

The Effect of PCOS on Self-Esteem, Social Interactions, and Quality of Life in Women

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Polycystic Ovary Syndrome (PCOS) is a lifestyle disorder known to significantly affect women's physical and psychological well-being. This study investigates the predictive relationship between PCOS-related Quality of life domains, self-esteem and social interactions, using standardized tools (PCOSQOL, the Rosenberg Self-Esteem Scale, and the Social Avoidance and Distress Scale). Correlational findings indicated a near-significant relationship between Body Hair and Weight domains ($p = 0.063$ and $p = 0.067$). One-way ANOVA showed that only the Body Hair domain significantly affected self-esteem scores ($F = 2.235$, $p = 0.020$). Although the Regression model predicting self-esteem was not statistically significant overall, Body Hair ($\beta = .211$, $p = .025$) and Weight ($\beta = .210$, $p = .024$) were individually significant predictors. Findings suggest that PCOS-related physical symptoms are strongly associated with self-esteem than with social interaction difficulties.

Keywords: PCOS, self-esteem, social avoidance, psychological outcomes, women's health.

Polycystic Ovary Syndrome

Polycystic Ovary Syndrome is a lifestyle disorder characterised by excessive production of androgens. Rotterdam criteria (2003) by the European Society of Human Reproduction and Embryology (ESHRE) and the American Society for Reproductive Medicine (ASRM) define PCOS based on the following criteria: (1) hyperandrogenism (2) oligo-ovulation or anovulation (3) polycystic ovarian morphology detected via ultrasound (Siddiqui et al., 2022).

Self-Esteem

Rosenberg (1965) conceptualised self-esteem as an individual's overall positive evaluation of the self. In women with PCOS, symptoms such as hirsutism, acne, weight gain, and fertility issues can significantly impact body image and self-perception, leading to diminished self-esteem (Burger & Mortimer, 2024).

Social Interactions

Social interaction involves reciprocal actions and responses within a social environment, ranging from early interactions between parents and children to social engagements in adulthood. Women with PCOS experience challenges due to the distressing symptoms of the disorder, such as obesity, acne, hirsutism, and menstrual irregularities (Bazarganipour et al., 2015).

Quality of Life

The WHO defines QOL as an individual's assessment of their position in life, considering their cultural and value systems, personal goals, expectations, standards, and concerns. It also encompasses health-related quality of life (HRQOL), which refers to the impact of a medical condition or its treatment on an individual's physical, emotional, and social well-being. Women with PCOS frequently experience reduced HRQOL due to symptoms like irregular menstrual cycles, hyperandrogenism,

obesity, and insulin resistance (Cooney et al., 2017).

Rationale of the Study

Polycystic Ovary Syndrome (PCOS) is a widespread endocrine condition. Despite its prevalence, the psychological and social implications of the disorder are often ignored. Physical symptoms such as hirsutism, acne, weight gain, and infertility often worsen body image concerns and emotional distress, potentially leading to social withdrawal and reduced self-worth. These psychosocial factors are especially salient for women in the 18–45 age range. By using the Rosenberg Self-Esteem Scale, the Social Distress and Avoidance Scale, and the PCOSQ, this study aims to provide a comprehensive assessment of how PCOS affects the mental and social well-being of affected women, contributing to the integration of mental health care in PCOS treatment protocols.

Objectives of the Study

1. To assess Self-Esteem and Social Interactions in women diagnosed with PCOS using the Rosenberg Self-Esteem Scale and the Social Distress and Avoidance Scale.
2. To examine the impact of PCOS symptoms on various domains of quality of life using the Polycystic Ovary Syndrome Questionnaire (PCOSQ).
3. To explore the relationship between Self-Esteem, Social Interactions, and Quality of Life in women with PCOS.

Hypotheses of the Study

- H1: PCOS-related quality of life domains will significantly predict Self-Esteem and Social Interactions in women with PCOS.
- H1€ PCOS-related quality of life domains will not significantly predict Self-Esteem and Social Interactions in women with PCOS.
- H2: There is a significant positive relationship between PCOS-related

quality of life domains, self-esteem and social interactions in women with PCOS.

H2€: There is no significant positive relationship between PCOS-related quality of life domains, self-esteem and social interactions in women with PCOS.

