

PREVALENCE OF POLYCYSTIC OVARIES SYNDROME IN REPRODUCTIVE AGE WOMEN IN DISTRICT CHARSADDA

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Abstract

Introduction: Polycystic Ovary Syndrome (PCOS) is multifactorial disorder that is associated with the infertility in reproductive aged women. The main aim of this study is to know the prevalence of PCOS in the infertile women in district Charsadda. Material and methods: The study is based on hospital-based data collected from women with age group from 18 to 45 years that were seeking medical help for conception. Ultrasound examination and androgen level test were used for the diagnosis. Results: Out of the total 300 women 69 (23%) were confirmed to have PCOS by ultrasound and androgen tests. Age group, location and the level of education were not significantly associated with the disorder, while the menstrual cycle irregularity and socio-economic status was significantly related with the prevalence of PCOS in this population. Conclusion: the study sows that PCOS is a significant factor that is associated with the infertility in this population. There is a need for the knowledge and awareness of the population for the diagnosis and treatment so the associated conditions such as infertility, metabolic syndrome, insulin resistance may be prevented.

1. INTRODUCTION

Polycystic Ovary Syndrome (PCOS) is endocrine disorder and is multifactorial in origin. It affects 8-13% of reproductive aged women globally that depends the use of diagnostic criteria (Teede et al., 2018). Stein and Leventhal described PCOS for the first time in 1935 as a major cause of ovulation failure and infertility. Generally, PCOS have three main features, that elevated level of male hormone in blood or hyperandrogenism, ovulation failure, and many cysts in ovaries when observed in ultrasound (Fauser et al., 2012). Generally, the Rotterdam criteria is used for the PCOS diagnosis that are based on at least three characteristics, (Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group, 2004).

Despite of most common cause of infertility, and the more research in the field, still the exact cause of

PCOS is not fully understood. Some evidence shows that genetic predisposition, environmental agents and lifestyle factors together contribute to the disease (Goodarzi et al., 2011). Women with PCOS also shows insulin resistance and hyperinsulinemia, due to which the level of androgen production increases in body that in turns develop metabolic syndromes and ovarian dysfunction (Dunaif, 1997). Moreover, central obesity also triggers the effects of PCOS although lean women can also be affected.

Not only reproductive disorder, PCOS is now recognised as recognized as a systemic condition with significant metabolic, cardiovascular, and psychological implications. The risk of insulin resistance, metabolic syndrome, cardiovascular abnormalities, hypertension, and dislipidemia are increased in women with PCOS (Lim et al., 2012).

Such women are more prone to anxiety, depression, sleep disturbance, and low quality of life (Dokras et al., 2018). If not treated, can cause endometrial hyperplasia or cancer due to prolonged exposure to oestrogen resulting from chronic anovulation (Teede et al., 2018).

Due to multiple cause and multifactorial in origin the treatment for PCOs must be personalised and should use multidisciplinary approaches. That may include, improving lifestyle, medicine, and psychological counselling. That include diet, exercise, meditation, and keeping healthy weight (Moran et al., 2011). Specific symptoms are treated with oral contraceptive, anti-androgen, and metformin (insulin sensitizers). Women usually have delayed diagnosis and treatment due to limited information and awareness about the disease. This shows the need for the public health education and awareness (Teede et al., 2018).

Early detection of the condition is crucial for the timely treatment and management. So that not only it improves the reproductive outcome, but also decrease the risks of metabolic syndrome and improve overall health.

The present study aims to determine the prevalence of PCOS in the reproductive-age women that are

seeking medical help for conception in District Charsadda.

2. Material and methods

A total of 300 married reproductive age women of age group 18 to 45 visiting hospitals and gynaecologic clinics for difficulty in conception (primary or secondary infertility) were selected for this study. The participants were belonging to different areas of Charsadda. Rotterdam Detailed questionnaire was used for sociodemographic data collection. Informed consents were obtained, the ethical guidelines set by the Declaration of Helsinki is followed. and the participants were informed that their contribution is totally volunteer.

