

Understanding of a Veiled Illness: Evaluation of Polycystic Ovarian Syndrome awareness (PCOS) in Young Female Students of Karachi.

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Abstract: Introduction: PCOS is a major endocrinological syndrome that affects females and impairs hormonal stability thus having an impact on the normal functioning of some body systems. This has affected 6-20% of the female population of reproductive age and hence its diagnosis is important.

Methods: This is a retrospective cross-sectional observational study. A total of 151 females were enrolled; after signing an informed consent form, females were asked a few questions about their general health, comorbidities, and generalized menstruation history. The last part of the questionnaire contains common signs and symptoms of polycystic ovarian disease to assess awareness. The data was analyzed in the statistical package of social sciences (SPSS) version 2021. **Result:** The participants were asked about 7 signs of PCOS. 9.3% (n=14) were facing irregular periods, heavy bleeding was experienced by 16.6% (n=25) participants. Facial hair growth has occurred in 13.2% (n=20) of participants. 15.2% (n=23) had oily scalp and dandruff. Participants were also asked if they were aware of some major risk factors of PCOS. 15.9% (n=24) knew that PCOS can cause infertility, and 7.3% (n=11) said PCOS causes Anovulatory cycles. 41.7% knew that lifestyle modification can help reduce adverse effects of the syndrome.

Conclusion: the majority of study participants indicated decreased awareness PCOS and its major risk factors, Hence there is a dire need for awareness as it rather ignored.

Keywords: Polycystic Ovarian syndrome, Menstruation, Awareness

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Introduction

Polycystic ovarian syndrome is an endocrinological impairment that affects 6-20% of women of Reproductive age ranging from 15 years to 49 years, making it the most debatable gynecological disorder in the developing world [1]. In this syndrome, the usual levels and functions of hormones are constantly impaired which affects the ovaries and maintenance of regular menstrual cycles [2]. Polycystic ovarian syndrome is widespread globally; In Pakistan, the prevalence rate has been recorded as 52% [3], and the reasons behind higher incidence rates are late detection of the disease, rare medical follow-up, and decreased knowledge of lifestyle modification impact. the prevalence of PCOS in western countries is notably low, 20-25% in the United Kingdom and 4-12% in the united states [4], The awareness of PCOS and its associated risk factors is low, in the US 7 million women with PCOS only half of them is mindful that they have this syndrome [5]. Insufficient knowledge leads to the progression of disease and late diagnosis, the young Pakistani female population has little awareness regarding this syndrome, a 22% rise in incidences has been recorded in the past 05 years. [5], while 30% increase in cases reported in India within the last couple of years [6]. Hereditary factors, environmental factors, and consanguineous marriage can be the reason behind the escalating occurrence of PCOS [7,3]. The ultimate reason behind infertility is raised androgen and luteinizing hormone levels and PCOS is currently the leading



cause of infertility in women. It is further characterized by irregular menstrual cycles, hirsutism, acne & seborrhea [8-9]. PCOS is related remarkably to BMI indicating obesity, paired with dysglycemia, DM type 2, and metabolic syndrome still it is not diagnosed thus restricting the chances of precautionary majors and its management [10-11]. 30% to 40% of women who are suffering from PCOS have glucose intolerance and are unresponsive to the insulin that causes hyperinsulinemia via feedback mechanism as the body's response to regulate blood glucose levels and approximately 10% are prone to have insulin-independent diabetes in their 40s [12-13]. It is commonly observed as being the potent instigator of impaired glucose tolerance, elevated insulin levels, heart disease, and high blood pressure. The occurrence of surplus weight in PCOS lies in the span of 30 - 75% and fattening up has detrimental effects on individuals and their symptoms are exacerbated [14] also expected to increase the possibility of cardio metabolic disorders, as significant half of the population of females with PCOS are obese [15]. Hormonal imbalance in PCOS lays its effects on the psychological wellbeing of a person and thus affects the quality of life. Psychological impairment manifests as depression, anxiety, stress, low self-esteem, negative body image & psychosexual dysfunction [16-17]. The occurrence of endometrial cancer increases three folds in individuals with PCOS [18].

