Original Article

Comparing Awareness Among Female Medical Versus Nonmedical Students Regarding Polycystic Ovarian Syndrome at Peripheral Center; A Cross Sectional Study

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Abstract

Objective: The objective of this study is to compare the awareness levels regarding Polycystic Ovarian Syndrome (PCOS) among female students studying in medical and non-medical fields at a peripheral center.

Methodology: The cross-sectional survey was conducted in Rawalpindi based institutions from Jan 2022 - June 2022, included females ages 18 to 25 from medical and non-medical institutes, excluding those receiving PCOS therapy. Through SPSS statistical analysis, frequency replies were collected and cross-tabulated. The Chi-square test calculated the significance.

Results: About 174 female students agreed to participate in the study. Among these female students, half of them were from medical universities. Medical students (MS) (88.50%) and non-medical students (nMS) (66.66%) reported having heard of PCOS. MS (27.58%) and nMS (25.28%) were aware that PCOS could alter their voice. MS (87.35%) and nMS (68.96%) were aware that PCOS might cause irregular or no menstrual cycles. MS (75.66%) and nMS (60.91%) were aware that PCOS might cause mood fluctuations.

Conclusion: The level of awareness of Polycystic Ovary Syndrome (PCOS) among non-medical students (nMS) in this study was significantly lower compared to their counterparts. This suggests an urgent need to enhance awareness of PCOS, given its significant health burden. Implementing awareness programs and incorporating PCOS and related disorders as essential topics in academic curricula, irrespective of the educational program, will facilitate early diagnosis and improved disease management.

Keywords: PCOS, Infertility, Polycystic Ovary, Endocrine disease

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Introduction

In reproductive age group Polycystic Ovarian Syndrome (PCOS) is the most frequent female endocrine illness globally and incidence is 52% among Pakistani Population. PCOS is related to various metabolic, cardiovascular, and psychological problems. PCOS is the commonest hormonal disturbances affecting female effecting affecting 4-18% women of reproductive age globally and in 52% of Pakistani population living in UK.[1] PCOS is associated with multiple metabolic, cardiovascular, and psychiatric disorders, and its impact on physical and mental health is well documented in the literature.[2] It is a clinical condition characterized by anovulation or oligoovulation, hyperandrogenism, and the presence of polycystic ovaries detected by ultrasound.[3] Initially, PCOS was diagnosed according to the 2003 Rotterdam criteria, which required the presence of two of three main features: hyperandrogenism, polycystic ovaries on ultrasound, and anovulation. However, the Androgen Excess Society revised these criteria in 2006 and stated that androgen excess must be accompanied by polycystic ovaries or anovulation/oligonovulation.[3]

PCOS is more prevalent in individuals who are obese, characterized by abnormal accumulation of fat in the

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abdominal region.[5] Literature also highlights the role of genetics in the origin of this multifactorial disease and environmental factors such as smoking, poor nutrition, and lack of exercise also plays a pivot role to aggravate the condition.[6]

According to WHO 70% of the cases are undiagnosed and is one of the leading cause of infertility in reproductive age group.[7] Although considered a contentious endocrinopathy among women of reproductive age, many females lack awareness of the signs and symptoms of the condition, often resulting in infrequent visits to healthcare providers due to insufficient understanding of this syndrome.[8] As the prevalence of the disease is increasing and due to lack of awareness re of its signs, symptoms, and complications females failed to report to health care provider, leading to poor diagnosis. [9-10] It is a need of the hour to educate women about PCOS, its signs and symptoms, and counseling to make them visit their health care provider on the symptoms of the condition.[11]

The PCOS not only affect the future fertility of the female but also cause pregnancy complications including early abortion, gestational diabetes, fetal complications, and pre-eclampsia.[12] Factors associated with hyperandrogenism including hirsutism, cystic acne, male pattern baldness, and increased BMI leading to abnormal weight gain have considerable impact on general appearance of female which also affect the mental health and confidence of the effected female especially teenage girls.[13] Anovulation leads to irregular menstrual cycles, including oligomenorrhea and amenorrhea, which can contribute to heavy menstrual bleeding and infertility. Additionally, the onset of insulin resistance further exacerbates symptoms, giving rise to conditions such as hyperlipidemia and increased pigmentation of skin folds.[2]

