PROJECT REPORT

ANXIETY AND DEPRESSION AMONG UNMARRIED WOMEN (YOUNG ADULTS) WITH PCOS AND THOSE WITHOUT PCOS

CHAPTER 1

INTRODUCTION

INTRODUCTION

Polycystic ovarian syndrome, abbreviated as PCOS, is the most prevalent disorder among women, affecting approximately 5 to 10% of women in the Western world (Franks 1995). In India, the Indian Fertility Society has reported a prevalence rate ranging from 3.7% to 22.5% for PCOS. PCOS is a genetic condition characterized by various phenotypes and appearances. Women afflicted by this condition experience hormonal imbalances leading to issues such as infertility, obesity, and excessive facial hair growth. Furthermore, it can result in significant mental health challenges, including anxiety, depression, eating disorders, and social isolation. Among the complications associated with PCOS, acne, obesity, hirsutism, infertility, and menstrual irregularities have the most detrimental impact on women's lives. Mental health issues are more commonly observed in younger women who suffer from PCOS.

Psychological challenges are more common among women with PCOS, primarily due to factors such as obesity, excessive body hair, infertility, and alterations in physical appearance. Women diagnosed with PCOS are three times more prone to receiving diagnoses of anxiety and depression compared to those without PCOS. Research indicates that approximately 27% to 50% of women with PCOS report experiencing depression, while this figure stands at 19% for women without PCOS.

One of the hallmark features of PCOS is infertility and/or subfertility. The length of time a couple experiences infertility, the duration of their treatment, the types of treatments pursued, and the underlying causes of infertility can exert significant pressure on them. Additionally, societal expectations regarding childbearing and the expression of these expectations can influence the severity and depth of psychiatric symptoms. However, it's important to note that the existing literature in this area is somewhat limited and exhibits contradictions. A published meta-analysis has indicated an increased prevalence of depression in individuals with PCOS. This meta-analysis also pointed out that previous reviews and meta-analyses often suffered from small sample sizes, and they tended to focus on PCOS as a whole rather than its individual symptoms. Consequently, the

concept of causality remained elusive in these studies.

SYMPTOMS: Hirsutism, acne, and obesity represent significant symptoms of PCOS, and these factors have a psychological impact on affected women, often resulting in social withdrawal. This effect is particularly pronounced among adolescent girls, where it can trigger anxiety and depression, primarily stemming from negative body image concerns and apprehension about societal disapproval.

Anxiety can be differentiated from fear, which represents an appropriate cognitive and emotional reaction to a perceived threat and is associated with specific responses like fight-or-flight reactions, defensive behaviors, or escape. It manifests in situations perceived as uncontrollable or unavoidable, even if they are not realistically so. According to Barlow (2001), anxiety can be defined as "a future-oriented mood state in which one is prepared to deal with upcoming negative events." The key distinction between anxiety and fear lies in the consideration of future versus present dangers. In the realm of positive psychology, anxiety is characterized as a mental state that arises when an individual faces a challenging situation for which they lack adequate coping skills.
distorted.

Anxiety is typically viewed as a natural response to stressors, serving as a mechanism that can assist individuals in managing challenging situations by motivating them to effectively cope. Nevertheless, when anxiety reaches an overwhelming intensity, it may be categorized as an anxiety disorder. In most cases, it contributes to enhanced individual performance. This underscores the importance of ensuring that anxiety does not exceed a certain threshold, as surpassing this limit can lead to its escalation into abnormal levels (National Institute of Mental Health, 2008).

Anxiety can manifest in two distinct ways: as chronic (or generalized) anxiety characterized by persistent, daily symptoms that diminish one's quality of life, or as acute anxiety marked by intermittent, intense panic attacks in response to sporadic stressors. The number, intensity, and frequency of anxiety symptoms can vary from person to person. Although nearly everyone experiences anxiety at some point, the majority do not develop persistent, long-term issues with it. Anxiety is a uniquely human phenomenon, often considered a defining aspect of the 21st century, often referred to as "the age of anxiety." While both fear and anxiety have evolved as adaptive responses to cope with danger and threat over countless generations, they are not synonymous. Fear is typically episodic, whereas anxiety tends to be chronic (Jitender & Mona, 2015).

