

Psychological Implication of Polycystic Ovary Syndrome

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Abstract

Polycystic ovary syndrome (PCOS), a hormone imbalance that causes infertility, obesity and excessive facial hair in women, can also lead to severe mental health issues including anxiety, depression and eating disorders. Common physical manifestations of PCOS: acne, obesity, hirsutism, and anovulation can have adverse effects on female's self-image and mood. Dissatisfaction with body image is one of the major causes for psychological disorders even in a healthy population; most women affected by PCOS are overweight, and having a high BMI exposes them to several appearance-related challenges. Therapy should focus on both the short and long-term reproductive, metabolic and psychological features. Small achievable goals of 5% loss of body weight result in significant clinical improvement even if women remain clinically in the unhealthy overweight or obese range. The present study showed that clinical signs of PCOS were most closely associated with psychological distress which has important implications in the diagnosis and treatment of disorder.

Keywords: Anxiety; Depression; Hirsutism; Obesity; Polycystic Ovary Syndrome.

Introduction

Nowadays, quality of life is widely considered an important parameter for evaluating the quality and outcome of health care, particularly for patients suffering from chronic disorders: polycystic ovary syndrome is one of these. PCOS is a heterogeneous endocrine and metabolic disorders, characterized by chronic anovulation/ oligomenorrhea, hyperandrogenism, and insulin resistance. Prevalence of PCOS among women at reproductive age was reported to be 5-10% [1]. Clinical symptoms of PCOS could compromise women's quality of life and have a strong negative effect on mood, psychological well-being and sexual satisfaction. Physically visible PCOS symptoms are more likely to provoke distress in younger women than older women [2]. The "American college of obstetricians and gynecologists" suggests

that, in view of the high prevalence rate of depression and persistence of new cases in PCOS population, an initial evaluation of all PCOS women should also include assessment of mental health disorders. The Primary care evaluation of Mental Disorders Patients Health Questionnaire [3] is suitable to evaluate eating disorders [4]. Furthermore, its interpretation and scoring are very simple. Promisingly, lifestyle intervention comprising dietary, exercise and psychobehavioral therapy improve clinical symptoms of PCOS that affected women's quality of life.

Etiology

Insulin resistance and hyperandrogenism: the exact pathophysiology of PCOS is complex and remains largely unclear. Schema of aetiology and psychosocial features of PCOS (Figure 1). Genetic and environmental contributors to hormonal disturbances combine with other factors, including obesity, ovarian dysfunction and hypothalamic pituitary abnormalities to contribute to the aetiology of PCOS. [5,6]. Hyperandrogenism is a well established contributor to PCOS aetiology, detected in around 60% to 80% of cases. Insulin resistance is a pathophysiological contributor in around 50% to 80% of women with PCOS [7], especially in those with more severe PCOS diagnosed on National Institute of

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Health (NIH) criteria and in women who are overweight.

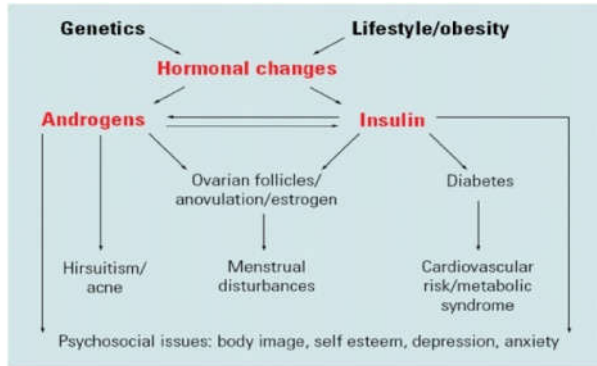


Fig. 1: Schema of etiology and clinical features including reproductive, metabolic and psychosocial features of polycystic ovary syndrome

Diagnosis of PCOS

The different diagnostic criteria for polycystic ovary syndrome with the four key diagnostic features, (Oligomenorrhea /amenorrhea, clinical or biochemical hyperandrogenism and PCO on ultrasound) there are many potentotypes (Table 1).

