

Research Paper

Exploring the Relationship between Quality of Life and Psychological Well-Being in Individuals with Polycystic Ovary Syndrome (PCOS)

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ABSTRACT

Polycystic ovary syndrome (PCOS) is the most prevalent hormonal disorder impacting young women. While infertility, inconsistent periods, and physical changes are often considered the primary sources of distress and reduced quality of life (QOL), a recent study explored this further. Between 2017 and 2018, researchers surveyed AIIMS Patna, involving 100 women with PCOS and 200 healthy women. Participants completed standardized questionnaires, like the Short Form Health Survey-36, to assess the impact of PCOS on their well-being. The data revealed that while the socioeconomic status of both groups was comparable, women with PCOS reported a significantly lower QOL. They also experienced differences in the age of their first period, had more irregular periods, and were less likely to have children. Furthermore, the PCOS group had higher rates of miscarriage, more children on average, and were more likely to experience pregnancy loss. Significant differences in various areas of the SF-36 survey were also found between the PCOS and control groups, depending on age, body mass index (BMI), education level, and marital status. Overall, menstrual irregularities and higher BMIs were significant factors. The study emphasizes the need for psychological support as part of PCOS care, as marital status and education level appear to have a notable influence on the QOL of women with PCOS.

Keywords: *Quality of Life, Psychological Well-Being, Polycystic Ovary Syndrome (PCOS)*

At present, there is a paucity of information related to PCOS among women of the reproductive age group in India, in particular, North India. Thus, considering these factors into account, this prospective study was planned to compare socioeconomic status (SES) and association of age, body mass index (BMI), education level and marital status between PCOS and healthy control cases among the women in the reproductive age group visiting the department of gynaecology and obstetrics of tertiary care hospital.

Polycystic ovary syndrome (PCOS) is a significant endocrine disorder that affects the health-related quality of life (HRQOL) and mental well-being of young women. This condition can persist throughout a woman's life, impacting approximately 5 million individuals in the United States alone (Escobar-Morreale HF 2018). In India, the prevalence

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of PCOS among adolescents is estimated to be around 9.13%, varying across different racial groups (Kalra P, Bansal B, Nag P, Singh JK, Gupta RK, Kumar S, et.al 2009). Key factors contributing to psychological challenges in these individuals include noticeable changes in physical appearance, obesity, and irregular menstrual cycles. The detrimental effects of PCOS are often underestimated, yet they can lead to serious anxiety and psychological disorders. Notably, the psychological burden associated with PCOS can differ significantly based on geographical location and societal attitudes (Barnard et al., 2007; Brady et al., 2009). Those affected may perceive their symptoms as stressful and are at a higher risk for depression and anxiety, which can even lead to suicidal thoughts. Clinically, PCOS is characterized by either infrequent or absent ovulation and excess androgen levels, leading to potential infertility and other metabolic issues. This condition heightens the risk of reproductive problems, such as infertility, endometrial cancer, and mental health disturbances. However, new treatments and therapies can be aimed at addressing these concerns, which are crucial for the individuals involved. Recently, there has been a growing emphasis on understanding the effects of PCOS symptoms, particularly regarding feminine identity and the treatment from the patients' viewpoint to enhance quality of life (QOL).

Polycystic Ovary Syndrome (PCOS)

Polycystic ovary syndrome (PCOS) is a condition that influences a woman's hormonal balance. Women diagnosed with PCOS tend to have elevated levels of male hormones, leading to irregular menstrual cycles and difficulties with conception. It usually starts during adolescence, but symptoms may fluctuate over time. PCOS can cause hormonal imbalances, irregular periods, excess androgen levels and cysts in the ovaries. Irregular periods, usually with a lack of ovulation, can make it difficult to become pregnant. PCOS is a leading cause of infertility.

