



SHATTERING THE STIGMA: UNCOVERING THE UNSPOKEN CHALLENGES OF PCOS PATIENT'S QUALITY OF LIFE AND SUICIDAL IDEATION

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Abstract

The study aimed to assess the Quality of Life (QoL) and Suicidal Ideation (SI) among women with Polycystic Ovary Syndrome (PCOS) compared to a control group. A total of 104 women aged 16-35 years were recruited from Outpatient Departments of various hospitals in India, using the Rotterdam criteria for PCOS. Purposive sampling technique was used for 49 PCOS sufferers, while 55 controls were selected using random sampling. The WHO Quality of Life-BREF (WHOQOL-BREF) and Suicidal Ideation Scale were used to collect data. Student t-test, Pearson product-moment correlation, and Linear Regression were used for statistical analysis. Results showed that PCOS women had significantly lower mean QoL scores in the psychological domain (18.57 ± 4.26) compared to other domains such as environment (29.38 ± 5.02), social relationship (10.93 ± 1.87), and physical health (23.18 ± 4.52). Additionally, PCOS women exhibited a significantly higher mean SI score (62.04 ± 14.26) compared to the control group. The Linear Regression analysis revealed that Quality of Life significantly predicted Suicidal Ideation among PCOS women, indicating that QoL accounted for 25.5% of the explained variability in Suicidal Ideation. The outcomes of this study offer valuable insights, highlighting a clear connection between reduced quality of life and increased instances of suicidal thoughts in women dealing with Polycystic Ovary Syndrome (PCOS). This underscores the importance of acknowledging and tackling the psychological dimensions when managing PCOS. Interventions like primary therapies, cognitive-behavioral approaches, and involvement in PCOS support groups hold significant potential for enhancing outcomes, elevating both quality of life and the management of suicidal ideation among individuals with PCOS.

Keywords: Polycystic Ovary Syndrome, WHO-QoL BREF, Suicidal Ideation, Rotterdam criteria, First- Line Therapy, PCOS support group.

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Introduction

Polycystic ovary syndrome (PCOS) is observed as a multifaceted disease affecting not only women of childbearing age, but also adolescents and postmenopausal women (Ganie et al., 2019). It affects 6-21% of women of the reproductive age group (Pal Kaur et al., 2019). However, in India, it affects approximately 3.7% to 22.5%, with 9.13% to 36% prevalence in adolescents only (Malik et al., 2015). PCOS adversely influences the fertility and reproductive health of the affected women (Ganie et al., 2019) which is the source for patients to become vulnerable to mental health problems.

PCOS patient's physical and metabolic changes have directly resulted in psychological problems among them, (Yin et al., 2021) such as anxiety, depression, suicidal thoughts, infertility, endometrial cancer, and gestational problems. On the other hand, health-related quality of life (HRQOL) have a significant negative impact on women of reproductive age (Tabassum et al., 2020). Previous studies have shown the adverse impact on the quality of life amongst women with PCOS due to psychiatric symptoms and higher rates of suicides compared to women without PCOS (Shah et al., 2020).

Quality of life, according to the World Health Organization (WHO), is defined as "the individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals" (Angin et al., 2019). Affected quality of life of PCOS women are associated with hormonal changes including any abnormality and sub-normal secretion of significant hormones (i.e. hypo or hyper thyroid and hyperandrogenism), metabolic changes (i.e. insulin resistance), menstrual cycle disturbances (i.e. amenorrhea, oligomenorrhea), abnormality in BMI levels, excessive growth body hair, acne, infertility, and chronic complications (Hahn et al., 2005).

The disease creates negative impacts different organ systems in the body and requires a crucial concentration in health maintenance for effective treatment. Disorders related to Menstruation in PCOS results with an ovulation and takes account for the formation of oligomenorrhea and amenorrhea. Most women with PCOS are obese or overweight (Ahmadi et al., 2020). The fact that PCOS elevates the negative mood effects like depression and anxiety along with the suicidal ideation was already bolstered in the previously conducted empirical researches (Månsson et al.,

2008). Suicidal ideation can be present in individuals with major depression, bipolar disorder, and other mental health conditions, as well as in those without any diagnosed mental illness. Various factors can contribute to the occurrence of suicidal thoughts. These thoughts often arise during moments of hopelessness, a sense of being overwhelmed and lacking control, and a perception of life as meaningless or purposeless. Furthermore, individuals may anticipate similar negative experiences in the future based on past traumatic events or distressing circumstances (Rajesh & Davis, 2023). Even more alarmingly, PCOS women are seven times more likely to commit suicide than control group (Gersh, 2019).

