

LEVEL OF AWARENESS OF POLYCYSTIC OVARIAN SYNDROME IN NON-MEDICAL FEMALE STUDENTS OF THE UNIVERSITY OF LAHORE

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ABSTRACT

Introduction: Polycystic ovarian syndrome is an endocrine abnormality in which multiple cysts are formed which causes hormonal imbalance in the body. PCOs may cause insulin resistance in which insulin hormone is not taken up by cells causing excess glucose which increases androgen level leading to an ovulation. **Objective:** To determine the level of awareness of PCOs in non-medical female students. **Material and Method:** Cross-sectional study was carried out. 217 non-medical female students from University of Lahore were recruited. Awareness about PCOs was observed by using a self-made validated questionnaire used in a previous research. Frequency tables were used to access level of knowledge. **Results:** Out of 217 non-medical female students the mean age was 21.88 and 62.7% responders heard about PCOs while 53.9% never heard about androgen hormone. 64.5% responders were not sure whether PCOs alter ovaries shape or not. To record relation of PCOs with malignancy and psychological disturbance, 57.6% and 49.3% were unaware respectively. 46.1% assumed PCOs as a cause of obesity and 50.7% believed that acne and hirsutism is caused due to PCOs. **Conclusion:** Most of the students heard about PCOs but more than half were not aware about change in shape of ovaries and its relation with cancer and psychological disturbance. Most of them believed that it is caused by obesity, causes acne and abnormal hair growth and reduce fertility. Awareness programs can help increase knowledge about PCOs and its symptoms as well as its prevention and treatment.

Key words: Polycystic ovarian syndrome, awareness, hirsutism

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INTRODUCTION

Polycystic ovarian syndrome (also known as pcos or pcod) is a common endocrine abnormality in which multiple small cysts are formed which can cause hormonal imbalance in the body.¹ Women with **PCOs** produce higher-than-normal amounts of male hormones. This hormone imbalance causes them to skip menstrual periods and makes it harder for them to get pregnant. PCOs is also known as Stein-Leventhal syndrome named after those who first reported it which is basically a condition in which about 10 small cysts are formed in one or both ovaries of diameter ranging from 2-9mm.²

PCOs is mainly of two types: Type 1 is insulin resistant which shows symptoms like weight gain, acne (most commonly on face) and hirsutism (excess body hair). Type 2 is referred as non-insulin resistant PCOs which can be due deficiency of iodine, vitamin D or adrenal stress.³ Overall estimated prevalence of this disease is 5 10% among females of 15 to 30years of age.⁴

Incidence of PCOs is highest (about 20-40%) in females with same family histories. Moreover, genetic factors accompanied with environmental factors increases the rate of incidence. Basic pathophysiology of this disease is not well

understood yet it is known that females with PCOs may have insulin resistance which means that insulin hormone is not taken up by cells which uses glucose for energy excess glucose in body will increase androgen level which leads to an ovulation or infertility.^{4,5}

Women with PCOs are at greater risk of hypertension, obesity, Type 2 diabetes, dyslipidemia and cardiovascular disorders.^{6,7} PCOs can affect quality of life at different level impeding normal physiological and emotional functioning.^{8,9} and can cause serious psychiatric disorders as prevalence of anxiety and depression is very high in these women.^{10,11}

Many studies reveal that there is not adequate amount of knowledge about PCOs among different populations and many of them perceive it as permanent infertility or a cosmetic problem.¹² As internet is the main and common source of knowledge for young generation. awareness can be spread through social networks and various web sites. Patients reach for more knowledge about PCOs and second opinion after consultation or confirm diagnosis by physician but there are several web sites which contain inadequate knowledge and can further lead to many conflicts.¹³

Educational and awareness programs should be conducted on regular basis at different levels to meet the need and it is also suggested to add proper education and awareness about PCOs in the curriculum of students because proper education can not only help in early management but can also provide information about prevention of this disease.¹⁴

MATERIAL AND METHOD

The study was conducted in University of Lahore. Only female students were included in this study from non-medical fields i.e. engineering, law, aviation, architecture, computer science etc. Self-made validated questionnaire from a previous

research was modified and used. Study was conducted under ethical considerations. Questionnaire was distributed among 217 non-medical students who were willing to participate. Informed written consent was taken and confidentiality was maintained. Questionnaire consists of two domains. First one included demographic information including age, marital status, religion and net income. Second domain consists of 10 knowledge questions regarding PCOs related information. Each question was recorded giving three options i.e. yes, no and I don't know.

