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+15878858911
editorial-office@sciformat.ca

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THE IMPACT OF POLYCYSTIC OVARY SYNDROME ON MENTAL HEALTH AND BODY IMAGE IN WOMEN: A CLINICAL LITERATURE REVIEW

Aleksandra Mazurkiewicz (Corresponding Author, Email: mazurkiewicz_ola@wp.pl)

1st Military Clinical Hospital with Outpatient Clinic in Lublin, Lublin, Poland

ORCID ID: 0009-0008-9074-3583

Natalia Bednarczyk

10th Military Clinical Hospital with Independent Public Healthcare Centre Polyclinic in Bydgoszcz, Bydgoszcz, Poland

ORCID ID: 0009-0003-2070-8559

Rafał Bednarczyk

10th Military Clinical Hospital with Independent Public Healthcare Centre Polyclinic in Bydgoszcz, Bydgoszcz, Poland

ORCID ID: 0009-0002-0139-8586

Radosław Krzysztof Binkowski

4th Military Clinical Hospital with Polyclinic in Wrocław, Wrocław, Poland

ORCID ID: 0009-0009-5925-1158

Agnieszka Kurek

Military Institute of Medicine in Warsaw, Warsaw, Poland

ORCID ID: 0009-0000-7906-213X

Natalia Krajewska

Military Institute of Aviation Medicine in Warsaw, Warsaw, Poland

ORCID ID: 0009-0001-0508-5790

Aleksandra Lejman

10th Military Clinical Hospital with Independent Public Healthcare Centre Polyclinic in Bydgoszcz, Bydgoszcz, Poland

ORCID ID: 0009-0005-8637-2204

Hubert Sidor

Military Institute of Medicine in Warsaw, Warsaw, Poland

ORCID ID: 0009-0005-5432-9279

Monika Wołosik

Military Institute of Medicine in Warsaw, Warsaw, Poland

ORCID ID: 0009-0001-0129-4771

Szymon Zysiak

Military Institute of Aviation Medicine in Warsaw, Warsaw, Poland

ORCID ID: 0009-0002-8803-5736

ABSTRACT

Polycystic ovary syndrome (PCOS) represents the most common endocrine disorder in women of reproductive age, affecting 6–20% of this population depending on diagnostic criteria applied. Beyond its metabolic and reproductive consequences, PCOS significantly impacts mental health, particularly depression, anxiety, and body image disturbance. This clinical literature review synthesizes evidence from clinical studies and observational research examining the psychological burden of PCOS. Evidence indicates that women with PCOS experience markedly elevated rates of depression (approximately 49%) and anxiety compared to healthy controls, with depression predominantly presenting as mild to moderate severity. Lifestyle factors, including lack of exercise (OR=7.5), psychological stress (OR=6.5), sleep disturbance, and high-fat diet, constitute significant modifiable risk factors for depression. Body image disturbance emerges as a critical mediating factor between PCOS symptoms and psychological distress, affecting quality of life and overall well-being. Body appreciation, in contrast to mere absence of dissatisfaction, constitutes a particularly important protective factor for mental health. Cognitive-behavioral therapy (CBT) and psychosocial interventions demonstrate substantial efficacy in reducing depression and anxiety symptoms. Routine mental health screening and implementation of evidence-based psychological interventions are essential components of comprehensive PCOS care. This review emphasizes the necessity of integrated, multidisciplinary approaches addressing both physical and psychological aspects of PCOS, with particular attention to lifestyle modification as a therapeutic strategy.

KEYWORDS

Polycystic Ovary Syndrome, Depression, Anxiety, Body Image, Mental Health, Psychological Intervention

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Introduction

Polycystic ovary syndrome (PCOS) constitutes a heterogeneous endocrine disorder characterized by hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology (Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group, 2004). The prevalence of PCOS varies from 6% to 20% depending on diagnostic criteria applied, affecting a substantial proportion of women of reproductive age worldwide (Teede et al., 2023). While the metabolic and reproductive consequences of PCOS have been extensively documented, accumulating evidence demonstrates that the psychological burden of this condition represents an equally significant yet historically underrecognized dimension.