Polycystic Ovary Syndrome (PCOS) is a hormonal disorder that impacts women in their reproductive years, typically between the ages of 15 and 44. Research indicates that approximately 2.2 to 26.7 percent of women within this age range are affected by PCOS. Notably, many women may have PCOS without being aware of it; a study found that nearly 70 percent of those with the condition had not received a diagnosis. PCOS influences the ovaries, which are responsible for producing the hormones estrogen and progesterone that regulate the menstrual cycle. Additionally, the ovaries generate a small amount of male hormones known as androgens. Each month, the ovaries release an egg, a process termed ovulation. The release of eggs is regulated by follicle-stimulating hormone (FSH) and luteinizing hormone (LH). FSH encourages the ovary to develop a follicle, which is a sac that houses an egg, while LH prompts the ovary to release a fully matured egg. PCOS is classified as a "syndrome," meaning it encompasses a collection of symptoms that impact ovulation and the ovaries. Its primary characteristics include the presence of cysts in the ovaries, elevated levels of male hormones, and irregular or absent menstrual periods. In cases of PCOS, numerous small fluid-filled sacs, referred to as follicles, form within the ovaries. The term "polycystic" translates to "many cysts." These follicles contain immature eggs that do not develop sufficiently to initiate ovulation. This absence of ovulation leads to imbalances in the levels of estrogen, progesterone, FSH, and LH; specifically, estrogen and progesterone levels tend to be lower than normal, whereas androgen levels are elevated. The increased levels of male hormones disrupt the menstrual cycle, resulting in women with PCOS experiencing fewer periods than usual.

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RELATIONSHIP BETWEEN QUALITY OF LIFE AND PCOS

Investigating the connection between quality of life and psychological well-being in individuals with Polycystic Ovary Syndrome (PCOS) uncovers several interrelated elements.

Quality of Life Patients with PCOS often experience a reduced quality of life due to:

1. **Physical Symptoms:** Challenges like weight gain and hirsutism may result in body image issues and lowered self-esteem.
2. **Chronic Health Risks:** The heightened risk of conditions like diabetes, heart disease, and infertility can lead to increased anxiety and stress.
3. **Social Implications:** Visible symptoms may result in stigma and social withdrawal, affecting personal relationships and social engagement.

Psychological Well-Being

Psychological well-being refers to emotional health, life satisfaction, and overall mental wellness. For those with PCOS, several factors influence their psychological state:

1. **Anxiety and Depression:** Women with PCOS frequently report higher levels of anxiety and depression, often related to the stress of symptom management and potential fertility challenges.
2. **Body Image:** Struggles with negative body image and self-esteem can create a cycle of emotional distress, further affecting quality of life.
3. **Coping Mechanisms:** Effective coping strategies can bolster psychological resilience, while ineffective ones may worsen mental health challenges.

LITERATURE REVIEW

Global Studies

H., B., Коцей, et al., 2014, The purpose of the study was to evaluate the psycho-emotional well-being of women with inflammatory pelvic organ disorders and Polycystic Ovary Syndrome (PCOS). With an emphasis on the psychological aspect of health, it aimed to comprehend the frequency of anxiety and depression in these women as well as how these illnesses impact their quality of life. The results showed that anxiety (34% to 57%) and depression (28% to 64%) are highly prevalent in women with PCOS. 120 women with normal weight who had been diagnosed with inflammatory illnesses and PCOS participated in the study. Inflammatory disorders and PCOS have been shown to substantially lower quality of life, impacting both physical and mental health, with the psychological aspect being more negatively affected. According to the study's findings, PCOS increases the risk of psychosocial and emotional disorders, and the presence of inflammatory diseases makes these problems worse by increasing pain and mental anguish.

Fatemeh et al., 2015, The aim of this research was to conduct a systematic review of how Polycystic Ovary Syndrome (PCOS) affects various areas of health-related quality of life (HRQOL). The researchers sought to determine which specific elements of disease-related HRQOL, especially those assessed by the modified polycystic ovary syndrome health-related quality of life questionnaire (MPCOSQ), experienced the most significant adverse effects due to PCOS.

