



Prevalence of PCOS among students in a selected educational institution

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Abstract: PCOS is a hormonal condition that affects approximately 5-10% of women in their childbearing ages (15 to 45-years). While the prevalence of PCOS differs, it affects around 9% to 22% of Indian women. **Aim:** to assess the prevalence of symptoms pertaining to Polycystic Ovarian Syndrome among students. **Materials and Methods:** Descriptive study design was used to collect data. 190 students who are studying in a selected nursing college were chosen as study subjects. **Results:** Age of the study subjects ranged from 17 to 21 years. Majority of the subjects attained menarche between the age of 12-14 years. Very few subjects (2.6%) had family history of PCOS. 12.6% of subjects had increased BMI. Based on the waist circumference 6.4% of subjects were falling in the category of overweight and obese. 83.2% of subjects had normal WHR. 11% of subjects consume bakery items every day. Only 10.5% of subjects has the practice of regular walking. With regard to PCOS symptoms, menstrual irregularity was found among 17.9% of subjects, 15.8% had weight gain, 11.6% had heavy bleeding and 20% had scanty bleeding. 6.5% of subjects had more than 6 symptoms pertaining to PCOS. There was a positive correlation found between BMI and WHR. **Conclusion:** Early diagnosis and treatment of PCOS along with life style modifications including diet, exercise may lower the risk of long-term complications such as type 2 diabetes and heart disease.

Keywords – PCOS(Polycystic Ovarian Syndrome), BMI, WHR

Introduction

Polycystic Ovary Syndrome, commonly known as PCOS, is an endocrine system disorder common among women of reproductive age. It is characterized by overproduction of androgen (male hormone), abnormality in menstrual cycles, or the presence of small cysts in ovaries. Ovulation happens when the ovaries release the egg so that the sperm can fertilize it. In the case of PCOS, the woman does not make enough hormones necessary for ovulation. The lack of ovulation results in cyst formation. The cysts produce high levels of male hormones, which hinder a woman's menstrual cycle and account for the multiple symptoms of PCOS. Multiple genetic and environmental factors play an important role in occurrence of PCOS. The consequences of this multifaceted disorder extend beyond the reproductive system affecting metabolic, cardiovascular, immune, and psychological health of affected women. Although the exact reason for PCOS is unknown, early diagnosis and treatment and weight loss may reduce the risk of multiple morbidities associated with PCOS.

Polycystic Ovarian Syndrome (PCOS) is a prevalent hormonal disorder in women, yet it is one of the most underdiagnosed diseases. It adversely affects women at varying life stages, but unfortunately, half of the women with PCOS are unaware and ignorant about it. As it is a complex and multifaceted condition, it impacts women's health and well-being in a multitude of ways. Therefore screening women for the prevalence of PCOS

symptoms is imperative to diagnose and treat it early to prevent complications. Hence the researchers have carried out a research study to identify the prevalence of symptoms pertaining to Polycystic Ovarian Syndrome.

Statement of the problem

A study to assess the prevalence of symptoms pertaining to Polycystic Ovarian Syndrome among students in a selected college at Virudhunagar district.

Objectives

1. To assess the prevalence of symptoms pertaining to Polycystic Ovarian Syndrome among students
2. To find out the association between symptoms pertaining to Polycystic Ovarian Syndrome and selected demographic variables

Hypothesis

H_1 - There will be a statistically significant association between symptoms pertaining to Polycystic Ovarian Syndrome and selected demographic variables

Methodology

Descriptive study design was used to collect data. 190 students who are studying in a selected nursing college were selected as study subjects. Formal permission was obtained from the school authority and oral consent was obtained from the students.

Tool-Instrument for data collection consisted of three parts.

- A. Demographic Proforma which includes age, religion, type of family, monthly family income place of residence, dietary pattern, age at menarche, History of junk food intake, physical activity, and family history of PCOS
- B. Anthropometric parameters - BMI, Waist circumference and Waist Hip Ratio
- C. Scale to assess the symptoms pertaining to PCOS – A checklist containing 10 symptoms pertaining to the Polycystic Ovarian Syndrome.

