

NUTRITIONAL STATUS ASSESSMENT AMONG WOMEN WITH POLYCYSTIC OVARY SYNDROME (PCOS) ATTENDING TO ABU- GRARIB HOSPITAL AND AL-YARMOUK TEACHING HOSPITAL OUTPATIENT CLINICS IN AL-KARKH/BAGHDAD (2025)

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Article Received: 15 August 2026

Article Revised: 05 September 2026

Article Published: 01 October 2026



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DOI: <https://doi.org/10.5281/zenodo.23013092>



How to cite this Article: *Tiba Ibrahim Mohammed Salman (M.B.Ch.B), Zainab Ghassan Lutfi (M.B.Ch.B/F.I.C.M.S./FM), Faten Mohammed Ali Shakir (M.B.Ch.B/F.I.C.M.S./FM) (2026). Nutritional Status Assessment Among Women With Polycystic Ovary Syndrome (Pcos) Attending To Abu- Grarib Hospital and Al-Yarmouk Teaching Hospital Outpatient Clinics In Al-Karkh/Baghdad (2025). World Journal of Advance Healthcare Research, 10(10), 66–74. This work is licensed under Creative Commons Attribution 4.0 International license.

ABSTRACT

Background: Polycystic Ovary Syndrome affects about 6–13 percent of women of reproductive age. It is a leading cause of infertility and is associated with insulin resistance, obesity, and high cardiovascular risk. Diet quality plays an important role in managing the condition. Diets high in refined carbohydrates and sugar and low in fruits, vegetables, and dairy worsen symptoms, while balanced, low-glycemic diets support better hormonal and metabolic control. Assessing nutritional status helps identify calorie imbalance, nutrient deficiencies, and dietary problems that can guide effective interventions. **Methodology:** This descriptive cross-sectional study was conducted from May to July 2025 at the Gynecology and Nutrition Clinics of Abu Ghraib Hospital and Al-Yarmouk Teaching Hospital in Baghdad. A total of 250 women aged 18–45 years with doctor-confirmed Polycystic Ovary Syndrome participated. Data were collected through direct interviews, including personal information, clinical history, and dietary habits. Nutritional assessment used a 24-hour dietary recall based on World Health Organization standards, along with body measurements. A pilot study was performed to test the clarity of the tools. Data were analyzed using statistical software with a significance level of less than 0.05. Ethical approvals were obtained from the Arab Board for Health Specializations and Al-Karkh Health Directorate. **Results:** The average age of the participants were 28.6 years. About 70 percent were overweight or obese, with an average body mass index of 27.2 kilograms per square meter. Central obesity was common. Only 6 percent met their daily calorie needs, while most had low intake of fruits, vegetables, and milk but high consumption of bread and sweets. Fewer than 21 percent had ever received dietary advice, even though most wanted it. Higher body weight was linked to more severe symptoms, and education level was associated with better dietary awareness. **Conclusions:** Women diagnosed with Polycystic Ovary Syndrome in Baghdad exhibit suboptimal nutritional status alongside a high prevalence of overweight and obesity. The observed diet quality is notably deficient relative to established international dietary guidelines. Consequently, this investigation strongly advocates for the implementation of regular nutritional assessments, the integration of specialized dietitians into the treatment protocol, and the promotion of culturally sensitive, healthy eating patterns.

INTRODUCTION

PCOS is a prevalent endocrine disorder affecting a significant number of women globally, with an estimated 6-13% of women of reproductive age being impacted. It contributes to a variety of health complications, including infertility, type 2 diabetes, cardiovascular diseases, and endometrial cancer. Often developing without obvious symptoms, PCOS is characterized by

irregular menstrual cycles, ovarian cysts, and hormonal imbalances. The WHO highlights the need for effective prevention and management strategies, as PCOS significantly affects women's health and quality of life.^{[1][2]}

PCOS is characterized by a complex interplay of hormonal imbalances that significantly affect women's

reproductive health. Research indicates that women with PCOS commonly exhibit elevated levels of key hormones.^[2]