Female students increasingly experience signs and symptoms of PCOS, but do not realize they have the syndrome and therefore do not visit a clinic as often when symptoms appear, reducing its diagnostic value even though it is a common condition among women of reproductive age. Early diagnosis and treatment can reduce the long-term effects associated with this disease, thus reducing the risk of developing metabolic syndrome, endometrial abnormalities that lead to hyperplasia, or cancer due to chronic estrogen stimulation.[10] The situation is very difficult. This includes educating adolescents about its negative effects by providing appropriate counseling, changing their lifestyles to combat psychological disorders, and providing them with appropriate treatment if necessary.[13]

Polycystic ovary syndrome (PCOS) represents a considerable public health concern and stands as one of the most prevalent hormonal imbalances observed in women of reproductive age. This condition impacts approximately 8–13% of women within this demographic, with a substantial portion, up to 70%, remaining undiagnosed

Methodology

The cross-sectional survey was conducted in Rawalpindi based institutions from Jan 2022 - June 2022. The IRB letter was obtained from DHQ Rawalpindi. The purposive sampling was used to select participants who met the requirements of the study. The study included all individuals who met the inclusion and exclusion (IE) criteria for the six months after approval of the synopsis. A gynecologist (one of the researchers) and a student statistician collaborated to develop a Proforma, which was a standardized data collection form/questionnaire. The study sample consisted entirely of females. The inclusion criteria were female medical and university students aged 18 to 25 who consented to participate in the study. The exclusion criteria were individuals with PCOS who were receiving therapy for it. A total of 274 female students agreed to participate in the study. This sample was then divided into two groups: 137 students attending medical school and 137 students attending a non-medical university. The data was analyzed by SPSS version 28; the frequencies of replies were computed. The chi-square test was used to determine the significance of associations between variables.

Results

A total of 174 students provided informed consent to participate in the research. Among these students, not all were enrolled in medical school; specifically, 87 were attending universities that did not specialize in medicine. Participating students came from 139 different metropolitan districts and 35 different rural places. The students were all in good health and had the following demographics: mean age of 21.18 (SD=2.535) years,

Table I: Personal characteristics and menstrual cycle duration. (n=174)

	Age	Family Income (Lac)	Menstrual cycle/ Periods Duration (Days)
Mean	21.18	1.7	3.6
SD	2.54	0.79	1.32

Table II: Assessing female pupils' knowledge of polycystic ovarian syndrome.

		Students				Total		
		Medical College		Non-Medical University				
		%	N	%	N	%	N	P-value
Is polycystic ovarian syndrome something you're familiar with?	Yes	88.50	77	66.66	58	77.58	135	<0.05
	No	11.49	10	33.33	29	22.41	39	
Please tell me how you learned about polycystic ovarian syndrome if you answered yes to the last question?	Billboards	0.02	2	0.0	0	0.01	2	<0.05
	Internet	87.35	76	70.11	61	78.73	137	
	Newspaper	0.01	1	0.02	2	0.01	3	
A change in voice is one symptom of polycystic ovary syndrome?	Yes	25.28	22	27.58	24	26.43	46	>0.05
	No	74.71	65	72.41	63	73.56	128	
Did you know that polycystic ovary syndrome (PCOS) is a possible diagnosis for women who have persistent and recurrent headaches, dizziness, or lower back pain?	Yes	48.27	42	45.97	40	47.12	82	>0.05
	No	51.72	45	54.02	47	52.87	92	
You may be surprised to hear that PCOS may cause mood swings.	Yes	75.86	66	60.91	53	68.39	119	<0.05
	No	24.13	21	39.08	34	31.60	55	
Be aware that polycystic ovary syndrome might be indicated by an abundance of hair on the face or body.	Yes	83.90	73	67.81	59	75.86	132	<0.05
	No	16.09	14	32.18	28	24.13	42	
Was it known to you that PCOS may lead to thinning hair?	Yes	47.12	41	49.42	43	48.27	84	<0.05
	No	52.87	46	50.57	44	51.72	90	
Does PCOS make you feel lonely, uninterested, or violent more often than not?	Yes	62.06	54	44.82	39	53.44	93	<0.05
	No	37.93	33	55.17	48	46.55	81	
Is PCOS something you're aware of? It might be associated with acne and greasy skin.	Yes	71.26	62	65.51	57	68.39	119	>0.05
	No	28.73	25	34.48	30	31.60	55	
Did you know that polycystic ovary syndrome may manifest with irregular or absent menstrual cycles?	Yes	87.35	76	68.96	60	78.16	136	<0.05
	No	12.64	11	31.03	27	21.83	38	
Am I telling you that PCOS may run in families? An example would be if you or one of your sisters have symptoms with your mother.	Yes	51.72	45	41.37	36	46.55	81	<0.05
	No	48.27	42	58.62	51	53.44	93	
Do you know that women experiencing these symptoms should schedule frequent appointments with gynecologists?	Yes	86.20	75	74.71	65	80.45	140	0.05
	No	13.79	12	25.28	22	19.54	34	