Method

Design of the Study

The present study utilises a quantitative design to investigate the impact of Polycystic Ovary Syndrome (PCOS) on self-esteem, social interactions, and quality of life among women. Data were collected using standardised self-report instruments: the Rosenberg Self-Esteem Scale (RSES) to measure self-esteem, the Social Distress and Avoidance Scale (SADS) to assess social interactions, and the Polycystic Ovary Syndrome Questionnaire (PCOSQ) to evaluate quality of life specifically in the context of PCOS.

Participants

The present study employed a non-probability purposive sampling technique and snowball sampling to recruit participants. Participants were selected based on their diagnosis of PCOS and their willingness to participate in the study.

Measures Used

Rosenberg Self-Esteem Scale (RSE): It was given by Morris Rosenberg. Its purpose is to measure self-esteem. It demonstrates a Guttman scale coefficient of reproducibility of .92. Test-retest reliability over 2 weeks reveals correlations of .85 and .88. It correlates significantly with other measures of self-esteem. The scoring was done according to the scoring manual and norms.

Social Avoidance and Distress Scale: It was given by D. Watson and R. Friend in 1969. It is a 28-item true/false scale that measures aspects of social anxiety, including distress, discomfort, fear, and avoidance.

Discriminant and convergent validity of the scale was established through negative correlations with self-confidence, need for affiliation and need for dominance. The scoring was done according to the scoring manual and norms.

Polycystic Ovary Syndrome Questionnaire (PCOSQ): It was given by Cronin et al. in 1998. Each question is associated with a 7-point scale. There are 5 domains in which the questionnaire is divided: emotions, body hair, weight, infertility problems, and menstrual problems. The scoring was done according to the scoring manual and norms.

Procedure

The researcher herself is diagnosed with polycystic ovarian syndrome and hence decided to employ a quantitative, cross-sectional design to investigate the impact of polycystic ovarian syndrome (PCOS) on women's self-esteem, social interactions, and quality of life. Following an extensive literature review, three standardised self-report instruments were selected: the Rosenberg Self-Esteem Scale (RSE), the Social Avoidance and Distress Scale (SADS), and the Polycystic Ovary Syndrome Questionnaire (PCOSQ). The instruments were compiled using Google Forms. Inclusion criteria required participants to be women aged 18–45 years with a clinically confirmed diagnosis of PCOS. Participants were invited via digital platforms, such as WhatsApp, Twitter, PCOS-specific communities and social media forums, as well as through in-person contact. After providing informed consent, respondents completed the Google form, which included demographic questions followed by the three assessment tools. Ethical considerations were strictly observed throughout the study. Participation was voluntary, and confidentiality was maintained. Once data collection concluded, responses were exported to an Excel sheet, followed by statistical analysis using IBM SPSS.

Results

The following section presents the statistical findings derived from the data analyses, including descriptive statistics, correlational analysis, One-Way ANOVA, and regression models.

Descriptive Statistics

Descriptive Statistics were calculated for all the variables used in the present study. As can be seen in Table 1, the skewness and kurtosis values of all variables were within the acceptable range. In a normally distributed dataset, skewness should be close to zero, and kurtosis should be close to 3. However, SPSS reports excess kurtosis; hence, the values were adjusted to raw kurtosis by adding 3, ensuring that all variables are normally distributed.

Table 1: Descriptive Statistics of the variables under study (N=123)

Variable	Mean	SD	Skewness	Kurtosis
RSE	15.23	3.45	-0.102	0.153
SADS	16.73	2.48	-0.308	-0.010
Emotions	4.20	0.32	-0.037	-0.599
Body Hair	4.00	0.42	0.039	-0.025
Weight	3.74	0.43	0.033	0.225
Infertility	3.80	0.51	-0.226	-0.569
Menstrual	4.11	0.53	0.216	0.526

Correlational Analysis

Pearson Correlation coefficients were calculated to examine the relationships between PCOS-related quality of life domains and the two dependent variables: self-esteem and social interactions. Results are shown in Table 2. None of the PCOSQOL subdomains were found to be significantly correlated with RSE or SADS scores. However, the Body Hair and Weight domains showed trends towards significance with RSE ($p = 0.063$ and $p = 0.067$, respectively).

