The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 13, Issue 3, July- September, 2025
DIP: 18.01.297.20251303, DOI: 10.25215/1303.297
https://www.ijip.in

Research Paper

Relations among Depression, And Anxiety in Women with Polycystic Ovary Syndrome (PCOS): The Moderating Role of Social Support and Self-Esteem

Parmeshwari[1]*, Nidhi Mehta[2]

ABSTRACT

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder that not only affects women's physical health but also significantly impacts psychological well-being. **Objective:** This study aimed to examine the relationships among depression, and anxiety in women with PCOS, with a particular focus on the moderating effects of self-esteem and social support. **Method:** A cross-sectional correlational design was employed, and 114 women diagnosed with PCOS were recruited from gynecological clinics in Gurugram, India. Participants completed the Hospital Anxiety and Depression Scale (HADS), the Rosenberg Self-Esteem Scale, and the MOS Social Support Survey. **Results:** Correlation and regression analyses revealed that self-esteem was negatively correlated with both depression and anxiety, and significantly predicted lower levels of both symptoms. However, social support did not significantly moderate or predict depression or anxiety levels. **Discussion:** These findings suggest that self-esteem plays a more critical role than social support in mitigating psychological distress in women with PCOS. The study highlights the need for mental health interventions targeting self-esteem enhancement to improve psychological outcomes in this population. Future research should explore these relationships longitudinally and across more diverse samples to inform comprehensive and culturally sensitive care strategies.

Keywords: *Polycystic Ovary Syndrome, Self-Esteem, Social Support, Depression, Anxiety*

Polycystic Ovary Syndrome (PCOS) is among the most common endocrine disorders affecting women of reproductive age, characterized by hormonal imbalance, ovarian cysts, menstrual irregularities, infertility, and metabolic disturbances (Choudhary et al., 2019;Bai et al., 2024). Beyond its physiological symptoms, PCOS significantly impacts women's psychological health, often leading to increased vulnerability to depression and anxiety. Women diagnosed with PCOS frequently experience emotional distress due to chronic symptoms, body image concerns, fertility challenges, and societal pressures, highlighting the need for comprehensive exploration of psychological dimensions associated with this condition (Dewani et al., 2023).

[1]M.Phil. Clinical Psychology Trainee, SGT University, India, Haryana
[2]Associate Professor, Department of Clinical Psychology, SGT University India, Haryana
*Corresponding Author

Received: May 30, 2025; Revision Received: September 05, 2025; Accepted: September 09, 2025

© 2025, Parmeshwari & Mehta, N.; licensee IJIP. This is an Open Access Research distributed under the terms of the Creative Commons Attribution License (www.creativecommons.org/licenses/by/2.0), which permits unrestricted use, distribution, and reproduction in any Medium, provided the original work is properly cited.

Understanding the complex interplay between PCOS, depression, and anxiety requires examining factors that may buffer or exacerbate these psychological outcomes. Social support and self-esteem have emerged as critical moderators influencing mental health, potentially alleviating or intensifying emotional distress in affected women (Merino et al., 2024). Investigating how social support systems and personal self-esteem interact to influence psychological well-being among women with PCOS can guide interventions, improve therapeutic approaches, and enhance overall quality of life. This chapter, therefore, aims to explore the relationships between depression and anxiety in women with PCOS, specifically examining how social support and self-esteem moderate these psychological associations.

Overview of Polycystic Ovary Syndrome (PCOS)

Polycystic Ovary Syndrome (PCOS) is a widespread endocrine disorder affecting approximately 8-13% of reproductive-age women globally (Safiri et al., 2022). Its incidence varies according to ethnicity, genetics, environmental factors, and diagnostic criteria. Women diagnosed with PCOS commonly experience symptoms such as hirsutism, observed in around 70% of cases, acne, menstrual irregularities, and obesity (Bai et al., 2024). Additionally, PCOS significantly increases the risk of various severe health conditions, including diabetes mellitus, hypertension, lipid disorders, and metabolic syndrome, underlining the necessity for comprehensive management strategies. Figure 1 illustrates the evolution of understanding and treating mental health in PCOS (Kerchner et al., 2009).

The implications of PCOS are not limited to physical health but also profoundly affect mental well-being (Cutler, 2019). Women with PCOS have an elevated risk of psychological disorders such as depression, anxiety, bipolar disorder, obsessive-compulsive disorder, somatization, eating disorders, and diminished sexual satisfaction. Anxiety and depression, in particular, are prevalent, with depression affecting approximately 64.1% of women diagnosed with PCOS (Xing et al., 2022; Agrawal et al., 2023). Factors like weight gain, hirsutism, infertility, and menstrual irregularities negatively impact overall quality of life. Additionally, societal perceptions and cultural factors can exacerbate psychological distress, affecting women's self-image and interpersonal relationships, independent of androgen levels.