After taking informed written consent, data was collected through modified questionnaire and was computed and analyzed through SPSS 25.0 software. Descriptive analysis was performed and the result of quantitative variable included mean and standard deviation using histogram i.e. of age. While qualitative variables were recorded in frequency and percentage using bar charts and pie charts.

RESULTS

Out of 217 female students, mean age was 21.88. Out of all non-medical departments, students of business administration were 18.4%, Aviation students were 12.9%, Computer science students were 24.0%, Engineering students were 16.1%, Law students were 3.7% and students from other department were 24.9%. 86.2% were unmarried and 13.8% were married. 94.9% of them belonged to Muslim religion and 56.7% had household income between 50000 to 100000. 62.7% responders heard about PCOs in their lifetime. 64.5% responders reported that they were not sure whether PCOs changes shape of ovaries or not. 56.7% responders believed that PCOs affect menstrual cycle. In order to record relation of PCOs with malignancy and psychological disturbance, 57.6% and 49.3% were unaware about it respectively. 46.1% assumed PCOs as a cause of obesity and 50.7% believed that acne and hirsutism is caused due to PCOs.

Table 1. Descriptive statistics of PCOs knowledge questions

	Have you heard about PCOs?		Have you heard about androgen male hormone?		Does PCOs change shape of ovaries?		Does PCOs affect ovulation?	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Yes	136	62.7	117	53.9	59	27.2	92	42.4
No	78	35.9	96	44.2	18	8.3	9	4.1
I Don't Know	3	1.4	4	1.8	140	64.5	116	53.5

Table 2. Descriptive statistics of PCOs knowledge questions

	Treating PCOs can reduce chances of getting cancer?		Do you think PCOs cause psychological disturbance?		Do you think PCOs reduce fertility?		Do you think severe acne & unusual hair growth is caused by PCOs?	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Yes	78	35.9	90	41.5	104	47.9	110	50.7
No	14	6.5	20	9.2	15	6.9	8	3.7
I Don't Know	125	57.6	107	49.3	98	45.2	99	45.6

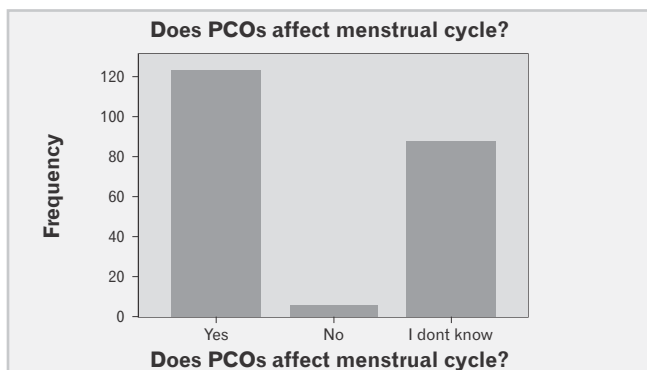


Figure 1. Responders view if PCOs affect on menstrual cycle?

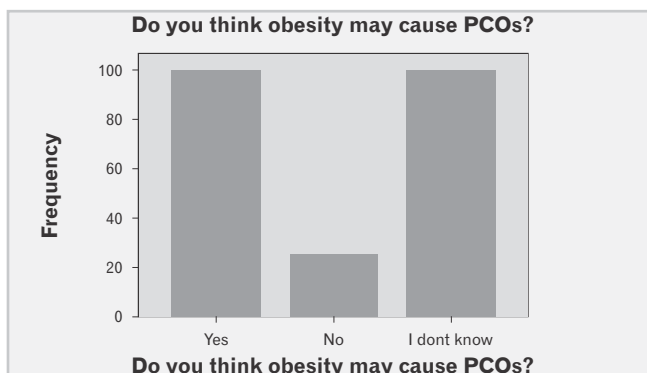


Figure 2. Responders view if obesity may cause PCOs?