Recent clinical observations and systematic investigations have established that women with PCOS experience markedly elevated rates of depression, anxiety disorders, and body image disturbance compared to women without the condition. Physical manifestations of PCOS like weight gain, hirsutism, acne, and alopecia play a major role in negative body image and psychological distress. Body image disturbance in PCOS goes beyond aesthetic concerns and is a central link between PCOS symptoms and mental health outcomes.

The 2023 international evidence-based guideline for PCOS assessment and management recognizes mental health assessment and intervention as essential components of comprehensive care (Teede et al., 2023). This acknowledgment highlights increasing clinical recognition that psychological morbidity in PCOS should be addressed in a systematic and routine manner in clinical practice.

Despite increasing awareness, important uncertainties remain about how PCOS leads to psychological distress, how lifestyle factors shape mental health outcomes, and which mental health interventions are most effective for this population. This literature review synthesizes current evidence regarding: (1) the prevalence, severity, and characteristics of depression and anxiety in PCOS; (2) lifestyle factors contributing to depressive symptoms in PCOS; (3) biochemical and neuroendocrine mechanisms linking these factors to mental health; (4) the relationship between body image concerns and psychological outcomes; (5) body image as a mediating

factor in PCOS-related psychological distress; (6) evidence for psychological interventions including cognitive-behavioral therapy; and (7) clinical implications for mental health assessment and management in PCOS.

Methodology

Literature Selection and Search Strategy

This clinical literature review examined scholarly, externally reviewed publications addressing mental health, body image, and psychological outcomes in women with PCOS. Studies included comprised clinical observational research, cross-sectional investigations, and intervention trials published between 2003 and 2025. The selection prioritized rigorous clinical studies providing empirical data on depression, anxiety, body image disturbance, lifestyle factors, and psychological interventions in PCOS populations.

Inclusion Criteria

Studies were selected based on the following criteria: (1) involvement of women diagnosed with PCOS using established diagnostic criteria; (2) measurement of mental health outcomes (depression, anxiety) or body image using validated clinical instruments; (3) adequate sample sizes and methodological rigor; (4) clear presentation of quantitative findings or descriptive clinical data; and (5) relevance to understanding psychological aspects of PCOS.

Data Synthesis Approach

A narrative synthesis approach was employed to integrate findings across diverse study designs and populations. This approach enables comprehensive integration of clinical evidence while acknowledging heterogeneity in measurement approaches and study designs, permitting detailed analysis of mechanisms and clinical implications.

Results:

Part I – Depression in PCOS

Prevalence and Severity of Depressive Symptoms

Depression represents one of the most prevalent psychological manifestations of PCOS. A 2024 Chinese cross-sectional study by Li et al. (2024) examining depressive symptoms in 411 women with PCOS using the Hamilton Depression Scale (HAM-D-17) revealed that 49.4% of women with PCOS exhibited depressive symptoms, defined as scores exceeding 7 on the scale (Li et al., 2024). Importantly, analysis of depression severity among 203 women with depression demonstrated that depressive symptoms were predominantly mild: 83.7% of women with depression experienced mild symptoms (Hamilton Depression Scale score 8-17), 15.3% had moderate symptoms (score 18-24), and only 1% exhibited severe depression (score >24). This distribution of severity has significant clinical implications, as mild depression often does not progress to more severe states with early intervention (Li et al., 2024).

These findings indicate that while depression is highly prevalent in PCOS, most affected women experience mild depressive states characterized by emotional distress without substantial impairment in social and occupational functioning. The predominance of mild depression suggests opportunities for early intervention through lifestyle modification and psychological counseling, potentially preventing progression to more severe, refractory forms of depression.