These hormonal aberrations are often accompanied by a notable decrease in FSH levels, further disrupting the delicate hormonal equilibrium essential for regular ovulatory function. The disruption in the LH/FSH ratio, a critical marker in assessing ovulatory function, is frequently observed in PCOS patients, highlighting the syndrome's profound impact on the reproductive endocrine system.^[3]

The key to understanding the major role of the relationship between diabetes and insulin resistance in the management of this disorder (Polycystic Ovary Syndrome, or PCOS) is critically important, as insulin resistance affects approximately 75% of women with PCOS. Increasing the level of obesity and type 2 diabetes could be considered as a metabolic dysfunction, along with the endocrine main features of PCOS, such as abnormal ovulation and hyperandrogenism. Increasing the risk of developing metabolic conditions like type 2 diabetes and obesity, this metabolic dysfunction not only worsens the endocrine features of PCOS, such as hyperandrogenism and irregular ovulation but also exacerbates the overall health challenges associated with the condition.^[4]

The result of insulin resistance could stimulate the ovaries to produce androgens in large amounts, as a result increasing the symptoms of PCOS, such as acne, menstrual irregularities, and hirsutism. Thus, a major role of metabolic management aspects through nutritional interventions is to regulate insulin levels. Diets that are based on rich protein and fiber, low in glycemic index, and low in fats could improve insulin sensitivity. In addition, weight control through proper nutrition and workouts could improve insulin resistance, reduce androgen levels, and restore ovulation.^[4]

Nutritional interventions play a vital role in managing symptoms of PCOS. While there is no universally optimal diet for PCOS, evidence supports that lifestyle modifications—including dietary changes combined with regular physical activity and modest weight loss (about 5–10%)—can significantly improve insulin resistance, restore ovulatory function, and alleviate symptoms such as hyperandrogenism, hirsutism, and menstrual irregularity. Diets such as moderately low-carbohydrate diets (30–45% of energy from carbohydrates) have shown promising results. Additionally, meal timing and frequency—such as consuming five to six small meals a day and focusing on carbohydrate intake at lunch—may offer added benefits for glucose metabolism and hormonal regulation. However, current evidence does not support definitive conclusions regarding high-protein diets or micronutrient supplementation. Overall, negative energy balance and personalized dietary planning based on individual preferences, culture, and metabolic needs

appear to be the most effective nutritional strategies for managing PCOS symptoms.^[6]

This study aims to assess nutritional status, dietary intake, and anthropometric measurements [height, weight, BMI, body circumferences (waist, hip) and waist to hip ratio] among women diagnosed with polycystic ovary syndrome and to find a correlation between nutritional status and dietary intake that may influence PCOS management.

SUBJECTS AND METHODS

Study setting and design

This cross sectional study was carried out over a specified from 1st of March to 30th of August 2025, utilizing a convenience sample of women diagnosed with PCOS by doctors who attended the Gynecological and Nutrition Consultation Clinics located in Baghdad, specifically at Abu Ghraib Hospital and Al-Yarmouk Teaching Hospital.

Study Population and Sample Size

A convenient sample of 250 women with PCOS, identified by doctors attending the Gynecological and Nutrition Consultation Clinics in Baghdad, specifically at the Abu Ghraib Hospital and Al-Yarmouk Teaching Hospital, agreed to participate in the study during the patient collection. Period.

Inclusion Criteria

1. Female patients, aged 18 - 45.
2. A PCOS patient with a confirmed diagnosis of Polycystic Ovary Syndrome (PCOS) by doctors.
3. Not pregnant.

Exclusion Criteria

- Patients on hormonal medications or treatments that could alter the clinical picture within at least 3 months for PCOS.
- Patients with eating disorders.
- Patients with dietary restrictions that may interfere with the assessment intake.

