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Exploring the mental health challenges faced by females with polycystic ovary syndrome (PCOS)

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Abstract

Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder affecting about 6-10% of females of reproductive age worldwide. Characterized by hyperandrogenism, anovulation, and polycystic ovarian morphology, PCOS is an important reason of sterility and is associated with long-term health risks such as type 2 diabetes, heart problems, and metabolic syndrome. In spite of extensive research, the etiology of PCOS remains multifactorial, involving genetic predisposition, insulin resistance, and environmental factors. Females with PCOS often experience a range of physical symptoms, comprising obesity, acne, and hirsutism, which contribute to important mental distress, including anxiety, depression and abridged quality of life. Treatment approaches are individualized, addressing symptoms and associated risks through lifestyle interventions and pharmacological treatments. Given the rising recognition of PCOS as a public health concern, ongoing research is vital to improve our understanding of its pathophysiology and to develop more effective management strategies, particularly in the domains of psychological wellbeing and overall quality of life for affected females.

Keywords: PCOS, hirsutism, predisposition, quality of life

Introduction

Polycystic Ovary Syndrome (PCOS) is a predominant endocrine disorder that distresses approximately 6-10% of females of reproductive age globally (Goodarzi *et al.*, 2011) ^[18]. It is considered by a combination of biochemical, clinical and ultrasound features, including hyperandrogenism, anovulation, and polycystic ovarian morphology (Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group, 2004). PCOS is an important cause of sterility and is related with long-term health risks, such as type 2 diabetes, heart problems and metabolic syndrome (Dunaif, 1997) ^[19].

Despite extensive research, the aetiology of PCOS remains multifactorial, with insulin resistance, genetic predispositions, and environmental factors playing a significant part in its development (Azziz *et al.*, 2016) ^[20]. Women with PCOS often present with diverse symptoms, including obesity, menstrual irregularities, acne, hirsutism which can lead to important psychological challenges, such as feelings of depression, heightened anxiety, and a diminished overall quality of life. (Himelein & Thatcher, 2006) ^[10]. Assumed the complexity and heterogeneity of PCOS, treatment strategies are tailored to address the individual's symptoms and associated risks, ranging from lifestyle modifications to pharmacological interventions (Teede *et al.*, 2018) ^[21]. As PCOS is increasingly recognized as a public health concern, further study is needed to improve our understanding of its pathophysiology and to grow more effective management and intervention strategies.

Prevalence and Global Impact: PCOS is among the most prevalent endocrine disorders impacting females globally, with occurrence rate that varies by population and diagnostic criteria used. Studies suggest that between 4% and 20% of women may have PCOS, making it a significant public health issue (Bozdag *et al.*, 2016) ^[22]. This variability underscores the need for standard diagnostic approaches and greater awareness of the condition globally.

Diagnostic Criteria and Challenges: The diagnosis of PCOS is primarily established using the Rotterdam criteria, which mandate the presence of at least two out of three key features: oligo- or anovulation,

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hyperandrogenism (either clinical or biochemical), and polycystic ovarian morphology (Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group, 2004). However, the heterogeneity in symptom presentation complicates the diagnosis, and many women remain undiagnosed or misdiagnosed. Current research have emphasized the significance of early diagnosis to mitigate long-term complications (Teede *et al.*, 2010) ^[23].

Insulin Resistance and Metabolic Disturbances

Insulin resistance (IR) was a hallmark feature of PCOS, present in 50%-70% of women with the disorder (Dunaif, 1997) ^[19]. The resultant hyperinsulinemia exacerbates hyperandrogenism and contributes to metabolic complications, comprising an increased risk for type 2 diabetes, obesity, and heart problems. Metformin, an insulin-sensitizing agent, is commonly used to manage metabolic disturbances in PCOS (Tang *et al.*, 2012) ^[24].

Psychological and Emotional Impact

Beyond physical symptoms, PCOS has a profound impact on the mental health and emotional well-being of women affected by the condition. Studies have found a more occurrence of anxiety, depression, & eating disorders among females with PCOS as comparison to the wider population (Barry *et al.*, 2011) ^[32]. The psychosocial burden is often compounded by weight gain and body image issues, further affecting the overall quality of life.

Reproductive Health and Infertility

One of the most distressing consequences of PCOS is its impact on fertility. Anovulation, a common feature of PCOS, can lead to difficulties in conceiving, making PCOS the leading reason of ovulatory sterility (Palomba *et al.*, 2004) ^[25]. Fertility treatments, such as ovulation induction with clomiphene citrate or assisted reproductive technologies, are often employed to address these challenges, though their success rates can vary.