DEPRESSION

THE SYMPTOMS OF DEPRESSION

The severity of the symptoms also varies from person to person:

a) Prolonged feelings of sadness, anxiety, or a persistent sense of emptiness
b) Diminished interest or enjoyment in your typical activities, including sexual activity
c) Restlessness, irritability, or excessive episodes of crying
d) Experiencing emotions of guilt, worthlessness, helplessness, hopelessness, or pessimism
e) Sleeping excessively or insufficiently, with early morning awakening
f) Fluctuations in appetite and/or weight, involving both loss and gain
g) Reduced energy levels, persistent fatigue, and a sensation of slowed-down movement
h) Contemplations of death or suicide, or actual suicide efforts
i) Difficulty in concentrating, recollection, or decision-making

Women with PCOS exhibit elevated rates of depression and anxiety when compared to women without PCOS. Consequently, both Indian and international guidelines emphasize the importance of considering and screening for psychological factors in all women diagnosed with PCOS. Two studies conducted to assess the prevalence of anxiety and depressive disorders among women with PCOS reported rates of 28% and 39% for anxiety and 11% and 25% for depression, respectively. Numerous investigations, such as Hollinrake et al. (2007), have found that PCOS women experience higher levels of anxiety and depression compared to their healthy counterparts. While much of the research has focused on depression, other studies, such as Månsson et al. (2008), have highlighted the significance of anxiety in PCOS. It has been proposed that mood disturbances in PCOS may be attributed to the distress associated with common PCOS symptoms such as obesity and hirsutism (Eggers and Kirchengast, 2001). In general, research suggests a connection between obesity and depression in both healthy women (Stunkard et al., 2003) and women with PCOS (Rasgon et al., 2003). Women exhibit variability in how much they are emotionally impacted by the various symptoms associated with PCOS. For instance, according to Farrell and Antoni (2010), PCOS symptoms that influence physical appearance tend to evoke more distress in younger women compared to their older counterparts. Given that PCOS encompasses a range of potentially distressing symptoms, pinpointing the primary cause of distress or assessing

the relative contributions of causal factors can be challenging. Furthermore, since PCOS often co-occurs with obesity, it's not surprising that women with PCOS tend to experience a higher degree of mood disturbances and psychiatric issues than women without PCOS, as noted by Farrell and Antoni (2010).

In a study involving a Brazilian cohort of women with PCOS, researchers discovered that approximately 58% of the participants had at least one depressive disorder, 78% exhibited behavioral changes, 26% were diagnosed with a major depressive disorder, and 11% had bipolar disorder. Additionally, Weiss and Bulmer conducted a study examining the psychological characteristics of PCOS and found that 24% of women experienced mild depression, 5% had moderate depression, and 2% were diagnosed with severe depression. Consequently, the present study aims to contribute to this body of research in a similar direction.

CHAPTER 2
REVIEW OF RELATED LITERATURE

INTRODUCTION

"An essential aspect of a research project is review of related literature"

- J. Mouly (1979)

The examination of relevant literature holds equal significance within the research process, on par with any other research component. This process entails the systematic identification, location, and analysis of documents containing information pertinent to the research problem at hand. The primary objective of conducting a literature review is to discern whether any prior studies have addressed the same issue. Moreover, the review serves a crucial role in guiding the planning of the current study, including the allocation of resources, the selection of specific methodologies and instruments, which are tailored to the research. Familiarity with previous research also aids in the interpretation of the study's findings. Ultimately, these reviews yield information that can either support or challenge the conclusions drawn in the investigator's research, thus providing valuable insights for future research endeavors.

NEED FOR THE REVIEW OF LITERATURE

A comprehensive review of the literature can significantly assist the researcher in gaining a multifaceted understanding of the problem. It enhances the depth and richness of the study, providing essential insights that foster creative thinking within the research study.

PURPOSE OF THE REVIEW

1. Examining the relevant literature empowers the researcher to establish the boundaries of their field of study. It aids in delineating and precisely defining the research problem. Familiarity with related literature keeps the researcher updated on previous work, enabling them to formulate clear and concise research objectives.

