taken into consideration. Instructions were given to all the participants about the test. They were provided with a 3 different scales to measure eating habits, sleep pattern and emotional regulation i.e. SQS , EDDS,

and Emotional Regulation Scale. Data was analysed by using SPSS-28 version software.

**Ethical Consideration:**

- The informed consent was taken from participants.
- The participants were assured that personal information would keep confidential.

**Statistical Analysis**

Data was analysed under both descriptive and inferential statistical analysis with the help of Statistical Package for Social Sciences (SPSS) by using version 22.0 (Windows, 2010). The computed p values were less than 0.05 and 0.01 respective to each analysis was determined to be statistically significant.

**Result**

To find out the difference between PCOS and Control Groups on measure of Eating behaviour, Sleep disorder and Emotional disturbance Independent t-test analysis was used. The findings are described in following table (Table-1):

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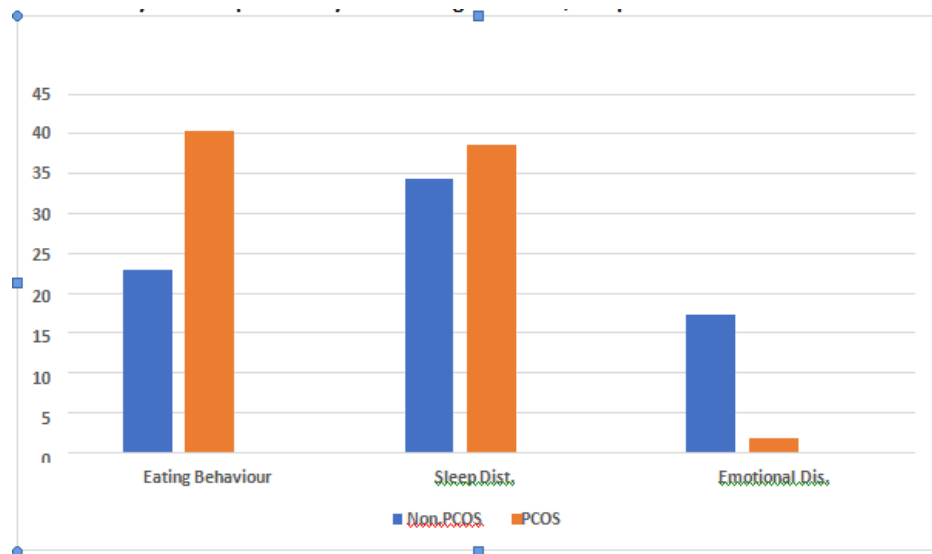
**Table 1**  
**Summary of t-test Analysis for difference between PCOS and Controlled Group**

Measures	PCOS		Non- PCOS		t	p
	Mean	SD	Mean	SD		
Sleep Quality	34.38	9.96	38.54	11.87	2.68*	.008
Eating Behavior	22.9	10.99	40.28	15.01	9.33*	.001
Emotional Disturbance	17.39	4.71	13.53	4.93	5.65*	.001

Note: \*= p <.01



**Figure 1**  
**Summary of Descriptive Analysis for Eating behaviour, Sleep disorder and Emotional disturbance**



Result Table 1 and corresponding figure 1 shows the difference between PCOS and Non-PCOS group on Sleep Quality, Eating Behaviour, and emotional disturbance &.

Results for Sleep Quality indicated that there is significant difference between PCOS (Mean =34.38 , SD =9.96) and Controlled group (Mean =38.54 , SD = 11.87) in sleep quality ( $t(2.683)$ ,  $p(0.008)$ ). Alongside result for Eating behaviour ( $t(9.339)$ ,  $p < .001$ ) further indicated that there is significant difference in eating behaviour between PCOS ( $M = 22.9$ ,  $SD=10.99$ ) and Controlled group ( $M = 40.28$ ,  $SD =15.01$ ). Additionally finding for emotional disturbance indicated that there is significant difference in emotional disturbance ( $t=5.654$ ,  $p < .001$ ) between PCOS (Mean = 17.39, SD = 4.71) and Controlled group (Mean = 13.53, SD =4.93).