DISCUSSION

Devi et al. in 2014 conducted a survey on risk of PCOs

and how much awareness program help in reducing these risk and found that total 13.6% students were at risk of PCOs and knowledge was increased after conductance of awareness program among them.^{15,16}

In this current study the aim was to access the level of awareness of PCOs in non-medical female student of The University of Lahore, Pakistan. Out of 217 students the mean age was 21.88 of which age group of 22 years was highest among them. Out of all non-medical departments students of computer sciences and others group were 24.0% and 24.9% respectively which were more than other departments .Regarding knowledge about PCOs there were 62.7% responders who heard about PCOs, 35.9% responders never heard about PCOs and 1.4% were not sure similarly 53.9% responders heard about androgen male hormone, 44.2% never heard about it and 1.8% were unsure.

In this investigation about changes in shape of ovaries, 27.2% thought that PCOs changes shape of ovaries, 8.3% thought that PCOs does not cause any change in shape of ovaries and 64.5% were unsure whether it cause any change or not. It shows that people are not aware about the physiological changes in body.

Goodarzi M.O. et al. conducted a study in 2011 on PCOs etiology and pathogenesis and claimed that females diagnosed with PCOs have higher chances of malignancies like ovarian and breast cancer.^{17,18} In this current study 35.9% responders believed that treating PCOs reduce chances of getting cancer, 6.5% said no and 57.6% were not sure about it.

Barry, John A. et al. conducted a study on 2013 in which he assessed depression level in females diagnosed with PCOs. It was concluded that 10-18% of participants were suffering from extreme depression.¹⁹ Another study was conducted by Deeks A.A in 2010 that observed that level of anxiety and depression in PCOs patients is higher in infertile women as compared to fertile females(20). In this current study 41.5% responders had idea about psychological disturbance in PCOs, 9.2% believed that PCOs does not affect mental health while 49.3% had no idea about it. Study on fertility changes showed that 47.9%

responders believed that PCOs reduce fertility, 6.9% believed that fertility is not reduced due to PCOs and 45.2% were unsure about it.

Sheik Ruksana et al. conducted a study about awareness of obesity as a predominant factor in PCOs and found that obesity plays a major role in causing PCOs including many factors like hyperinsulinemia or insulin resistance.²¹ In this current study 46.1% responders assumed obesity as a cause of PCOs, 8.3% believed that it does not cause PCOs and 45.6% were not sure.

Khomami et al. conducted a study on PCOs symptoms in 2015 in Iranian women and it concluded that quality of life of PCOs patients were highly affected due to hirsutism i.e. excessive/unusual hair growth on body apart from other symptoms. while this study shows that 50.7% responders thought severe acne and unusual hair growth as a cause of PCOs, 3.7% responders had opposite views about it and 45.6% responders were unsure.

CONCLUSION

In this study, it is concluded that 62.7% non-medical females heard about PCOs but more than half of the selected population was not aware about change in shape of ovaries, effect of PCOs on ovulation and its relation with getting cancer. About half of them approx. 49.3% were not sure whether it cause psychological disturbance or not but most of them believed that it is caused by obesity, causes acne and abnormal hair growth, reduce fertility and affect menstrual cycle. Awareness programs and one day seminars can help increase knowledge about PCOs and its symptoms as well as its prevention and treatment.

LIMITATIONS

- This study was done on a small size.
- This study was done in University of Lahore only.
- The data was taken only from female students.
- Only non-medical females were surveyed for this study.
- This study is an observational study only.

RECOMMENDATION



- It is recommended to conduct a study like this on a larger scale including more students from different universities.
- There should be a larger sample size because a larger sample size would have shown more clear results.
- Awareness should be conducted on PCOs symptoms and management to help in early diagnosis and prevention of other life hazards.

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**AUTHORSHIP AND CONTRIBUTION DECLARATION**

Sr. #	Author's Full Name	Contribution to the paper	Author's Signature
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2	Areeba Ghaffar	Article writing, proof reading	
3	Ashfaq Ahmad	Supervised the whole thesis	