Pcos and Mental Health

Polycystic Ovary Syndrome (PCOS) has significant impacts on the mental health of affected women, with studies increasingly showing that the psychological burden can be as profound as the physical symptoms. The following are key aspects of how PCOS influences mental health among females:

Increased Rates of Anxiety and Depression

Women with PCOS face an increased risk of experiencing anxiety and depression compared to those without the condition. Research indicates that up to 40-60% of females with PCOS may suffer from depressive symptoms, while 30-50% experience anxiety disorders (Dokras *et al.*, 2011) ^[26]. The chronic nature of PCOS, combined with the emotional strain of managing symptoms like infertility, weight gain, and hirsutism, often contributes to this heightened psychological distress.

Body Image and Self-Esteem Issues

The Physical manifestations of PCOS, including weight gain, acne, and excessive hair growth. Often lead to body image dissatisfaction & reduced self-esteem. Female's with Polycystic Ovary Syndrome frequently report feelings of embarrassment, frustration, and inadequacy related to their

appearance (Jones *et al.*, 2008) ^[27]. These body image concerns can lead to the development of disordered eating behaviours, further exacerbating emotional stress.

Impact on Sexual Health

PCOS can negatively affect sexual health and satisfaction, with women experiencing lower libido and sexual dysfunction, likely due to hormonal imbalances, emotional distress, and body image issues. This, in turn, can strain intimate relationships and contribute to feelings of isolation and depression (Trent *et al.*, 2002) ^[33].

Infertility-Related Stress

PCOS is a leading cause of ovulatory infertility, and many women with the condition struggle with conceiving. The emotional toll of infertility, particularly for women desiring children, can be substantial. Feelings of loss, frustration, and inadequacy often arise when faced with repeated treatment failures or uncertainty about future fertility (Tao *et al.*, 2011) ^[28]. Infertility has been related to higher rates of depression, anxiety and even marital difficulties among females with PCOS.

Social Isolation and Stigmatization

Women with PCOS may experience stigmatization due to the visible symptoms of the disorder, such as hirsutism or obesity. The fear of being judged or misunderstood can lead to social withdrawal and isolation. In particular, younger women with PCOS may struggle to relate to their peers or avoid social situations altogether due to the embarrassment associated with their appearance (Gibson-Helm *et al.*, 2014) ^[29].

Sleep Disturbances and Mood Disorders

Sleep disturbances are common in women with PCOS, often due to co-existing conditions like sleep apnea and obesity (Vgontzas *et al.*, 2001) ^[30]. Poor sleep quality can contribute to mood disorders, increase fatigue, and exacerbate symptoms of anxiety and depression. This cyclical relationship between poor sleep and mental health issues highlights the need for comprehensive management of PCOS symptoms.

Psychological Support Needs

The psychological impact of PCOS underscores the importance of holistic treatment approaches. Cognitive-behavioural therapy (CBT), counselling, and support groups have been shown to help women cope with the emotional burden of PCOS. Integrating psychological care with medical treatments can improve overall well-being and help women better manage both the physical and emotional challenges linked with the syndrome (Moran *et al.*, 2017) ^[31].

Impact on Quality of Life

Overall, women with PCOS often report a diminished quality of life compared to the wider population. The interplay of physical symptoms, reproductive issues, and emotional challenges leads to a reduced sense of well-being. Research indicates that addressing both the physical and psychological aspects of PCOS is essential for refining overall quality of life and reducing the long-term impact of the condition (Jones *et al.*, 2008) ^[27].

In conclusion, the impact of Polycystic Ovary Syndrome on mental health is multifaceted, involving not just hormonal

imbalances but also the emotional strain of managing its physical and social consequences. Women with PCOS require comprehensive care that addresses both their psychological and medical needs to develop their psychological wellbeing and quality of life.