2. Through a review of the pertinent literature, the researcher can steer clear of unproductive and futile problem areas. They can strategically select areas where positive findings are more likely to emerge, ensuring that their efforts contribute meaningfully to the existing knowledge base.

3. The review of related literature also serves as a preventive measure against unwittingly duplicating well-established findings. Replicating a study is redundant when the stability and validity of its results have already been conclusively established.

4. Another crucial reason for conducting a literature review is to gain insights into the recommendations made by previous researchers in their studies for further research endeavors.

Studies related to Anxiety and depression among women due to PCOS

In a study conducted by Aditi P in 2018, a total of 70 females within the reproductive age group (18-45 years) who met the Rotterdam criteria for PCOS and did not have any other psychiatric illnesses potentially leading to anxiety and depression were examined. These participants were assessed using the Hamilton Rating Scale. Among the 70 females, 27 were identified as having an anxiety disorder, 18 were found to be experiencing depression, and 10 females (equivalent to 14.3%) were coping with both anxiety and depression. The study revealed a prevalence of approximately 38.6% for anxiety and 25.7% for depression. Half of the total sample, which accounts for 35 females, did not exhibit symptoms of either anxiety or depression. Furthermore, the research indicated that issues such as infertility and alopecia were associated with anxiety, while acne was linked to depression. The Hamilton Rating Scale was employed to assess the severity of anxiety

and depression symptoms, with results indicating 62.9% with mild anxiety, 29.6% with moderate anxiety, and 7.4% with severe anxiety. Regarding depression, the findings showed 50% with mild depression, 38.8% with moderate depression, and 11.10% with severe depression.

Additionally, a study from India conducted by Hussain A, Chandel RK, Ganie MA, Dar MA, Rather YH, Wani ZA, et al. in Kashmir also established a connection between PCOS and anxiety and depression, reporting prevalence rates of approximately 39% and 27%, respectively, for anxiety and depression.

In 2011, Livadas conducted a study focusing on the association between anxiety and the hormonal and metabolic profiles of women with polycystic ovarian syndrome (PCOS). Studies have indicated a higher prevalence of psychological issues, including anxiety, depression, and eating disorders, among women with PCOS compared to those who have normal ovulation and are not hyperandrogenic. The study aimed to explore the connection between the severity of anxiety, depression, and eating disorders, as determined through self-reported symptoms, and the extent of hormonal and metabolic irregularities in women with PCOS. To achieve this, the PCOS cohort was divided into three subgroups based on the level of anxiety. A total of 130 women with PCOS, matched for age and BMI, were included in the study. Each participant underwent assessments of hormonal and metabolic status, as well as a psychological profile evaluation using specific questionnaires. Specifically, anxiety (both trait and state) was measured using the STAI-T and STAI-S, while depression and eating disorders were assessed using the Beck Depression Inventory and the Eating Attitudes test, respectively.

The investigation indicated that there were no significant differences in age and BMI among the subgroups. However, when comparing subjects with the highest STAI-S scores to those with the lowest STAI-S scores, there were notable increases in both the homeostasis assessment model-insulin resistance (HOMA-IR) and free androgen index values ($P < 0•05$). In terms of trait anxiety, as assessed by STAI-T, there was a significant elevation ($P < 0•05$) in HOMA-IR values within the subgroup exhibiting higher STAI-T scores when compared to the group with lower STAI-T scores.

In women diagnosed with PCOS, the severity of anxiety, whether in the state or trait form (STAI-S, STAI-T), appears to follow a pattern similar to that of hyperandrogenemia and insulin resistance. These associations were observed independently of factors such as age and BMI. However, the specific pathophysiological mechanisms underlying the link

between psychological morbidities and androgen excess, as well as insulin resistance in PCOS, remain to be fully understood.

CHAPTER 3

SIGNIFICANCE OF THE STUDY

SIGNIFICANCE OF THE STUDY

By utilizing the findings from this study, it becomes possible to offer early interventions to women affected by PCOS, consequently enhancing their overall quality of life. It is crucial to recognize that psychological well-being plays a pivotal role in the management of polycystic ovary syndrome (PCOS) and is an integral aspect of fostering self-efficacy and maintaining a healthy lifestyle. Therefore, there is an imperative requirement to develop a comprehensive strategy aimed at enhancing the psychological well-being of women diagnosed with PCOS.