Results

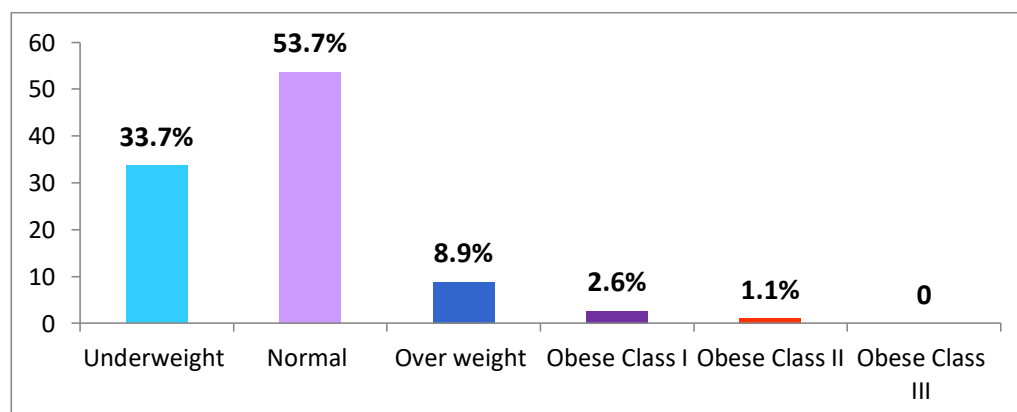
Demographic characteristics of the study subjects

Age of the study subjects ranged from 17 to 21 years. More than half of the subjects (66.3%) were in the age group of 19-20 years. Most of the samples were Hindus(92.1%) and belongs nuclear family(93.2%). 63.2 % of subjects monthly family income was between 5000-10,000 rupees. More than 3/4th of the subjects were from rural area. Majority of the subjects attained menarche between the age of 12-14 years. Very few subjects (2.6%) had family history of PCOS.

Distribution of subjects based on anthropometric measurements

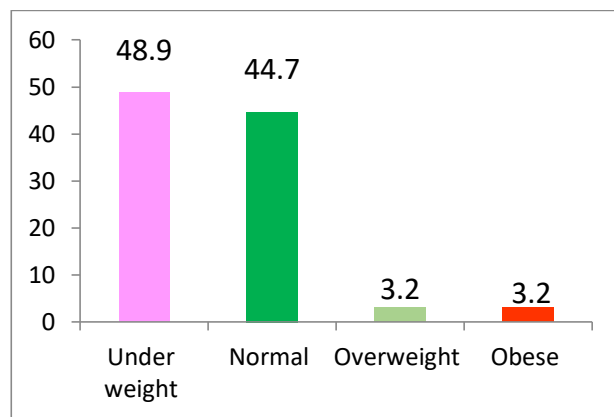
BMI

n=190



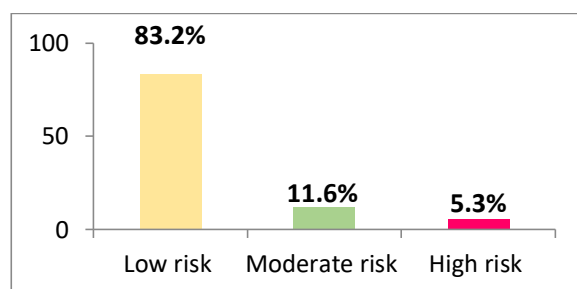
1/3rd of subjects were underweight, very few subjects (2.6% and 1.1%) fell in the category of Class I and Class II obese respectively.

Waist circumference n=190



With regard to Waist circumference nearly half of the subjects were found to be underweight. Very few subjects (3.2%) were classified to be overweight and obese.

Waist Hip Ratio n=190



Based on waist Hip Ratio 5.3% subjects fell in the category of high risk

Table-1: Distribution of subjects based on the junk food intake n=190

S. No	Food item	Every day		Weekly once		Monthly once		Never	
		F	%	F	%	F	%	F	%
1	Bakery items	22	11.6	106	55.8	61	32.1	1	0.5
2	Fried items	4	2.1	59	31.1	124	65.3	3	1.6
3	Soft drinks	8	4.2	37	19.5	102	53.7	43	22.6

Almost all the subjects had the habit of taking junk food items. Very few subjects consumes fried items and soft drinks on daily basis. A major portion of subjects take fried items once in a month.

Table-2: Distribution of subjects based on Physical activity**n=190**

S.No	Physical Activity	Regularly		Sometimes		Never	
		F	%	F	%	F	%
1	walking	20	10.5	144	75.8	26	13.7
2	Yoga	3	1.6	63	33.2	124	65.3
3	Aerobics	0	0	10	5.3	180	94.7
4	Jogging	0	0	33	14.4	157	82.6

None of the subjects do aerobics and jogging on a regular basis. Only 1.6% of subjects perform yoga regularly. 13.7% of subjects never go for walking.

