

# Holistic approaches to PCOS: Diet, Exercise and Mental well-being

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## ABSTRACT:

**Objective:** To comprehend holistic approaches through evaluating diet, exercise, and mental health in patients with polycystic ovarian syndrome.

**Methodology:** From August 2024 to January 2025, a descriptive cross-sectional study was carried out at the tertiary care facility in Jauharabad, Pakistan; following approval from the hospital's ethical committee and consent from study participants. Total 85 females with PCOS that participated in the survey. PCOS was identified using the Rotterdam criteria by the American Society for Reproductive Medicine. Data was gathered using a structured questionnaire that included demographics, PCOS symptoms, holistic approaches (dietary practices, physical activity), and mental health (stress levels, coping mechanisms). Following data collection, SPSS 21 software was used to sort and analyze the data. For all variables, descriptive statistics using frequency and percentage were used.

**Results:** The majority of participants (45.9%) were between the ages of 28 and 36. 78.9% of those surveyed said they have mental health problems. 5.7% of respondents believed they lacked the knowledge and resources necessary to manage PCOS comprehensively. Just 33% of respondents were following holistic methods and eating a healthy, balanced diet. Just 17.7% of women reported engaging in daily physical activity. Of the individuals, moderate to high levels of stress were reported by 29.4% and 20%, respectively. 57.6% of participants said that emotional and psychological barriers made managing PCOS difficult, and 67.1% said that they had problems managing the condition because of conflicting information and guidance.

**Conclusion:** PCOS is linked to a variety of emotional, physical, hormonal, metabolic, and nutritional issues, such as depression and anxiety. These problems frequently lower patients' quality of life. Holistic treatments for PCOS are underappreciated and ought to be given more attention.

**Key words:** Ovarian Diseases, Polycystic Ovary Syndrome, Holistic approach, Diet therapy.

Cite: Faisal MJ, Ashraf M, Yasmeen Q. Holistic approaches to PCOS: Diet, Exercise and Mental well-being. J Muhammad Med Coll. 2025; 16 (1) pp-50-54

## Introduction:

The most common endocrine disorder in women of reproductive age is polycystic ovary syndrome (PCOS), which can lead to enduring reproductive gynecological disorders such as irregular menstrual periods (oligo-menorrhea, amenorrhea, abnormal uterine bleeding), infertility, and excessive androgen levels in females), cardio metabolic disorders (hyperinsulinemia, impaired glucose tolerance, obesity, dyslipidemia, inflammation, insulin resistance and type 2 diabetes mellitus) psychological symptoms like anxiety and depression, disordered eating, low self-esteem, body image distress and reduced quality of life; and dermatological symptoms like acne, facial hirsutism, and androgenic alopecia.<sup>1</sup> Women's quality of life is greatly impacted by a variety of physical, mental, and psychological health

changes that result from the intricate interaction of lifestyle, genes, and environmental variables.<sup>2</sup>

For lifestyle changes to be successful, diet and exercise are two essential areas that need to be addressed. Weight control, insulin sensitivity, and inflammatory markers in women with PCOS are significantly influenced by dietary practices, such as calorie intake, macronutrient composition, and food quality.<sup>3</sup> The problem is made worse by lifestyle choices including eating unhealthy foods and engaging in less physical activity throughout the day, especially for younger girls. Many people pick unhealthy snacks or quick food over healthier ones. Weight gain might result from hormonal imbalances caused by these behaviors.<sup>4</sup> This sedentary lifestyle and fast food intake raise the risk of obesity and cause hormonal abnormalities. Obesity, type 2 diabetes, and cardiovascular diseases are among the clinical disorders that are associated with oxidative stress. Increased oxidative stress impacts PCOS patients' pathophysiology, leading to chronic inflammation, elevated testosterone, and insulin resistance.<sup>5</sup>