Mental health is a fundamental aspect of overall well-being, exerting a profound influence on social and economic outcomes throughout one's life. It stands as a crucial indicator of healthcare quality within society. Numerous chronic illnesses have the potential to impact mental health. In the case of PCOS, its symptoms and associated comorbidities elevate the risk of adverse psychological health consequences. Mental well-being is particularly intertwined with the management of polycystic ovary syndrome, playing an essential role in fostering self-efficacy and promoting a healthy lifestyle. Prioritizing lifestyle modifications is key in managing PCOS, as even modest adjustments to lifestyle and weight balance can lead to symptom improvement, increased ovulation, and enhanced fertility. However, mental disorders such as depression or anxiety can hinder these critical changes, impeding lifestyle modification efforts and consequently leading to negative clinical outcomes. Unfortunately, there has been limited attention directed toward the mental health of women with PCOS. Therefore, it becomes imperative to assess and address the mental health needs of this specific group of women. Consequently, this study was conducted with the aim of enhancing the psychological well-being of women diagnosed with PCOS.

CHAPTER 4
METHODOLOGY

RESEARCH METHODOLOGY

Research is a systematic and methodical pursuit aimed at uncovering answers to significant questions about various phenomena or events through the application of scientific methodologies. It involves an objective, impartial, empirical, and logical examination and documentation of carefully controlled observations. This process may ultimately lead to the formulation of generalizations, principles, or theories, enabling the prediction and control of events that can be either causative factors or outcomes of specific phenomena. Research represents a structured and refined cognitive undertaking that employs specialized tools, instruments, and procedures to arrive at a more comprehensive solution to a problem than what can be attained through ordinary means. Typically, research initiates with a question at its core. It is guided by three primary objectives: factual, practical, and theoretical, each of which corresponds to three distinct research types: historical, experimental, and descriptive.

Research Problem

Research Problem

The primary research objective of the current study is to assess and contrast the levels of anxiety and depression in women with PCOS and compare these with women who do not have PCOS. Additionally, this study seeks to examine and compare other factors, including marital status and employment, among women with PCOS.

Objectives

- To evaluate and contrast the levels of anxiety among women with and without PCOS.
- To assess and compare the levels of depression in women with and without PCOS.
- To examine and compare anxiety and depression levels in women with PCOS who are employed versus those who are not employed.

Hypotheses

There is significant difference in the anxiety level of women with PCOS and without PCOS

There is significant difference in the depression level of women with PCOS and without

PCOS

A notable disparity exists in the levels of anxiety and depression among women with PCOS based on their employment status.

Operational definitions

PCOS: It represents a "syndrome" characterized by a collection of symptoms impacting ovarian function and ovulation, encompassing three primary features:

- Ovarian cysts,
- Elevated levels of male hormones
- Irregular or absent menstrual cycles

ANXIETY: Anxiety is an unpleasant sensation characterized by nervousness, fear, or apprehension regarding potentially adverse events. In certain individuals, these sensations can persist and intensify. Prolonged anxiety can disrupt everyday functioning, manifest physical symptoms, and necessitate intervention or treatment.

DEPRESSION: Depression is a prevalent and severe condition that has a detrimental impact on an individual's cognitive, emotional, and behavioral aspects. Those with depression experience persistent and intense negative emotions and thoughts. This condition has the potential to affect both the physical and emotional well-being of individuals, causing disruptions in their daily activities.

Depression and anxiety have various impacts on the quality of life, including physical effects such as

- Alterations in eating and sleeping patterns.
- Psychologically, through decreased motivation and heightened feelings of worthlessness.
- Socially, by influencing interpersonal relationships.

Sample

The study sample consisted of 120 women who were carefully matched based on income, socioeconomic background, and education. Among these women, 60 were diagnosed with PCOS, and the remaining 60 were diagnosed without PCOS.

Sampling criteria

In our study, we utilized purposive sampling techniques, which involve the deliberate selection of individuals meeting specific criteria. The study comprised a total of 120 unmarried and employed women, with 60 women diagnosed with PCOS and 60 women without a PCOS diagnosis.