Historically, treatment for PCOS focused primarily on fertility concerns, with hormone supplementation and artificial insemination being predominant methods (Balen et al., 2016). However, the contemporary approach to PCOS management has evolved considerably, highlighting the significance of lifestyle modifications such as weight management, dietary adjustments, and increased physical activity. These changes have been demonstrated to improve not only metabolic outcomes but also psychological well-being (Bacon et al., 2002). Dietary strategies, such as high-protein, low-carbohydrate diets, have shown beneficial effects on metabolic symptoms and mental health outcomes. Additionally, Cognitive Behavioral Therapy (CBT) has emerged as a crucial component in managing PCOS-related mental health issues, significantly reducing anxiety and depression symptoms, enhancing coping skills, and improving overall quality of life (Almhmoud et al., 2024).

Depression and Anxiety in PCOS

Depression is a common but serious mental health condition characterized by persistent feelings of sadness, despair, and hopelessness that extend beyond typical emotional fluctuations (Horwitz, 2007). Individuals suffering from depression often experience

diminished interest or pleasure in activities that were previously enjoyable, known as anhedonia. Additional symptoms include significant changes in appetite or weight, insomnia or hypersomnia, fatigue, feelings of worthlessness or excessive guilt, difficulty concentrating or making decisions, and recurring thoughts of death or suicide. These symptoms persist for extended periods, typically at least two weeks, and significantly impair an individual's ability to carry out daily responsibilities and activities, thereby negatively affecting their social, professional, and personal life.

Anxiety, in contrast, involves intense, excessive, and persistent worry and fear about everyday situations, often without clear or rational justification (Rowa et al., 2017). It manifests through psychological symptoms such as restlessness, irritability, and a constant feeling of being on edge or excessively apprehensive. Physiologically, anxiety may present with symptoms including rapid heartbeat, sweating, trembling, dizziness, nausea, muscle tension, and sleep disturbances. Individuals experiencing anxiety often find it challenging to control these worries, leading to avoidance behaviors, further impairing daily functioning. Anxiety can manifest in various forms, including generalized anxiety disorder, panic disorder, social anxiety disorder, and specific phobias. Both depression and anxiety, individually or together, considerably impact one's quality of life, relationships, performance at work, and overall physical health (Barry et al., 2011).

Social Support and Self-Esteem in PCOS

Social support is a fundamental aspect of psychological well-being, playing a significant role in managing stress, anxiety, and depression. It is particularly crucial for individuals dealing with chronic health conditions, such as Polycystic Ovary Syndrome (PCOS), where emotional and psychological challenges are common. This discussion explores the concept and dimensions of social support, its impact on mental health, and its specific importance for women diagnosed with PCOS (Mitchell et al., 1989).

Self-esteem refers to an individual’s overall sense of self-worth, confidence, and value. It is the perception one holds about oneself and plays a crucial role in shaping attitudes, behaviors, and emotional well-being. It is often influenced by personal experiences, social interactions, achievements, and external validation. A person with high self-esteem tends to have a positive self-image, embraces their strengths and weaknesses, and maintains a healthy level of self-respect. On the other hand, low self-esteem can lead to self-doubt, lack of confidence, and feelings of inadequacy, negatively impact personal and professional life (Birkeland ,2012).

Psychologists define self-esteem as a fundamental component of mental health, affecting motivation, decision-making, and overall happiness. It is closely linked to self-acceptance and self-efficacy, which determine how effectively an individual navigates challenges and setbacks. Healthy self-esteem enables individuals to set realistic goals, build meaningful relationships, and develop resilience against criticism or failure. Factors such as upbringing, societal standards, peer influence, and personal accomplishments contribute significantly to shaping self-esteem over time (Habat, 2018).

Significance of the study

Polycystic Ovary Syndrome (PCOS) is a common endocrine disorder that not only affects women's physical health but also significantly impacts their mental well-being, often leading to increased levels of depression and anxiety. Psychological distress in women with PCOS is

influenced by various factors, including body image concerns, hormonal imbalances, and fertility challenges, which can negatively affect self-esteem and overall quality of life. In this context, the role of social support and self-esteem becomes crucial in mitigating the psychological burden associated with PCOS. This study is significant as it examines the intricate relationship between depression, anxiety, and self-esteem in women with PCOS, emphasizing how social support and self-esteem act as protective factors against mental health issues. By highlighting these moderating roles, the study provides valuable insights into the importance of psychological and social interventions, advocating for a holistic approach to PCOS management. The findings can inform healthcare professionals, policymakers, and support networks in developing targeted strategies to improve the mental well-being of women with PCOS, ultimately enhancing their overall quality of life.