As the prevalence of PCOS continues to increase in India, it is imperative to gain a comprehensive understanding of the mental health implications experienced by Indian women with PCOS, taking into account the unique sociocultural factors specific to the region (Kanagarajan et al., 2023).

The primary objective of this study was to identify the mean difference and simultaneously highlighting the relationship between two variables i.e. quality of life and suicidal ideation between women with PCOS and a control group. The other objective of the existence study is to examine the impact of quality of life on suicidal ideation.

Objectives

- To assess the quality of life (QoL) among women with Polycystic Ovary Syndrome (PCOS) compared to a control group.
- To examine the level of suicidal ideation (SI) among women with PCOS compared to the control group.
- To investigate the relationship between QoL and SI among women with PCOS.
- To investigate the effect of QoL on SI among women with PCOS.

Hypotheses

- H₀: There is no significant difference in the QoL between women with PCOS and the control group.
- H₀: There is no significant difference in the SI between women with PCOS and the control group.
- H₀: There is no significant relationship between QoL scores and SI scores among women with PCOS.
- H₀: There is no significant effect of QoL on SI among women with PCOS.

Method

Research design

This study utilized an exploratory research design to assess the Quality of Life (QoL) and Suicidal Ideation (SI) among women with Polycystic Ovary Syndrome (PCOS) compared to a control group. Additionally, the study aimed to explore the relationship between QoL and SI, specifically examining the impact of QoL on suicidal ideation in PCOS women.

Participants

This study was conducted among PCOS sufferers aged 16-35 at the Outpatient Department of different hospitals residing in India using Rotterdam criteria. 104 women (49 PCOS and 55 control) were included in this study and an informed consent was obtained from all the subjects before participating in the study.

Inclusion Criteria

- i. a diagnosis of PCOS using Rotterdam criteria
- ii. age from 16-35 years, with no chronic conditions other than PCOS
- iii. at least 6 months duration of diagnosis.

Exclusion criteria

- i. PCOS and Control group having any known medical condition or psychological disorder.
- ii. PCOS suffers who are outside India.
- iii. Pregnant women, those with diagnosed psychiatric disorders, any acute illnesses, or currently taking any psychiatric medications.

Measurements

• Quality of life was evaluated using the WHO Quality of Life-BREF (WHOQOL-BREF) (World Health Organisation, 2005) is evaluated from 26 item version of the WHOQOL-100 developed by the WHOQOL group which has four domains of Quality of Life i.e. physical, psychological, social and environmental. In addition there are two questions on overall quality of life and general health which are not included in respective domains (Ncube, 2015). Each question is scored on a five-point Likert scale for all items in the instrument. Different types of response scales were used in the instrument by “Very Satisfied-Very dissatisfied”, “Not at all-Extremely”, “Not at all-Completely”, and “Never-Always”, “Very Poor-Very good” and “Very Unhappy-Very happy”. The responses showed the respondent’s feelings in the preceding two weeks (Ncube, 2015; World Health Organization, 1998). WHOQOL-BREF is a unique cross-cultural approach. The test-retest reliabilities

for domains were 0.66 for physical health, 0.72 for psychological, 0.76 for social relationships and 0.87 for environment (The WHOQOL Group, 1998).

• The Suicidal Ideation Scale (SIS) was developed by Rd. Devendra Singh Sisodia and Rd. Vibhuti Bhatnagar with an aim to measure suicidal ideation by using Likert technique. The scale comprises 25 statements, which consists of 21 positive statements and 4 negative statements. The scale is used to screen individuals who suffer from alarmingly high degree of suicidal ideation. It gives a quick measure of suicidal ideation. The scale was determined by test-retest reliability and internal consistency method i.e. 0.78 and 0.81 respectively (Sisodia & Bhatnagar, 2005 ; Suthar, 2019).

Data Analysis

The data collected in this study were analyzed using SPSS software version 23. Several statistical tests were employed to analyze the data, including the student t-test, Pearson correlation & Linear Regression. The t-test provided insights into the differences in the psychological domain of QoL between the PCOS group and the control group. Pearson correlation analyses elucidated the associations between QoL domains and Suicidal Ideation scores among women with PCOS. Linear regression was used to analyze the data, examining the impact of quality of life on suicidal ideation among women with PCOS. The regression coefficient, standard error, t-value, and p-value were calculated to determine the significance of the predictors. These statistical analyses contribute to our understanding of the impact of PCOS on QoL and Suicidal Ideation, highlighting the importance of addressing psychological well-being in women with PCOS.