Table 2: Correlation Analysis of PCOSQOL Domains with RSE and SADS

Dependent Variables	Emotions	Body Hair	Weight	Infer-tility	Mens-trual
RSE r	0.014	0.168	0.166	-0.030	-0.033
p value	0.874	0.063	0.067	0.740	0.718
SADS r	-0.008	-0.033	-0.044	-0.022	0.016
p value	0.929	0.714	0.629	0.808	0.857

ANOVA

A series of one-way ANOVA was calculated to examine if there are statistically significant differences between self-esteem and social interaction levels based on the PCOSQOL domains. Out of all the domains, only the effect of Body Hair on RSE was statistically significant, $F = 2.235$, $p = 0.020$. For all other domains and SADS, the ANOVA tests yielded nonsignificant results.

Regression Analysis

Multiple Linear Regression was conducted to evaluate whether the PCOSQOL domains

(Emotions, Body Hair, Weight, Infertility, Menstrual) predicted scores on the Rosenberg Self-Esteem Scale and the Social Avoidance and Distress Scale.

Self-Esteem (RSE)

The model predicting self-esteem was not statistically significant, with $R^2 = 0.070$, $p = 0.126$. However, the coefficients for Body Hair ($\beta = .211$, $p = .025$) and Weight ($\beta = .210$, $p = .024$) were individually significant, suggesting that these two variables meaningfully contribute to lower self-esteem, even if the model is not predictive. The same can also be seen in the scatterplots included.

Table 3: Regression Coefficients for Self-Esteem (RSE)

Predictor	B	Beta	p-value
Emotions Score	0.012	0.001	0.990
Body Hair Score	1.757	0.211	0.025
Weight Score	1.675	0.210	0.024
Infertility Score	0.105	0.016	0.865
Menstrual Score	-0.038	-0.006	0.950