mean family income of 1.70 (SD=0.786) lac, mean menstrual cycle length of 3.63 (SD=1.318) years, and no illnesses.

Polycystic ovarian syndrome was mentioned by about 66.66% (n=58) of non-MS and 88.50% (n=77) of MS (P<0.05). Only 70.11% (n=61) of the time (P<0.05) did MS learn about PCOS via the internet and newspapers, despite 87.35% (n=76) of MS learning about the condition on the internet, 0.02% (n=2) from billboards, and 0.01% (n=1) from newspapers. P<0.05 indicates that 25.28% of non-MS and 27.58% of MS were aware that PCOS might change voice. Of the women with MS, 48.27% (n=42) and non-MS, 45.97% (n=40) knew that polycystic ovary syndrome (PCOS) might lead to persistent, recurring back pain, frequent headaches, and vertigo. 53 non-MS (60.91%) and 66 MS (75.66%) were cognizant that PCOS might lead to changes in mood (P<0.05). According to 83.90% (n=73) of MS and 67.81% (n=59) of nMS (P<0.05), PCOS may be indicated by abundant facial or body hair. 47.12% of MS and 49.42% of nMS knew that PCOS might cause hair thinning. The fact that polycystic ovary syndrome (PCOS) might be associated with emotions of loneliness, disinterest, or frequent aggressive behavior was known by 64.06 percent (n=54) of the men with MS and 44.82 percent (n=39) of the non-MS (P<0.05). Among MS, 71.26% (n=62) and nMS, 65.51% (n=57) reported PCOS as a possible cause of acne or oily skin. According to 87.35% (n=76) of MS and 68.96% (n=60) of nMS (P<0.05), PCOS symptoms might include irregular or nonexistent menstrual cycles. 50.72 percent (n=45).

Discussion

Bassam et al. found that 12% of students at Saudi Arabia's Al Qassim University had polycystic ovary syndrome in 2018. Among the student body, 71% had heard of polycystic ovary syndrome (PCOS). Although irregular menstrual periods were noted by 87% of individuals, changes in voice were the least prevalent symptom, with 13% of participants reporting them.[14] According to Joshi et al., who used the Rotterdam and Androgen Excess Society Criteria, the prevalence estimates for PCOS vary greatly around the globe, ranging from 2.2% to 26%. Of them, 22.5% did not have PCOS and 10.7%.[15] Choudhary et al. reports that 9.13%

of Indian teenagers suffer from polycystic ovary syndrome.[16] The prevalence of PCOS among American women aged 18–45 is 6.6%, according to research.[17] The results did not showed that 72% of the females knew about PCOS, whereas only 28%.[16] Forty-two percent of those who took part in research at CMH Lahore found out about PCOS online.[18] People, online communities, and medical facilities were ranked as the top three sources of knowledge on PCOS.[19] According to the research, 50.7% of the participants reported having hirsutism, while 55.5% of the individuals had acne and oily skin.[17] A 2015 study looked into PCOS among Iranian women and found that hirsutism the abnormal growth of hair on the body—has a major negative impact on PCOS patients' well-being.[20] Anxiety disorders were found in 38.6% of PCOS women and depressive disorders in 25.7%.[21] In 2013, the researchers looked at how depressed women with PCOs were. Ten to eighteen percent of those who took part in the study suffered from major depressive disorder.[22]

Conclusion

The research found that non-medical female students knew far less about PCOS than their medical school-affiliated peers. This notable disparity highlights the critical need to raise awareness of PCOS, which poses a substantial health cost to society. Early identification and improved treatment of PCOS may be facilitated by awareness campaigns that make PCOS and associated disorders mandatory learning objectives in all educational programs.

Limitations: This survey was carried out in Taxila and just included pupils from the local area to assess their degree of knowledge. To determine the precise levels of knowledge throughout the country, it would be wise to conduct similar research in other locations.

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