Ethical Procedures Followed

The research followed ethical guidelines, obtaining informed consent, ensuring confidentiality, and prioritizing participant well-being throughout the study. Data was anonymized, and potential risks were monitored and addressed promptly. Transparency and open communication were maintained with participants.

Result

Among the 104 women, 49 (47%) were PCOS sufferers, 55 (52%) were the control group, aged between 16-35 years.

Table 1: Comparison of mean WHO-QoL BREF score between PCOS women and control group

	Sample	N	Mean	SD	t	df
Physical health	PCOS	49	23.18	4.52	3.51**	102
	NON-PCOS	55	25.94	3.46		
Psychological	PCOS	49	18.57	4.26	4.86**	102
	NON-PCOS	55	22.36	3.68		
Social relationships	PCOS	49	10.93	1.87	1.77	102
	NON-PCOS	55	11.69	2.38		
Environment	PCOS	49	29.38	5.02	2.29*	102
	NON-PCOS	55	31.78	5.57		

***. t-value is significant at the 0.01 level (2-tailed).*

**. t-value is significant at the 0.05 level (2-tailed).*

In this study, Table 1, shows the impact of polycystic ovary syndrome (PCOS) on various domains of quality of life was evaluated and compared between women with PCOS and women without PCOS. The results showed that PCOS women had significantly lower scores in physical health (M=23.18, SD=4.52) compared to non-PCOS women (M=25.94, SD=3.46), t(102)=3.51, p=0.00. Additionally, PCOS women had significantly lower scores in the psychological

domain (M=18.57, SD=4.26) compared to non-PCOS women (M=22.36, SD=3.68), t(102)=4.86, p=0.000, as well as in the social relationship domain (M=10.93, SD=1.87) compared to non-PCOS women (M=11.69, SD=2.3), t(102)=1.77, p=0.079. The environment domain score was also lower in PCOS women (M=29.38, SD=5.02) compared to non-PCOS women (M=31.78, SD=5.57), t(102)=2.29, p=0.024.

Table 2 Comparison of mean Suicidal ideation Scale score between PCOS women and control group

	Sample	N	Mean	SD	t	df
Suicidal Ideation	PCOS	49	62.04	14.26	3.074**	102
	NON-PCOS	55	53.43	14.23		

***. t-value is significant at the 0.01 level (2-tailed).*

Furthermore, in Table 2, PCOS women had a significantly higher level of suicidal ideation (M=62.04, SD=14.26) compared to non-PCOS women (M=53.43, SD=14.23), t(102)=3.07, p=0.003. These findings suggest that PCOS has a negative impact on multiple domains of quality of life, which may contribute to the higher levels of suicidal ideation in PCOS women.

with Polycystic Ovary Syndrome (PCOS) and those without, an independent-sample t-test was conducted. The results revealed that PCOS women had significantly higher levels of both quality of life and suicidal ideation compared to non-PCOS women. This indicates that PCOS may have a substantial impact on the overall well-being and mental health of affected individuals.

To examine the differences in Quality of Life (QoL) and Suicidal Ideation (SI) between women

Table 3 Analysis of Pearson correlation among observed variables.

Variables	1	2	3	4	5
1. Psychical Health	-				
2. Psychological	.598**	-			
3. Social Relationships	.598**	.517**	-		
4. Environment	.442**	.445**	.511**	-	
5. Suicidal Ideation Scale	-.527**	-.463**	-.301*	-.287*	-

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

As it can be seen in Table 3, a Pearson product-moment correlation was run to determine the relationship between Quality of life and Suicide Ideation in PCOS women. There was a strong negative correlation between suicidal ideation and

domains of Quality of Life i.e. physical health (r=-.527, p=.000), psychological r=-.463, p=.001), social relationships (r=-.301, p=.035), environment (r=-.216, p=.046).

Table 4 Linear Regression Analysis: Predictors of Suicidal Ideation and their effects

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.563 ^a	.317	.255	12.31

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3099.85	4	774.96	5.11	.002 ^b
	Residual	6668.06	44	151.54		
	Total	9767.91	48			

a. Predictors: (Constant), Psychical Health, Psychological, Social Relationships, Environment

a. Dependent Variable: Suicidal Ideation

b. Predictors: (Constant), Psychical Health, Psychological, Social Relationships, Environment

In Table 4, Linear Regression established that Quality of Life could statistically significantly predict Suicidal Ideation, $F(4,44) = 5.114$, $p < 0.0005$, $R^2 = .317$ and the Quality of Life accounted for 25.5% of the explained variability in Suicidal Ideation.