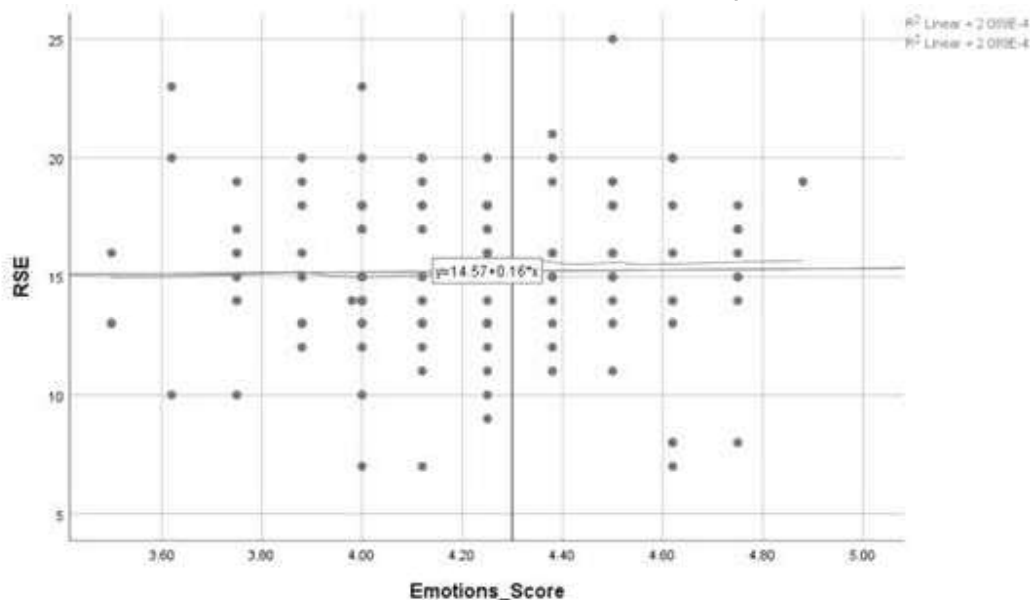


Figure 1: RSE with the Emotion dimension PCOSQOL

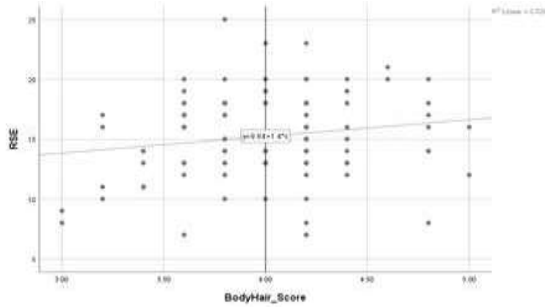


Figure 2: RSE with the Body Hair dimension of PCOSQOL

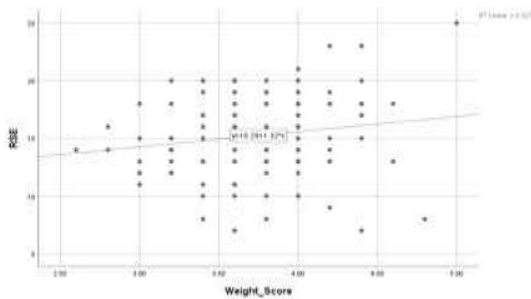


Figure 3: RSE with the Weight dimension of PCOSQOL

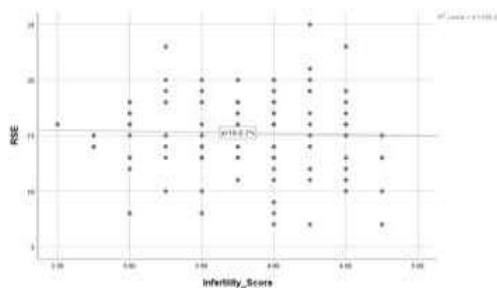


Figure 4: RSE with the Infertility dimension of PCOSQOL

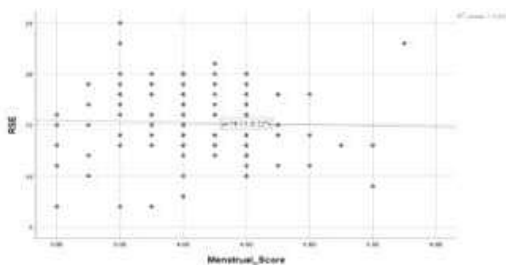


Figure 5: RSE with the Menstrual dimension of PCOSQOL

Social Interactions (SADS)

The model predicting social interactions was not statistically significant, with $R^2 = 0.005$, $p = 0.988$. None of the predictors showed a significant effect on SADS scores. The same can also be seen in the scatterplots included.

Table 4: Regression Coefficients for Social Interactions (SADS)

Predictor	B	Beta	p-value
Emotions Score	-0.22	-0.003	0.976
Body Hair Score	-0.282	-0.047	0.625
Weight Score	-0.330	-0.058	0.546
Infertility Score	-0.159	-0.033	0.731
Menstrual Score	0.032	0.007	0.943

