

Dietary and physical activity patterns among patients with polycystic ovary syndrome

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Objective: To determine the prevalence of Polycystic Ovarian Syndrome in women's dietary habits and their physical activity patterns.

Methodology: This observational cross-sectional study was conducted in Department of Gynecology, Pakistan Railway Hospital, Rawalpindi and included 106 diagnosed Polycystic Ovary Syndrome (PCOS) female patients aged >18 years with non-probability convenient sampling. The study was carried out from January to June 2019. We used a modified questionnaire to measure the level of obesity and physically inactivity, followed with the Rapid

Assessment of Physical Activity Scale for measuring patterns of physical activity in their dietary habits.

Results: Women with PCOS followed a sedentary lifestyle and were not physically active. Among the sample, 83% of females were reluctant from performing physical activity.

Conclusion: The majority of PCOS Patients fall in high-risk obesity, in terms of waist-hip ratio. They do not follow any special diet for weight reduction. Most of them perform only light physical activity. (Rawal Med J 202;46:173-175).

Keywords: BMI, ovary syndrome, waist hip ratio.

INTRODUCTION

Polycystic ovarian syndrome (PCOS) is a common endocrine disease in premenopausal women. It is correlated with issues of infertility, clinical symptoms of hyper androgenism, and metabolic diseases, especially obesity, and insulin resistance.¹ In there is "Presence of 12 or more follicles in each ovary 2–9 mm in diameter and/or increased ovarian volume (>10 mL). This does not refer to people who are on oral contraceptives.² Typical characteristics are irregular menstruation along with difficulties with ovulation and trouble in conceiving, and the cause for women seeking medical advice is attributable to the high secretion of androgenic hormones that result in hirsutism, obesity, acne, and sometimes alopecia.³ There is a strong genetic component that is influenced by lifestyle, gestational environment, or both.⁴

With both diet control and simple moderate physical activity that includes structured exercise at least 30min/day helps in weight loss and improve clinical outcomes in comparison to diet alone.⁵ The most frequent cause of infertility and anovulation in obese patients is PCOS characterized by obesity, and increased waist to hip ratio. The relative risk of infertility is high in patients with BMI ≥ 27 .

Bodyweight reduction of as little as 5 percent tends to restore ovulation of obese patients with or without PCOS.⁶ BMI ranges defined as: underweight (<19 kg/m²), average weight (19.1-24.9 kg/m²), overweight (25-29.9 kg/m²) and obese (~30 kg/m²).⁷ The purpose of this study was to evaluate the eating behaviors and their physical activity of women with PCOS.

METHODOLOGY

This observational cross-sectional study was carried out in the Gynecology Department of Pakistan Railway Hospital, Rawalpindi. It included 106 diagnosed PCOS females using non-probability convenient sampling technique. The study was carried out from January to June 2019. The Inclusion criteria consisted of the participants, who were diagnosed PCOS, females >18 years age and patients of both rural and urban areas. Subjects with other comorbidities and other ovarian disease were excluded from the study. Ethical considerations were ensured during the data collection period.

A validated Questionnaire was redesigned after the extensive literature review in which Rapid Assessment of Physical Activity Scale (RAPA) was used for measuring the level of physical activity of

patients. Age, dietary, BMI, and physical activity patterns were taken as the dependent variables.

Statistical Analysis: Statistical analysis was performed using SPSS version 17. The descriptive statistics and demographics were categorized in the form of Bar charts and Pie charts.

RESULTS

Mean age of patients was 23.4 ± 3.38 years. Waist Hip Ratio in which most of the patients were at high risk (Fig. 1). Majority did not follow dietary principles and physical activity levels that can idealize the prevention of disease and symptom management (Fig. 2). About 83% of females never do any physical activity and about 23% of females rarely do physical activity. In BMI categories, 42% were overweight, whereas only 1% were categorized in class 3 obese.

Fig 1. Waist Hip Ratio.

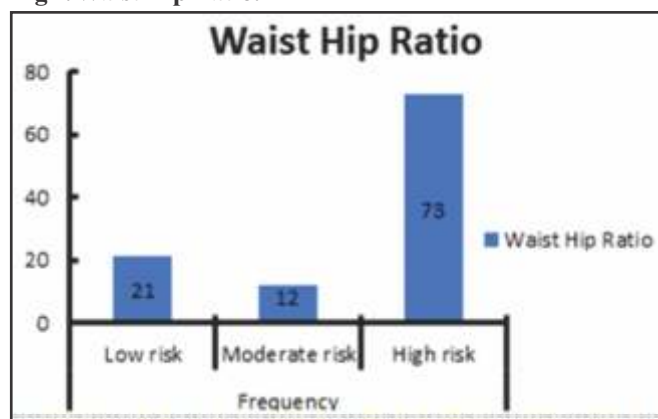


Fig 2. Follow special diet.

