

Prevalence and awareness of polycystic ovarian syndrome among medical students of Karachi, Pakistan.

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A B S T R A C T

Introduction: PCOS is the most common condition experienced by females of reproductive age across all ethnicities and cultures worldwide. The term "polycystic" refers to several cysts or many cysts, each harboring an immature egg.

Objective: The objective of this study is to determine the prevalence and awareness among female medical students regarding polycystic ovarian symptoms in Karachi.

Methodology: A cross-sectional study was conducted with a sample of 377 medical students, and data was collected using a questionnaire-based survey.

Results: The results revealed that 77.2% of participants showed awareness of PCOS. 10.9% were diagnosed with PCOS, and all of them were taking medication for this syndrome. However, 63.9% had regular menstrual cycles.

Conclusion: Most of the sample population was aware of PCOS. 10.9% were diagnosed with PCOS.

Keywords: Awareness, Female medical students, Polycystic Ovary Syndrome.

Introduction

Polycystic Ovarian Syndrome (PCOS) is known to be the most common condition experienced by females of reproductive age across all ethnicities and cultures worldwide.¹ Several cysts are present in the ovary containing immature eggs. As the eggs are immature, ovulation does not occur. This leads to alteration in levels of estrogen, progesterone, FSH, and LH. On the other hand, androgen will be higher than usual, but estrogen and progesterone will be lower.^{2, 3} The leading cause of PCOS is uncertain; however, many researchers have recognized that changing lifestyles like dietary changes, lack of exercise, insulin resistance and genetic predisposition may also lead to PCOs.⁴ Although previously believed to be an endocrine condition, PCOS is a broad-spectrum, multi-organ syndrome whose symptoms extend beyond the reproductive system and lead to significant metabolic disorders as well as

psychological consequences.⁵ There is a vast diversity in the symptoms of PCOS; these may include sleep apnea,⁵ hirsutism,⁶ amenorrhea,⁷ oligomenorrhea,⁸ acne,⁹ anxiety, depression,¹⁰ obesity¹¹ and type II diabetes.¹²

The widely used criteria for diagnosis of PCOS are Rotterdam Criteria.¹³ Three features out of these two need to be present to confirm the diagnosis. These features are Oligomenorrhea or Amenorrhea and Hyperandrogenism, whether based on clinical findings or biological signs. Lastly, the presence of poly cysts on ultrasound scans. Most physicians use the Rotterdam Criteria for diagnosis.¹⁶ Many of the patients suffering from PCOS have psychosocial impairments as well, but these are not well acknowledged. Many young physicians are likely to prescribe lifestyle modification along with medication for improvement in the condition.^{16, 17} There are comorbidities related to the cardio-metabolic system

which are found to be associated with PCOS. Along with this, anxiety and depression were also associated with PCOS.¹⁸ Quality of life is significantly affected by different symptoms.¹⁹ A misperception regarding the condition is present among the population.²⁰ Studies show that females are well aware of the term²¹ but a lack of awareness is found regarding complications associated with PCOS.²² Also, females suffering from the condition tend to neglect to visit a gynecologist until and unless the condition becomes life-threatening.²³ An increase in BMI may tend to be a risk factor.²⁴ It is also reported that early detection and diagnosis of PCOS may help improve the individual's quality of life.²⁵

The condition is very common however, according to Tahir H et al., among MBBS & BDS students, the prevalence of PCOS is 11.2%, and most of them seek treatment. Family history, diabetes, hypertension and other endocrine disorders have positive associations with the condition.²⁶ Zulfiqar S et al. showed that around 50% of females have suffered from one or other features of PCOS like obesity, facial hair growth, irregular periods/ menstrual flow, acne, etc.²⁷ Zafar et al. showed that its prevalence is 55.41% in the general population with the most common complaint to be irregularity in menstruation, hirsutism, acne obesity and infertility. Most of the patients suffering from PCOS are either overweight or obese. In recent years, its incidence has increased. Lifestyle changes have also rapidly changed in recent years. The dietary patterns and habits have altered a lot. All these changes also have effects on hormonal disturbances. These may directly or indirectly lead to the development of PCOS.²⁸

PCOS has many symptoms that directly or indirectly affect the individuals' performance and quality of life.¹⁹ Although people are aware of the term and suffer from various symptoms related to it.²⁸ PCOS is a misdiagnosed problem of reproductive-age females.²⁹ This study was planned to check the prevalence and awareness of PCOs among the medical students of Karachi, Pakistan, comprising MBBS, BDS and DPT.