Nutrition is crucial for maintaining hormonal equilibrium as well as managing insulin resistance, the primary factor in PCOS.<sup>6</sup> Consuming a diet rich in whole foods, lean proteins, healthy fats, and fiber can assist in regulating illnesses by maintaining blood sugar levels and reducing inflammation. Eating nutrient-dense meals like leafy greens, nuts, and omega-3-rich seafood while avoiding sugar-laden foods and refined starches will improve metabolic health. Additionally, mindful eating practices like portion control and meal scheduling promote long-term weight management.<sup>7,8</sup> Another crucial element of a comprehensive PCOS control strategy is regular physical activity. Exercise lowers androgen levels, which are linked to symptoms like acne

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Received: 23.05.2025 . Revised: 03.09.2025

Accepted: 21.09.2025 Published online 5.10.2015

and excessive hair growth, improves insulin sensitivity, and aids in weight loss. Exercises that include aerobic exercises, strength training, and stress relieving practices like yoga or Pilates have been demonstrated to enhance hormone balance and general wellbeing.<sup>9</sup> Importantly, personalized workout plans that take into account an individual's preferences and physical capabilities can boost motivation.<sup>10</sup> A vital but frequently disregarded component of managing PCOS is mental wellness, which goes beyond physical health. Due to hormonal imbalances and the difficulties associated with PCOS, women are more likely to experience anxiety, despair, and emotional distress. Including stress-reduction techniques like mindfulness, meditation, and counseling can greatly increase mental toughness.<sup>11</sup> In order to help people deal with the psychological effects of PCOS, support groups and counseling offer additional emotional support.<sup>12</sup> Women with PCOS can improve their quality of life and long-term health results by embracing a holistic approach that incorporates nutrition, exercise, and mental health. This research aims to investigate the effectiveness of holistic approaches—including dietary modifications, exercise routines, and mental health interventions in managing PCOS symptoms and improving overall wellbeing.

**Objective:**

The goal of the current study was to comprehend holistic approaches through evaluating diet, exercise, and mental health in patients with polycystic ovarian syndrome.

**Methodology:**

This survey based cross sectional study was conducted in a tertiary care hospital of Jauharabad, Pakistan in gynecology department; between August 2024 to January 2025; to assess the impact of holistic approaches; diet, exercise and mental wellbeing on managing polycystic ovarian syndrome (PCOS) symptoms. A Total of 85 females, who were diagnosed with PCOS, participated in the study. Informed consent was obtained before study. Inclusion Criteria: Women aged 18-45 with a confirmed PCOS diagnosis, attending reproductive health clinic and were willing to participate. Exclusion Criteria: Pregnant or breastfeeding women, those with other endocrine disorders, severe psychiatric conditions, or on medications affecting weight or hormones. A structured questionnaire was designed to collect data on: demographic information, PCOS symptoms, holistic approached i.e. Dietary habits; Intake of whole foods, processed foods, sugar, and healthy fats. Exercise routine; Frequency, type, and duration of physical activity. Mental well-being: Stress levels and coping strategies. PCOS symptom management: Changes in weight, menstrual cycle regularity, acne, and hair growth. The questionnaire included multiple-choice, Likert-scale, and open-ended questions to gather qualitative and quantitative data. Following data collection, SPSS 21 software was used to sort and analyze the data. For all variables, descriptive statistics using frequency and percentage were used. The Ethical approval was taken from Majid Medical Complex. Approval No. 0321; Dated: 12-07-2024

**Results:**

Out of 85 participants, as shown in table 1, 45.9% females belonged to age group 28-36 years. Majority of females (76.4%) were married. 73% of the participants were living in urban areas. Majority (71.8%) revealed that there was no family history of PCOS. While 57.7% participants did not had enough information and support to manage PCOS holistically. The presenting features of PCOS are summarized in Table 2. Among menstrual irregularities, 68.2%

experienced anovulatory menstrual cycles, 71.8% experienced irregular or skipped periods, and 63.6% reported heavy or prolonged menstrual flow.

