

Case Report

Body Image Perception in a Patient with Polycystic Ovary Syndrome over a Decade: A Case Report

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Abstract: Introduction: Polycystic Ovary Syndrome (PCOS) affects up to 10% of women and is associated with weight gain, insulin resistance, and potential negative body image. In some cases, PCOS can lead to eating disorders, such as anorexia nervosa, due to the psychological impact of the condition's physical symptoms. Early identification and intervention are crucial to preventing long-term health consequences. Detailed Case Description: A 25-year-old female diagnosed with PCOS at age 15 began restricting food intake to avoid weight gain, developing anorexia nervosa. By age 17, her body mass index (BMI) had dropped to 16.65, indicating moderate thinness. At that point, she started cognitive behavioral therapy (CBT) with strong social support. Over time, her eating behaviors normalized, and ten years later, her BMI was 21.16. She also scored 4.3/5 on the Body Appreciation Scale-2 (BAS-2), indicating a healthy body image. Conclusions: Early detection and intervention are crucial for women with PCOS at risk of eating disorders and body image issues. CBT plays a key role in addressing cognitive distortions, while a supportive social network strengthens recovery. Ongoing monitoring of physical and psychological health, including BMI and BAS-2, ensures effective treatment and improved long-term outcomes for these patients.

**Keywords:** polycystic ovary syndrome; body image; BMI; eating disorders; self-esteem

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1. Introduction

Polycystic Ovary Syndrome (PCOS) is a multifaceted endocrine disorder that affects up to 10% of women of reproductive age, with various manifestations including irregular menstruation, hyperandrogenism, and polycystic ovaries [1]. The syndrome is characterized by a complex interplay of genetic, hormonal, and environmental factors that contribute to its heterogeneous presentation. One of the primary challenges faced by individuals with PCOS is the disruption of normal metabolic processes, which frequently results in insulin resistance and an increased risk of developing obesity, type 2 diabetes, and cardiovascular diseases. This metabolic dysregulation not only poses significant health risks but also has profound psychological implications, as weight gain and difficulty in weight management can lead to negative perceptions of body image and self-esteem [2,3].

Recent studies have highlighted the significant role of chronic low-grade inflammation in PCOS, contributing to metabolic dysfunctions such as insulin resistance and dyslipidemia, as well as adversely affecting psychological well-being by increasing the risk of depression and anxiety. Additionally, alterations in gut microbiota composition in PCOS patients have been linked to hormonal imbalances, including disrupted insulin sensitivity

and sex hormone levels, which may further impact mental health. These findings suggest that targeting inflammation and gut microbiota could be promising strategies for managing both metabolic and psychological aspects of PCOS [4].

Hormonal therapy, particularly the use of combined oral contraceptives (COCs), is a cornerstone in managing PCOS in young women. COCs help regulate menstrual cycles, reduce hyperandrogenic symptoms such as acne and hirsutism, and provide endometrial protection. Beyond these physical benefits, addressing hyperandrogenism can positively influence psychological well-being and body image, as elevated androgen levels are often associated with mood disturbances and reduced self-esteem. By mitigating these symptoms, hormonal therapy may enhance overall quality of life for young women with PCOS. It is essential to approach treatment holistically, combining medical interventions with lifestyle modifications and psychological support to comprehensively address both the physical and emotional aspects of PCOS [5].

In certain cases, PCOS has also been linked to the development of eating disorders, including anorexia nervosa, bulimia nervosa, and binge eating disorder. These conditions may arise as maladaptive coping mechanisms in response to the emotional and psychological distress associated with the syndrome. The persistent struggles with weight, coupled with symptoms such as hirsutism, acne, and alopecia, can significantly impact self-esteem and contribute to the adoption of disordered eating patterns as a means of exerting control over one's body [6,7]. The prevalence of eating disorders in women with PCOS underscores the importance of understanding the underlying psychological and physiological mechanisms that drive these behaviors. Research indicates that hormonal imbalances, including elevated levels of androgens and insulin, may play a role in influencing appetite regulation, emotional reactivity, and impulsivity, further exacerbating the risk of developing disordered eating habits [8].

In addition to its effects on eating behaviors, PCOS is also associated with heightened levels of psychological distress, including anxiety and depression. Anxiety, in particular, has been identified as a significant mediator between body image dissatisfaction and overall quality of life among women with PCOS. The chronic nature of the syndrome, coupled with unpredictable fluctuations in symptoms, contributes to increased emotional burden and psychological vulnerability. Research has demonstrated that women with PCOS who experience body image concerns are more likely to report higher levels of anxiety, which in turn negatively impacts their daily functioning, interpersonal relationships, and overall well-being [9–11].