This study aims to evaluate the understanding of PCOS in the population at risk, upon analyzing the acceptance and deficiency existent in awareness of the syndrome this study will help health care providers to emphasize preventive and treatment opportunities including counseling and behavioral therapies. As very few cases of PCOS are diagnosed due to a lack of awareness of symptoms and hence the symptoms are ignored and not consulted by a healthcare physician.

Method:

This is a survey-based, cross-sectional observational study conducted in the Suvastu school of nursing and health sciences, Karachi. Ethical permission was granted by the head of institute, the survey continued for 3 months ranging from January 2021 to April 2021, and 151 females were enrolled in the study. Data was gathered by restructured, validated questionnaire from participants who are legally allowed to give consent, an informed consent form was signed. The questionnaire contains two different sections, section A has Demographic questions including age, gender, city, marital status, weight, and profession while Section B contains questions about the dietary pattern, details of the menstrual cycle, and its related symptoms such as acne, facial hair growth, and some awareness questions were included. Section B was subcategorized into two different parts part 1 was about awareness questions while part 2 contains seven signs of polycystic ovarian syndrome in which participants were asked if they have experienced any of the following signs. The data were analyzed in a statistical package of social sciences (SPSS) version 2021. Demographic detail such as age weight height and BMI are analyzed as descriptive variables and interpreted in mean and standard deviation methods. Education marital status diet pattern and other associated symptoms are analyzed in frequencies and percentages.

Results:

The commonly occurring age of the participants is 22.21 \pm 1.9 yrs. The weight of most participants is 12.4 \pm 9 lbs, while the mean height was 4.9 \pm 0.4 ft. The average BMI was measured as 24.8 \pm 3.9 kg/m² (Table 01)

Table 1 Demographic details of participants

VARIABLE	RESULTS
AGE	22.21 \pm 1.9 yrs
WEIGHT	12.4 \pm 9 Lbs



HEIGHT	4.9 ± 0.4 ft
BMI	24.8 ± 3.9 kg/m ²

The frequency of occurrence of the symptoms that can be related to PCOS, including the responses of 151 participants was recorded and summed up in figure 1 and the results were as follows. Heavy bleeding was experienced by 25 (16.6%) participants. Female balding was faced by 6 (4.0%) participants. 21 (13.9%) participants' experienced high-stress levels. Anxiety was felt by 4 (2.6%) of participants. 8 (5.3%) of participants faced irregular periods. The absence of Periods for 2 or 3 months was faced by 15 (9.9%) participants. 8 (5.3%) participants gained weight and are facing difficulty in losing weight. Facial hair growth was experienced by 20 (13.2%) participants. 14 (9.3%) participants had acne and oily skin. Only 3 (2.0%) felt pelvic pain. 15 (9.9%) experienced fatigue. 23 (15.2%) had oily skin and dandruff issues.