Table-3: Distribution of subjects Based on PCOS symptoms**n=190**

S.No	Criteria	Yes	Percentage (%)
1	Menstrual irregularity	34	17.9
2	Weight gain	30	15.8
3	Heavy bleeding	22	11.6
4	Scanty bleeding	38	20.0
5	Acne/oily skin	86	45.3
6	Excessive facial or body hair	16	8.4
7	Loss of hair/alopecia	124	65.3
8	Darkened skin in certain areas of the body	14	7.4
9	Mood changes/ depression	49	22.1
10	Fatigue	42	22.1

The commonest PCOS symptom experienced by the subjects was loss of hair (65.3%), followed by Acne/oily skin (45.3%), Mood changes/depression (22.1%) and fatigue (22.1%). 34 subjects(17.9%) have experienced menstrual irregularities.

Table-4: Distribution of subjects based on number of symptoms pertaining to PCOS**n=190**

S.No	Number of symptoms	Frequency	Percentage (%)
1.	0	26	13.7
2.	1-2	87	45.8
3.	3-5	65	34.2
4.	>6	12	6.3

26 subjects (13.7%) had no symptoms pertaining to PCOS. Very few percentages of subjects (6.3%) had more than 6 symptoms.86.3% of study subjects had one or more symptoms related to PCOS.

Table-5: Correlation of BMI and WHR**n=190**

S.No	Variables	R value
1.	Body Mass Index and Waist Hip Ratio	0.533*

* Correlation is significant at the 0.01 level (2-tailed)

There was a positive correlation found between Body Mass Index and Waist Hip Ratio.

Table-6: Association of PCOS symptoms and selected demographic variables**n=190**

S.No	Variables	Chi-square	p-value
1.	Age	11.7558	0.67644
2.	Type of family	1.2255	0.541849
3.	Income	4.2495	0.642959
4.	Religion	0.7313	0.865814
5.	Place of residence	8.8007	0.032061*
6.	Diet pattern	1.4127	0.70254

*significant at 0.05 level (2-tailed)

There was an association found between PCOS and place of residence where the chi-square value was 8.8007 and p-value was 0.032061.

Discussion

Different studies have reported a wide range of PCOS among adolescents and young people. A prospective study was conducted by Jabeen A, Yamini V, Rahman Amberina A, et al. (August 12, 2022) among 250 adolescent and young girls aged between 13 and 25 years. The mean age was 16.96 years and most participants (78%) belonged to the age group of 13 to 19 years. Most (78%) of the study participants had normal BMI, 17.6% were underweight, and 4.4% were overweight. A PCOS prevalence rate of 6.8% was noted among the study participants. The study concludes that efforts should be made by the government to increase the awareness on PCOS, especially among the rural and low socioeconomic populations. The above study contradicts the current study since 86.3% of study subjects in the current study had one or more symptoms related to PCOS.

Swetha Balaji et.al., (2015) conducted a study to determine urban and rural differences in the burden of polycystic ovarian syndrome among 126 Indian adolescent females aged 12 to 19 years. The study found that 18% of study subjects had symptoms of PCOS. The study concluded that the proportion of participants diagnosed with PCOS was higher among urban participants in comparison to rural participants.

Mehreen et.al.,(2021) carried out a research to find out the prevalence of PCOS among 518 women in the age group of 12-30 years. The study found that the prevalence of polycystic ovaries on ultrasonography was observed in 78.6% of the women with PCOS. There is a high prevalence of PCOS in urban India, which emphasizes the need for urgent preventive and control measures.

The above quoted studies reveal that the prevalence of PCOS was high among urban residents. In the current study also there was an association found between place of residence and PCOS symptoms.

Upadhya R.S.S, Tripathy S, Mohapatra S(2018) conducted a cross-sectional research study among 246 students in the age group of 17-23 years to determine the prevalence of PCOS among students in Tamil Nadu. The study

found that 32.11% of study subjects had symptoms pertaining to PCOS. The clinical features like oily skin (13.82%), acne (8.53%), increased hair growth (5.69%), and male pattern thinning of hair (9.75%) was found among subjects.

In the current study also a considerable number of subjects had oily skin(45.3%) and excessive body hair (8.4%)

The current study finding may not reflect the real prevalence of PCOS in the population since the study has not included study subjects from all the segments of women in reproductive age group.

Conclusion

The cure for PCOD is yet to be determined. The current study reveals that a significant percentage of subjects had symptoms of Polycystic Ovarian Syndrome. More emphasis should be given for early screening and diagnosis. Counselling should be given for life style modifications. Increasing awareness programs will facilitate improved understanding, increased diagnoses, and effective management of PCOS.

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