Data collection method

Data collected by direct interview with women diagnosed with PCOS using an applied questionnaire. The questionnaire was designed by gathering information from similar research and textbook references by the researcher, with input from the supervisor's opinion and recommendations.

Some challenges were encountered during the data collection process, as the questionnaire required approximately 30 minutes to complete, and it was administered exclusively by the researcher to ensure the accuracy of the information obtained. Additionally, patients often experienced difficulty recalling their meals over the previous 24 hour.

Demographic Measurements

Participants completed a structured socio-demographic questionnaire designed to capture essential baseline characteristics relevant to the study population. The questionnaire included core demographic variables such as age, marital status, and educational level. In addition, it collected information on occupational status (e.g., work out side home, not work out side home).

Symptoms severity

The severity of Polycystic Ovary Syndrome (PCOS) is determined by combining clinical symptoms, hormonal abnormalities, and ultrasound findings. Clinically, more severe cases present with marked hyperandrogenism—such as significant hirsutism and acne—along with pronounced menstrual irregularities or anovulation. Hormonal blood tests, including elevated testosterone levels and increased LH/FSH ratios, further indicate stronger endocrine dysfunction. Ultrasound adds another layer of assessment, as higher antral follicle counts and increased ovarian volume reflect more severe polycystic ovarian morphology. Together, these clinical, hormonal, and imaging indicators provide a unified measure of PCOS severity.

Anthropometric Measurements

Anthropometric measurements were conducted to evaluate body composition and fat distribution among women diagnosed with PCOS, as these parameters are essential for assessing metabolic risk and guiding individualized nutritional interventions.^[7]

- **Body Mass Index (BMI):** BMI was calculated by dividing weight (kg) by height squared (m²) to classify weight status according to WHO categories (underweight <18.5; normal 18.5–24.9; overweight 25.0–29.9; obesity ≥30). Although widely used, BMI alone may not fully capture metabolic risk in lean PCOS phenotypes.^[8]
- **Waist Circumference (WC):** WC was measured using a flexible tape placed midway between the lowest rib and the iliac crest while the participant stand and exhaled gently. A cut-off >88 cm was considered indicative of increased metabolic risk and visceral adiposity commonly associated with insulin resistance and cardiovascular complications.^[9]
- **Hip Circumference (HC):** HC was assessed at the widest point of the hips/buttocks with the participant standing upright. This measurement provided additional context for evaluating body fat distribution and changes during nutritional or lifestyle interventions.
- **Waist-to-Hip Ratio (WHR):** WHR was computed by dividing WC by HC. A WHR >0.85 indicated central obesity and greater risk for metabolic disturbances related to PCOS. Tracking WHR

helped monitor the effectiveness of diet and lifestyle modifications over time.^[10]

24-Hour Dietary History

The participant offered a comprehensive description of their food consumption over the last 24 hours using a dietary history sheet. This approach was designed to identify potential nutrient deficiencies that may require attention.

To enhance the precision of dietary reporting, the research utilized the WHO Food and nutrition handbook. This tool supports dietary assessments by providing portion sizes for foods frequently eaten in the Middle East, which helps in achieving a more accurate estimation and reporting of food intake. The handbook features images illustrating various portion sizes, Allowing users to choose the option that most closely matches their preferences aligns with their individual consumption habits. This approach enhances the accuracy of dietary recall and portion size estimation in nutritional studies and publications.^{[11][12]}

Ethical considerations and official approvals

Written permission was obtained from each woman diagnosed with PCOS before collecting data, and each woman who met the inclusion criteria was interviewed. Before the interview, the aim of the study was explained and their privacy was taken into consideration; all information was kept confidential. Administered approvals were granted from:

- Scientific council of the Arabic board for health specializations.
- Al-Karkh health directorate.

Statistical Analysis

This study employs the statistical package for the social sciences (SPSS) version 26 for data management and analysis. The chi-square test is applied to examine association between variables, with statistical significance determined at a p-value of less than 0.5.