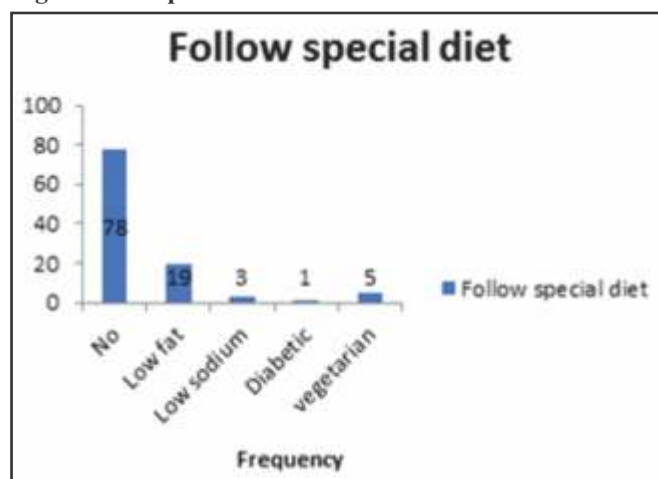
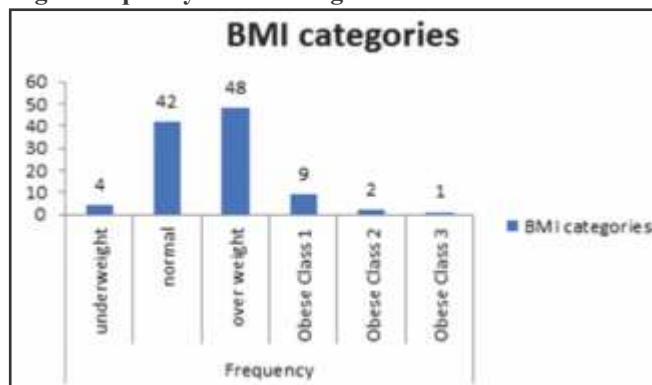


Fig 3. Frequency of BMI categories.



DISCUSSION

Our study had mean BMI of PCOS ladies of 25.1. A study by Hoeger et al had mean BMI of >39 .⁸ As per a cross-sectional study by Chin et al on proper BMI levels for PCOS patients, they inferred that the extent of PCOS patients with a BMI over 23 kg/m² was 34.63%.⁹ Even though a former study by Diamanti-Kandarakis likewise presumed that the expanded weight and stomach adiposity further aggravate the clinical, hormonal, and metabolic boundaries in PCOS.¹⁰

This cross-sectional study results indicated that WHR is (2.4 ± 0.80) having contrasted with a review study by Pasquali R et al in which WHR was utilized to characterize various examples of fat geography was fundamentally higher in PCOS ladies for example (0.84 ± 0.10).¹¹ Our study findings are consistent with results of Barr et al, who found that 53% of ladies with PCOS had a BMI >25 kg/m² having presumed that 45.3% of ladies with PCOS having a BMI >25 kg/m².¹²

In current research as indicated by BMI, the recurrence pace of PCOS in underweight, ordinary weight, overweight and fat ladies were 3.8%, 39.6%, 45.3%, and 11.3%, as contrasted and the after effects of examination by Bulent et al, the pervasiveness pace of PCOS to be underweight = 8.2%, typical weight = 9.8%, overweight = 9.9% And stout = 9.0% respectively.¹³ This study results found the heftiness rate to be 97%, associating with research by Vrbikova and Hainer who found that 30-70% of PCOS patients were obese.¹⁴

CONCLUSION

PCOS patients were mostly obese and the majority

of them had pear-shaped obesity. They did not follow any special diet for weight reduction. Most of them performed only light physical activity. It is recommended that they should aim at the quantity and quality of fat and carbohydrate modification in their dietary intake.

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REFERENCES

1. Lenart-Lipińska M, Matyjaszek-Matuszek B, Woźniakowska E, Solski J, Tarach JS, Paszkowski T. Polycystic ovary syndrome: clinical implication in perimenopause. *Przegląd menopauzalny. Menopause Rev* 2014;13:348-54.
2. Cheung AP, Chang RJ. Polycystic ovary syndrome. *Clin Obstet Gynecol* 1990;33:655-7.
3. Kovacs GT. Polycystic ovarian disease: an overview. *Rev Gynecol Pract* 2004;4:97-104.
4. Norman RJ, Dewailly D, Legro RS, Hickey TE. Polycystic ovary syndrome. *The Lancet* 2007;370:685-97.
5. Teede H, Deeks A, Moran L. Polycystic ovary syndrome: a complex condition with psychological, reproductive and metabolic manifestations that impacts on health across the lifespan. *BMC Med* 2010;8:1-0.
6. Teitelman M, Grotegut CA, Williams NN, Lewis JD. The impact of bariatric surgery on menstrual patterns. *Obes Surg* 2006;16:1457-63.
7. Norman RJ, Moran LJ. Diet and Lifestyle Factors in the Etiology and Management of Polycystic Ovary Syndrome. In: *Insulin Resistance and Polycystic Ovarian Syndrome* 2007;147-62.
8. Hoeger KM, Kochman L, Wixom N, Craig K, Miller RK, Guzick DS. A randomized, 48-week, placebo-controlled trial of intensive lifestyle modification and/or metformin therapy in overweight women with polycystic ovary syndrome: a pilot study. *Fertil Steril* 2004;82:421-9.
9. Chen X, Ni R, Mo Y, Li L, Yang D. Appropriate BMI levels for PCOS patients in Southern China. *Hum Reprod* 2010;25:1295-302.
10. Diamanti-Kandarakis E. Role of obesity and adiposity in polycystic ovary syndrome. *Int J Obes* 2007;31:8-13.
11. Pasquali R, Casimirri F, Cantobelli S, Labate AM, Venturoli S, Paradisi R, et al. Insulin and androgen relationships with abdominal body fat distribution in women with and without hyperandrogenism. *Horm Res Paediatr* 1993;39:179-87.
12. Barr S, Hart K, Reeves S, Sharp K, Jeanes YM. Habitual dietary intake, eating pattern and physical activity of women with polycystic ovary syndrome. *Eur J Clin Nutr* 2011;65:1126-32.
13. Yildiz BO, Knochenhauer ES, Azziz R. Impact of obesity on the risk for polycystic ovary syndrome. *J Clin Endocrinol Metab* 2008;93:162-8.
14. Vrbikova J, Hainer V. Obesity and polycystic ovary syndrome. *Obes Facts* 2009;2:26-35.