PCOS Symptoms and Psychological Correlation

Obesity and Body Image

Some studies showed that PCOS women have lower quality of life and overweight was the largest contributor to poor quality of life [8]. In fact, health related quality of life questionnaire in women with PCOS have shown that excess weight and difficulties with losing weight are the foremost concerns [9].

Table 1: The different diagnostic criteria for polycystic ovary syndrome

NIH (1900)	PCOS- Diagnostic Criteria Rotterdam (2003)	AES (2006)
<ul style="list-style-type: none"> • Menstrual Irregularity • Hyperandrogenism • Exclusion if other etiologies 	<ul style="list-style-type: none"> • 2 out of 3 required 1. Menstrual Irregularity 2. Hyperandrogenism 3. USG-Polycystic ovary • Exclusion if other etiologies 	<ul style="list-style-type: none"> • Menstrual Irregularity +/- USG Polycystic ovary • Hyperandrogenism • Exclusion if other etiologies

Women with PCOS report that they are not happy with the way they look or the way that clothes fit them and consequently do not feel their body is sexually appealing [10]: these feelings are negatively associated with self esteem, body satisfaction, and fear of negative appearance evaluation [11].

Hirsutism

Women with PCOS recognize excessive hair growth especially on face as the second most severe symptom negatively affecting on their life satisfaction [12]. The presence of facial hair is one of the most essential and visible difference between men and women: hair on a female face reflects a symbolic transgression between the two genders [13]. As shown in a quality study, hirsute women feel “slaves of their own body” and describe this condition as a “prison” [14]. Moreover, looking in the mirror very often could represent an obsessive-compulsive behavior [15].

Infertility and Sexual Life

Characteristics symptoms of PCOS occur during a life period in which relationships, marriage, and having child play an important role: for this reason,

changes femininity are likely to mean an increased risk of psychological distress [16]. Some patients are infertile and are subjected to social pressure due to the importance given to having children by the society. Having a partner who supports the hope of having a child was found to be a protective factor and improves the emotional well being of PCOS patients [17]. Moreover, according to a study, even adolescent girls with PCOS are 3.4 times more likely than healthy girls to be “worried about their ability to become pregnant in the future” compared to the controls; however this fear was not associated with odds of having sexual intercourse [18,19]. An alternative psychological explanation is that some women with PCOS felt that their partner were not attracted by them [16].

PCOS and Mental Disorder

Mood Disorders

Several studies have been investigating the association between PCOS and depression. The result is that PCOS women reported more depressive symptoms compared with the control group [16,20] and scored above average on questionnaire assessing

depression [21, 22]. The prevalence of depression in women with PCOS is high, ranging from 28 to 64% (23). Studies found that 14% of women suffering from PCOS reported suicidal ideation. This percentage is high as what has been reported from other chronic medical conditions and much higher than in the general population [24]. Two thirds of women with PCOS show weight problems, but it is not properly correlated only to PCOS: in fact, high BMI might increase depression in the normal population as well [25, 26]. Some studies found depressed women with PCOS to have a higher evidence of insulin resistance and impaired fasting glucose than PCOS women without depression [21]. In view of all these data and because the peak incidence of depression is during the reproductive years, gynecologists have to be able to identify and treat women with PCOS who have depression.

Anxiety

Anxiety symptoms could be identified in one third of PCOS patients, especially social phobia [24, 26, 27]. It has been associated mainly with hirsutism, acne, obesity and infertility. The prevalence of anxiety in women with PCOS ranges from 34 to 57% [23]. Fears reported by hirsute women are mainly categorized as "social phobia" or anxiety evoking situations, such as meeting strangers, attending parties, shopping and mixing at work [28]. Some authors have suggested that adolescents with PCOS are at higher risk for anxiety symptoms related to the clinical signs of hyperandrogenism. In a study of hirsute 13-18 years old girls, anxiety was diagnosed in 26% compared with 10% in the control girls [29]. Further more successful treatment of hirsutism leads to a reduction of time spent on hair removal with a consequent improvement in anxiety score [30]. Most women with PCOS reported sleep disorders: a partial explanation for this finding might be that sleep apnea is common in obese women with PCOS, androgen excess and subnormal estrogen levels and visceral adiposity may be involved in sleep disturbances [31].