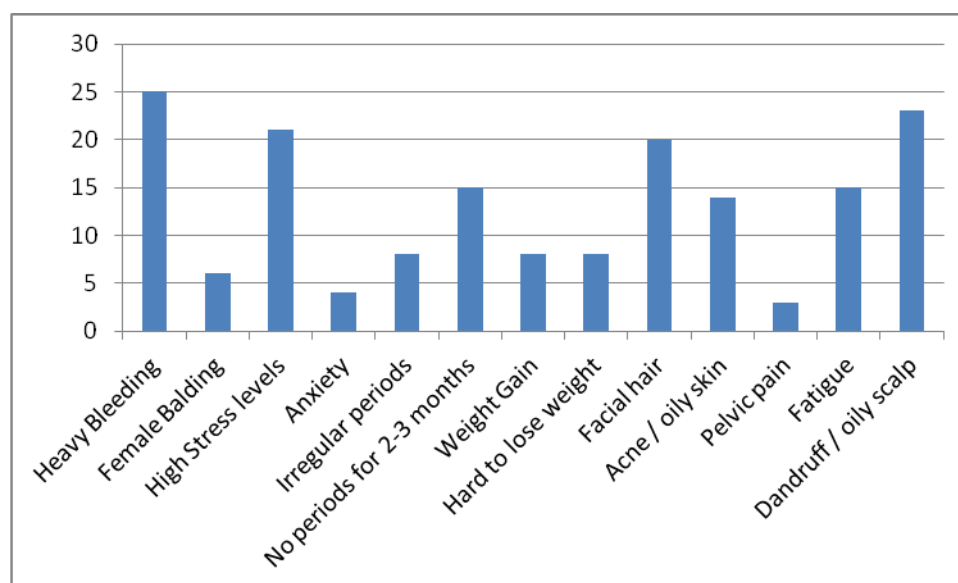


Figure 1: Symptoms occurrence in study participants

The awareness of PCOS amongst the 151 females who participated in the survey indicated the fact that exercise and lifestyle modification can help in preventing adverse effects, signs, and symptoms of PCOS known to 63 (41.7%) of participants. 21 (13.9%) participants affirmed that PCOS can cause metabolic syndrome. On inquiry about whether PCOS is a major risk factor for hypertension (HTN) and diabetes mellitus (DM), 21 (13.9%) said that it is a risk factor for these two diseases. Only 4 (2.6%) said that they were diagnosed with PCOS. 24 (15.9%) participants knew that PCOS is a leading cause of infertility. PCOS can cause Anovulatory cycles was known in 11 (7.3%) participants. 92 (60.9%) knew that irregular periods are a sign of PCOS. (Fig 2)

Participants were asked if they were or had experienced any of the seven signs of PCOS and the results are as follows. Amongst 151 participants 14 (9.3%) participants had irregular cycle i.e cycles all over the place. Growing hair in unexpected places was faced by 9 (6.0%) participants. Excess oil or sebum production causing acne i.e breaking out was experienced by 2 (1.3%) participants. 13 (8.6%) participants had a dark ring around the neck. Belly size is getting bigger without any apparent reason is happening with 13 (8.6%) participants. Only 2 (1.3%) have skin tags popping out often. 14 (9.3%) participants are facing difficulty in getting pregnant. (Fig 03)