Objectives of the Study

- To investigate the moderating effect of social support on the relationship between depression, and anxiety among women with PCOS.
- To investigate the moderating effect of self- esteem on the relationship between depression and anxiety among women with PCOS.

REVIEW OF LITERATURE

Depression and Anxiety in Women with PCOS

Polycystic Ovary Syndrome (PCOS) has increasingly been associated with significant psychological distress, particularly depression and anxiety (Cooney et al., 2017). Multiple studies have consistently reported higher prevalence rates of these mental health issues in women with PCOS. The interplay between chronic stress, body image dissatisfaction, and the stigmatization of visible symptoms further fuels emotional distress (Karjula et al., 2017). There is necessity to include self-reflective therapy strategies into the management of PCOS to tackle the psychological issues linked to the disorder (Jose, 2025). Women with PCOS showed higher rates of depression, bipolar disorder, anxiety, and sleep problems, and lower rates of schizophrenia (Kim et al., 2025). Higher depression and total HADS scores were found in PCOS women, with depression linked to BMI and body size (Simao et al., 2025). Moderate stress and high anxiety were common across all BMI categories in PCOS; self-management behaviors were low (Masters, 2025). Depression was highest in nulligravida, anxiety in primigravida, and poor quality of life and stress in multigravida PCOS women (Rheman et al., 2025). PCOS patients with minority or migration backgrounds reported worse quality of life, higher depression, and lower self-esteem (Hofmann et al., 2025). Poor social support was associated with severe emotional, weight, infertility, and menstruation symptoms (Hassan et al., 2024). PCOS women reported emotional distress, with strong needs for psychological therapy and lifestyle coaching (Wang et al., 2023). Adolescents with PCOS had higher depression rates but no significant differences in self-esteem or quality of life (Çoban et al., 2019). PCOS was linked to greater depression, anxiety, and stress; perceived stress mediated psychological outcomes (Damons et al., 2018). Body dissatisfaction increased depression; self-esteem and self-compassion reduced its impact (Acmaz et al., 2013). PCOS women experienced more anxiety, depression, and negative body image; self-worth and delayed diagnosis were key factors (Deeks et al., 2011).

Role of Self-Esteem and Body Image in PCOS

Over half of PCOS patients reported body shape concerns (50.9%) and sexual dysfunction (50.5%), with body image negatively linked to sexual function (Alsaidan et al., 2025). Low self-esteem and mental health issues were common in women with PCOS, especially due to

weight changes; improved psychological care was strongly needed (Pal, 2024). High rates of depression (51.4%) and anxiety (50.5%) were observed; body image issues (11.4%) and low self-esteem (21.9%) was less prevalent, with no significant correlation between them (D. Joshi et al., 2022). Adolescent girls with PCOS showed no significant differences in self-esteem, depression, or body image compared to controls; anxiety was higher in the control group (Zachurzok et al., 2021).

Influence of Social Support in PCOS

Limited social support during the COVID-19 pandemic contributed to high stress (73%) and barriers in PCOS care, including delayed appointments and reduced physical activity; 20% benefited from telehealth (Sydora et al., 2025). PCOS subgroups showed varied psychological burdens: obese women reported highest anxiety, lowest self-esteem, and weakest interpersonal trust; infertile women had highest depression; social and emotional functioning was poorest in the oligomenorrhea-hirsutism group, underscoring the importance of psychosocial support (Saqib, 2024). Perceived social support consistently correlates with reduced depression and anxiety and enhances coping and resilience, while its absence exacerbates emotional distress and isolation (Sydora et al., 2025; Saqib, 2024).

Holistic and Alternative Perspectives on PCOS Management

Holistic care approaches for PCOS, including Ayurveda, body-image therapy, and self-compassion techniques, are increasingly recognized for improving emotional well-being and treatment adherence (Chauhan, 2025). Women with PCOS face stigma across structural, interpersonal, and individual domains; responses include both acceptance and resistance, influenced by sociocultural factors (Lin et al., 2025). Body dissatisfaction is linked to depression in PCOS adolescents; self-esteem and self-compassion significantly mediate this relationship, suggesting the importance of promoting positive self-perception (Huangfu et al., 2024). Health-related quality of life (HR-QoL) in young PCOS patients is significantly impaired, especially in social and psychological domains; strategic and preventative coping strategies moderated this impact, while general coping did not (Aslam et al., 2023).

RESEARCH METHODOLOGY

Research Design

This study adopted a correlation study design to examine the relationships among depression, anxiety, and PCOS while investigating the moderating effects of social support and self-esteem.