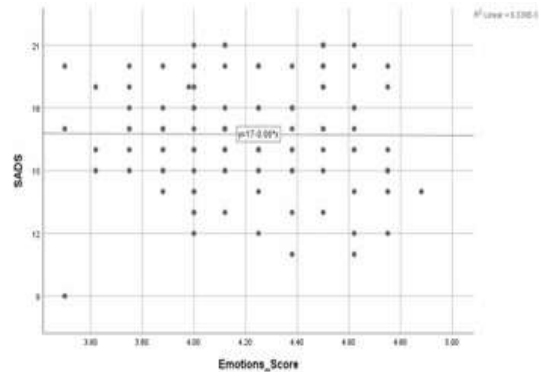


Figure 6: SADS with the Emotions dimension of PCOSQOL

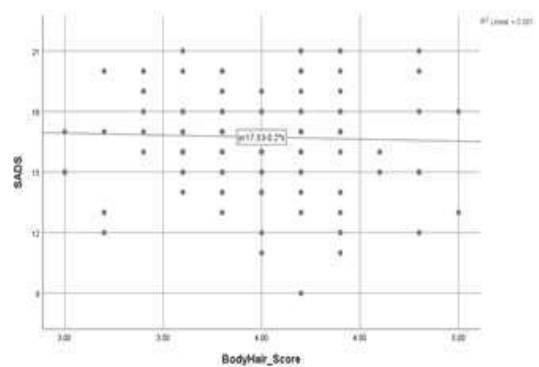


Figure 7: SADS with the Body Hair dimension of PCOSQOL

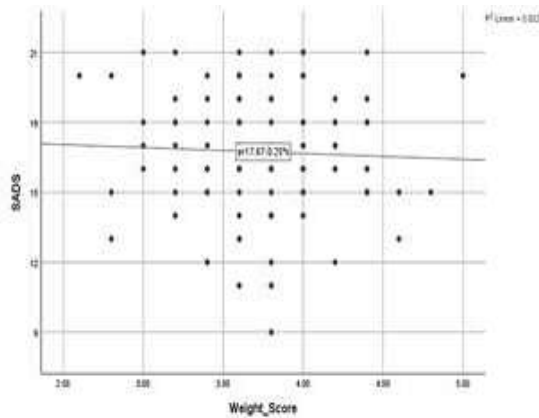


Figure 8: SADS with the Weight dimension of PCOSQOL

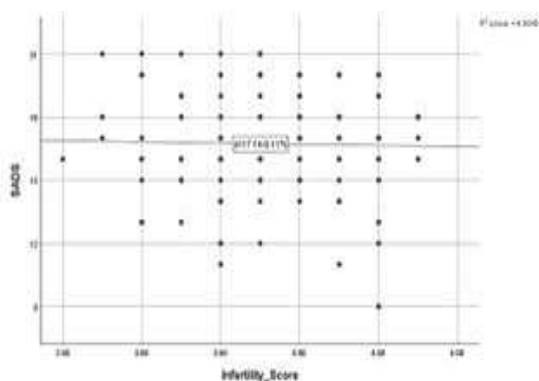


Figure 9: SADS with the Infertility dimension of the PCOSQOL

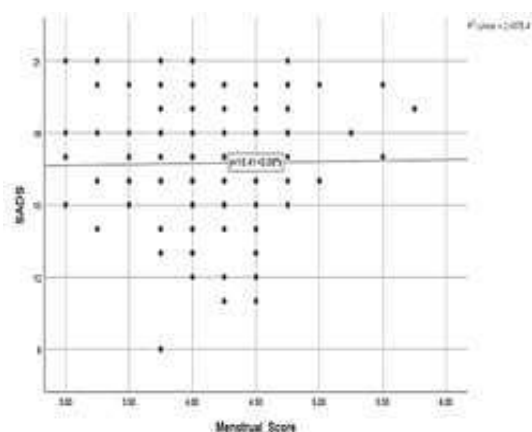


Figure 10: SADS with the Menstrual dimension of PCOSQOL

Discussion

The study investigated the relationship between emotional, body hair, weight, infertility, and menstrual dimensions of PCOS-related quality of life, and psychological outcomes like self-esteem and social interaction difficulties among women.

Correlational Analysis

It was conducted to examine the relationship between PCOS-related quality of life and psychological well-being. Although there were no significant findings, the associations between Body Hair and Weight with RSE were near-significant ($p = .063$ and $p = .067$). These findings partially support Hypothesis 2 (H2). They are consistent with the study conducted by Trent et al. (2002), which highlights that adolescent girls with PCOS often suffer from low self-esteem, particularly due to body image issues.

The other 3 domains did not display strong associations with either RSE or SADS, despite being commonly cited in the literature as one of the key psychological factors (Cooney et al., 2018).

Overall, the findings did not fully support Hypothesis 2 (H2), while physical symptoms of PCOS impact self-esteem, they may not directly influence social interactions. This aligns with the findings of Jones et al. (2008), which states that the impact of PCOS on social withdrawal is complex and may be more heavily influenced by personality traits, mental health comorbidities, and cultural factors.

Hence, Hypothesis 2 (H2) was partially accepted, and Hypothesis 2€ (H2€) was partially rejected.

ANOVA

The ANOVA findings provide further validation of correlation analysis. There was a statistically significant result for Body Hair on RSE ($F = 2.235$, $p = 0.020$), stating that

physical symptoms of PCOS have a strong influence on self-esteem. It can be seen in the findings of Mansson et al. (2008), which states that women with hirsutism often internalise stigma, feeling less attractive and socially unacceptable.

The lack of significance across other domains for both RSE and SADS suggests that not all aspects of PCOS symptoms contribute equally to psychological distress experienced.