Methodology

It was a quantitative cross-sectional study conducted through convenience purposive sampling

techniques from different medical universities in Karachi. The study duration was six months. The sample size was 377, which Rao Soft online sample size calculator determined. Undergraduate female medical students from the first to the final year were included. The questionnaire was adopted from Tahir H et al. 2020.²⁸ It was distributed among the recruited participants who fulfilled the inclusion criteria: female undergraduate medical students from their first to final year. Informed consent was signed. The data was analyzed using SPSS version 20, which calculated the descriptive statistics.

The study's permission was obtained by coding from the Institutional Ethical Review Committee, Isra Institute of Rehabilitation Sciences, Isra University Karachi Campus.

Results

The 377 female medical students were included in the study. Among them, 25.5% were from the first year, 24.7% from the second year, 28.9% from the third year, 9.8% from the fourth year and 11.1% from the fifth year. 77.2% of participants were aware of the term PCOS. 10.9% of the respondents were diagnosed with PCOS, and all of them were taking treatment for it (Figure 1 to 4).

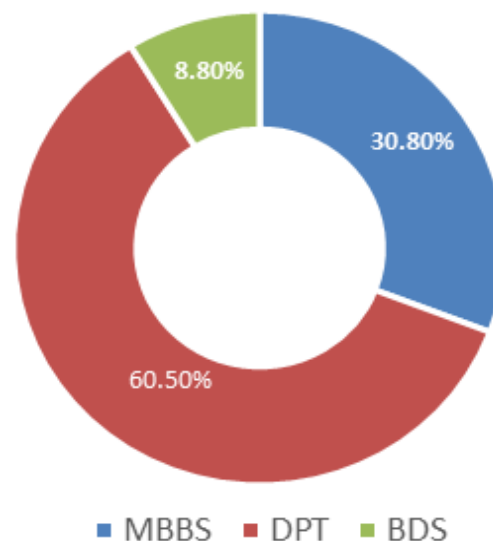


Figure 1: Distribution of respondents based on program of study

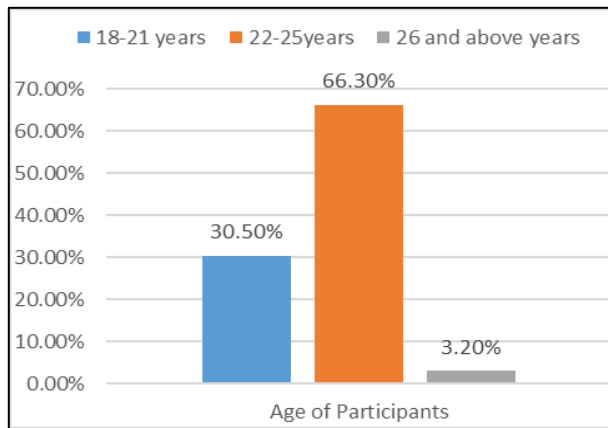


Figure 2: Age of Participants

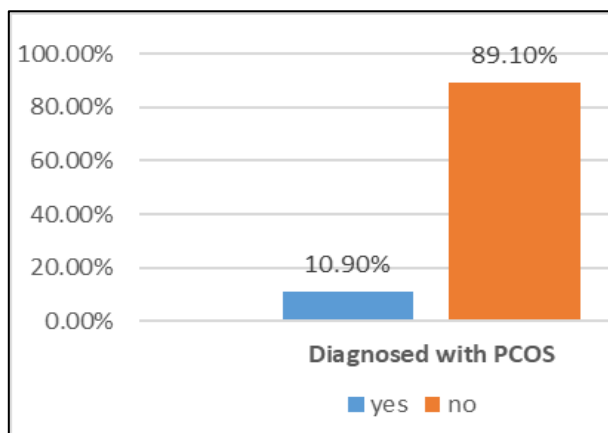


Figure 3: Diagnosed with Polycystic Ovary Disease

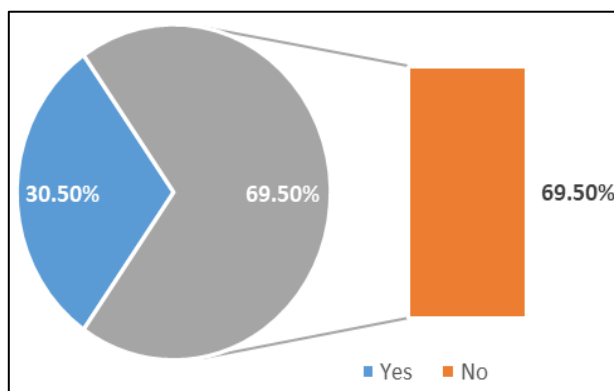


Figure 4: Responses regarding the question whether the participant's mother or at least one of your sisters also had similar symptoms