Study Participants

Based on G-power analysis study included 114 adult women in reproductive age (18-45), diagnosed with PCOS. Through purposive sampling participants were recruited from multiple gynaecological outpatient clinics in Gurugram, Haryana, to ensure sample diversity.

Selection Criteria

Inclusion Criteria:

- Adult females in the reproductive age (18-45years).
- Women diagnosed with PCOS by a gynaecologist.
- Women with PCOS undergoing treatment.
- Women who provide informed consent to participate in the study.

Exclusion Criteria:

- Females already continuing psychiatric treatment or with cognitive impairment or other concurrent significant medical illness which is reported by the patient, or reported in medical record.
- Pregnant women or menopausal.
- Those having hirsutism due to related disorders like congenital adrenal hyperplasia, Cushing´s syndrome and androgen secreting tumours or other concurrent significant medical illness which is reported by the patient, or diagnosed, or reported in medical record.
- Women unwilling to participate in the study or unable to provide informed consent.

Study Variables

- **Independent variable:** PCOS diagnosis, Social support and Self-esteem.
- **Dependent variable:** Depression levels and anxiety levels.
- **Demographic variable:** Age, education level, and socioeconomic status.

Tools used in the Study

- **Hospital Anxiety and Depression Scale (HADS)**: It is a 14-item screening tool developed by Zigmond and Snaith (1983) to assess anxiety and depression in medical settings. It includes two subscales: HADS-A (anxiety) and HADS-D (depression), each scored from 0 to 21. It has demonstrated strong internal consistency, with Cronbach's alpha values of 0.83 (HADS-A) and 0.82 (HADS-D) (Bjelland et al., 2002).
- **MOS Social Support Survey**: It is a 19-item, self-administered instrument developed by Sherbourne and Stewart (1991) to assess perceived social support. It measures five dimensions: emotional, informational, tangible, affectionate support, and positive social interaction. Each item is rated on a 5-point Likert scale, with higher scores indicating greater support. It has excellent reliability, with a Cronbach's alpha of 0.97 (Sherbourne & Stewart, 1991).
- **Rosenberg Self-Esteem Scale**: It was developed by Morris Rosenberg in 1965, is a 10-item self-report measure assessing global self-esteem through both positively and negatively worded items. Responses are rated on a 4-point Likert scale (0–3), with total scores ranging from 0 to 30; higher scores indicate greater self-esteem. The RSES is widely recognized for its simplicity, validity, and reliability, with an internal consistency (Cronbach's alpha) of 0.85 (Blascovich & Tomaka, 1991).

Data Collection

A total of 114 adult women with PCOS were selected from the Gynecology Department at SGT Hospital and various gynecological clinics in Gurugram. The Hospital Anxiety and Depression Scale (HADS) along with the MOS Social Support Survey and the Rosenberg Self-Esteem Scale were utilized to collect data. The process was carefully structured, ensuring that each participant provided written informed consent before assessments.

Statistical Analysis

The collected data was analyzed using SPSS 26.0.0 software, applying various statistical methods. Descriptive statistics, including were used to summarize demographic and psychological variables. Shapiro-Wilk test to assess the normality and pearson correlation to examine the relationships among depression, anxiety, social support, and self-esteem. Direct

relationship between PCOS and mental health variables such as depression and anxiety was assessed through regression analysis. Multiple regression analysis was used to see moderating effects of social support and self-esteem.

RESULTS

Demographic Characteristics of Participants

The study primarily includes women in their reproductive years, with most aged 26–35 (39.47%) and 18–25 (32.46%). A majority have below graduate-level education (71.05%), indicating lower educational attainment among participants. Most belong to the middle socioeconomic class (84.2%), with fewer from lower (12.2%) and higher (3.5%) classes.

Table1 Demographic Characteristics of Participants

Parameters	**Frequency (n)**	**Percentage (%)**
Age Group		
18-25	37	32.46
26-35	45	39.47
36-45	32	28.07
Education		
Below Graduate	81	71.05
Graduate	11	9.64
Post-Graduate	22	9.29
Socioeconomic Status		
Higher	4	84.2
Middle	96	3.5
Lower	14	12.2

Correlation Analysis Among depression, anxiety, social support, and self-esteem

A strong positive correlation was found between anxiety and depression ($r = 0.67$, $p < 0.001$), indicating that higher levels of anxiety are associated with higher levels of depression. Anxiety also showed a negative correlation with social support ($r = -0.45$, $p < 0.001$) and self-esteem ($r = -0.52$, $p < 0.01$), suggesting that greater anxiety is linked to lower levels of social support and self-esteem. Similarly, depression showed a strong positive correlation with anxiety ($r = 0.67$, $p < 0.001$) and a negative correlation with both social support ($r = -0.51$, $p < 0.001$) and self-esteem ($r = -0.62$, $p < 0.001$), highlighting that higher depression is associated with lower social support and self-esteem. Social support, on the other hand, showed a positive correlation with self-esteem ($r = 0.42$, $p < 0.01$), suggesting that greater social support is linked to higher self-esteem, but it did not significantly correlate with anxiety ($r = -0.45$, $p < 0.001$). Lastly, self-esteem showed a negative correlation with both anxiety ($r = -0.52$, $p < 0.01$) and depression ($r = -0.62$, $p < 0.001$), indicating that higher self-esteem is associated with lower anxiety and depression levels.

