



A review on impact of polycystic ovarian syndrome on mental health

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Abstract

Background. Polycystic ovary syndrome (PCOS) affects the metabolic, endocrine, and reproductive systems of the body as well as mental health. This review aims to evaluate the impact of anxiety and depression in PCOS patients

Methodology: A systematic search of the MEDLINE database was conducted to identify studies of impact of anxiety and depression on PCOS patients.

Results: According to study findings, PCOS is a complex condition that reduces quality of life and mental health of patients. When compared to the healthy control group mental health is three times reduced in PCOS patients. Consequently, psychological counselling and medicine should be used in the treatment of PCOS in women. Women should be educated about benefit of life style modification in PCOS patients.

Keywords: PCOS, psychological impact, depression, anxiety, quality of life, hormonal disorder, polycystic ovarian syndrome, reproductive age, mental health

Introduction

Polycystic ovary syndrome (PCOS) is the most commonly diagnosed endocrine disorder in women of reproductive age, affecting approximately 5–8% of females [1]. It is characterized by amenorrhea, oligomenorrhea, hirsutism, subfertility or infertility, anovulation, weight gain or obesity, acne vulgaris, and androgenic alopecia². Diagnosis of PCOS is currently based on the Rotterdam criteria, established in 2003, and its utilization has resulted in the recognition of several distinct clinical phenotypes of this syndrome [3, 4]. PCOS is often associated with metabolic disorders and insulin resistance. Patients with PCOS are also at increased risk of developing cardiovascular disease, carbohydrate intolerance and type 2 diabetes [5, 6, 7]. PCOS has no cure but its symptoms can be managed with drugs like bupropion, naltrexone, pioglitazone, metformin, and lifestyle changes including a healthy diet and regular physical exercise [8, 9].

Throughout the world, 5 to 20 percent of females of reproductive age have to put up with this malady [10]. Initially, most of the studies are focused on exploring the physical outcomes of PCOS [11, 12]. But now studies have started to explore the psychological effects of PCOS among women [13, 14, 15]. PCOS creates a lot of physiological and psychological issues for women. Women having PCOS suffer from a lot of psychological issues including moodiness, panic attacks, low self-esteem, depression, and self-consciousness [16]. Females suffering from PCOS are more prone to have psychiatric disorders than females without PCOS [17]. A less sense of emotional well-being is found among females suffering from PCOS [18]. The mental well-being of women is very crucial because mental health issues such as stress can cause physical health issues such as irregularity in menstrual cycles [19].

This article is intended to provide an overview of the literature regarding impact of mental health in women with polycystic ovary syndrome.

Methods

This article will review the impact of anxiety and depression on PCOS patients, done by accessing journals from the database of PubMed and Google Scholar. The keywords used for the paper search were 'PCOS', 'Women', 'Health', 'Mental Health', and 'Well-being'. There was no limitation on study design. Selected articles are written in the English language. The article types included were Controlled trials and Randomized Controlled trials.

PCOS and depression

Literature has suggested that the most common psychological issue created by PCOS is anxiety. A study of Devu Rajeev *et al.*, showed that PCOS group had greater depression than non-PCOS group. This study involves fifty-five women who fulfilled the Rotterdam criteria and fifty-nine controls without PCOS were included in the study. The symptoms associated with PCOS are likely to be responsible for greater rate of depression among women with PCOS. Hirsutism, infertility, baldness, dark patches in skin, weight gain can cause d to depression [20].

In a study, 106 healthy participants and 106 PCO cases were enrolled by Batoool Shahraki Mojahed *et al.* The study found that compared to healthy people, women with PCOS experienced higher rates of depression. Mean BDI was significantly higher while FSFI and its subscales as well as SQOL-F were significantly lower in PCO group than controls [21].

A cross-sectional study was carried out in Tehran, Iran, enrolling 120 adolescents who had PCOS conducted by Marzieh Saei Ghare Naz *et al.* The study revealed that adolescents with PCOS had lower quality of life due to the emotional states of stress, anxiety, and depression. Based on the results, they highlight the interventional studies and recommendations for enhancing every aspect of life quality and lowering the psychological burden of PCOS in later life of adolescence [22].