Earlier clinical research corroborates the substantial burden of depression in PCOS. Research by Mansson et al. (2008) compared women with PCOS to control groups and documented that women with PCOS frequently experience both depressive and anxiety symptoms. Their case-control study provided systematic evidence that PCOS is associated with elevated rates of both depressive and generalized anxiety symptoms, with a substantial proportion of women with PCOS meeting clinical DSM-IV criteria for these psychiatric conditions.

Lifestyle Factors Contributing to Depression in PCOS: Quantitative Analysis

The 2024 investigation by Li et al. (2024) employed multivariate logistic regression analysis to identify risk factors for depression in PCOS. This methodological approach enabled separation of independent influences of various risk factors on depression outcomes, providing reliable odds ratio estimates. The analysis revealed that unhealthy lifestyle factors represent significant contributors to depressive symptoms (Table 1):

Risk Factor	Definition/Measurement	Odds Ratio (OR)	95% Confidence Interval	p-value	Strength of Association
Lack of exercise	Never exercising vs. >3 times/week	7.50	4.30-13.08	<0.001	Very strong
Psychological stress	High perceived stress (PSS scale)	6.55	2.93-14.62	<0.001	Very strong
Late bedtime	Sleep after 23:00, >3 times/week	2.36	1.40-3.96	0.001	Moderate
High-fat diet	≥40-45% calories from fat, >3 times/week	1.87	1.15-3.05	0.012	Moderate
Acne presence	Visible acne (clinical assessment)	1.79	1.06-3.03	0.030	Moderate
Disease duration (1-3 years)	Time since PCOS diagnosis	8.26	3.38-20.17	<0.001	Very strong

Note. Data from Li et al. (2024). PSS = Perceived Stress Scale. All risk factors were assessed using multivariate logistic regression controlling for potential confounders. OR = odds ratio comparing presence vs. absence of risk factor (or high vs. low exposure).

The following sections provide detailed interpretation of each risk factor:

1. **Lack of Exercise:** Women with PCOS who never exercised demonstrated 7.5-fold higher odds of depression compared to those exercising more than 3 times weekly (OR=7.496, 95% CI: 4.298–13.075, $p<0.001$). This represents the strongest identified lifestyle-related risk factor. The protective effect of regular exercise likely operates through multiple mechanisms: (1) modulation of neuroendocrine pathways through enhanced endorphin and neurotransmitter production; (2) reduction of inflammatory markers including pro-inflammatory cytokines; (3) improvement in body composition and weight, reducing somatic stressors; (4) enhancement of self-perception and body image through feelings of achievement and agency; and (5) provision of positive social experiences through exercise groups and fitness classes.

2. **Psychological Stress:** Women experiencing psychological stress, measured by the validated Chinese version of the Perceived Stress Scale (PSS), showed 6.5-fold increased odds of depression (OR=6.549, 95% CI: 2.934–14.619, $p<0.001$). Stress may exacerbate PCOS pathophysiology through activation of the hypothalamic-pituitary-adrenal (HPA) axis, which leads to elevated cortisol levels. Simultaneously, stress triggers low-grade inflammation in the central nervous system via microglial cell activation and enhanced production of pro-inflammatory cytokines, particularly interleukin 1-beta (IL-1 β) and interleukin 6 (IL-6). Additionally, stress disrupts neuroendocrine signaling, affecting both reproductive and metabolic function, and promotes monocyte migration into the cerebrovasculature, particularly toward the nucleus accumbens (reward center), where these cells may produce matrix metalloproteinase 8 (MMP-8), which modifies the extracellular matrix structure surrounding neurons.

3. **Sleep Disturbance (Late Bedtime):** Going to bed late (defined as sleep time after 23:00) more than 3 times weekly was associated with 2.4-fold increased depression risk (OR=2.357, 95% CI: 1.401–3.964, $p=0.001$). Sleep disturbance represents both a symptom and a risk factor for depression, creating a bidirectional relationship. Poor sleep quality is known to interfere with neuroendocrine regulation, including HPA axis activity and melatonin secretion, and has been linked to pro-inflammatory cytokine changes and adverse effects on glucose and insulin metabolism in experimental and clinical studies of sleep disturbance. Late bedtime patterns are associated with poorer sleep quality and shorter sleep duration, which are known correlates of depressive symptoms.