Literature Review

Chaudhari, A. P., *et al.* (2018)^[1]. This study investigates the prevalence of anxiety and depression in women with Polycystic Ovary Syndrome (PCOS) in India, focusing on how psychiatric morbidity affects quality of life (QOL). Seventy women, aged 18-45, diagnosed with PCOS based on the Rotterdam criteria, were evaluated for anxiety and depression using the Hamilton scales. The study also measured QOL using the WHO-QOL-BREF. The results revealed a notable prevalence of anxiety (38.6%) and depression (25.7%) among women with PCOS. Anxiety was particularly associated with infertility and alopecia, while depression was linked to acne. Hirsutism was found to have a detrimental effect on psychological well-being. In general, women experiencing psychiatric conditions reported a significantly lower quality of life compared to those without such conditions, underscoring the importance of addressing mental health in the management of PCOS.

Blay, S. L., Aguiar, J. V., & Passos, I. C. (2016)^[2]. This systematic review and meta-analysis examined the association between Polycystic Ovary Syndrome (PCOS) and psychiatric disorders, specifically anxiety and depression, by analysing six studies. Results revealed that women with PCOS were significantly more possible to practice anxiety and depressive symptoms. These findings highlight the raised occurrence of both anxiety and depression among women with PCOS, suggesting that mental health assessments should be prioritized in their care.

Karsten, M. D. A., and its associates (2021). This study explored differences in mental health and sexual function between women with and without PCOS, controlling for BMI and fertility characteristics. The findings revealed that women with PCOS had poorer mental quality of life, particularly in the area of emotional role limitations, but there were no significant differences in symptoms of depression, quality of life, anxiety or sexual function between the groups. The research recommends that mental health issues in women with PCOS may be influenced more by obesity than PCOS itself, both obese women with and without PCOS experience a lower quality of life compared to the general population.

Yin, X., Ji, Y., Chan, C. L. W., & Zhao, L. (2021)^[4]. This systematic review and meta-analysis examined the mental health of women with PCOS compared to women without the condition, using data from 46 studies involving 30,989 participants. Findings revealed that females with PCOS had significantly higher levels of depression, anxiety, and lower quality of life (SMD = -0.55) compared to controls. However, no significant difference was found in sexual dysfunction (SMD = -0.24). Heterogeneity among studies was noted, particularly based on country of origin, diagnostic criteria, and assessment tools. Females with PCOS in China reported greater levels of anxiety & depression as compared to other countries.

Brady, C., *et al.* (2009)^[6]. Polycystic ovary syndrome (PCOS) is increasingly known as a multifaceted disorder encompassing metabolic, hormonal, and psychosocial dimensions, rather than solely an endocrine issue. This holistic perspective emphasizes the significance of early

analysis and comprehensive treatment to address the emotional stress often associated with PCOS. Effective long-term management can help women maintain a healthy, active lifestyle and prevent serious complications such as metabolic syndrome and cardiovascular diseases.

Tabassum, F., Jyoti, C., Sinha, H. H., Dhar, K., & Akhtar, M. S. (2021)^[8]. This prospective case-control study evaluated the effect of polycystic ovary syndrome (PCOS) on health-related quality of life (HRQOL) by comparing 100 women diagnosed with PCOS to 200 healthy controls at AIIMS, Patna, between 2017 and 2018. Factors such as higher age of menarche, irregular menstrual cycles, and childlessness were more prevalent in the PCOS group. Significant differences in HRQOL were noted across various age, BMI, educational, and marital status categories. The findings indicate that increased BMI, menstrual irregularities, and socio-demographic factors significantly affect HRQOL in women with PCOS, highlighting the need for psychological care in their management.

Douglas, K. M., Fenton, A. J., Eggleston, K., & Koss, L. (2022)^[9]. This systematic review examines the prevalence of polycystic ovary syndrome (PCOS) in female patients with mental health disorders, focusing on reproductive-aged women with Axis I or II diagnoses. Eleven studies were included, covering conditions such as bipolar disorder, autism spectrum disorders, bulimia nervosa, and post-traumatic stress disorder. The findings indicated restricted suggestion of elevated PCOS rates in bipolar disorder compared to general population estimates, while significantly higher rates were observed in samples with autism spectrum disorders, bulimia nervosa, and PTSD. The review emphasizes the complexities of this research area, noting the need for more comprehensive studies to address the gaps and inform screening practices for PCOS in mental health settings.

Yadav, S., Delau, O., and its associates (2023)^[12]. This study examines the economic burden of mental health (MH) disorders linked to polycystic ovary syndrome (PCOS), a condition that affects approximately one in seven women of reproductive age worldwide. Using PRISMA guidelines for a systematic review, the researchers analyzed data from multiple databases and included 25 studies that assessed anxiety, depression, eating disorders, and postpartum depression in women with PCOS. The meta-analysis revealed noteworthy prevalence ratios: 1.42 for anxiety, 1.65 for depression, and 1.48 for eating disorders in PCOS compared to controls.