Outcome Menstruation (3.84; 95% CI 3.63-4.04) and hirsutism (3.81; 95% CI 3.26-4.35) domains had lower mean scores than the PCOSQ/MPCOSQ in related dimension, but the combined mean of emotional (4.40; 95% CI 3.77-5.04), infertility (4.13; 95% CI 3.81-4.45), and weight (3.88; 95% CI 2.33-5.42) dimensions were better.

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Elise et al., 2016, The aim of this study was to evaluate the quality of life concerning diet and physical activity (QOL ED) in women diagnosed with Polycystic Ovarian Syndrome (PCOS) compared to those without PCOS who are pursuing fertility treatment. The research sought to investigate different elements of eating habits and the psychological experiences related to eating disorders within these two groups.

Mojgan et al., 2017, The study's objective was to ascertain the connection between women with polycystic ovary syndrome (PCOS) and their quality of life in relation to a lifestyle that promotes health. The study used health-promoting lifestyle (HPLP-II) and quality of life (PCOSQ) questionnaires to collect data from 174 women who were attending fertility clinics in Urmia, Iran.

The findings showed a moderate quality of life score of 45.8 out of 100, with hirsutism and weight being the two main areas of concern. The average score for the health-promoting lifestyle was 2.2 out of 4, indicating that it needs to be improved. Health responsibility, stress management, spiritual development, body mass index (BMI), employment status, and menstrual cycle intervals were all found to be significant determinants of these women's quality of life using multivariate linear regression analysis. The study came to the conclusion that changing one's lifestyle is crucial to improving the quality of life for women with PCOS.

Sophie et al., 2018, The study's objective was to create and first evaluate a quality of life scale specifically designed for UK women with polycystic ovarian syndrome (PCOS). The necessity for a more accurate quality of life metric that takes into account the particular difficulties faced by women with this illness was acknowledged by the researchers. The 35-item Polycystic Ovary Syndrome Quality of Life scale (PCOSQOL), which has four subscales—Impact of PCOS, Infertility, Hirsutism, and Mood—was developed by 714 women with PCOS. With a Cronbach's alpha of .95 for the overall scale and high alphas for the subscales (Impact of PCOS: .95, Infertility: .93, Hirsutism: .96, Mood: .85), the results showed that the PCOSQOL showed outstanding reliability. The scale is a useful tool for clinical and research applications since it accurately measures the quality of life factors that are significant to women with PCOS, according to preliminary validation.

Romilson et al., 2019 The aim of this systematic review and meta-analysis protocol is to assess how lifestyle interventions affect health-related quality of life (HRQOL) in women diagnosed with polycystic ovary syndrome (PCOS). The study intends to explore different lifestyle interventions, such as exercise-only, diet-only, and mixed methods, to evaluate their effects on HRQOL in women suffering from PCOS. - Examine the limited existing research on the connection between lifestyle modifications and psychological well-being in this group, especially in light of the elevated depression rates reported among women with PCOS. - Adhere to recognised guidelines from the Cochrane Handbook and PRISMA-P to maintain a thorough and transparent review process. - Evaluate the quality of evidence utilising the GRADE framework, which will aid in understanding the robustness of the results and their relevance for healthcare professionals and researchers. This inclusive approach aims to offer important insights that can inform the creation of effective strategies to enhance the quality of life for women with PCOS.

Camil et al., 2020, The study "Quality of life and sexual function in women with polycystic ovary syndrome: a comprehensive review" looks into how women's sexual function and

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quality of life are affected by PCOS. It aims to show that PCOS is not only an endocrine disorder but also a complicated condition with important implications on metabolism, reproduction, and psychology.

According to the review's findings, hyperandrogenism, irregular menstruation, and obesity are just a few of the symptoms that cause women with PCOS to have a much lower quality of life. Chronic psychological discomfort and marital problems are caused by these symptoms, which also contribute to low self-esteem, sexual unattractiveness, and feelings of dissatisfaction with appearance. The results emphasise the significance of addressing PCOS's medical and social ramifications and the demand for all-encompassing care that takes into account the condition's complex character.