Eating Disorders

Association between PCOS and eating disorders has been suggested, mainly correlated to the body image dissatisfaction compared to the general population, eating disorder seem to be more prevalent in PCOS population: 12.6% bulimia and 1.6% anorexia. Moreover an epidemiological cohort study of eating disorders among hirsute women showed a high prevalence of untreated eating disorders especially EDNOS (eating disorders not otherwise

specified) and bulimia nervosa; hirsute women with an eating disorder had high levels of co morbid depression and anxiety [32].

Conclusions

PCOS is a common complex condition in women associated with psychological, reproductive and metabolic features. It is chronic disease with manifestations across the lifespan and represents a major health and economic burden. Both hyperandrogenism and insulin resistance contribute to pathophysiology of PCOS. Clinical symptoms of PCOS could compromise women's quality of life and have a strong negative effect on mood, psychological well being and sexual satisfaction. Insulin resistance occurs in the majority of women with PCOS, especially those who are overweight and these women have a high risk of metabolic syndrome, prediabetes and DM Type 2. Management should focus on support, education, addressing psychological factors and strongly emphasising healthy lifestyle with targeted medical therapy as required. Treatment for the large majority is lifestyle focused and an aggressive lifestyle based multidisciplinary approach is optimal in most cases to manage the features of PCOS and prevent long term complications. Small achievable goals of 5% loss of body weight results in significant clinical improvement even if women remain clinically in the unhealthy overweight or obese range. Consideration should be given to screening high risk family members for metabolic abnormalities also. Overall further research is needed in this complex condition. In the interim comprehensive evidence based guidelines are needed to guide consumers and clinicians in optimal PCOS management.

References

1. Wang YY, Hao SL, Hou LH, Wu XK. Research progress on cardiovascular risk factors for polycystic ovarian syndrome. *J Medl Res* 2013; 42(7):11-13.
2. Farrell K, Antoni MH. Insulin resistance, obesity, inflammation, and depression in polycystic ovary syndrome: biobehavioral mechanism and interventions. *Fertil Steril* 2010; 94:1565-1574.
3. Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. *JAMA* 1999; 282:1737-1744.
4. Kerchner A, Lester W, Stuart S, Dokras A. Risk of depression and other mental health disorders in