Inclusion Criteria –

1) Women who have received a PCOS diagnosis from a certified gynecologist.
2) Young adult females within the reproductive age bracket (21 to 25 years).
3) Individuals who are willing to provide informed consent.
4) Unmarried female participants.
5) Employed female participants.

Exclusion Criteria –

1) Women with pre-existing psychiatric disorders and medical conditions that may contribute to anxiety and depression issues.
2) Women with co-existing and substantial medical illnesses.
3) Women aged below 21 and above 25.
4) Married women.
5) Women who are not currently employed.

Research Design

The research design encompasses the set of research methods and techniques selected by a researcher to frame their study. In the current investigation, the objective is to determine if there exists a relationship between anxiety and depression in women with PCOS. To address this, we adopted a correlation research design approach to ascertain whether a positive, negative, or zero correlation exists between these two variables, without implementing any control measures. In this study

Variable of the study

Independent Variable – PCOS

Dependent Variable – Anxiety and Depression

Tools Used-

Socio-Demographic Sheet and Consent Form

To gather data on the social and demographic factors, including name, age, gender, and other relevant demographic information of the participants, ethical procedures were followed. In adherence to ethical standards, participants provided their consent and were thoroughly informed about the study. Their participation was contingent upon their voluntary and informed consent by signing the required documents.

BECK DEPRESSION INVENTORY (ORIGINAL BDI, BECK ET AL., 1961)

The BDI, initially introduced in 1961, has undergone multiple revisions, including one in 1988 (Beck et al.). This assessment tool has gained widespread use for evaluating the severity of depression among patients meeting clinical diagnostic criteria for depressive syndromes. Additionally, the BDI has found applications in research involving non-

clinical populations, where its primary purpose is to detect instances of depression or depressive thoughts.

The BDI has gained widespread acceptance among clinicians due to its reliable and valid nature, making it an objective measure of depressive thoughts. Its primary application is often evident in assessing changes in the level or intensity of depression. In the context of managed healthcare and the increasing demand for accountability among psychotherapeutic service providers, the BDI serves as a dependable and valid tool for documenting alterations in depressive symptoms and attitudes resulting from therapy.

The Original BDI is a self-administered questionnaire, typically taking approximately 15 minutes to complete. However, respondents should possess a reading comprehension level similar to that of fifth or sixth-grade to fully comprehend the questions. This 21-item scale evaluates various aspects including mood, pessimism, feelings of failure, self-dissatisfaction, guilt, self-punishment, self-dislike, self-accusation, thoughts of suicide, crying, irritability, social withdrawal, indecisiveness, changes in body image, work-related difficulties, insomnia, fatigue, loss of appetite, weight changes, preoccupation with somatic symptoms, and loss of libido.

It is crucial to emphasize that the tool employed in the study (BDI) is a self-reported assessment, and the researcher did not interfere with the participants' self-observations.

Validity

The mean correlation between the overall scores of the BDI and clinical depression assessments surpassed .90 for both psychiatric patients and individuals without clinical conditions. The BDI demonstrates effectiveness in discriminating among distinct mood disorder subcategories, including dysthymia and major depression, as well as various symptoms like sadness and diminished libido. Furthermore, the BDI can distinguish between psychiatric outpatients diagnosed with major depression and those with generalized anxiety disorders.

Reliability

The BDI demonstrates robust internal consistency, with alpha coefficients spanning from .73 to .92 and a mean of .86 (Beck, Steer, & Garbin, 1988). This substantial internal consistency is evident in alpha coefficients of .86 for psychiatric populations and .81 for non-psychiatric populations, as reported by Beck et al. in 1988.

Scoring

During the scoring process of the test, each response is attributed a value ranging from 0 to 3, and these values are then aggregated to compute the overall score. This total score is subsequently matched against a predefined key to evaluate the severity of depression. The established cutoffs for interpretation are as follows: A total score falling within the range of 0-9 suggests an absence of depression, whereas a score in the range of 10-18 signifies mild to moderate depression. Scores ranging from 19-29 are indicative of moderate to severe depression, and a total score falling within 30-63 indicates severe depression. Higher total scores on the scale correspond to more pronounced depressive symptoms.