Table 2 Correlation Analysis among Depression, Anxiety, Social Support, and Self-Esteem

		Anxiety	Depression	Social Support	Self-Esteem
Anxiety	Pearson Correlation	1.00	0.67**	-0.45**	-0.52**
	Sig. (2-tailed)	0.0001	0.001	0.001	0.0001
	N	114	114	114	114
Depression	Pearson Correlation	0.67**	1.00	-0.51**	-0.62**
	Sig. (2-tailed)	0.0001	0.001	0.001	0.01
	N	114	114	114	114
Social Support	Pearson Correlation	-0.45**	-0.51**	1.00	0.42**
	Sig. (2-tailed)	0.001	0.001	0.001	0.001
	N	114	114	114	114
Self-Esteem	Pearson Correlation	-0.52**	-0.62**	0.42**	1.00
	Sig. (2-tailed)	0.0001	0.0001	0.001	0.05
	N	114	114	114	114

Note: ** Significant at $p < 0.01$

Assessment of Normality of Anxiety, Depression, Social Support, and Self-Esteem

For all variables, the p-values are above the commonly used significance level of 0.05, indicating that the distributions of these variables do not significantly deviate from normality. Since all p-values exceed 0.05, we fail to reject the null hypothesis, suggesting that the data for these variables are approximately normally distributed.

Table 3 Shapiro-Wilk Test for Normality

Variable	W-Statistic	p-value
Anxiety	0.974	0.218
Depression	0.971	0.120
Social Support	0.978	0.374
Self-Esteem	0.973	0.208

Simple Regression Analysis of Anxiety with Social Support and Self-Esteem

The simple regression analysis examined the predictive effects of social support and self-esteem on anxiety. The intercept is not statistically significant ($p = 0.98$), suggesting that the baseline level of anxiety without the influence of social support or self-esteem is essentially zero. Social support did not show a significant predictive relationship with anxiety ($B = 0.02551$, $p = 0.62$), indicating that social support does not have a substantial impact on anxiety levels in this model. However, self-esteem demonstrated a significant negative relationship with anxiety ($B = 0.652714$, $p = 0.01$), with a standardized coefficient (Beta) of 0.45, indicating that higher self-esteem is associated with lower anxiety levels.

Table 4 Simple Regression for Anxiety with Social Support and Self-Esteem

Variable	B (Unstandardized Coefficient)	Std. Error	B (Standardized Coefficient)	t-value	p-value
Intercept	0.000002	0.0003	-	0.01	0.98
Social Support	0.02551	0.030	0.12	0.85	0.62
Self-Esteem	0.652714	0.312	0.45	2.09	0.01**

NOTE: ** Significant at p = 0.01

Simple Regression Analysis of Depression with Social Support and Self Esteem

The simple regression analysis explored the predictive effects of social support and self-esteem on depression. The intercept value is not statistically significant (p = 0.99), indicating that without the influence of social support or self-esteem, the baseline level of depression is virtually zero. Social support did not show a significant effect on depression (B = 0.03271, p = 0.50), suggesting that social support does not play a substantial role in predicting depression levels in this model. However, self-esteem was found to have a significant positive relationship with depression (B = 0.73427, p = 0.03), with a standardized coefficient (Beta) of 0.55. This indicates that lower self-esteem is associated with higher levels of depression, suggesting that improving self-esteem could potentially reduce depressive symptoms.

Table 5 Simple Regression for Depression with Social Support and Self-Esteem

Variable	B (Unstandardized Coefficient)	Std. Error	B (Standardized Coefficient)	t-value	p-value
Intercept	-0.00242	0.0042	-	-0.57	0.99
Social Support	0.03271	0.0354	0.16	0.92	0.50
Self-Esteem	0.73427	0.271	0.55	2.71	0.03*

NOTE: * Significant at p < 0.05

Moderation Analysis: Social Support and Self-Esteem as Moderators

Moderation of Anxiety by Social Support and Self-Esteem

The moderation analysis assessed the interaction between social support and self-esteem in predicting anxiety. The intercept value is not statistically significant (p = 0.99), suggesting that without the influence of the predictor variables, anxiety is close to zero. Social support was not found to have a significant effect on anxiety (B = 0.02245, p = 0.70), indicating that social support does not directly influence anxiety levels in this model. However, self-esteem showed a significant positive relationship with anxiety (B = 0.50642, p = 0.01), with a standardized coefficient (Beta) of 0.37, suggesting that higher self-esteem is associated with lower anxiety levels. The interaction term between social support and self-esteem (Social Support × Self-Esteem) was not statistically significant (B = -0.0159, p = 0.26), implying that the combination of social support and self-esteem does not significantly moderate the relationship between social support, self-esteem, and anxiety.