Discussion

According to one study, there is an effort to make better knowledge in students so that early cure and management of PCOS could be possible, while this study

suggests that 77.2% of participants were aware of the term PCOS.³² In another study, 74.5% of the individuals knew about the disease.²⁸ In this study, 28.10% of students heard about PCOS from University, 7.7% from hospitals, 14.6% from other people, 28.6% from the Internet or social media, 0.8% from television and 20% students were not aware at all, and Hamyel Tahir et al. found that 42.2% individuals aware from social media or Internet and the diagnosed cases was 11.2% while according to this study 10.9% of the participants was diagnosed with PCOS.²⁸

Madhumati Chatterjee and Soma Aditya Bandyopadhyay suggested in a study that about 28% of participants were at high risk of PCOS. 85% of cases suffered from irregular and inconsistent menstrual blood flow, 19% had excessive facial hairs, 41% faced acne problems, 63% were affected with emotional issues, and 22% of participants had a family history. While the results of this study, we found that 36.15 participants suffered from irregular menstrual cycles, 30% had acne, 58.1% experienced excessive facial or body hair, 41.4% faced hair loss, 37.7% suffered from excessive weight, 70% affected from mood swing, 58.9% disturbed from loneliness or lack of interest and got aggressive, 12.5% had change in voice quality, 44.8% involved with frequent headache, 39.8% affected from chronic low back pain, 56.5% get tired quickly and 53.1% had family history of diabetes, hypertension or other endocrine disorder.³³

According to one study, females having menorrhagia are affected by polycystic ovaries more than females having regular menstrual cycles.³³ In another research, generally worldwide, the quality of life of females is meaningfully affected due to PCOS.³² During teenage years, many psychological and bodily changes occur that coincide with the symptoms of PCOS. That might be a significant challenge in finding out during this age, but for an adult woman, there are diagnostic criteria.³⁵

One study shows that there is insufficient information and awareness about PCOS among medical and dental students. According to the results, 61.9% of the female students did not know enough about how this disease could be caused.³¹ As in this study, 89.10% of students were not diagnosed with PCOS. According to one research, 71.7% of students thought that the most typical

indication of PCOS is an irregular menstrual cycle. Another study suggested that 42.2% of female students got awareness about PCOS from social media and the Internet, and in this study, 28.60% of students were informed by social media and the Internet.²⁸

Sharifa M. Gaferi et al. suggested in their study that 66.3% of the females having PCOS were unaware of the hazards and symptoms of PCOS because of deficient discussions or awareness programs or social gatherings in the facilitation of female reproductive health in society at the school level and family.³³ While in this study, 20.20% of the female students had not heard at all about PCOS. Women are the core building blocks of society, family, and community. At childbearing age, there are many distresses faced by women physically and mentally, which can affect women's reproductive health related to PCOS and could cause the quality of life; hence awareness, enough knowledge about PCOS and a healthy lifestyle would help maintain reproductive health of females, and according to the study young females have not enough knowledge about PCOS and its early identification and prevention.³¹ In the literature, there is a lack of awareness about PCOS, which is an indication that unsuitable deeds affecting lifestyle might lead females to PCOS, while this research also indicates less knowledge and understanding among students about PCOS.³⁵

Table 1: Responses to questions related to symptoms

Items related to symptoms of PCOS	Yes (%)	No (%)
Do you suffer from irregular menstrual cycles or no menstrual cycles?	36.1	63.9
Do you suffer from acne or oily skin?	30.5	69.5
Do you experience excessive facial or body hair?	58.1	41.9
Do you suffer from hair loss or hair loss in a particular area of the hair?	41.4	58.6
Do you suffer from weight gain?	37.7	62.3
Do you suffer from mood swings?	70	30
Do you feel lonely, lose interest, or very aggressive frequently?	58.9	41.1
Do you experience frequent headaches or dizziness?	44.8	55.2
Do you suffer from chronic, frequent lower back pain?	39.8	60.2
Do you observe any change in voice?	12.5	87.5
Do you get tired quickly/or feel weak?	56.5	43.5
Do you have a family history of diabetes, hypertension or other endocrine disorders?	53.1	46.9

Conclusion

The results show that the level of awareness regarding PCOS among medical students is deficient. Furthermore, significant sources of understanding are universities and social media. Most participants had various associated symptoms, but only a few were diagnosed with PCOS. It is recommended that future studies include the male population to determine their level of awareness and knowledge regarding this female related issue and that awareness sessions should be conducted to overcome the dire need.

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