- women with polycystic ovary syndrome: a longitudinal study. *Fert Steril* 2009; 91:207-212.
5. Legro RS, Strauss JF. Molecular progress in infertility: polycystic ovary syndrome. *Fertil Steril* 2002; 78:569-576.
 6. Doi SA, Al-Zaid M, Towers PA, Scott CJ, Al-Shoumer KA. Ovarian steroids J *Endocrinol Invest*. 2005; 28:882-892.
 7. Legro RS, Castracane VD, Kauffman RP. Detecting insulin resistance in polycystic ovary syndrome: purpose and pitfalls. *Obstet Gynecol Surv* 2004; 59:141-154.
 8. Barnard L, Ferriday D, Guenther N et al. Quality of life and psychological well being in polycystic ovary syndrome. *Hum Reprod* 2007; 22:2279-2286.
 9. Coffey S, Bano G, Mason HD. Health-related quality of life in women with polycystic ovary syndrome: a comparison with the general population using the polycystic ovary syndrome Questionnaire (PCOSQ) and short-Form-36 (SF-36). *Gynecol Endocrinol* 2006; 22:80-86.
 10. Bazarganipour F, Ziaei S, Ali M et al. Predictive factors of health-related quality of life in patients with polycystic ovary syndrome: a structural equation modeling approach. *Fertil Steril* 2013; 100(5):1389-1396.
 11. De Niet JE, De Koning CM, Pastoor H et al. Psychological well-being and sexarache in women with polycystic ovary syndrome. *Hum Reprod* 2010; 25:1497-1503.
 12. Guyatt G, Weaver B, Cronin L et al. Health-related quality of life in women with polycystic ovary syndrome, a self-administered questionnaire, was validated. *J Clin Epidemiol* 2004; 57:1279-1287.
 13. Farkas J, Rigo A, Zsolt D. Psychological aspects of the polycystic ovary syndrome. *Gynecol Endocrinol* 2014; 30(2):95-99.
 14. Ekback M, Wijma K, Benzein E. It is always on my mind: women's experience of their bodies when living with hirsutism. *Health Care Women Int* 2009; 30:358-372.
 15. Lipton MG, S Herr L, Elford J et al. Women living with facial hair: the psychological and behavioral burden. *J Psychosom Res* 2006; 61:161-168.
 16. Elsenbruch S, Hahn S, Kowalsky D et al. Quality of life, psychological well-being, and sexual satisfaction in women with polycystic ovary syndrome. *J Clin Endocrinol Metab* 2004; 88:5801-5807.
 17. Elsenbruch S, Benson S, Hahn S. Reply: incorporating qualitative approaches is the path to adequate understanding of the psychosocial impact of polycystic ovary syndrome. *Hum Reprod* 2006; 21:2724-2725.
 18. Trent M, Rich M, Bryn Austin A, Gordon C. Fertility concerns and sexual behavior in adolescent girls with polycystic ovary syndrome: implications for quality of life. *J Pediatr Adolesc Gynecol* 2003; 16:33-37.
 19. Omran AR. *Family planning in the legacy of Islam*. Routledge, London. 1992.
 20. Weiner CL, Primeau M, Ehrmann DA. Androgens and mood dysfunction in women: comparison of women with polycystic ovarian syndrome to healthy controls. *Psychosom Med* 2004; 66:356-362.
 21. Rasgon NL, Rao RC, Hwang S et al. Depression in women with polycystic ovary syndrome: clinical and biochemical correlates. *J Affect Disord* 2003; 74: 299-304.
 22. Keegan A, Liao LM, Boyle M. Hirsutism: a psychological analysis. *J Health Psychol* 2003; 8(3):327-345.
 23. Bodner C, Garratt A, Ratcliffe J et al. Measuring health-related quality of life outcomes in women with endometriosis: results of the gynaecology audit project in Scotland. *Health bull* 2007; 55:109-117.
 24. Mansson M, Holte J, Landin-Wilhelmsen K et al. Women with polycystic ovary syndrome are often depressed or anxious: a case study. *Psychoneuroendocrinology* 2008; 33:1132-1138.
 25. Azziz R, Woods KS, Rena R et al. The prevalence and features of the polycystic ovary syndrome in an unselected population. *J Clin Endocrinol Metab* 2004; 89:2745-2749.
 26. Benson S, Hahn S, Tan et al. Prevalence and implications of anxiety in polycystic ovary syndrome: results of an internet-based survey in Germany. *Hum Reprod* 2009; 24:1446-1451.
 27. Jedel E, Waem M, Gustafson D et al. Anxiety and depression symptoms in women with polycystic ovary syndrome compared with controls matched for body mass index. *Hum Reprod* 2010; 25:450-456.
 28. McCook JG, Reame N, Thatcher S. Health-related quality of life issues in women with polycystic ovary syndrome. *JOGNN* 2005; 34:12-20.
 29. Drosdzol A, Skrypulec V, Plinta R. Quality of life, mental health and self-esteem in hirsute adolescent females. *J Psychosom Obstet Gynaecol* 2010; 31: 168-175.
 30. Clayton A, Lipton M, Elford J et al. A randomized controlled trial of laser treatment among hirsute women with polycystic ovary syndrome. *Br J Dermatol* 2005; 152:986-992.
 31. Tasali E, Van Cauter E, Ehrmann DA. Polycystic ovary syndrome and obstructive sleep apnea. *Sleep med Clin* 2008; 3:37-46.
 32. Morgan J, Scholtz S, Lacey H, Conway G. The prevalence of eating disorders in women with facial hirsutism: an epidemiological cohort study. *Int Eat Disord* 2008; 41:427-431.