Table 6 Moderation Analysis of Anxiety by Social Support and Self-Esteem

Variable	B (Unstandardized Coefficient)	Std. Error	B (Standardized Coefficient)	t-value	p-value
Intercept	0.0000012	0.0004	-	0.00	0.99
Social Support	0.02245	0.0311	0.10	0.72	0.70
Self-Esteem	0.50642	0.245	0.37	2.07	0.01**
Social Support × Self-Esteem	-0.0159	0.014	-0.06	-1.14	0.26

NOTE: ** Significant at p = 0.01

Moderation of Depression by Social Support and Self-Esteem

In moderation analysis the intercept value is not statistically significant (p = 0.99), suggesting a baseline depression level close to zero without the influence of the predictor variables. Social support did not show a significant effect on depression (B = 0.02821, p = 0.60), indicating that social support alone does not significantly impact depression levels in this model. However, self-esteem was found to have a significant positive relationship with depression (B = 0.75362, p = 0.02), with a standardized coefficient (Beta) of 0.49, suggesting that lower self-esteem is associated with higher depression levels. The interaction term between social support and self-esteem (Social Support × Self-Esteem) was not statistically significant (B = -0.0201, p = 0.29), indicating that the combination of social support and self-esteem does not significantly moderate the relationship between self-esteem and depression.

Table 7 Moderation Analysis of Depression by Social Support and Self-Esteem

Variable	B (Unstandardized Coefficient)	Std. Error	B (Standardized Coefficient)	t-value	p-value
Intercept	-0.00347	0.0046	-	-0.76	0.99
Social Support	0.02821	0.0357	0.13	0.79	0.60
Self-Esteem	0.75362	0.299	0.49	2.52	0.02*
Social Support × Self-Esteem	-0.0201	0.019	-0.07	-1.06	0.29

NOTE: * Significant at p < 0.05

DISCUSSION

Polycystic Ovary Syndrome (PCOS) is a widespread endocrine disorder that affects women of reproductive age, leading to a variety of physical and psychological challenges. This study aimed to investigate the relationships between self-esteem, social support, depression, and anxiety in women diagnosed with PCOS, with particular emphasis on the moderating roles of social support and self-esteem in these relationships. Our findings indicate that self-esteem plays a pivotal role in managing depression and anxiety, while social support, and did not exhibit significant moderating effects in this population. This insight has important implications for clinical practice, suggesting that interventions aimed at enhancing self-esteem may be more effective in alleviating the psychological distress experienced by women with PCOS.

H1:0a: The Present study found a strong negative correlation between self-esteem and depression, ($r = -0.62$, $p < 0.001$) suggesting that women with lower self-esteem are more likely to experience higher levels of depression. This finding supports previous literature suggesting that self-esteem is a protective factor against depression in populations with chronic health conditions (Glowinskae et al., 2020; Joshi et al., 2022).

H1:0b: Similarly, a negative correlation between self-esteem and anxiety ($r = -0.52$, $p < 0.01$), indicating that higher self-esteem is associated with lower levels of anxiety, consistent with findings by Brown et al. (2022) and Alkheyr et al. (2024). Thus, improving self-esteem may help women better cope with the physical challenges of PCOS and improve their psychological resilience, ultimately reducing the severity of depressive symptoms and reducing anxiety.

H2:0a: The study did not find a significant relationship between social support and depression in women with PCOS ($B = 0.03271$, $p = 0.50$), contrary with studies like those of Cupino-Arcinue & Banal-Silao et al. (2018) and Kumar et al. (2021), which reported that higher levels of social support were associated with lower depression in individuals with chronic conditions.

H2:0b: Similarly, there is no significant effect of social support on anxiety levels ($B = 0.02551$, $p = 0.62$), contrasts with findings from Li et al. (2024), suggesting that social support plays a significant role in reducing anxiety in women with chronic health conditions. One possible explanation for this discrepancy is that women with PCOS face unique challenges, such as hormonal imbalances and associated emotional distress, which may make them less responsive to social support alone. Hormonal fluctuations can intensify feelings of anxiety and exacerbate body image concerns, making women with PCOS less able to benefit from social support. Additionally, the stigma surrounding PCOS-related physical symptoms may lead to feelings of isolation, which can reduce the perceived effectiveness of social support.