Wadha K. Almeshari *et al.*, conducted a cross sectional study by enrolling 250 PCOS patients. Study found that

Prevalence of anxiety symptoms was reported among 100 (40%) of women and was found to be significantly higher in single women with a prevalence of 59 (48%). Depressive symptoms were reported among 122 (49%) participants. They also revealed that depressed mood and psychological anxiety were the most reported depressive symptoms [23].

In order to determine the prevalence and severity of depression symptoms Paweł Dybciak *et al.*, conducted a study. The study revealed that women with PCOS had higher levels of depression and over 30 years old, living in a rural area with a lower level of education, being childless, and being obese increased the depression levels in the women with PCOS [24].

Han Lin *et al.*, found that prevalence of depression like behaviours in women with PCOS 52.0%. In fertile PCOS patients, the prevalence was 36.36% and in infertile PCOS patients the prevalence was 70.19%. Age, BMI, WHR, and FAI were associated with depression like symptoms, while fasting insulin, FBG, and HOMAIR were important factors for depression-like behaviours. Body image-related factors and hyperandrogenism-related factors were related to both anxiety-like behaviours and depression-like behaviours in both infertile and fertile PCOS patients [25].

PCOS and anxiety

In a study, Sana Habib *et al.*, concluded that women with PCOS are at high risk of mental disorders and reduced QOL as more than half of the study population experienced anxiety scored from mild to severe. Approximately 20% and 25% women are having major anxiety, which forms the cut-off for consulting psychological and psychiatric professionals. High prevalence of anxiety, were found amongst the patients [26].

According to a cross-sectional study by Pattra Keeratibharat *et al.*, 11.92% of PCOS-affected women reported having anxiety. Additionally, hirsutism and childbearing are linked to PCOS anxiety in women. In women with PCOS, hirsutism was a significant independent associated risk for anxiety. Based on these results, they advise screening all PCOS-afflicted hirsutism-exhibiting women for anxiety and depression using the HADS questionnaire. This test can assist in identifying people who might need more assistance and mental health interventions [27].

A cross-sectional analysis was performed from the Australian Longitudinal Study of Women's Health (ALWSH) comparing women with ($n = 478$) or without ($n = 8134$) a self-reported diagnosis of PCOS. They found that higher prevalence of anxiety symptoms (50% *v.* 39.2%). After adjusting for body mass index, infertility and socio-demographic factors, women with PCOS were still more likely to be depressed, anxious and to have a higher level of perceived stress. There was a high-level mediation effect of stress between PCOS and both depression and anxiety [28].

To investigating psychological traits like anxiety and depression, body image, sexual dysfunction, and related factors among PCOS phenotypes and comparing them with healthy controls, Seher Çetinkaya Altuntaş conducted a study. There were no significant differences between PCOS group and control group in depression and PSS-10 scores, but the anxiety score was significantly higher in control than in PCOS group (9.6 ± 3.0 vs 7.3 ± 3.9 , $p = 0.02$). They conclude that in adolescent girls PCOS is not related to anxiety and depressive symptoms as well as poor self-esteem [29].

To investigate the prevalence of anxiety and depression in women with polycystic ovarian syndrome, Arham Yahya Rizwan Khan *et al* conduct a Cross-sectional study. They found that anxiety and depression are common in patients with PCOS. These psychological conditions are associated with various demographic and socio-economic factors such as BMI, level of education, monthly household income, employment status, and pregnancy. It is recommended to involve a multidisciplinary team while managing patients with PCOS to timely identify and treat these psychological conditions in these patients [30].

Conclusion

This review paper aimed to determine the impact of PCOS on the mental health of women with PCOS by exploring the findings of empirical studies in this field. Studies showed that women have to suffer from a lot of mental health issues including depression, anxiety, dissatisfaction with the body etc. Mental health and quality of life is significantly reduced in patients with PCOS. Literature has revealed that various mental health issues, anxiety and depression are more rampant among women suffering from PCOS. It is also evident from this investigation that most of the psychological issues are created by physiological issues created by PCOS such as obesity, sleep disorder, menses irregularity, and infertility. The most serious form these concerns are obesity and infertility. Special efforts must be done to enhance well-being among PCOS women. Mentally affected PCOS patients should be given psychological support aside from medical treatment for PCOS, this can better their situation, giving them a higher quality of life and better outcomes overall.

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