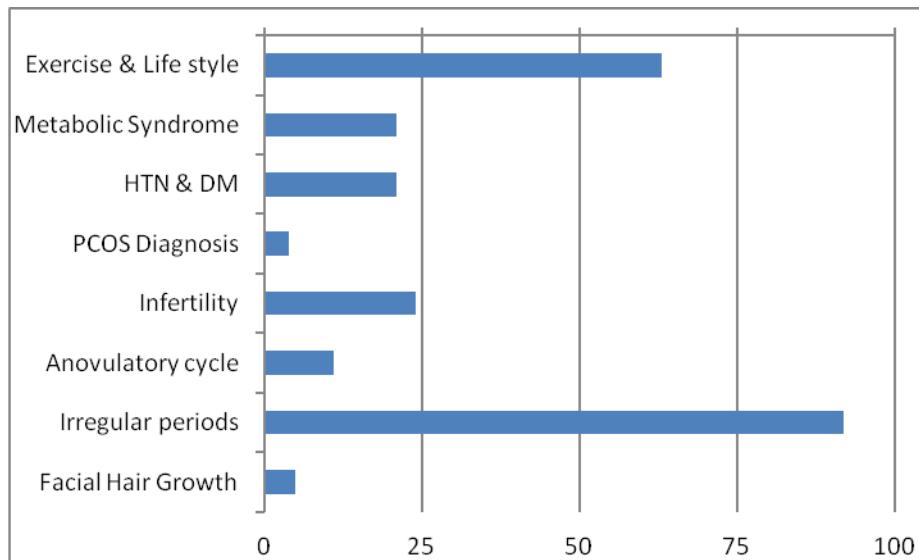


Figure 2 : Understanding of associated risk factors in study participants

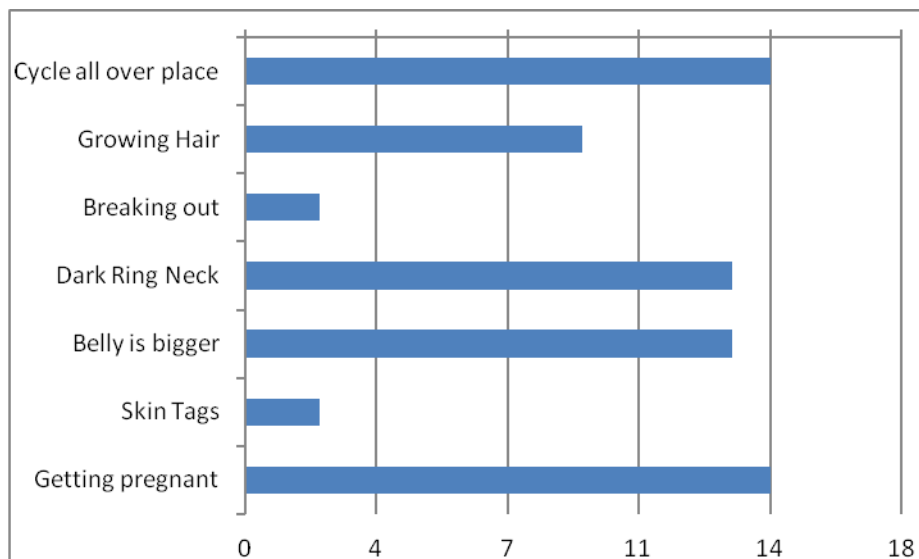


FIGURE 3: 07 Signs of PCOS in study participants

Discussion:

Based on the study that comprised of participants who were educated at least up to 12 grades but on accessing their knowledge on PCOS the results came out that they were unaware of the symptoms, its correlation with other diseases, and its consequences. The study highlighted that 27.2% of the participants faced irregular menstruation while only 8.6% out of which 6.6% consulted a gynecologist and 2% approached a dermatologist. This is the reason that only 2.6% were diagnosed with PCOS. Although the irregular period is a vital sign of PCOS but still as significant as 39.1% of the participant were not aware that this sign is crucial for the diagnosis of PCOS. As high as 85 to 90% of females suffering from PCOS are facing symptom that involves disturbed menstrual cycle length and its absence, making it hallmark for diagnosis of PCOS [19]. Anovulatory cycles are the consequence of PCOS, but 92.7% of participants supported the option that PCOS cannot contribute to Anovulatory cycles. PCOS has a major role in causing infertility but as few as 15.9% were educated on this. Metabolic syndrome is common in individuals with PCOS but 86.1% of participants denied that it is as they were unaware. Several data support and establish that percentage of folks with PCOS constitutes a population that has a high occurrence



of heart diseases and metabolic syndrome risk factors [20]. PCOS is a risk for hypertension, diabetes, cardiovascular diseases, hypercholesterolemia & sleep apnea but only 13.9% of participants were aware of this. Snoring which is associated with a sleep disorder, obstructive sleep apnea is a lifestyle sign of ovulation in PCOS [21]. Exercise and lifestyle modification aids in maintaining signs and symptoms of PCOS but more than half of the participants were oblivious to this. Exercise influences programmed cell death of large lipocytes specialized in visceral tissues; hence decreasing lipocytes in the viscera refining insulin sensitivity and fat metabolism impairment in the body [22]. 83.4% of participants in our study stated that PCOS is not hereditary. Not even a single participant was aware that individuals diagnosed with PCOS are at risk of cancer cell formation in the innermost layer of the uterus, the endometrium. The incidence of endometrial tumors in an individual with PCOS was 37% [23]. PCOS increases the risk for non-communicable diseases such as diabetes mellitus and hypertension by two-fold approximately, [24] although the diagnosis is known as uncomplicated and needs only a few standard diagnostic tests, the treatment should be symptoms oriented [25] and this is the main endpoint of our study, frequency of occurrence of 7 signs of PCOS is individually low for every sign still our population must be educated about PCOS as it has affected a significant portion of the female population hence better knowledge can prevent worsening of symptoms and its consequences hindering the quality of life.

Conclusion:

In our study, we concluded that the majority of young female's age gap 18 to 24 yrs had no awareness of PCOS and its indicating signs and symptoms. Therefore, awareness sessions, literature & group discussion are required to enhance awareness. Better knowledge of a syndrome prevalent in our young population may help in controlling the prevalence.

Authors Contribution:

S.Tariq- Objective, article writing and statistical analysis.

N.Bhatti- Corrections, editing, proof reading

B.-Results interpretation

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was taken from Head of Institute. Suvastu school of nursing and health sciences, Karachi

HUMAN AND ANIMAL RIGHTS

No animals were used in this study. The study on humans was conducted in accordance with the ethical rules of the Helsinki Declaration and Good Clinical Practice.

CONSENT FOR PUBLICATION

Not applicable.

AVAILABILITY OF DATA AND MATERIALS

None.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.



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