These findings underscore the importance of tailoring mental health interventions for women with PCOS to address the root causes of their psychological distress. While social support is undoubtedly important, it may not be sufficient on its own to mitigate the effects of depression and anxiety in this population. Instead, interventions that focus on enhancing self-esteem could provide more immediate and lasting benefits by helping women with PCOS rebuild their self-worth and address body image dissatisfaction.

CONCLUSION

This study sought to explore the relationships between depression, and anxiety in women with Polycystic Ovary Syndrome (PCOS), focusing particularly on the moderating role of social support and self-esteem. The findings provide valuable insights into the psychological challenges faced by women with PCOS and suggest that while social support is often viewed as a critical component of mental well-being, its role in moderating depression and anxiety in this population is not as pronounced as previously believed. Instead, self-esteem emerged as the central psychological factor influencing both depression and anxiety in women with PCOS. These findings indicates that interventions aimed at improving self-esteem could play a crucial role in alleviating the psychological distress experienced by women with PCOS, potentially leading to better mental health outcomes. The unique challenges posed by PCOS, including physical symptoms such as weight gain, hirsutism,

and infertility, may diminish the effectiveness of social support in reducing psychological distress unless it is paired with efforts to enhance self-esteem.

In conclusion, this study highlights the critical role that self-esteem plays in moderating depression and anxiety in women with PCOS. Although social support remains important, it may not be sufficient on its own to mitigate the emotional and psychological distress caused by PCOS. Future interventions aimed at improving mental health in this population should focus on enhancing self-esteem, with the potential for significant improvements in both mental health outcomes and quality of life for women with PCOS.

Limitations of the Study

1. The cross-sectional design of the study prevents the establishment of causal relationships between self-esteem, social support, depression, and anxiety, making it difficult to infer long-term effects.
2. The study explored only a limited range of social support dimensions, excluding other forms of support such as workplace support or partner support, which could provide a more comprehensive view of social support's role.
3. Sample was obtained from Gurugram which may contribute as a limiting factor for the finding's applicability across diverse cultural backgrounds.

Future Perspective of the Study

1. Future research should adopt a longitudinal design to better understand the causal relationships between self-esteem, social support, depression, and anxiety in women with PCOS, providing insight into the long-term effects of these variables.
2. Psychological intervention-based research focusing on self-esteem enhancement could offer practical applications for improving mental health outcomes for women with PCOS.
3. Research should delve deeper into the psychological aspects connecting PCOS to depression and anxiety, including body image dissatisfaction, perceived stigma, and emotional well-being.
4. Expanding research to include a more diverse range of women with PCOS from different cultural, educational, and socioeconomic backgrounds would help generalize the findings and inform inclusive mental health interventions.

REFERENCES

Acmaz, G., Albayrak, E., Acmaz, B., Aksoy, H., Basalan, F., & Gungor, T. (2013). Level of self-esteem and body image of adolescents with polycystic ovary syndrome. *Journal of Pediatric and Adolescent Gynecology, 26*(6), 337–341. https://doi.org/10.1016/j.jpag.2013.06.018

Alkheyr, Z., Murad, M., Das, P., Aljenaee, K., Kamel, C., Hajji, S. A., … & Ali, K. F. (2024). Self-esteem and body image satisfaction in women with PCOS in the Middle East: Cross-sectional social media study. *PLOS ONE, 19*(4), e0301707.

Alsaidan, R. M., Alqurashi, R. M., Alzahrani, N. S., & Alsolami, R. M. (2025). Body shape concerns and sexual dysfunction among women with polycystic ovary syndrome. *Saudi Journal of Health Sciences, Advance online publication*.

Aslam, F., Zahra, R., & Haider, S. (2023). The moderating effect of coping on the relationship between PCOS and quality of life. *Pakistan Journal of Psychological Research, 38*(1), 12–28.

Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research, 52*(2), 69–77. https://doi.org/10.1016/S0022-3999(01)00296-3

Blascovich, J., & Tomaka, J. (1991). Measures of self-esteem. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 115–160). Academic Press.

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2022). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 33*(3), 201–212.

Chauhan, S. (2025). Holistic approaches to PCOS management: A clinical overview. *Journal of Integrated Health, 11*(2), 54–63.

Cupino-Arcinue, D., & Banal-Silao, M. (2024). Prevalence of anxiety and depression among PCOS patients in a government hospital. *Acta Medica Philippina, 58*, 29–38. https://doi.org/10.47895/amp.v58i11.8977

Damons, A., Teede, H., Joham, A., & Moran, L. (2018). Psychological distress in women with polycystic ovary syndrome. *Australian Journal of Psychology, 70*(4), 305–314.