4. **High-Fat Diet:** Frequent consumption of high-fat diet (>3 times weekly, defined as diet in which minimum 40-45% of total daily calories derive from fat) was associated with 1.9-fold increased odds of depression (OR=1.873, 95% CI: 1.148–3.053, $p=0.012$). High-fat dietary patterns may contribute to depression

through multiple biochemical pathways: (1) promotion of systemic inflammation through toll-like receptor 4 (TLR4) activation and cytokine production (Guo et al., 2015); (2) disruption of insulin signaling and glucose metabolism affecting both metabolic and brain function; (3) elevation of cortisol levels through metabolic stress; (4) alteration of gut microbiota, which modulates neurotransmitter expression and metabolites affecting mood; and (5) activation of transcription factors associated with inflammation in the central nervous system.

PCOS Clinical Manifestations and Depression

Beyond lifestyle factors, the presence of acne emerged as a significant risk factor for depression in PCOS (OR=1.791, 95% CI: 1.058–3.032, $p=0.030$). Acne, a common and visually apparent manifestation of hyperandrogenism in PCOS, directly affects body image and self-perception through visual prominence of skin changes, potentially mediating its association with depression. Disease duration also influenced depression risk, with women experiencing PCOS for 1-3 years demonstrating particularly elevated risk (OR=8.258, 95% CI: 3.381–20.170, $p<0.001$). This peak may reflect an adaptation phase in which women adjust to the diagnosis and its consequences, sometimes associated with mood fluctuations.

Interestingly, the study found no significant associations between depression and factors including age, body mass index (BMI), fertility desires, hirsutism, or family history of PCOS. This finding is clinically significant, suggesting that psychological burden in PCOS relates more closely to modifiable lifestyle factors and visible clinical manifestations (particularly acne) than to metabolic parameters or inherited demographic characteristics.

Early Clinical Observations on Depression and Quality of Life

Early foundational research by Elsenbruch et al. (2003) examined the relationship between PCOS characteristics and psychological well-being in a population of 54 women with PCOS and a control group of 54 women without PCOS. Their findings revealed significant associations between PCOS-related symptoms (particularly obesity, hirsutism, and acne) and depression, anxiety, and reduced sexual satisfaction, indicating that psychological distress represents a pervasive feature of the PCOS experience affecting multiple dimensions of quality of life (Elsenbruch et al., 2003).

Research by Adali et al. (2008) investigated the relationship between clinico-biochemical characteristics of PCOS and psychiatric distress in 99 young women with PCOS (mean age 26.3 years) compared to 50 controls using a structured psychiatric review (PSE). Their findings indicated that psychological distress is common in PCOS and correlates with clinical and biochemical features of the condition (particularly androgen and insulin levels). This study suggested that psychiatric symptoms represent an intrinsic aspect of PCOS pathophysiology rather than solely a secondary psychological reaction to diagnosis, with important implications for therapeutic strategies (Adali et al., 2008).

Results: Part II – Anxiety and Mental Health Burden in PCOS

Anxiety in PCOS Populations

Anxiety is another prominent mental health problem in women with PCOS, frequently occurring together with depressive symptoms. Mansson et al. (2008), in a case-control study, reported that women with PCOS were significantly more likely than controls to meet DSM-IV criteria for both depressive and generalized anxiety disorders.

More recent clinical data by Hofmann et al. (2025) examining 587 women with PCOS revealed that a significant proportion exhibited clinically relevant anxiety and depression measured by the Generalized Anxiety Disorder Scale (GAD-7) and Patient Health Questionnaire (PHQ-9). The study revealed associations between obesity, negative body image, and mental health outcomes, suggesting that metabolic and psychological factors are interconnected in PCOS through processes including hyperinflammation, neuroendocrine dysregulation, and adverse body image changes.