Balikci, A., Erdem, M., *et al.* (2014)^[14]. This study investigates the relationships between hormonal changes and psychological symptoms—specifically anxiety, depression, and anger—in females with PCOS. Forty-four females with PCOS were compared to 44 BMI-matched healthy controls. Researchers measured various hormonal levels, including insulin, LH, DHEAS, and total testosterone, along with psychological assessments using established inventories. Results indicated significant differences in hormonal levels between the groups, with the PCOS group showing elevated BMI, insulin, LH, DHEAS, and testosterone. Notably, a positive correlation was found between anxiety scores and DHEAS levels. Furthermore, significant differences in trait anger, anxiety, and depression scores were observed between the groups. The study concludes that anxiety symptoms have a stronger relationship with DHEAS than depression, potentially linked to DHEAS's effects on the autonomic

nervous system. Additionally, the physical manifestations of PCOS may diminish self-esteem, contributing to depressive symptoms, while hormonal changes appear to directly influence anxiety, suggesting that depression may be a secondary response.

Zare Mobini, F., Kazemi, A., & Farajzadegan, Z. (2018) ^[15]. This study focuses on enhancing psychological health in women with Polycystic Ovary Syndrome (PCOS), recognizing its crucial role in self-efficacy and overall well-being. The research employs a mixed-methods approach in three phases: initially, a qualitative study will assess the psychological needs of females with PCOS through purposive sampling and semi-structured interviews, with data analyzed using content analysis. Based on these insights and a literature review, a comprehensive mental health care program will be developed and refined by a multidisciplinary team. The final phase will utilize a quasi-experimental design to evaluate the program's effectiveness on participants' psychological health through comparisons between two groups. The study aims to demonstrate that a tailored mental health intervention can significantly improve both psychological well-being and reproductive outcomes in women with PCOS, while also being cost-effective.

Farajzadegan, Z., Kazemi, A., Salehi, M., & Zare Mobini, F. (2023) ^[16]. The study on the psychological experiences of women with Polycystic Ovary Syndrome (PCOS) in Isfahan, Iran, highlights the significant psychological complications associated with this common endocrine disorder. Utilizing qualitative content analysis, the research involved 13 females with PCOS, four spouses, and 13 healthcare providers, with data collected through semi-structured interviews until saturation was reached. The findings revealed five main categories of psychological experiences: reactions to infertility, issues stemming from menstrual irregularities, fears regarding potential chronic diseases, psychological challenges related to the condition itself, and concerns about body image and appearance. The results underscore that women with PCOS face multiple psychological problems, necessitating proactive support from healthcare providers and the implementation of comprehensive plans to promote their mental health. This study emphasizes the significance of addressing the psychological dimensions of PCOS to improve the overall care and quality of life for affected females.

Light, R. S., Chilcot, J., & McBride, E. (2021) ^[17]. This study investigated the relationship between illness perceptions and psychological distress in women with Polycystic Ovary Syndrome (PCOS) in the UK, involving a sample of 487 participants. The findings suggest that illness perceptions significantly influence psychological well-being in women with PCOS, indicating the need for targeted self-management interventions that address maladaptive perceptions to alleviate psychological burden.

Conclusion

Polycystic Ovary Syndrome (PCOS) is a complex endocrine disorder that profoundly affects the physical and psychological well-being of females. The high prevalence of psychological wellbeing issues, such as depression & anxiety among individuals with PCOS emphasizes the critical need for a comprehensive approach to treatment. Factors such as body image dissatisfaction, infertility-related stress, and social stigmatization significantly contribute to the emotional burden experienced by affected individuals.

Effective management of PCOS requires not only addressing the physiological symptoms through lifestyle interventions and pharmacological treatments but also providing psychological support. Integrating mental health care, including cognitive-behavioural therapy and counselling, can enhance the quality of life for women with PCOS.

Future Implications

Future study should focus on developing comprehensive treatment strategies that address both physical and psychological aspects. Increased awareness and standardization in diagnostic criteria can lead to earlier identification and intervention, ultimately reducing the long-term consequences of PCOS. By fostering a collaborative care model, healthcare providers can empower women with PCOS to navigate their challenges, improve their mental health outcomes, and achieve a better quality of life.

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