RESULTS

Table 1 outlines the characteristics of 250 study participants, with a mean age of 28.6 years. Most were aged 26–35 (54.4%) and married (56.4%). Education levels varied, with 57.6% holding college degrees. Employment status showed 53.2% employed. The mean BMI was 27.2 kg/m², with 44.8% overweight and 25.6% obese. Nearly half had a moderate waist/hip ratio, indicating a significant risk for central obesity-related health issues.

Table 1: Socio-demographic and Anthropometric Characteristics of the Study Participants (N=250)

Variables	no	%
Age Group (years) Mean $\pm$ SD: 28.6 $\pm$ 5.6 (min = 17, max = 44)		
18–25	87	34.8
26–35	136	54.4
36–45	27	10.8
Marital Status		
Married	141	56.4
Unmarried	102	40.8
Divorced & widowed	7	2.8
Education Level		
Illiterate	6	2.4
Primary education	30	12.0
Intermediate education	18	7.2
Secondary education	40	16.0
College or institute degree	144	57.6
Master's degree or higher	12	4.8
Employment Status		
Employed	133	53.2
Unemployed	117	46.8
BMI Category Mean $\pm$ SD: 27.2 $\pm$ 4.5 (min = 17, max = 40.6)		
Underweight	6	2.4
Normal	68	27.2
Overweight	112	44.8
Obese	64	25.6
Waist/Hip Ratio Category		
($\leq$ 0.80) Low risk	81	32.4
(0.81- 0.85) Moderate risk	121	48.4
($\geq$ 0.86) High risk	48	19.2

Table 2 outlines the clinical and menstrual history of PCOS participants. Most diagnoses were via ultrasound (69.2%), with 43.2% reporting severe symptoms. Menarche typically occurred at ages 13-14 (49.6%).

Menstrual cycle lengths varied, with 41.6% having cycles of 20-40 days. Additionally, 47.2% experienced heavy menstrual bleeding, while 52.8% did not.

Table 2: Clinical and Menstrual History Characteristics of Study Participants with PCOS (N=250)

Variables	No	%
PCOS Diagnosis Basis		
Ultrasound	173	69.2
Hormonal blood test	40	16.0
Clinical symptoms	37	14.8
PCOS Symptom Severity		
None	21	8.4
Mild	65	26.0
Moderate	56	22.4
Severe	108	43.2
Age of Menarche (in years)		
11–12	105	42.0
13–14	124	49.6
15–16	21	8.4
Cycle Length (in days)		
20–40	104	41.6
41–60	60	24.0
61–80	59	23.6
81–100	27	10.8
Heavy Bleeding Experience		
Yes	118	47.2
No	132	52.8

Table 3 shows that among 250 participants, 78.8% believe diet affects PCOS management, while 14% do not. Only 20.8% received dietary counseling, primarily

from doctors (71.2%). A significant 92.8% expressed interest in nutritional guidance.

Table 3: Perceptions and Practices Regarding Dietary Impact on PCOS.

Variables	no	%
Diet Role in Managing PCOS		
Yes	197	78.8
No	35	14.0
Not sure	18	7.2
Received Dietary Counseling		
Yes	52	20.8
No	198	79.2
Counseling Source (N = 52)		
Doctor	37	71.2
Internet	15	28.8
Interested in Nutritional Guidance		
Yes	232	92.8
No	18	7.2

Table 4 shows the dietary intake of study participants: 6.0% met caloric needs, 35.2% exceeded, and 58.8% fell short. In dietary categories, 38.0% had a balanced diet, while 32.0% had carbohydrate imbalances, 22.8% had

fat imbalances, and 7.2% had protein imbalances. Regarding food quantity, 49.6% consumed their usual amount, 43.6% consumed less, and 6.8% consumed more than usual.

Table 4: 24-Hour Dietary Intake among Study Participants (N=250).