To conclude PCOS group has a significantly high sleep disturbance, poorer eating behaviour and a

significantly high emotional disturbance as compared to controlled group ( Non-PCOS).

#### Discussion

The present finding revealed that PCOS and Non-PCOS groups are significantly different in their measure of eating behaviour, emotional Disturbance, and sleep Quality. More Meticulously, PCOS group was found with poor eating habits, higher emotional disturbed and with poorer sleep quality.

Based on the few studies conducted to date, women with PCOS may experience an increase in many psychological disorders. These are depression, generalized anxiety disorder, personality disorders, phobias, attention deficit hyperactivity disorder (ADHD) and eating disorders. Bipolar disorder, schizophrenia, and other mental disorders are also more common in women with PCOS experience an increase in many psychological disorders (Samuel, 2006). These are depression, generalized anxiety disorder,

personality disorders, phobias, attention deficit hyperactivity disorder (ADHD) and eating disorders. Bipolar disorder, schizophrenia, and other mental disorders are also more common in women with PCOS. Shahraki et al. (2018), Reported depression and Sexual Function were significant predictors of sexual quality of life-Female (SQOL-F).

Consistently, Christie et al., (2021) reported that Sleep disturbance may influence lifestyle behaviours in women with self – reported PCOS. As per findings sample with PCOS had more noteworthy unfavourable rest side effects counting serious tiredness, trouble resting and eager rest, compared with ladies without PCOS. In another study of Aneesa Thannickal, et al., (2020) studied Eating Sleeping and sexual function disorders in women with Polycystic ovary syndrome (PCOS). According to study, Compared to ladies without PCOS, ladies with PCOS were more likely to have bulimia nervosa, fling eating, or any eating clutter; but not anorexia nervosa. Ladies with PCOS were more likely to have rest clutters like hypersomnia and obstructive rest apnea. Ladies with PCOS had lower sexual fulfillment as measured on a visual simple scale, but no contrast in Add up to Female Sexual Work List.

Likewise, Chau et al., (2019) explored an increased prevalence of eating disorders, low self-esteem, and psychological distress in women with polycystic ovary syndrome: a community-based cohort study. Additionally the study revealed that Women's Wellbeing with self-reported PCOS status (PCOS n = 875 vs. non-PCOS n = 7,592) Compared with ladies not detailing PCOS, ladies detailing PCOS had higher predominance of eating clutters, low self-esteem, and mental trouble. The study further concluded that women with PCOS are more likely to report low self-esteem, mental trouble, and eating disarranges. Moo self-esteem and mental trouble are exceedingly related and encourage expanded the chance for eating disarray.

To conclude the present finding, PCOS condition can be related with an expanded hazard of eating behaviour, worsen sleep quality and emotional disturbance, which in turn related to poorer

quality of life. Indeed the present result limits to generalization of the present finding all over the PCOS population due to limited sample size. However, the present finding would be conducive in planning of intervention oriented towards improving the QoL of women with PCOS through emphasizing on psychological aspects to improve. The present study contributes valuable insights into the psychological aspects of PCOS and its impact on quality of life. The recent literature supports and strengthens the significance of your findings (Amiri et al., 2019). This research collectively underscores the need for interventions targeting psychological well-being to improve the overall quality of life for women with PCOS. In a nutshell, findings collectively underscore the significance of understanding the unique challenges faced by Indian women with PCOS. They emphasize the need for targeted interventions that address both the medical and psychosocial aspects of this condition to improve the overall quality of life for affected individuals.

#### **Author contributions:**

**Conceptualization:** Anand, & Manglani; **Methods:** Anand, and Jahan; **Data Collection:** Anand; **Data analysis:** Manglani; **Writing:** Anand; **Writing—review and editing:** Manglani, & Jahan.

#### **Declaration of interest**

The authors declare that there is no conflict of interest. All authors have read and agreed to the published version of the manuscript.

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