The association between weight gain and body image in PCOS is multifaceted and varies across individuals. While some women with PCOS may exhibit a resilient body image despite their metabolic and dermatological symptoms, others may experience considerable distress related to their appearance. Factors such as cultural beauty standards, social comparisons, and personal experiences of stigma and discrimination further shape how individuals perceive their bodies. Given the significant impact that body dissatisfaction can have on mental health, interventions aimed at improving body image and self-perception are crucial [12,13]. The Body Appreciation Scale-2 (BAS-2) is a widely used instrument designed to assess body appreciation, a key facet of positive body image. It consists of 10 items and has been validated across diverse populations, demonstrating robust psychometric properties. Higher BAS-2 scores are associated with better mental health outcomes, including higher self-esteem and intuitive eating behaviors, and lower levels of depressive symptoms and body dissatisfaction. Clinicians can use the BAS-2 to identify individuals with low body appreciation, who may benefit from interventions aimed at enhancing body image [14].

The need for comprehensive psychological interventions, including cognitive behavioral therapy (CBT), mindfulness-based techniques, and acceptance and commitment therapy (ACT) is crucial in addressing these concerns and promoting mental health resilience. CBT has demonstrated sustained efficacy in treating body image disturbances and eating disorders, including anorexia nervosa, over extended periods [15]. This meta-analysis evaluated the effectiveness of CBT across various eating disorders, revealing that CBT outperformed other psychological treatments in reducing eating disorder symptoms, with effects maintained at a 12-month follow-up. These findings underscore CBT's role in achieving long-term improvements in body image and eating disorder symptomatology. One promising approach is mindfulness-based art therapy (MBAT), which integrates mindfulness practices with creative expression to foster self-acceptance and emotional regulation. Recent research suggests that MBAT has the potential to enhance body image and psychological well-being in women diagnosed with PCOS, offering a therapeutic avenue to address the psychosocial burden of the condition [12]. Moreover, a randomized controlled trial evaluated the effectiveness of group counseling based on ACT for women with polycystic ovary syndrome PCOS [16]. The study found that participants who received ACT-based group counseling experienced significant improvements in body image and self-esteem compared to a control group.

Early identification of these vulnerabilities and the implementation of targeted interventions are critical in mitigating the adverse effects of PCOS on both physical and mental health. Integrative treatment approaches that address the hormonal, metabolic, and psychological aspects of PCOS are essential in improving patient outcomes. Holistic care models that incorporate nutritional counseling, behavioral therapy, and medical management have the potential to enhance quality of life and empower individuals to navigate the challenges of living with PCOS [17]. By fostering awareness and providing accessible resources, healthcare providers can play a vital role in supporting women with PCOS in achieving both physical and emotional well-being.

2. Detailed Case Description

A 25-year-old female patient was diagnosed with PCOS ten years ago and underwent significant changes in her physical and psychological well-being. At the age of 15, she had a height of 1.68 m and weighed 50 kg, resulting in a body mass index (BMI) of 17.71, which classified her as underweight, mild thinness. Upon learning about the potential weight implications of PCOS, she became highly concerned and started restricting her food intake. Over time, this behavior developed into a pattern consistent with anorexia nervosa, characterized by an intense fear of gaining weight and severe caloric restriction. At the same time, she started treatment for PCOS with dienogest/ethinylestradiol on a daily basis, aiming to manage both the hormonal imbalance and its associated symptoms.

At the age of 17, while maintaining the same height of 1.68 m, her weight dropped to 47 kg, resulting in a BMI of 16.65, classified as moderate thinness. Her persistent caloric restriction and intense fear of weight gain had intensified, raising serious concerns among her family and social circle. Recognizing the severity of the situation, they made a strong intervention, urging her to seek professional help. Their support was crucial in facilitating access to a psychologist specializing in eating disorders.

Through two years of cognitive behavioral therapy (CBT), with weekly sessions and no subsequent maintenance phase, along with the unwavering support of her family, she was able to address her disordered eating patterns and underlying fears. Despite the absence of continued therapy, the strong foundation built through treatment and family encouragement enabled her to achieve a stabilized BMI. A more balanced diet was reintroduced, allowing her to regain both physical health and emotional stability.

Now, at the age of 25, she maintains a height of 1.68 m and a weight of 61 kg, leading to a BMI of 21.16, which falls within the normal range. Her recovery has extended beyond just physical health; her psychological well-being has also significantly improved. To evaluate her body image perception, she completed the Body Appreciation Scale-2 (BAS-2), where she achieved a mean score of 4.3 out of 5. The BAS-2 has been validated as a reliable measure of body appreciation across diverse populations, including individuals recovering from disordered eating, demonstrating strong psychometric properties in assessing positive body image. Her high score indicates a positive self-image and an improved perception of her body, further reinforcing the effectiveness of the interventions she received.

Her journey highlights the importance of early intervention, specialized psychological care, and strong social support in mitigating the psychological effects of PCOS. It also underscores the role of multidisciplinary approaches in fostering long-term health and self-acceptance.