These converging lines of clinical evidence establish that both depression and anxiety represent prevalent and clinically significant features of PCOS affecting overall quality of life and social functioning. The co-occurrence of depression and anxiety in PCOS suggests shared underlying mechanisms including neuroendocrine dysregulation, non-specific inflammation, and body image disturbance, indicating the need for comprehensive mental health assessment addressing both conditions and their common causes.

Results: Part III – Body Image Disturbance in PCOS

Prevalence and Characteristics of Body Image Concerns

Body image concerns represent a central psychological feature of PCOS. Women with PCOS frequently report dissatisfaction with physical appearance, including concerns about weight gain, facial hair growth, acne, and hair loss on the scalp (androgenetic alopecia). These physical manifestations directly impact self-perception and body-related attitudes through violation of beauty norms and reinforcement of appearance-related cognitions.

An extensive 2024 cross-sectional investigation by Alkheyr et al. (2024) examining body image and self-esteem in women with and without PCOS in a Middle Eastern population (n=12,199, including 3,329 with PCOS and 8,870 without PCOS), conducted in Gulf countries (including Saudi Arabia, United Arab Emirates, and Kuwait), found that women with PCOS demonstrated significantly greater body dissatisfaction. Specifically, women with PCOS were significantly more likely to report feeling less attractive, to avoid seeing their reflection in mirrors, to avoid social interactions due to appearance concerns, and to report reduced satisfaction and confidence in their appearance compared to women without PCOS. Importantly, women with PCOS demonstrated 1.63-fold higher odds of body dissatisfaction compared to controls (adjusted OR=1.63, 95% CI: 1.50–1.77, $p<0.001$), and this effect persisted statistically significantly across all BMI categories, including underweight, normal weight, overweight, and obese. This finding is clinically significant because it indicates that body image disturbance in PCOS extends beyond weight-related concerns and represents a distinctive feature of this biological condition independent of actual body weight (Alkheyr et al., 2024).

Body Image as a Mediator of Psychological Distress

Recent research has illuminated the mechanisms by which PCOS relates to psychological distress. A 2025 Israeli study by Geller et al. (2025) from Tel Aviv University examining body image, illness perception, and psychological distress in a sample of women with PCOS (n=197, mean age 31.4 years) and healthy controls (n=119, mean age 30.8 years) distinguished between positive body image (body appreciation, measured by the Body Appreciation Scale) and negative body image (body dissatisfaction, measured by the Body Dissatisfaction Scale), treating these as distinct psychological constructs with their own correlates and consequences.

The study revealed that women with PCOS reported significantly higher depression (measured by PHQ-9, mean 9.2 vs. 4.1 in controls) and anxiety (measured by GAD-7, mean 8.7 vs. 3.5 in controls) compared to controls. Importantly, path analysis (an advanced statistical technique examining mediating relationships) revealed that only body appreciation, rather than body dissatisfaction by itself, significantly mediated the link between PCOS diagnosis and psychological distress. In other words, women with PCOS who maintained positive attitudes toward their bodies despite physical changes demonstrated substantially better mental health outcomes (Geller et al., 2025).

In women with PCOS, the relationship between symptom severity and psychological distress is mediated by two interconnected factors: body appreciation and illness perception. Illness perception refers to individual beliefs about how threatening PCOS is and how it affects identity. These findings highlight complex interactions between biological factors, psychological perception, and mental health outcomes. These mechanistic findings suggest that positive body image characterized by body functionality appreciation, acceptance, respect, and emotional regard for one's body, plays a particularly important protective role in mental health among women with PCOS, more important than mere absence of negative thoughts.

Body Image in the Context of Infertility

Body image disturbance in PCOS may be particularly salient in the context of infertility. A 2024 Dutch study by Jannink et al. (2024) examining anxiety, depression, and body image among infertile women with PCOS (n=502, mean age 33.1 years) and without PCOS but with other infertility diagnoses (n=523, mean age 34.5 years), conducted at a tertiary fertility clinic in Amsterdam, revealed significant differences in the psychological profiles of these populations. Notably, anxiety and depression (measured by standard clinical scales) did not differ significantly between women with PCOS and those with other causes of infertility, suggesting that both PCOS itself and infertility itself carry similar psychological burden in this dimension.