Deeks, A. A., Gibson-Helm, M. E., Paul, E., & Teede, H. J. (2011). Is having polycystic ovary syndrome a predictor of poor psychological function including anxiety and depression? *Human Reproduction, 26*(6), 1399–1407.

D. Joshi, R., Sawant, N., & Mayadeo, N. (2022). How common are depressive-anxiety states, body image concerns and low self-esteem in patients of PCOS? *The Journal of Obstetrics and Gynecology of India, 72*(5), 458–465. https://doi.org/10.1007/s13224-021-01564-6

Glowinska, A., Duleba, A. J., Zielona-Jenek, M., & Banaszewska, B. (2020). Sexual satisfaction, self-esteem, anxiety, and depression in women with and without PCOS. *Reproductive Sciences, 27*(1), 432–442. https://doi.org/10.1007/s43032-019-00061-0

Hassan, A. A., Alotaibi, A. F., Almatar, F. A., Albassam, N. A., AlQuaiz, A. M., & Kazi, A. (2024). Assessment of health-related quality of life and the role of social support in reducing the severity of symptoms in women with PCOS. *The Journal of Obstetrics and Gynecology of India, Advance online publication*. https://doi.org/10.1007/s13224-024-01772-9

Hofmann, K., Decrinis, C., Bitterlich, N., Bachmann, A., & Stute, P. (2025). Health-related quality of life and mental state in women with PCOS and migration or minority background: A cross-sectional study. *Journal of Migration and Health, 9*, 100313. https://doi.org/10.1016/j.jmh.2025.100313

Huangfu, X., Li, L., & Wang, S. (2024). Self-esteem and self-compassion as mediators between body dissatisfaction and depression in adolescents with PCOS. *Adolescent Health Journal, 25*(1), 77–88.

Jose, S., & Majeed, J. (2025). Impact of mirror work intervention on mental health of women with PCOS. *Cuestiones de Fisioterapia, 54*(3), 1165–1173.

Kim, Y., Chae, K., Kim, S., Kang, S., Yoon, H., & Namkung, J. (2025). Risk of mental disorders in polycystic ovary syndrome: Retrospective cohort study. *International Journal of Women's Health, 17*, 627–638.

Lin, Y., Guo, H., & Li, C. (2025). Experiences and management of stigma among Chinese women struggling with infertility. *Journal of Reproductive and Infant Psychology, Advance online publication*. https://doi.org/10.1080/02646838.2025.2254695

Masters, M., & Grevstad, N. (2025). Relationship between BMI, mental health, and quality of life in PCOS. *Open Health, 6*(1), 20230055.

Pal, S., & Mahapatra, M. (2024). Impact of PCOS on mental well-being and self-esteem among women in India. *International Journal of Indian Psychology, 12*(2), 1155–1163.

Rehman, F., Khan, M. M., Ashraf, L. N., Naila, L. N., Rumman, L. N., & Zeb, S. (2025). Comparative analysis of psychosocial outcomes among women with PCOS. *Cureus, 17*(3), e41366.

Saqib, T., & Rizvi, T. (2024). Social support as the predictor of psychological well-being among PCOS women in Kashmir. *Journal of Social Psychology and Well-Being, 8*(2), 88–98.

Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Science & Medicine, 32*(6), 705–714.

Simão, D. O., Santos, A. V., Vieira, V. S., Reis, F. M., Cândido, A. L., Comim, F. V., … & Gomes, K. B. (2025). Anxiety and depression in polycystic ovary syndrome: Analysis using HADS. *Experimental and Clinical Endocrinology & Diabetes, Advance online publication*. https://doi.org/10.1055/s-0045-1724250

Sydora, B. C., Wilke, M. S., Ghosh, M., & Vine, D. F. (2025). COVID-19 pandemic impact on women with PCOS. *International Journal of Women's Health, 17*, 287–298.

Wang, G., Liu, X., Zhu, S., & Lei, J. (2023). Mental health experiences in women with PCOS: A phenomenological study. *Journal of Psychosomatic Obstetrics & Gynecology, 44*(1), 1–10.

Zachurzok, A., Pasztak-Opilka, A., & Gawlik, A. M. (2021). Depression, anxiety, and self-esteem in adolescent girls with PCOS. *Ginekologia Polska, 92*(6), 399–405.

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 67*(6), 361–370.

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Parmeshwari & Mehta, N. (2025). Relations among Depression, And Anxiety in Women with Polycystic Ovary Syndrome (PCOS): The Moderating Role of Social Support and Self-Esteem. *International Journal of Indian Psychology*, *13*(3)*,* 3269-3282. DIP:18.01.297.20251303, DOI:10.25215/1303.297