**Table No 1: characteristics of participants**

| Characteristics                                                                  | Frequency (%) |
|----------------------------------------------------------------------------------|---------------|
| AGE                                                                              |               |
| 18-27                                                                            | 32 (37.7)     |
| 28-36                                                                            | 39 (45.9)     |
| 37-45                                                                            | 14 (16.4)     |
| Marital Status                                                                   |               |
| Married                                                                          | 65 (76.4)     |
| Unmarried                                                                        | 20 (23.6)     |
| Residence                                                                        |               |
| Urban                                                                            | 62 (73)       |
| Rural                                                                            | 23 (27)       |
| Do you have any family members with PCOS                                         |               |
| Yes                                                                              | 24 (28.2)     |
| No                                                                               | 61 (71.8)     |
| Do you feel you have enough information and support to manage PCOS holistically? |               |
| Yes                                                                              | 36 (42.3)     |
| No                                                                               | 49 (57.7)     |

**Table 2: Symptoms of PCOS among participants.**

| PCOS symptoms                            | Frequency (%) |
|------------------------------------------|---------------|
| Menstrual Irregularities                 |               |
| Irregular or missed periods              | 61 (71.8)     |
| Heavy or prolonged menstrual bleeding    | 54 (63.6)     |
| Absent ovulation (anovulation)           | 58 (68.2)     |
| Hormonal Imbalances                      |               |
| High levels of androgens                 | 46 (54.1)     |
| Acne and oily skin                       | 51 (60)       |
| Hirsutism                                | 42 (49.4)     |
| Thinning hair or hair loss               | 33 (38.9)     |
| Metabolic Issues                         |               |
| Weight gain or difficulty losing weight  | 68 (80)       |
| Insulin resistance                       | 59 (69.4)     |
| Dyslipidemia                             | 23 (27)       |
| Mental Health Concerns                   |               |
| Mood swings and irritability             | 67 (78.9)     |
| Anxiety and depression                   | 44 (51.8)     |
| Low self-esteem due to physical symptoms | 54 (63.6)     |

Table 3 displayed the outcomes of PCOS patients' holistic approaches. In terms of nutrition and diet, 33% of respondents were eating balanced meals, 42.3% were eating a diet high in processed foods and sugar, just 11.7% chose a low-carb diet, and 13% were vegetarians. Additionally, 48.2% of respondents admitted to occasionally eating processed or sugary foods 1-2 times per week.36.4% of respondents acknowledged that they frequently experienced cravings for sweets or carbohydrates, while 48.2% reported consuming meals high in fiber (fruits, vegetables, whole grains, and legumes) once a day. Walking was the most common physical activity (47%) among 41.1% of those who exercise 1-2 times per week, compared to just 17.7% who exercise every day. 14.1% of individuals reported high levels of

stress related to PCOS, whilst 29.4% reported moderate levels of stress in the category of mental well-being and stress management. Just 10.5% of respondents chose therapy or counseling, while 42.3% said they exercise or go for walks to reduce stress, and 32.9% said they feel at ease discussing their PCOS relating problems with friends or family. The majority (31.8%) slept for fewer than five hours each night. Just 10.5% slept for longer than eight hours.