Variables	no	%
Caloric Intake vs. Requirements		
Equal	15	6.0
More	88	35.2
Less	147	58.8
Dietary Intake Category		
Balanced diet	95	38.0
Imbalanced carbohydrates	80	32.0
Imbalanced fat	57	22.8
Imbalanced protein	18	7.2
Food Amount Consumed		
Usual amount	124	49.6
Less than amount	109	43.6
More than amount	17	6.8

Table 5 compares participants' dietary intake to WHO guidelines. The average daily calorie intake was 1630 Kcal, below the recommended 2000 Kcal ($p < 0.001$). Participants consumed 6.8 bread and sweet servings (recommended 6.0), but fell short in vegetables (1.5 vs.

2.5), fruits (0.9 vs. 2.0), milk (1.0 vs. 3.0), and meat (3.0 vs. 5.5), while fat servings were slightly below the recommendation (4.7 vs. 5.5) with all differences statistically significant ($p < 0.001$).

Table 5: Comparison of Dietary Intake with WHO Recommendations			
Daily Calorie Intake	Participants Diet Calories Kcal	WHO Recommended Calories Kcal	P- value*
	Mean =1630 Kcal	Mean = 2000kcal	<0.001
Food Groups	Mean Serving/Day	Mean Serving/Day	P- value
Bread & Sweet Serving	6.8	6.0	0.006
Vegetable Serving	1.5	2.5	<0.001
Fruit Serving	0.9	2.0	<0.001
Milk Serving	1.0	3.0	<0.001
Fat Serving	4.7	5.5	<0.001
Meat Serving	3.0	5.5	<0.001

t- Test, *statistically significant

Table 6 illustrates the link between BMI categories and PCOS symptom severity. Among underweight women, 33.3% reported no or mild symptoms. In the normal weight group, 11.8% had no symptoms, while 27.2% experienced varying severity. Overweight women

showed 44.8% with severe symptoms, and among obese women, 60.9% reported severe symptoms. The association between higher BMI and increased PCOS symptom severity was statistically significant ($P = 0.032$).

Table 6: Association between BMI Categories and PCOS Symptom Severity.

BMI Category	PCOS Symptom Severity				Total 250 (100.0)	P-value
	None 21 (8.4)	Mild 65 (26.0)	Moderate 56 (22.4)	Severe 108 (43.2)		
Under weight	2 (33.3)	2 (33.3)	1 (16.7)	1 (16.7)	6 (2.4)	0.032*
Normal Weight	8 (11.8)	23 (33.8)	19 (27.9)	18 (26.5)	68 (27.2)	
Over weight	7 (6.3)	28 (25.0)	27 (24.1)	50 (44.6)	112 (44.8)	
Obese	4 (6.3)	12 (18.8)	9 (14.1)	39 (60.9)	64 (25.6)	

Chi-square test, *statistically significant

Table 7 presents data from 250 participants on BMI categories and dietary intake. Among them, 2.4% were underweight, 27.2% normal, 44.8% overweight, and 25.6% obese. A balanced diet was followed by 38%, with a significant association ($p = 0.043$) to BMI.

Imbalances in carbohydrate intake were noted in 32%, while fat and protein imbalances were 22.8% and 7.2%, respectively. Only carbohydrate intake showed a significant link to higher BMI categories.

Table 7: Association between BMI Categories and Dietary Intake Patterns.

Dietary Intake	BMI Categories				Total 250 (100.0)	p-value
	Underweight 6 (2.4)	Normal 68 (27.2)	Overweight 112 (44.8)	Obese 64 (25.6)		
Balanced Diet	2 (2.1)	32 (33.7)	42 (44.2)	19 (20.0)	95 (38.0)	0.043*
Imbalance Carb	1 (1.3)	24 (30.0)	38 (47.5)	17 (21.3)	80 (32.0)	
Imbalance Fat	2 (3.5)	10 (17.5)	25 (43.9)	20 (35.1)	57 (22.8)	
Imbalance Protein	1 (5.6)	2 (11.1)	7 (38.9)	8 (44.4)	18 (7.2)	

Chi-square test, *statistically significant

Table 8 shows the relationship between Waist-to-Hip Ratio (WHR) risk categories and dietary patterns among 250 participants. Of these, 32.4% were low risk, 48.8% moderate, and 18.8% severe. A balanced diet was reported by 38.0%, with moderate risk participants most

represented. Carbohydrate imbalance affected 32.0%, fat imbalance 22.8%, and protein imbalance 7.2%. A significant association was found between WHR risk and dietary intake ($p=0.009$), highlighting the impact of diet on WHR risk.