Discussion and Conclusion

Quality of life is a crucial indicator that encompasses various domains such as physical health, psychological well-being, social relationships, and environmental factors to assess an individual's overall well-being. The present study confirms this finding and suggests that PCOS women exhibit a decreased quality of life in areas concerning physical health, psychological well-being, social relationships, and environment. The results indicate that poor physical health, including dependence on medicinal substances, menstrual irregularities, and improper sleep and rest, may lead to negative thoughts, lack of concentration, and poor self-esteem regarding unsatisfied bodily image due to hirsutism and obesity, which can affect the psychological domain (Barnard et al., 2007; Naumova et al., 2021; Almis et al., 2021). Whereas, the individuals with higher levels of QoL are less likely to experience Suicidal Ideation. The significant relationship between QoL and Suicidal Ideation implies that interventions targeting improvements in QoL may have potential benefits in reducing the risk of Suicidal Ideation (Williams et al., 2022). Consequently, PCOS sufferers feel different from the control group in the context of social support and acquiring opportunities, leading to an inferiority complex in sexual activity and personal relationships. The overall decreased mean of QoL is due to their physical, psychological, social as well as emotional issues.

It has been consistently demonstrated that women with polycystic ovary syndrome (PCOS) experience lower health-related quality of life

(HRQoL) compared to the control group (Dokras et al., 2018; Hahn et al., 2005). The findings of this study highlight the significant impact of poor quality of life on increasing suicidal ideations among women with Polycystic Ovary Syndrome (PCOS). The experience of a lower quality of life in PCOS women is associated with various negative consequences, including impaired sexual functioning, social withdrawal, diminished self-esteem, and limitations in daily activities. These factors collectively contribute to the overall deterioration of well-being and mental health in PCOS women (Jones et al., 2008). The detrimental effects of poor quality of life extend beyond the physical symptoms of PCOS, encompassing various psychosocial aspects of an individual's life. The challenges associated with PCOS, such as hormonal imbalances, weight issues, and hirsutism, can significantly impact sexual functioning, leading to feelings of dissatisfaction and distress (Jones et al., 2008). Furthermore, the negative impact on social interactions and relationships due to PCOS-related concerns can contribute to social withdrawal and isolation, further exacerbating the psychological distress experienced by these women.

Previous studies have suggested that the comorbidity of psychological conditions can have an impact on physical (e.g., sleeping and eating patterns), psychological (e.g., motivation and feelings of worthlessness), and social factors (e.g., relationships with others) among Indian PCOS sufferers (Chaudhari et al., 2018). Kumarapeli et al., (2011) reported significantly lower physical health, psychological health, and social relationships measures among community-based women with recently diagnosed PCOS compared to the control group from the same setting. Additionally, another study found that the psychological attributes of HRQoL had the lowest score, and psychiatric morbidity was significantly

associated with a poorer QoL (Chaudhari et al., 2018).

Thus, these findings highlight the need for healthcare professionals to consider the psychological and social impacts of PCOS, in addition to physical symptoms, while managing PCOS patients. PCOS, being a chronic condition necessitating lifestyle adjustment, finds an ideal therapeutic fit in Cognitive Behavioral Therapy (CBT) to effectively manage the disease and minimize treatment discontinuation rates. CBT's fundamental premise lies in the belief that cognitive processes, combined with lifestyle modifications or psychological counseling, influence behavior. There is widespread acknowledgment that cognitive transformations can lead to desired behavioral changes (Tang et al., 2022).

The present study found a significantly higher prevalence of suicidal ideation among PCOS women than the control group, which may be attributed to several factors such as low self-esteem, negative body image, social stigma, concern about future complications, and family dynamics (Almeshari et al., 2021). This is in consistent with previous research which indicates that PCOS symptoms and lower quality of life can lead to negative ideations about daily life (Dokras et al., 2018). In a case-control study conducted in Sweden, higher rates of suicide attempts were reported in the PCOS group compared to the control group, with a seven-fold increase in the prevalence of suicidal attempts (Månsson et al., 2008). These findings suggest that there is a need for increased awareness and attention to the psychological well-being of women with PCOS.