Table No 3: Holistic Approaches to Polycystic ovarian syndrome

| Variables                                                                          | Frequency (%) |
|------------------------------------------------------------------------------------|---------------|
| <b>Diet and Nutrition</b>                                                          |               |
| How would you describe your current diet?                                          |               |
| Balanced and healthy                                                               | 28 (33)       |
| High in processed foods and sugar                                                  | 36 (42.3)     |
| Low in carbohydrates                                                               | 10 (11.7)     |
| Vegetarian                                                                         | 11 (13)       |
| How often do you consume processed Or sugary foods?                                |               |
| Rarely                                                                             | 12 (14.1)     |
| 1-2 times a week                                                                   | 41 (48.2)     |
| 3-4 times a week                                                                   | 20 (23.6)     |
| Daily                                                                              | 12 (14.1)     |
| How often do you eat fiber-rich foods (fruits, vegetables, whole grains, legumes)? |               |
| Every meal                                                                         | 20 (23.6)     |
| Once a day                                                                         | 41 (48.2)     |
| A few times a week                                                                 | 12 (14.1)     |
| Rarely                                                                             | 12 (14.1)     |
| Do you experience cravings for sweets or carbs?                                    |               |
| Often                                                                              | 31 (36.4)     |
| Sometimes                                                                          | 28 (33)       |
| Rarely                                                                             | 14 (16.5)     |
| Never                                                                              | 12 (14.1)     |
| <b>Exercise and Physical Activity</b>                                              |               |
| How often do you exercise per week?                                                |               |
| Daily                                                                              | 15 (17.7)     |
| 3-5 times per week                                                                 | 18 (21.1)     |
| 1-2 times per week                                                                 | 35 (41.1)     |
| Rarely/Never                                                                       | 17 (20)       |
| What type of exercise do you engage in most frequently?                            |               |
| Walking                                                                            | 40 (47)       |
| Strength training                                                                  | 18 (21.1)     |
| Cardio (running, cycling, etc.)                                                    | 20 (23.6)     |
| Yoga/Pilates                                                                       | 07 (8.2)      |
| <b>Mental Well-being and Stress Management</b>                                     |               |
| How would you describe your current stress levels?                                 |               |
| Low                                                                                | 31 (36.4)     |
| Moderate                                                                           | 25 (29.4)     |
| High                                                                               | 17 (20)       |
| Very high                                                                          | 12 (14.1)     |
| How do you usually manage stress?                                                  |               |
| Meditation/mindfulness                                                             | 12 (14.1)     |
| Exercise                                                                           | 36 (42.3)     |
| Talking to friends or family                                                       | 28 (32.9)     |
| Therapy or counseling                                                              | 09 (10.5)     |
| How many hours of sleep do you get per night on average?                           |               |
| Less than 5 hours                                                                  | 27 (31.8)     |
| 5-6 hours                                                                          | 29 (34.1)     |
| 7-8 hours                                                                          | 20 (23.6)     |
| More than 8 hours                                                                  | 09 (10.5)     |

Table 4 shows the participants' overall PCOS management strategies. When asked what lifestyle modification helped them manage PCOS, 81.2% of respondents said that dietary adjustments really aided their recovery. 64.7% of respondents said that supplements and medication were a powerful support in addition to diet and exercise (50.5%), while 71.8% said that stress management approaches were extremely helpful to them. Participants' biggest obstacle to maintaining a healthy lifestyle during their PCOS journey was weight management difficulties (90.5%), with 76.4% believing that a lack of resources and support is a bigger obstacle to PCOS management. However, 71.8% of respondents said that physical symptoms like fatigue and discomfort had a significant influence on their way of life while they were managing PCOS. Along with physical

symptoms (fatigue, discomfort, 71.8%), 67.1% of participants reported that they had trouble managing PCOS due to inconsistent information and advice, and 57.6% reported emotional and psychological obstacles that made managing the condition challenging

Table No 4: Over all PCOS management.

| Description                                                                     | n (%)     |
|---------------------------------------------------------------------------------|-----------|
| <b>What lifestyle changes have helped you manage PCOS the most?</b>             |           |
| Diet changes                                                                    | 69 (81.2) |
| Exercise                                                                        | 43 (50.5) |
| Stress management techniques                                                    | 61 (71.8) |
| Medication/Supplements                                                          | 55 (64.7) |
| <b>What challenges do you face in maintaining a healthy lifestyle for PCOS?</b> |           |
| Weight Management Difficulties                                                  | 77 (90.5) |
| Emotional and Psychological Barriers                                            | 49 (57.6) |
| Lack of Support and Resources                                                   | 65 (76.4) |
| Physical Symptoms (fatigue, discomfort) impacting Lifestyle                     | 61 (71.8) |
| Conflicting Information and Guidance                                            | 57 (67.1) |

Discussion:

The results of this study indicate notable findings regarding management of polycystic ovarian syndrome patients, highlighting the efficacy of a holistic strategy in addressing PCOS. In contrast to traditional treatments that primarily focus on symptom relief through pharmaceutical interventions, a holistic approach addresses the root causes of PCOS by combining medical therapy with complementary therapies such as lifestyle modifications, dietary adjustments, physical activity, mental health support, and stress management.<sup>13,14</sup>