Regression Analysis

The multiple linear regression model assessing the impact of PCOSQOL domains on self-esteem was not statistically significant overall. However, the model did account for 7% of the variance in self-esteem ($R^2 = .070$), and two predictors—Weight Score ($\hat{\alpha} = .210$, $p = .024$) and Emotions Score ($\hat{\alpha} = .211$, $p = .025$)—were individually significant contributors.

These findings align with research by McCook et al. (2005), who found that weight and body image concerns are primary factors affecting psychological well-being in PCOS. According to Self-Discrepancy Theory (Higgins, 1987), self-esteem diminishes when there is a perceived mismatch between the actual self and societal or internalised ideals.

The second regression model assessing the impact of PCOSQOL domains on social interactions was overall not statistically significant. It accounted for only 0.5% of the variance in SADS scores ($R^2 = .005$). Furthermore, none of the individual predictors were statistically significant. The present study did not find statistically meaningful associations between emotional distress and body image issues.

Hence, Hypothesis 1 (H1) was partially accepted, and Hypothesis 1€ (H1€) was partially rejected.

Implications

The findings carry noteworthy implications. The study emphasises the need for a biopsychosocial approach in clinical interventions for women with PCOS, highlighting the importance of addressing emotional distress and body-related concerns. It also suggests that existing assessments may not adequately capture factors influencing social functioning, such as self-efficacy, perceived stigma, and cultural factors.

Limitations and Future Directions

The study has limitations due to self-reported measures and sample characteristics, which may not accurately represent the broader population of women with PCOS. Future research should focus on longitudinal studies of psychological outcomes over time, examining constructs like perceived social support, internalised stigma, body-related shame, and coping style, and employ qualitative studies like interviews and focus groups.

Conclusion

This study aimed to investigate the predictive and relational dynamics between PCOS-related quality of life - Emotions, body Hair, Weight, Infertility, and Menstrual problems - and psychological outcomes - self-esteem and social interaction difficulties in women diagnosed with PCOS. While the overall models were not statistically significant, the body hair and weight domains showed meaningful individual associations with self-esteem. Emotional well-being also emerged as a significant predictor. In contrast, none of the PCOSQOL domains significantly predicted social interaction difficulties.

References

- Açmaz, G., Albayrak, E., Acmaz, B., Soylemez, F., Aksoy, H., & Ozturk, A. (2013). Level of depression, anxiety and self-concept in

- patients with polycystic ovary syndrome. *Journal of Obstetrics and Gynaecology*. <https://doi.org/10.3109/01443615.2013.813955>
- Alkheyr, A. F., & Al-Khalifah, A. (2024). Body image dissatisfaction and self-esteem in women with polycystic ovary syndrome. *A Middle Eastern perspective. International Journal of Women's Health*.
- Aslanli, M. (2022). Self-esteem and mental health: A structural equation model analysis. *Psychological Research*.
- Barnard, L., Ferriday, D., Guenther, N., Strauss, B., Balen, A. H., & Dye, L. (2007). Quality of life and psychological well-being in polycystic ovary syndrome. *Human Fertility*.
- Bazarganipour, F., Ziaei, S., Montazeri, A., Foroozanfar, F., & Faghihzadeh, S. (2015). Health-related quality of life in patients with polycystic ovary syndrome: A systematic review. *Iranian Journal of Reproductive Medicine*.
- Benson, S., Hahn, S., Tan, S., Janssen, O. E., Dietz, T., Mann, K., & Elsenbruch, S. (2021). Obesity, depression, and quality of life in women with polycystic ovary syndrome. *Human Reproduction*.
- Branden, N. (1969). *The psychology of self-esteem: A revolutionary approach to self-understanding that launched a new era in modern psychology*. Hoboken: Jossey-Bass.
- Brown, J. D., Dutton, K. A., & Cook, K. E. (2001). From the top down: Self-esteem and self-evaluation. *Cognition and Emotion*.
- Chen, X., & Ma, R. (2023). Self-esteem, resilience, and psychological well-being in college students. *Journal of College Student Mental Health*.
- Cooney, G. L., Lee, I., Sammel, M. D., & Dokras, A. (2017). High prevalence of moderate and severe depressive and anxiety symptoms in polycystic ovary syndrome: A systematic review and meta-analysis. *Human Reproduction*.
- Cooney, G. L., Lee, I., Sammel, M. D., & Dokras, A. (2018). High prevalence of moderate and severe depressive and anxiety symptoms in polycystic ovary syndrome: A systematic review and meta-analysis. *Human Reproduction*.
- Cronin, L., Guyatt, G., Griffith, L., Wong, E., Azziz, R., Futterweit, W., Cook, D., & Dunaif, A. (1998). Development of a Health-Related Quality-of-Life Questionnaire (PCOSQ) for Women with Polycystic Ovary Syndrome (PCOS)*. *Journal of Clinical Endocrinology and Metabolism*.
- 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*.
- 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*.
- Dokras, A., Clifton, S., Futterweit, W., & Wild, R. (2011). Increased risk for abnormal depression scores in women with polycystic ovary syndrome: A systematic review and meta-analysis. *Obstetrics & Gynaecology*.
- Elsenbruch, S., Hahn, S., Kowalsky, D., Henschel, F., Mohlig, M., Brabant, G., & Mann, K. (2003). Quality of life, psychosocial well-being, and sexual satisfaction in women with polycystic ovary syndrome. *The Journal of Clinical Endocrinology & Metabolism*.
- Hahn, S., Janssen, O. E., Tan, S., Pleger, K., Mann, K., Schedlowski, M., & Schmidt, U. (2005). Clinical and psychological correlates of quality-of-life in polycystic ovary syndrome. *European Journal of Endocrinology*.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*.
- Himelein, M. J., & Thatcher, S. S. (2006). Depression and body image among