To evaluate how strongly quality of life is linked with suicidal ideation, the researchers used Pearson correlation. The analysis showed that there is a significant negative correlation between quality of life and suicidal ideation. PCOS women may experience a range of negative effects such as feeling unwell, physical discomfort, undergoing medical treatment, having negative body image, struggling with personal relationships, and experiencing persistent negative emotions. These factors have been found to significantly impact the quality of life and contribute to an increased risk of suicidal ideation among women with PCOS. According to a study conducted by Hussain et al. (2015), the excessive levels of androgens in females with PCOS lead to physical changes like hirsutism, acne, weight imbalance, or alopecia, which affect their feminine identity. These changes often define them as culturally and socially undesirable and unfeminine. Physical attributes

associated with PCOS, such as hirsutism, acne, weight imbalance, and alopecia, may frequently lead to social isolation, self-doubt, and reduced self-esteem, which are significant risk factors for poor quality of life and suicidal ideations (Barnard et al., 2007). Moreover, clinical variables have been identified as potential contributors to the psychological problems experienced by women with PCOS. According to Shah et al. (2020), the high number of suicide attempts among women with PCOS, which is seven times higher than that of non-PCOS women, is a cause for serious concern, given the lower level of quality of life often seen in PCOS sufferers. These findings support the idea that a decrease in quality of life can have a direct impact on suicidal ideation in women with PCOS. In our study, it appears that women diagnosed with PCOS were more likely to display maladaptive strategies for regulating their emotions compared to women without PCOS (Williams et al., 2022). Additionally, these women exhibited a higher prevalence of suicide-related thoughts and behaviours. The study conducted by Shani et al., (2016) revealed significant findings regarding women at risk of suicide. These women had a higher probability of not having children or having fewer children. They also reported elevated levels of depressive symptoms and a history of suicidal thoughts in the past year, indicating their increased vulnerability. Furthermore, women at risk of suicide tended to employ coping strategies characterized by denial, social withdrawal, and self-blame, while utilizing positive reappraisal coping strategies less frequently. In comparison, infertile women who were not at risk of suicide displayed different patterns in their reproductive status, mental health, and coping strategies (Shani et al., 2016). Consistent with earlier research, these findings emphasize the adverse effects of PCOS on the quality of life and mental health of affected women. It is suggested that early interventions and CBT has shown a positive effect at improving quality of life and reducing suicidal ideation may provide significant benefits to women with PCOS (Tang et al., 2022).

Limitations

Our study has several limitations that should be taken into account when interpreting the results. Firstly, the sample size was relatively small, which may have limited the statistical power of the analyses. Additionally, the sample was collected from different regions in India, which may not be representative of the entire population of women with PCOS. Therefore, caution should be exercised

when generalizing the findings of our study to other populations of PCOS sufferers.

Implications

This study's findings hold significant importance, shedding light on the psychological and emotional dimensions experienced by women living with polycystic ovary syndrome (PCOS). The observed decline in quality of life among women with PCOS, particularly in areas like physical health, emotional well-being, social connections, and environment, resonates with research exploring the effects of chronic health conditions on an individual's holistic well-being. In this context, a diminished quality of life can notably impact motivation, treatment adherence, and coping mechanisms. Challenges posed by PCOS can lead to disruptions in sexual functioning, withdrawal from social interactions, and a dip in self-esteem, echoing findings from previous studies on the psychological implications of PCOS.

Furthermore, the heightened prevalence of suicidal ideation in PCOS women underscores the pivotal role of mental health in shaping overall well-being. Extensive literature underscores the intricate interplay between mental and physical health, where psychological aspects often mold an individual's perception of their wellness and capacity to handle life's challenges. By comprehending the behavioral and psychological repercussions of PCOS, healthcare providers can better assist those affected with tailored interventions, psychological counseling, and lifestyle adjustments. Approaches like cognitive-behavioral therapy could be advantageous in addressing negative thought patterns and enhancing coping mechanisms among women with PCOS.

Conclusion

This study shows that many women with Polycystic Ovary Syndrome (PCOS) experience lower quality of life and more thoughts of suicide. It's important to think about both physical and emotional aspects of PCOS. Even though medical treatments can help with PCOS symptoms, they might not completely make life better or help with following treatment plans. To help these women, we need to also think about their feelings and minds. Talking to a counselor, eating healthier, doing things like yoga or meditation, and joining PCOS support groups can all make a difference. It's suggested that treatments for mental health issues, learning better ways to live with PCOS, and being part of support groups can all help improve life and reduce thoughts of suicide. Doctors should

consider all parts of PCOS, like the body, mind, and social parts. This can include ways to improve life, feel better sexually, get more support from friends, and overall, make life better for women with PCOS.

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