STATE TRAIT ANXIETY INVENTORY (STAI)

The STAI, created by Spielberger et al. (1970), was designed to evaluate anxiety in terms of states versus traits. The state assessment gauges the individual's current emotional state, capturing how they feel "right now" or at the present moment. Participants are prompted to rate the intensity of their anxious emotions using a four-point scale, indicating the extent of their feelings as: "not at all," "somewhat," "moderately so," or "very much so." In contrast, the trait anxiety measurement focuses on the individual's typical or general emotional disposition. It involves self-rating on a four-point scale, ranging from "almost never" to "almost always," to assess how they generally feel.

Reliability: Several researchers in the area conducted testing on this standardized instrument within the local context. The split-half reliability for State anxiety was found to be 0.89, and for Trait anxiety, it was determined to be 0.79.

Validity: The correlation coefficient achieved for the State inventory was 0.84, while for the Trait inventory, it was 0.86. Additionally, item analysis confirmed face validity. In the previous study, Cronbach's alpha was greater than 0.88 for state anxiety and greater than 0.83 for trait anxiety.

Scoring: The STAI offers a score range that spans from a minimum of 20 to a maximum of 80 for both the State and Trait subscales. Respondents provide their self-assessment for each STAI item by using a four-point scale, as detailed below:

State Anxiety	**Trait Anxiety**
1. Not at all	1. Almost never
2. Somewhat	2. Sometimes
3. Moderately so	3. Often
4. Very much so	4.Almost always

The maximum total score for STAI is set at 160. In this study, STAI scores below 50% will be categorized as indicating mild anxiety, scores falling between 50% and 70% will be classified as moderate anxiety, and scores exceeding 70% will be designated as severe anxiety.

STATISTICAL TECHNIQUES

The data was subjected to analysis, employing both descriptive and inferential statistics, specifically the t-test.

Descriptive statistics were utilized to organize the data into tables, graphs, and figures, employing measures such as mean, standard deviation, frequency, and percentage.

Inferential statistics, specifically the t-test, were employed to examine the hypothesis.

The t-test was applied to assess whether a significant difference existed in the anxiety and depression levels between women with PCOS and those without PCOS. Additionally, the t-test was used to investigate if there was a significant difference in anxiety and depression levels among women with PCOS based on their employment status.

CHAPTER 5
REUSLTS & DISCUSSION

RESULTS & DISCUSSION

Considering the study's objectives and their associated hypotheses, the data underwent statistical processing employing suitable methods and techniques. Consequently, after data collection, it was imperative to process and analyze the data to draw valid conclusions.

Data analysis involves scrutinizing the provided information to uncover underlying factors or significance. This procedure encompasses breaking down intricate elements into simpler components and subsequently reconstructing these components into a new arrangement, ultimately aiding in the interpretation of the data.

Interpretation stands as the crucial juncture within the overall research process, demanding a thorough assessment of the analysis results while accounting for all data limitations. As a result, the process of data analysis and interpretation equips researchers with the means to effectively address related issues using appropriate statistical methods, thus preventing unnecessary efforts. In the context of this study concerning anxiety and depression among unmarried young adult women with and without PCOS, the data analysis and interpretation were conducted as follows:

The final analysis of the study encompassed a total of 120 women, evenly divided into a PCOS group consisting of 60 women and a Non-PCOS group comprising another 60 women. Initially, anxiety and depression screening were conducted for the 60 women in the PCOS group. The mean age (in years) for the PCOS group was 24.99 (SD±6.17), while the control group had a mean age of 25.00 (SD±6.58). Additional sociodemographic information for the study population is provided in Table 1.