Our findings showed that women of young age (45.9%) tend to have more PCOS symptoms. In previous studies it was noted that a higher prevalence of metabolic problems including insulin resistance and high blood pressure may be observed in older women with PCOS, although younger people typically exhibit more noticeable symptoms such irregular periods, acne, and excessive hair growth (hirsutism).<sup>15</sup> Polycystic Ovary Syndrome (PCOS) was more common in urban (73%) women than in rural ones. This is probably because of lifestyle differences, such as dietary habits, levels of physical activity, and stress related to urban living, which can exacerbate PCOS symptoms. According to a survey done in India, those living in nuclear households in metropolitan areas had a higher prevalence of PCOS than people in rural areas. Among the urban participants, there was a higher prevalence of oligomenorrhea along with recent weight increase and obesity. Compared to rural settings, urban areas had higher levels of excess androgen activity, as indicated by increased hirsutism, which was linked to higher levels of insulin resistance and androgen levels which is consistent with our study findings.<sup>16</sup> In current survey 57.7% participants did not have enough information and support to manage PCOS holistically which is a notable concern, The necessity for comprehensive care and collaborative development of instructional materials is highlighted by a systematic evaluation of the lived experiences of individuals with polycystic ovarian syndrome.<sup>17</sup> Irregular periods, anovulation, hirsutism, difficulty and managing weight, hormonal imbalance, stress, anxie-

ty, depression, and mood swings were notable PCOS symptoms in our patients. The most prevalent endocrine condition affecting women of reproductive age in Western society is polycystic ovarian syndrome (PCOS), which affects 20% of these women. PCOS affects at least 90% of women who visit reproductive clinics because they are unable to ovulate. A lower quality of life is linked to PCOS. Numerous symptoms, such as hirsutism, obesity, acne, and infertility, are painful, uncomfortable, unexpected, and linked to traits that are culturally seen undesirable and unfeminine. Furthermore, the illness is linked to metabolic abnormalities, which can cause mood swings on their own.<sup>18</sup> A study found that women with PCOS frequently have higher degrees of body dissatisfaction, anxiety, and despair which is consistent with our findings.<sup>7</sup> Lack of resources and expertise, trouble adjusting to changing lifestyles, weight control, and emotional and psychological barriers are some of the difficulties PCOS individuals have when using holistic therapies.<sup>19-21</sup> In our survey women exclusively revealed that weight loss, dietary changes, physical activity, stress management techniques and medication/supplements helped the, a lot in the managements of PCOS. The mainstay of treatment for women with PCOS is lifestyle modifications. Sedentary lifestyles and high-calorie diets may be contributing factors to the aggravation of PCOS. Diet, exercise, supplements, and intervention greatly enhance fertility outcomes, reproductive endocrine function, and clinical hyperandrogenism, according to a meta-analysis including 1113 participants.<sup>22-24</sup> The present investigation identified key themes associated with PCOS. Women's knowledge and awareness of PCOS, holistic approaches to PCOS, such as physical activity and nutrition, personal experiences of self-concept among women with PCOS, the effects of PCOS on an individual's psychological well-being, the difficulties faced by women with PCOS, the perceived impact of stress factors on PCOS management as perceived by participants, new holistic approaches to PCOS treatment, and new ideas in healthcare.

#### Conclusion:

PCOS has also been related to a variety of mental, physical, hormonal, metabolic, and nutritional problems, including anxiety, depression, low self-esteem, eating disorders, stress, emotional strain, mood swings, sleep disturbances, and body image concerns. These disorders typically reduce patients' quality of life. Developing a behavioral or educational model can help women with PCOS improve the efficacy of standard treatment and provide a more holistic approach to PCOS management. These modules could include goal-setting, progress tracking, behavioral interventions (diet, exercise, sleep), stress management (relaxation techniques, cognitive therapy), coping with physical changes, PCOS knowledge and treatment options, and positive reinforcement.

#### Limitation:

The small sample size and differences in eating patterns, exercise routines, and mental health therapies make it difficult to identify optimal practices in studies on holistic approaches to PCOS (diet, exercise, and mental well-being). Adherence issues, subjective self-reports, and individual differences all put into question the results' validity.

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| *Author's contribution* |                                                         |
|-------------------------|---------------------------------------------------------|
| Muhammad Faisal Javed   | Conceived idea, literature Review. Writing Introduction |
| Muhammad Ashraf         | Developed Proforma, Data Collection                     |
| Qamar Yasmeen           | Data Analysis, Manuscript draft writing                 |