Table 8: Association between WHR Risk Categories and Dietary Intake Patterns.

Dietary Intake	WHR Risk Category			Total 250 (100.0)	p-value
	Low 81 (32.4)	Moderate 122 (48.8)	High 47 (18.8)		
Balanced Diet	31 (32.6)	46 (48.4)	18 (18.9)	95 (38.0)	0.009*
Imbalance Carb	26 (32.5)	39 (48.8)	15 (18.7)	80 (32.0)	
Imbalance Fat	18 (31.6)	28 (49.1)	11 (19.3)	57 (22.8)	
Imbalance Protein	6 (33.3)	9 (50.0)	3 (16.7)	18 (7.2)	

Chi-square test, *statistically significant

Table 9 illustrates the link between education level and awareness of diet's role in PCOS management. Awareness increased with education: 50% among

illiterates, 70% in primary, 66.7% in intermediate, 75% in secondary, 82% in graduates, and 91.7% in

postgraduates. The association between higher education and awareness was statistically significant ($P = 0.017$).

Table 9: Association between Education Level and Dietary Awareness.

Education Level	Diet Role in PCOS Management			Total n (%)	P-value
	Yes 197 (78.8)	No 35 (14.0)	Not Sure 18 (7.2)		
Illiterate	3 (50.0)	2 (33.3)	1 (16.7)	6 (100)	0.017*
Primary education	21 (70.0)	6 (20.0)	3 (10.0)	30 (100)	
Intermediate education	12 (66.7)	4 (22.2)	2 (11.1)	18 (100)	
Secondary education	30 (75.0)	7 (17.5)	3 (7.5)	40 (100)	
College or institute degree	120 (82.0)	15 (10.4)	9 (7.6)	144 (100)	
Master's degree or higher	11 (91.7)	1 (8.3)	0 (0.0)	12 (100)	

Chi-square test, *statistically significant

Table 10 presents data on caloric intake relative to requirements among 250 women with varying PCOS symptom severity. Only 6% had equal intake, while 35.2% consumed more and 58.8% less. Among symptom groups, those with no symptoms had 9.5% equal intake,

mild symptoms had 7.7%, moderate had 7.1%, and severe had 3.7%. The association between symptom severity and caloric intake was statistically significant ($P = 0.023$).

Table 10: Association between PCOS Symptom Severity and Caloric Intake Pattern.

PCOS Symptom Severity	Caloric Intake vs. Requirements			Total 250 (100.0)	P-value
	Equal 15 (6.0)	More 88 (35.2)	Less 147 (58.8)		
None	2 (9.5)	4 (19.0)	15 (71.5)	21 (8.4)	0.023*
Mild	5 (7.7)	20 (30.8)	40 (61.5)	65 (26.0)	
Moderate	4 (7.1)	20 (35.7)	32 (57.2)	56 (22.4)	
Severe	4 (3.7)	44 (40.7)	60 (55.6)	108 (43.2)	

Chi-square test, *statistically significant

This comprehensive nutritional assessment of 250 women with PCOS attending outpatient clinics in Baghdad represents one of the largest studies examining the relationship between dietary patterns and PCOS manifestations in Iraq. The findings reveal significant nutritional inadequacies and highlight the complex interplay between dietary habits, anthropometric measures, and PCOS symptom severity in this population.