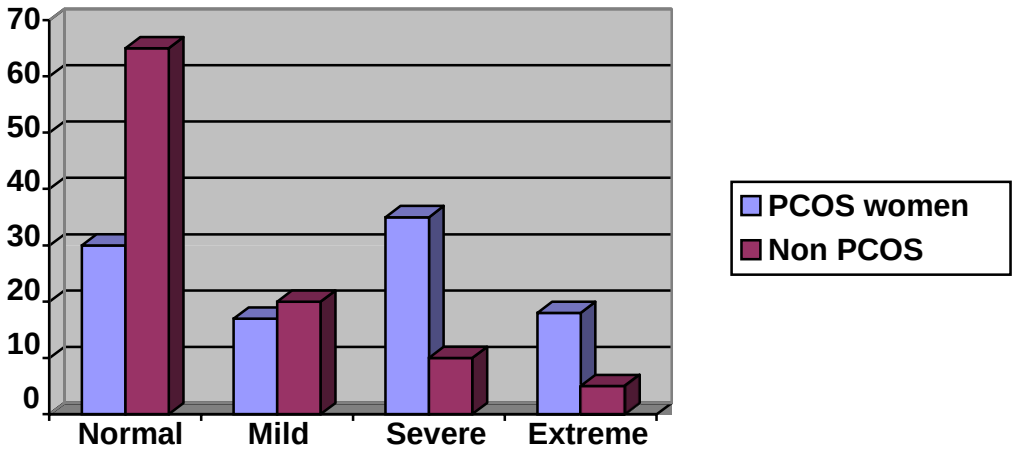
Table 1: Showing the Socio demographic details of the respondent

Variables	**Women with PCOS (N=60)**	**Women without PCOS (N=60)**
Age (years)*	24.99	25.00
Marital status		
Married	30	35
Unmarried	10	5
Education level		
Less than high school	10	11
High school and above	30	29
Menstrual cycle abnormalities (N/%)		

Normal	32%	70
Oligomenorrhoea	(57%)	(19%)
Secondary amenorrhea	(7%)	(2%)
Irregular cycles	(4%)	(9%)
Clinical and radiological studies (N/%)		
Hirsutism	(82%)	(32.%)
Acne	(29%)	(14%)
Acanthosis nigricans	(8%)	(3%)
Polycystic ovarian morphology (USG)	(63%)	(9%)

Table 2: Distribution of participants according to the levels of anxiety

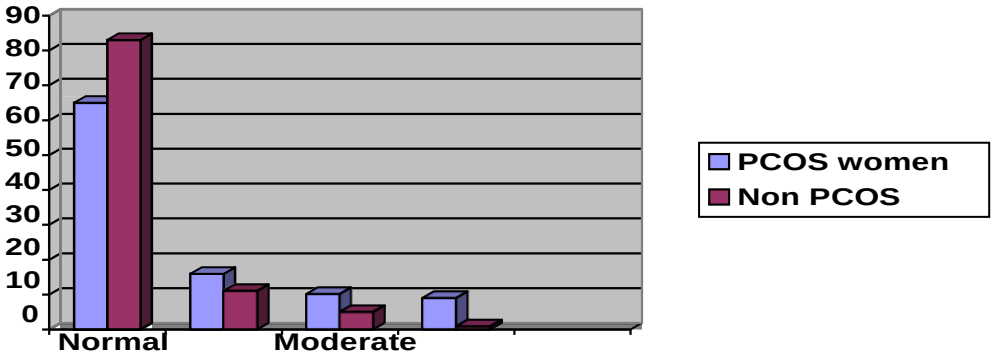
Anxiety Scoring	Normal range	Mild to moderate anxiety	severe Anxiety	Extreme anxiety
PCOS	(30%)	(17%)	(35%)	(18%)
Women without PCOS	(65%)	(20%)	(10%)	(5%)



Within the PCOS group, 30% of women exhibited no signs of anxiety, 17% experienced moderate anxiety, and 18% displayed extreme anxiety. In contrast, among women without PCOS, only 5% showed extreme anxiety, and a majority of 65% exhibited no anxiety symptoms.

Table 3: The distribution of participants according to levels of depression

Depression Level	Normal	Mild depression	Moderate	Severely Depression
PCOS group	(65%)	(16%)	(10%)	(9%)
Women without PCOS	(83%)	(11%)	(5%)	1%



Among women with PCOS, 65% did not exhibit any signs of depressive illness, whereas among women without PCOS, only 1% had no signs of depression. Mild depression was identified in 16% of women with PCOS, moderate depression in 10%, and severe depression in 9%.