However, women with PCOS demonstrated significantly lower body appreciation compared to women with other infertility diagnoses (adjusted mean difference: -1.34 , 95% CI: -2.32 to -0.36 , $p=0.007$), even after controlling for age and duration of infertility. This finding is clinically significant because it indicates that while infertility itself imposes substantial psychological burden regardless of etiology, PCOS confers specific body image concerns distinct from general infertility-related distress, potentially reflecting PCOS-specific phenotypic symptoms (Jannink et al., 2024).

Results: Part IV – Psychological Interventions

Cognitive-Behavioral Therapy for Depression and Anxiety

A 2023 Iranian randomized controlled trial by Majidzadeh et al. (2023) evaluated cognitive-behavioral therapy (CBT) for depression and anxiety in women with PCOS (n=84, mean age 29.2 years, randomly assigned to intervention group n=42 or waiting list control group n=42). The intervention consisted of eight weekly group-based CBT sessions, each lasting 60 minutes, addressing key components including identification and modification of cognitive distortions (negative automatic thoughts), behavioral activation (engagement in pleasant and meaningful activities), relaxation training, and stress management strategies.

Results demonstrated substantial clinical and statistically significant efficacy. Women receiving CBT showed significant reductions in depression scores on the Beck Depression Inventory (BDI-II), with changes indicating movement from moderate depression (baseline mean score 23.4) to absence of clinically significant symptoms (endpoint mean score 7.8, change -15.6 points, $p < 0.001$). Similar significant improvements occurred in anxiety measures assessed by the Generalized Anxiety Disorder Scale (GAD-7). Quality of life, assessed using PCOS-specific instruments (PCOSQoL), also improved significantly in the CBT group compared to waiting list controls. Notably, treatment retention was excellent, with all 42 participants in the intervention group completing all eight sessions and attending $\geq 75\%$ of meetings, indicating good acceptability of the intervention and its ability to engage women with PCOS.

These findings establish CBT as an effective, acceptable, evidence-based intervention for addressing the mental health burden of PCOS. The large effect sizes observed (mean Cohen's $d > 1.0$ for most measures) suggest that women with PCOS may be particularly responsive to structured psychological interventions, potentially due to the fairly concrete, identifiable stressors associated with diagnosis that can be effectively addressed through cognitive modification (Majidzadeh et al., 2023).

Psychosocial Intervention and Mind-Body Approaches

A 2021 pilot study by Yin et al. (2021) at the Chinese University of Hong Kong examined whether psychosocial intervention could suppress testosterone and triglycerides among women with PCOS (n=32, n=16 intervention vs. n=16 control). The intervention combined Eastern philosophical approaches to health and well-being with Western therapeutic techniques, implementing two-hour sessions three times weekly for 8 weeks including Tai Chi, qigong, mindfulness meditation, breathing exercises, and self-compassion practices based on theories from Western positive psychology.

Results demonstrated that the psychosocial intervention reduced depression symptoms (measured by PHQ-9, mean change -6.2 points, $p = 0.001$) and anxiety symptoms (measured by GAD-7, mean change -5.8 points, $p = 0.002$) compared to control group. Remarkably and unexpectedly, the intervention also produced significant improvements in biological parameters, specifically decreasing testosterone levels by a mean 18.5% ($p = 0.008$) and triglyceride levels by a mean 22.3% ($p = 0.004$) (Yin et al., 2021). Theoretical models suggest bidirectional connections between psychological and metabolic processes in PCOS (Hollinrake et al., 2007; Bergmans et al., 2017). Evidence indicates that stress and depression are associated with altered inflammatory markers and neuroendocrine function, including dysregulation of the HPA axis and elevated pro-inflammatory cytokines (Clerici et al., 2025; Guo et al., 2015). These findings raise the possibility that psychological interventions could beneficially influence PCOS pathophysiology through such pathways, though direct evidence from intervention studies remains limited.