Ultrasound examination and blood hormonal tests were performed by health professionals to confirm the PCOS. Criteria (2003) criteria were used that requires 2 of 3 of oligo/anovulation, hyperandrogenism, polycystic ovaries on ultrasound. The data were arranged on the basis of different demographic characters (Table 1). The percent prevalence were calculated by the formula given below. Chi-square values calculated and $P < 0.005$ were considered significant.

Prevalence rate:

$$\text{Prevalence (\%)} = \frac{(\text{Number of women diagnosed with PCOS})}{\text{Total number of women assessed}} \times 100$$

$$= 69/300 \times 100 = 23\%$$

3. Results

The result showed 23 percent of the total prevalence of PCOS in these population of Charsadda. Of these positive cases the history of irregular menstrual cycle was significant with a p value of 0.025. while difference in prevalence on the bases of location, education level and having children or not was not significant in this population. However, the differences of economic status of the positive participants were also significant in this population (Table 2).

Table 1. Sociodemographic characteristics of the sample population, N = 300

Characteristics		N (%)
Age group		
	≤ 35	185(61%)
	> 35	115 (39%)
Location		
	Rural	170 (56.6%)

	Urban	130 (43.3%)
Education		
	Illiterate	191 63.6(%)
	SSC/matriculate	85 (19.3.%)
	Graduate	24 (14%)
Economic status		
	Low	70 (23.3%)
	Middle	201 (67%)
	Higher	29 (9.6%)
Children		
	Yes	71(5.6%)
	No	229 (76%)
History of menstrual irregularities		
	Yes	192 (64%)
	No	108 ((36%)

Table 2. Prevalence of PCOS respect of different demographic characteristics

Characteristics		Positive	Percentage %	Chi square p. value
Age group		69/300		
	≤ 35	41	59.4	0.66.
	> 35	28	40.6	
Location				
	Rural	35	50.7	0.256.
	Urban	34	49.3	
Education				
	Illiterate	40	58.0	0.504
	SSC/matriculate	22	31.9	
	Graduate	7	10.1	
Economic status				
	Low	24	34.8	< 0.0001)
	Middle	32	46.4	
	Higher	13	18.8	
Children				
	Yes	14	20.3	0.45.
	No	55	79.7	
History of menstrual irregularities				
	Yes	52	75.4	0.025.
	No	17	24.6	

4. Discussion

This study showed 23% PCOS among infertile women, consistent with the finding of other studies

conducted in different areas and location of the world. The prevalence in the general population is lower however in the infertile women group there is

significantly higher of women with PCOS as it is a recognised cause of infertility worldwide. A cross-sectional study in Peshawar reported 59.8% prevalence in women with infertility that is substantially higher than our findings (Raheem et al., 2024). This elevated rate may reflect a referral-based population with more pronounced symptoms or diagnostic rigor

A prevalence of PCOS ranged from 20% to 33% were reported by a 2020 systematic review and meta-analysis this study showed that among infertile women, this prevalence of PCOS (20% to 33%), depends on diagnostic criteria and region (Ding et al., 2020). In Iran Tehrani et al reported 28.3% (Tehrani et al., 2014), while Nidhi et al in India reported 22.5% prevalence in a hospital-based study (Nidhi et al., 2011).

This study results (23% prevalence in infertile women) support the well-recognised association between infertility and PCOS. Furthermore, a significant association between PCOS and irregular menstrual cycle was also determined in this study. Previous study by Lizneva et al. (2016) indicated that oligomenorrhea is associated with PCOS in 85% women. In one other cohort from the South Asia indicated that menstrual cycle abnormality is associated with 90% cases of PCOS (Deswal et al., 2020).

Our study also indicated significant association of economic status with PCOS cases. Globally, socioeconomic status and other socio demographic characters are catching the attention of researchers in association with PCOS. High income status may improve life style, access to health care and receiving medical help and improves diagnosis due to accessibility to health care facilities. However, in low-income population the diagnosis is low due to unavailability of resources and access to healthcare. Additionally, the scarcity of knowledge and awareness also contribute to underdiagnosis.

5. Conclusion

The prevalence of PCOS in the infertile women of Charsadda is 23% comparable with worldwide studies from infertile women. This study provides a population-specific insight in the disease. However, the study may have limitation due to small population size. Further studies with larger samples

size and specific risk factors for this population is required.

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