CHAPTER 6
CONCLUSION & IMPLICATION

MAJOR FINDINGS

- The examination of anxiety scores between women with PCOS and those without PCOS reveals a notable difference (t=2.99, df=118, significant at the 0.01 level of significance). Consequently, the hypothesis suggesting a significant difference in anxiety levels between women with PCOS and those without PCOS is supported.
- When comparing depression scores between women with PCOS and those without PCOS, a significant difference is evident (t=2.15, df=118, significant at the 0.05 level of significance). Consequently, the hypothesis proposing a significant difference in depression levels between women with PCOS and those without PCOS is confirmed.
- When evaluating the depression and anxiety scores among women with PCOS, a significant difference becomes apparent (t=2.45, df=118, significant at the 0.05 level of significance). Consequently, the hypothesis positing a significant difference in the levels of anxiety and depression among employed women with PCOS is upheld.

CONCLUSION

Polycystic ovarian syndrome (PCOS) stands as the most prevalent endocrine disorder in women of reproductive age, impacting roughly 5%–10% of women in Western countries. In India, the reported prevalence by the Indian Fertility Society varies from 3.7% to 22.5%. PCOS manifests through a diverse array of symptoms, including amenorrhea, oligomenorrhea, hirsutism, subfertility or infertility, anovulation, weight gain or obesity, acne vulgaris, and androgenic alopecia.

PCOS is intimately linked with psychological challenges, highlighting the need for the identification and treatment of these disorders. Given the high prevalence of depression and anxiety in this population, it's advisable to include mental health assessments in the initial evaluation of all women with PCOS. Psychological support plays a significant role in managing affected patients. This doesn't diminish the importance of medical treatment for PCOS; rather, a collaborative approach combining medical and psychological support can enhance the well-being of women with PCOS. Mood dysfunction appears to be associated with elevated free androgen levels and a history of menstrual irregularities. Additionally, clinicians should be attentive to the religious and cultural backgrounds of their patients, recognizing their potential influence on psychological well-being.

Based on the findings of this study, it can be inferred that women with PCOS have a higher susceptibility to experiencing anxiety and depression, with a greater prevalence of moderate to severe levels of these conditions compared to those without PCOS.

In summary, the outcomes of this study underscore the importance of routinely screening all women with PCOS for emotional, behavioral, and psychological issues, given the elevated risk of encountering psychological disorders in this population.

IMPLICATION

It is clear that given the elevated prevalence of anxiety and depression in women with PCOS, it is essential to address the physical and psychological well-being of these individuals through various means. Firstly, healthcare providers in primary care and endocrinology clinics should incorporate mental health assessments and screenings for adolescent girls with PCOS alongside their routine physical and laboratory examinations to detect and assess potential psychological issues. Secondly, individuals identified with such concerns should be referred to specialists for comprehensive evaluation, diagnosis, counseling, and treatment. Nonetheless, it's crucial to acknowledge that access to evidence-based psychological therapies is frequently limited in underserved regions, including the geographical area where this research was conducted. Healthcare professionals specializing in PCOS treatment for adolescents should identify suitable local referral options so that patients can access the necessary psychological interventions. Thirdly, educating families about PCOS and the associated psychological disorders is of paramount importance to mitigate stress, anxiety, and depression among this young patient group. Cognitive-behavioral therapies and relaxation techniques, which have been adapted for managing psychological symptoms in women with PCOS, can be tailored to address developmental differences specific to adolescents. Group support sessions and treatments offered within PCOS-focused practices may also aid patients in better coping with both their medical and psychological symptoms. Furthermore, medical interventions like medication, weight management, and addressing specific PCOS symptoms may contribute to a reduction in anxiety and depression symptoms. Consequently, the assessment of psychological symptoms should be an ongoing part of the medical treatment process to determine whether additional psychological interventions are warranted.

CHAPTER 7
DELIMITATION & SUGGESTIONS

DELIMITATION OF THE STUDY

- The study will focus exclusively on the Delhi region.
- The study will include a total of 60 participants with PCOS and 60 participants without PCOS.
- Additionally, the study will be limited to women between the ages of 21 and 25 years.

SUGGESTIONS FOR FURTHER RESEARCH STUDY

- Incorporating both objective and subjective stress measures would enhance our comprehension of underlying mechanisms.
- A prolonged follow-up period and an examination of cognitive changes could be considered for future research.
- Extending the follow-up duration and maintaining home practice for approximately six months may be explored.

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