Discussion

Comprehensive Summary of Psychological Burden and Mechanisms

The accumulated clinical evidence unequivocally establishes that PCOS carries substantial mental health burden through complex interactions between biological, lifestyle, and psychosocial factors. Women with PCOS experience depression at rates approaching 50% (Li et al., 2024), with most affected women experiencing mild to moderate symptoms, creating opportunities for early intervention. Anxiety disorders are similarly prevalent with rates approximately 35-50% depending on sample and diagnostic criteria. Body image disturbance affects the overwhelming majority of women with PCOS, with odds of body dissatisfaction approximately 1.6 times higher than controls (Alkheyr et al., 2024).

From a biological perspective, mechanisms linking PCOS to psychological distress appear decidedly multidimensional and include both biological and psychosocial factors. PCOS is characterized by low-grade inflammatory states, HPA axis dysregulation, and elevated cortisol levels (Hollinrake et al., 2007), all established risk factors for depression and anxiety disorders. Physical manifestations of PCOS: particularly hirsutism, acne, and weight gain, contribute to negative body image through violation of beauty norms and

activation of negative automatic thoughts regarding appearance. This negative body image in turn mediates a substantial portion of the association between biological PCOS symptoms and mental health outcomes.

Importantly, research demonstrated that positive body image which means body appreciation and acceptance may be more protective than mere absence of negativity (Geller et al., 2025), suggesting that interventions should focus on cultivating positive body attitudes rather than solely reducing dissatisfaction.

The Critical Role of Lifestyle Factors

A particularly significant finding emerging from recent research is the substantial contribution of modifiable lifestyle factors to depression in PCOS. Lack of exercise, poor sleep patterns, high-fat diet, and psychological stress represent modifiable risk factors substantially elevating depression risk with odds ranging from 1.9 to 7.5 (Li et al., 2024). These findings have fundamental clinical implications: lifestyle interventions targeting these specific factors may serve as both preventive and therapeutic strategies for depression in PCOS, potentially preventing progression of mild depression to more severe, treatment-resistant forms.

The finding that lack of exercise represents the strongest identified lifestyle-related risk factor for depression (7.5-fold increased odds) (Li et al., 2024) underscores the critical importance of promoting physical activity in comprehensive PCOS management. Exercise likely benefits mental health through multiple interacting pathways: (1) neuroendocrine modulation through enhanced endorphin, serotonin, and noradrenaline release; (2) reduction of inflammatory markers through altered cytokine profiles; (3) improvement of metabolic parameters and body composition, reducing somatic stressors; (4) enhancement of body image through sense of achievement, agency, and physical competence; and (5) provision of positive social experiences through exercise groups, fitness classes, and team activities.

Similarly, the strong association between psychological stress and depression (6.5-fold increased odds) (Li et al., 2024) underscores the need for integration of stress management interventions into routine PCOS care. Stress reduction techniques encompassing mindfulness practices, meditation, breathing exercises, cognitive restructuring, and assertiveness training should be systematically integrated into comprehensive PCOS care for all women, particularly those experiencing high perceived stress.

Conclusions

Clinical evidence comprehensively documents that polycystic ovary syndrome carries substantial mental health burden through complex interactions between biological, lifestyle, and psychosocial factors. Women with PCOS experience depression at rates approaching 50% (Li et al., 2024), with depression predominantly manifesting as mild to moderate symptoms, creating opportunities for early intervention before progression to more severe states. Anxiety disorders are similarly prevalent. Body image disturbance affects the majority of women with PCOS and impacts mental health outcomes through complex mediating mechanisms.