Divya et al., 2020, In women with polycystic ovarian syndrome (PCOS) aged 18 to 40 undergoing conventional treatment, the study sought to assess the additional impact of Satvavajya Cikitsa, a type of supportive counselling grounded in Ayurvedic principles, on stress, quality of life (QOL), psychosocial well-being, and sexual satisfaction. The experimental group who received counselling in addition to traditional treatment showed notable improvements, according to the results. Among the main conclusions were a significant drop in stress ratings ($p < 0.001$), improved QOL associated with PCOS ($p < 0.001$) and gains in overall quality of life in the social ($p < 0.05$) and psychological ($p < 0.01$) dimensions. Heightened sexual pleasure ($p < 0.05$). Overall, the study found that women with PCOS experienced higher clinical efficacy and psychosocial outcomes when Satvavajya Cikitsa was combined with traditional treatment.

Manish et al., 2022, assessing the health-related quality of life (HRQoL) of women of reproductive age with a diagnosis of polycystic ovarian syndrome (PCOS) was the main goal of the study. The researchers aimed to determine how these women's quality of life is impacted by a number of characteristics, including body mass index (BMI), menstrual patterns, length of medication, and the existence of comorbidities.

More than half of the respondents (50.9%) said they had a good quality of life, according to the poll. Infertility was the most important health issue (28.57%), whilst acne was the least important (71.43%). A number of covariates were found to have statistically significant relationships with HRQoL, including BMI ($p < 0.001$), menstrual pattern ($p = 0.013$), length of medication ($p = 0.002$), and comorbidities ($p = 0.010$). These results underline the necessity of focused interventions to enhance the quality of life for women with PCOS, with an emphasis on infertility and related health problems.

Bilal et al., 2023, This qualitative phenomenology study set out to investigate the socio-psychological difficulties that women with PCOS (polycystic ovary syndrome) encounter. Understanding their feelings, body image, social stigma, interactions, and coping mechanisms were the main goals of the study. The researchers conducted in-depth interviews with a broad group of women in an effort to learn more about the emotional journeys and difficulties these women face on a daily basis.

The results showed a number of noteworthy themes:

- Emotional Journey: Women described a challenging emotional journey that included feelings of frustration and distress associated with their illness.

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- **Body Image Problems:** The symptoms of PCOS had a detrimental effect on the self-perception and body image of several participants.
- **Loneliness and Stigma:** Because women frequently felt misinterpreted or scrutinised by others, the study found sentiments of social exclusion and loneliness.
- **Support Networks:** The value of networks of connections and support was underlined since these connections were essential in assisting women in overcoming their obstacles. For women with PCOS, legislators, and healthcare professionals, these insights are essential because they can result in more compassionate treatment and well-informed legislation to combat the stigma attached to the condition.

Gaurangi et al., 2024, This study aimed to identify the health areas most negatively impacted by Polycystic Ovarian Syndrome (PCOS) and assess the quality of life among women with the illness. Forty single women participated in the study and completed the SF36 and PCOSQOL questionnaires to gauge their quality of life. The results demonstrated that infertility worries got the greatest average score, suggesting that unmarried participants were less distressed by this element, whereas menstrual problems earned the lowest average score, revealing a significant detrimental impact on quality of life. The participants' severe emotional challenges and weariness were highlighted by the SF36 scores, which also showed that emotional well-being and fatigue levels were rated the lowest. Social and physical functioning restrictions, on the other hand, received the highest ratings, indicating that participants were still able to engage in social activities in spite of their difficulties. Overall, the study found that PCOS significantly affects quality of life, especially when it comes to emotional and menstrual issues.

Indian Studies

Radhika et al., 2019, Finding out how common depression is among women with PCOS and analysing its relationship to their quality of life (QoL) were the main goals of the study. The study excluded individuals with documented mental problems and concentrated on women between the ages of 18 and 40.