The study demonstrated that 70.4% of participants were overweight or obese, with a mean BMI of 27.2 ± 4.5 kg/m², which aligns with the established association between PCOS and metabolic dysfunction. Importantly, 48.4% exhibited moderate waist-hip ratios, indicating central obesity patterns that are particularly concerning for insulin resistance development. The dietary analysis revealed substantial deviations from WHO recommendations, with participants consuming significantly fewer calories (1630 vs 2000 kcal), vegetables (1.5 vs 2.5 servings), fruits (0.9 vs 2.0 servings), and dairy products (1.0 vs 3.0 servings) than recommended. These findings confirm the hypothesis that women with PCOS in Baghdad exhibit compromised nutritional status that may exacerbate their condition.

The frequency of overweight and obesity (70.4%) in our PCOS cohort exceeds rates reported in previous Iraqi

studies of the general female population, where obesity frequency ranges from 35-45%.^{[11][12]} This disparity underscores the metabolic burden specifically associated with PCOS.

Globally, our results align with international observations. A large European multicenter study reported 61% overweight/obesity prevalence in PCOS patients^[13], while Australian research documented 75% prevalence.^[14] The slightly higher rates in Middle Eastern populations may reflect cultural dietary patterns characterized by refined carbohydrates and reduced physical activity levels.^[15]

The dietary inadequacies observed in our study are particularly concerning when compared to international standards. The low vegetable and fruit consumption (1.5 and 0.9 servings respectively) falls well below recommendations and is consistent with regional dietary surveys. A recent systematic review of Middle Eastern dietary patterns reported similar deficiencies in micronutrient-rich foods among women of reproductive age.^[16] However, our PCOS cohort showed even greater deviations, suggesting that hormonal and metabolic disruptions may further compromise dietary quality.

The significant association between BMI categories and PCOS symptom severity ($p=0.032$) corroborates findings

from international literature. A meta-analysis of 35 studies demonstrated that each unit increase in BMI was associated with 3.7% increase in PCOS symptom severity.^[17]

Similarly, our finding that 60.9% of obese participants experienced severe symptoms compared to 26.5% in normal-weight individuals reflects the established dose-response relationship between adiposity and PCOS manifestations.

The reliance on internet sources for nutritional information (28.8% of counseled participants) raises concerns about misinformation and highlights gaps in healthcare delivery.

The pattern of caloric intake versus requirements showed that 58.8% consumed less than needed while 35.2% consumed more, creating a polarized distribution. This bimodal pattern contrasts with the normal distributions commonly observed in general population studies and may indicate the metabolic variability among PCOS phenotypes. Women with insulin-resistant PCOS may experience appetite dysregulation that promotes overeating, whereas those with inflammatory phenotypes may demonstrate reduced appetite.

These findings have significant implications for clinical practice in Iraq and similar resource-limited settings. The high prevalence of dietary inadequacies suggests that routine nutritional assessment should be integrated into PCOS management protocols. The strong association between BMI and symptom severity reinforces the importance of weight management as a primary therapeutic target.

The low rate of dietary counseling (20.8%) represents a critical gap in care delivery. Implementing structured nutrition education programs could potentially improve outcomes, given that 92.8% of participants expressed interest in receiving guidance. The education-awareness gradient suggests that tailored interventions accounting for literacy levels may enhance effectiveness.

The finding that carbohydrate imbalance was most common (32.0% of participants) supports the implementation of low-glycemic index dietary approaches, which have demonstrated efficacy in PCOS management. However, the concurrent deficiencies in protein and healthy fats indicate the need for comprehensive dietary restructuring rather than single-nutrient modifications.

CONCLUSIONS

Women diagnosed with Polycystic Ovary Syndrome in Baghdad exhibit suboptimal nutritional status alongside a high prevalence of overweight and obesity. The observed diet quality is notably deficient relative to established international dietary guidelines. Consequently, this investigation strongly advocates for the implementation

of regular nutritional assessments, the integration of specialized dietitians into the treatment protocol, and the promotion of culturally sensitive, healthy eating patterns.

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