- women with polycystic ovary syndrome. *Journal of Health Psychology*.
- Jones, G. L., Hall, J. M., Balen, A. H., & Ledger, W. L. (2004). Health-related quality of life measurement in women with polycystic ovary syndrome: A systematic review. *Human Reproduction*.
- Kitzinger, C., & Willmott, J. (2002). The thief of womanhood: Women's experience of polycystic ovarian syndrome. *Social Science & Medicine*.
- Ligocka, D., Nowicka, G., & Walentowicz, P. (2024). The PCOSQ-50: A comprehensive quality of life measure for women with PCOS. *Journal of Women's Health Research*.
- Mansson, M., Holte, J., Landin-Wihelmsen, K., Dahlgren, E., Johansson, A., & Landen, M. (2008). Women with polycystic ovary syndrome are often depressed or anxious—a case control study. *Psychoneuroendocrinology*.
- McCook, G. J., Reame, N. E., & Thatcher, S. S. (2005). Health-related quality of life issues in women with polycystic ovary syndrome. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*.
- Moran, L. J., Hutchison, S. K., Norman, R. J., & Teede, H. J. (2010). Lifestyle changes in women with polycystic ovary syndrome. *Cochrane Database of Systematic Reviews*.
- Pal, L., & Mahapatra, S. (2022). Mental health challenges in women with polycystic ovary syndrome: A biopsychosocial approach. *Indian Journal of Health Psychology*.
- Rice, P. (1984). The quality of life in chronic illness: Definitions, measurements and applications. *Journal of Chronic Diseases*.
- Rosenberg, M. (1965). Society and the adolescent self-image. *Princeton University Press*.
- Rosenberg, M. (1979). *Conceiving the Self*. New York: Basic Books.
- Siddiqui, S., Mateen, S., Ahmad, R., & Moin, S. (2022). A brief insight into the etiology, genetics, and immunology of polycystic ovarian syndrome (PCOS). *Journal of Assisted Reproduction and Genetics*. <https://doi.org/10.1007/s10815-022-02625-7>
- Simon, J., Engel, A., & Zang, L. (2023). Mental health consequences of polycystic ovary syndrome: A comprehensive review. *Clinical Psychology Review*.
- Trent, M. E., Rich, M., Austin, S. B., & Gordon, C. M. (2002). Quality of life in adolescent girls with polycystic ovary syndrome. *Archives of Paediatrics & Adolescent Medicine*.
- Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology*.
- Weiss, T. R., & Bulmer, S. M. (2011). Young women's experiences living with polycystic ovary syndrome. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*.

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