Lifestyle factors: lack of exercise, poor sleep patterns, high-fat diet, and psychological stress represent significant, modifiable depression risk factors with odds ranging from 1.9 to 7.5 (Li et al., 2024). Strong associations between these lifestyle factors and depression indicate that lifestyle intervention represents both a preventive and therapeutic strategy that should be prioritized as a principal component of PCOS management for all affected women. The predominance of mild depression in PCOS (84% of depression cases) (Li et al., 2024) creates opportunities for early intervention through lifestyle modification and psychological counseling before progression to severe, treatment-resistant depression requiring pharmacotherapy.

Body image emerges as a critical mediating factor in the relationship between PCOS and psychological distress (Geller et al., 2025). Positive body image characterized by appreciation, acceptance, and emotional regard for one's body functions as a protective factor more strongly associated with mental health than mere absence of negative body image (Geller et al., 2025). Interventions specifically designed to cultivate body appreciation through psychoeducation, mindfulness and assertiveness exercises, self-compassion practices, and cognitive restructuring of appearance-based negative thoughts represent promising and innovative therapeutic approaches.

Cognitive-behavioral therapy and psychosocial interventions (encompassing mindfulness, meditative movement, and self-compassion practices) demonstrate substantial clinical and statistical efficacy in improving mental health outcomes in PCOS (Majidzadeh et al., 2023; Yin et al., 2021). Evidence that psychological intervention can produce improvements in both mental health and metabolic parameters (decreased testosterone and triglycerides) (Yin et al., 2021) supports integrated mind-body approaches and suggests that psychological treatment may influence PCOS pathophysiology through multiple interacting neuroendocrine, inflammatory, and behavioral pathways.

The 2023 international evidence-based guidelines appropriately recognize mental health assessment and intervention as essential, rather than optional, components of comprehensive PCOS care (Teede et al., 2023). Guidelines emphasize lifestyle intervention as a cornerstone of PCOS management for all affected women throughout the lifespan (Teede et al., 2023). Implementation of routine mental health screening (using validated screening tools), assessment of lifestyle factors and interventions, body image evaluation, and evidence-based psychological interventions (CBT, psychosocial programs) (Teede et al., 2023) represents a critical priority for improving health outcomes and quality of life in women with PCOS.

Effective, comprehensive management of PCOS requires integration of medical care (endocrinological and gynecological) with mental health services (psychiatry, clinical psychology) and lifestyle counseling (dietetics, exercise physiology, health coaching). Multidisciplinary, coordinated approaches addressing physical, psychological, and lifestyle dimensions of PCOS offer optimal frameworks for person-centered comprehensive patient care. Recognition of mental health as an essential, intrinsic component of PCOS rather than an ancillary or optional aspect is essential for providing comprehensive, person-centered care addressing the full burden of this common yet complex endocrine condition.

As clinical recognition of PCOS-related psychological burden increases and evidence-based mental health and lifestyle interventions become more widely implemented, mental health, metabolic, and reproductive outcomes in women with PCOS should substantially improve. Healthcare systems, clinicians, researchers, and patient organizations should prioritize integration of routine mental health assessment, lifestyle counseling, and evidence-based psychological interventions into standard PCOS care protocols, ensuring that all women with this common condition receive comprehensive, evidence-based care addressing their physical health, mental health, reproductive health, and overall quality of life.

Author's contribution:

Research and concept design: Aleksandra Mazurkiewicz, Radosław Binkowski, Szymon Zysiak

Data collection and methodology: Natalia Bednarczyk, Aleksandra Mazurkiewicz, Rafał Bednarczyk, Hubert Sidor

Formal analysis: Radosław Binkowski, Aleksandra Lejman, Monika Wołosik

Interpretation: Szymon Zysiak, Natalia Krajewska, Agnieszka Kurek, Rafał Bednarczyk

Writing: Aleksandra Mazurkiewicz, Natalia Bednarczyk, Natalia Krajewska, Hubert Sidor

Critical review of the article: Monika Wołosik, Agnieszka Kurek, Aleksandra Lejman

Supervision, project administration: Aleksandra Mazurkiewicz

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