With a mean age of 25.64 years and a mean Body Mass Index (BMI) of 26.78 kg/m², the study comprised 100 participants. The results showed that more than 50% of individuals had mild to moderate depression, with a mean depression score of 12.46. The emotional domain had the greatest mean score of 28.07 on the QoL assessment, while the menstrual difficulties domain had the lowest mean score of 12.48. Notably, emotional QoL scores and depression severity showed strong negative relationships, underscoring the detrimental effects of depression on these patients' quality of life. The study's overall findings indicated that PCOS is strongly linked to depression and a lower quality of life, indicating the necessity of regular screening and suitable treatments for impacted women.

RESEARCH GAP AND SIGNIFICANCE

Research Gap

The complex effects of Polycystic Ovary Syndrome (PCOS) on women's physical, reproductive, and mental health have been well documented by international research, but there is a dearth of information specific to India, especially in North India. Most of the existing research is done outside of India or in the southern regions, creating a big gap in understanding how factors like education, marital status, and socioeconomic background impact the quality of life (QOL) for women with PCOS in northern India. Furthermore, despite the widespread use of the SF-36 and PCOSQOL, there has been limited research on

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their applicability and contextual relevance among Indian women. The aforementioned disparity underscores the necessity of thorough, regional studies that take into account the distinct socioeconomic and cultural factors impacting women with PCOS in this area.

Significance

This study is important because it sheds light on how PCOS impacts Indian women's quality of life, particularly in North India. The research clarifies how variables like BMI, menstrual irregularity, marital status, and educational attainment contribute to psychological distress and decreased well-being by comparing women with PCOS to healthy controls using validated instruments like the SF-36. The results highlight how crucial it is to incorporate lifestyle modifications and psychological support into routine PCOS treatment. Furthermore, the study's localised insights can help support networks, legislators, and medical professionals create culturally aware, focused initiatives that enhance women with PCOS's emotional and social well-being in addition to their physical symptoms.

DISCUSSION

This research explores how Polycystic Ovary Syndrome (PCOS) affects the well-being of women in North India, examining the physical, emotional, and social difficulties they face. PCOS, a common hormonal disorder impacting both reproductive and metabolic health, presents with symptoms like irregular periods, weight gain, skin issues, excess hair growth, and fertility problems – all significantly impacting a woman's self-image and overall happiness. The study reveals that women with PCOS experience increased stress, including anxiety and depression, particularly married women facing societal pressures related to childbearing. A significant finding highlights a clear link between body weight and quality of life, with higher body mass index (BMI) correlating to lower well-being scores. Obesity, often linked with PCOS, worsens hormonal imbalances and metabolic problems, further impacting physical and mental health. Irregular periods also contribute to distress, indicating underlying hormonal issues. The social stigma associated with PCOS symptoms, like excess hair growth and acne, adds to the emotional burden, leading to decreased self-esteem and social isolation. The study underscores the importance of a comprehensive approach to PCOS management, including medical treatment, counselling, and lifestyle changes. Raising awareness and providing education about PCOS are critical, as many women may not fully understand the condition and its long-term effects. Healthcare providers should prioritise holistic care that addresses both the physical symptoms and the mental health challenges faced by women with PCOS. By promoting early diagnosis, weight management techniques, and emotional support, healthcare professionals can improve the quality of life for women living with PCOS, leading to better overall health and well-being.

CONCLUSION

This study highlights the multifaceted and wide-ranging effects of polycystic ovary syndrome on women's quality of life, especially in North India's sociocultural context. PCOS is a chronic condition with substantial psychological, social, and emotional repercussions that manifests as more than just a hormone disorder. Women suffer from anxiety, sadness, problems with their bodies, and distress associated with infertility, all of which are worsened by social stigma, ignorance, and insufficient support networks. Many people internalise their troubles and suffer in silence as a result of cultural barriers and the normalisation of their symptoms. It emphasises that treatment should go beyond symptom management to include psychological counselling and community-based assistance, highlighting a major gap in holistic care. Women must be empowered with information,

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early diagnosis, and emotional support. The lived experiences of women with PCOS in North India must be improved by a multidisciplinary strategy that integrates community educators, mental health specialists, and healthcare providers.

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Conflict of Interest

The author(s) declared no conflict of interest.

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