3. Discussion

PCOS is a widely prevalent endocrine disorder that significantly impacts both the physical and mental health of individuals, particularly during their reproductive years. Affecting a considerable proportion of women, PCOS is associated with a broad range of clinical manifestations, including irregular menstrual cycles, infertility, hirsutism, and metabolic disturbances such as obesity and insulin resistance [1]. Among these challenges, one of the most profound and pervasive effects of PCOS is its impact on body image perception, especially concerning weight gain and metabolic dysfunction [2,3]. Women diagnosed with PCOS frequently experience body image issues that can lead to psychological distress, including heightened anxiety about weight gain, and the development of disordered eating behaviors [6,7,9,10]. The connection between PCOS and eating disorders represents a critical area of concern, given the compounded challenges of managing both the physical manifestations of the disorder and the mental health ramifications. This case emphasizes the importance of early intervention and consistent monitoring, as patients with PCOS may be at an elevated risk of developing eating disorders and associated psychological difficulties, especially in the context of hormonal fluctuations and the visible physical changes the condition often causes.

In the present case, the patient's body image and eating behaviors were significantly influenced by a pervasive fear of weight gain, a common and distressing concern for many women with PCOS [6,7]. Despite the patient being initially underweight at the time of her diagnosis, the anxiety surrounding potential weight gain led her to engage in restrictive eating behaviors that closely mirrored those seen in anorexia nervosa. This observation aligns with findings from other research that suggests women with PCOS are at increased risk for the development of disordered eating patterns, primarily due to the hormonal and metabolic challenges they face [2,3]. Hyperandrogenism, a common hormonal imbalance in PCOS, and insulin resistance both exacerbate concerns about weight gain and can further contribute to the onset of eating disorders. These physiological conditions create a feedback loop in which the fear of weight gain leads to restrictive eating patterns, which in turn aggravate metabolic dysfunctions and hormonal imbalances, compounding the psychological and physical challenges of managing PCOS [8,11]. Nevertheless, hormonal therapy, especially COCs, may have played a role in improving the patient's body image and well-being. By regulating menstrual cycles and reducing hyperandrogenic symptoms like acne and hirsutism, COCs also help address mood disturbances and low self-esteem linked to elevated androgen levels. These effects could have positively impacted her overall quality of life [5].

In response to these concerns, an intervention incorporating cognitive behavioral therapy (CBT) was implemented. This therapeutic approach proved to be crucial in preventing the progression of the eating disorder and in fostering a healthier, more balanced relationship with both food and body image. CBT has consistently demonstrated efficacy in the treatment of eating disorders, particularly anorexia nervosa, by targeting the cognitive distortions and maladaptive beliefs that perpetuate disordered eating behaviors [18]. Through CBT, the patient was able to challenge the harmful thought patterns related to food and body image, gradually shifting towards more adaptive coping mechanisms. Additionally, therapeutic interventions that enhance emotional regulation and self-compassion have been shown to significantly reduce anxiety, depression, and body image distress, thereby improving subjective well-being in women with PCOS [3,19]. However, while CBT is effective, other therapeutic approaches such as acceptance and commitment therapy (ACT) and mindfulness-based interventions have also shown promising results in addressing body image concerns in chronic conditions like PCOS [12,16]. These approaches offer alternative or complementary strategies that may further enhance treatment outcomes.

The favorable outcome in this case, marked by a normalized body mass index (BMI) of 21.16 and an impressive score on the Body Appreciation Scale-2 (BAS-2), underscores the effectiveness of the intervention [13]. These improvements suggest that the restrictive eating behaviors were successfully halted, and the patient was able to cultivate a more balanced and positive body image [10,20]. The use of CBT not only addressed immediate concerns related to eating behaviors but also promoted long-term mental health benefits, including the enhancement of self-compassion and emotional regulation skills. This case illustrates the profound impact that early, targeted intervention can have on preventing the escalation of eating disorders in women with PCOS, emphasizing the importance of a holistic, multi-faceted treatment approach to address both the physical and psychological aspects of the condition.

4. Conclusions

This case highlights the critical importance of early detection and intervention for women with PCOS, especially those at risk for developing eating disorders or experiencing significant alterations in body image. The physical symptoms of PCOS, such as weight gain, insulin resistance, and hyperandrogenism, can have profound psychological impacts, contributing to negative body image, anxiety, and the development of disordered eating behaviors. By identifying these issues early, clinicians can intervene before they escalate into more severe, long-term consequences.

The use of CBT was a key component of this intervention. CBT helps patients address the cognitive distortions and maladaptive beliefs that contribute to eating disorders and body image concerns, promoting healthier thinking patterns and more adaptive behaviors. However, CBT alone may not be sufficient. A supportive social network is also essential, as emotional support from family, friends, and healthcare providers strengthens the therapeutic process and provides ongoing encouragement. Also, longitudinal follow-up is crucial for patients with body image disturbances who have undergone CBT, as it helps monitor and sustain therapeutic gains.

Additionally, ongoing monitoring of both physical and psychological indicators, such as Body Mass Index (BMI) and the Body Appreciation Scale-2 (BAS-2), allows clinicians to track progress and adjust treatment plans as necessary. Early intervention in disordered eating and body image disturbances can significantly enhance both the psychological and physical health of women with PCOS, leading to better long-term outcomes.

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