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Research Article

Prevalence, Awareness And Predisposing Factors For Polycystic Ovarian Syndrome (PCOS) Among Young Women In Selected PHC.

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ABSTRACT

Background: Polycystic Ovary Syndrome (PCOS) is a common hormonal disorder that affects women during their reproductive years. It can cause irregular periods, excess androgen, and ovarian cysts.

Aim: The aim of the study is to assess the prevalence, awareness and predisposing factors for Polycystic Ovarian Syndrome (PCOS) among young women in selected PHC.

Methods: A quantitative approach and cross section study design was adopted for the study. The study included 300 young women with the age group of 18-30 years who are attending selected PHC, Salem. Convenient sampling technique was used for the study to select the samples. Data on menstrual cycle regularity, body hair growth, demographics, awareness, and predisposing factors for Polycystic Ovarian Syndrome were collected using a standard questionnaire and non-invasive sonographic scanning identified polycystic ovaries.

Results: The prevalence of PCOS among young women was 20.67%, 39% of young women were aware of PCOS, 61 % were not aware about the PCOS. Among young women the age groups, 61.3% of women aged between 18-25 years and 38.7% of them aged between 26-30 years. In terms of Body Mass Index (BMI), 12.9% classified as underweight, 29% with a normal BMI, and 50% was classified as overweight. Activity levels also seem to influence PCOS, with 19.4% of individuals engaging in regular physical activity and 80.6% reporting no physical activity. Moreover, family history appears to play a role, as 83.9% of individuals with a family history of PCOS and 16.1% without such a history.

Conclusion: PCOS is a common problem among young women after puberty. Many young women were unaware of the disease's symptoms and management, which may have skewed the observed disease burden away from its true prevalence.

Keywords: Polycystic ovary syndrome, PCOS Young women, Prevalence, Predisposing factors, Awareness.

INTRODUCTION

Polycystic ovary syndrome (PCOS) is a common hormonal disorder that affects women during their reproductive years. It can cause irregular periods, excess androgen, and ovarian cysts.It is distinguished by a combination of symptoms associated with excess androgens and ovarian irregularities, without a clear diagnosis of another condition. While the exact causes of PCOS are unknown, growing evidence suggests a complex nature involving multiple genes and significant influences from epigenetics and environmental factors such as nutrition and lifestyle choices. Menstrual irregularities and reproductive health issues are among the most common symptoms of PCOS, which frequently leads to female infertility[1].

The introduction of modern technologies such as ultrasound for ovarian imaging marked a watershed moment in the history of PCOS, simplifying diagnosis. However, this innovation unexpectedly resulted in a large number of cases in which women were diagnosed with only polycystic ovaries, often with no other typical PCOS symptoms[2]. This gave rise to the concept of polycystic ovarian morphology, whose significance is still debated. Some argue that broad acceptance of criteria such as the Rotterdam criteria, which include oligo-

anovulatory women with polycystic ovarian morphology but no obvious signs of hyperandrogenism, is premature. Such broad criteria may result in unnecessary diagnoses, extensive lab evaluations, and potential lifelong consequences for these women[3].

The clinical manifestations of PCOS range from adolescence to postmenopausal years. The syndrome includes chronic anovulation, menstrual irregularities, hyperandrogenism, polycystic ovaries, obesity, and metabolic syndrome. Notably, many of the long-term complications associated with PCOS are caused by insulin resistance[4]. Women with a genetic predisposition are susceptible to PCOS, with environmental factors, notably obesity, often triggering its symptoms. Notably, certain population groups exhibit a heightened risk of PCOS, and varying predispositions to different symptoms may exist across populations. PCOS emerges as a prevalent endocrine disorder globally, often intertwined with specific metabolic irregularities[5].

NEED FOR THE STUDY

PCOS affects up to 5 million US women, causing female infertility. However, its effects go far beyond fertility concerns and last throughout a woman's life. Women with PCOS frequently experience insulin resistance, which occurs when their bodies produce insulin but cannot use it efficiently, increasing the risk of developing type 2 diabetes. Furthermore, they have elevated levels of androgens, which are male hormones that also exist in females. These hormonal imbalances can disrupt ovulation, causing irregular periods, acne, scalp hair thinning, and excessive facial and body hair growth[6].

Polycystic ovary syndrome (PCOS) is a common hormonal disorder affecting women of reproductive age. It affects approximately 8-13% of such women, with up to 70% of cases going undiagnosed. Some ethnicities have a higher prevalence of PCOS, and these groups are more likely to experience complications, particularly metabolic problems. The biological and psychological consequences of PCOS, particularly those related to obesity, body image, and infertility, can result in mental health issues and social stigma[7].

Obesity rates are on the rise, as are sedentary habits and decreased physical activity, which appear to be the primary contributors to the increasing prevalence of PCOS. Furthermore, there is a concerning lack of awareness among women about this condition, which is frequently discovered incidentally during infertility screenings or as a result of irregular menstrual cycles. Alarmingly, adolescents have a higher incidence of PCOS. Increasing awareness has the potential to lead to early diagnosis and, in some cases, prevention of PCOS[8].

MATERIAL AND METHODS

A quantitative approach and cross sectional study design was adopted for the study. Sample size is determined by power analysis and considered as 300. The study sample included 300 young women with the age group of 18-30 years who are attending selected PHC, Salem. Convenient sampling technique was used for the study to select the samples. The study was approved by the Institutional Ethical Committee of Shanmuga Group of Institution, Salem. Study samples were screened for PCOS by validated questionnaire using Rotterdam criteria. The Rotterdam criteria for diagnosing PCOS require the presence of at least two out of three criteria: oligo- or chronic anovulation, clinical and/or biochemical indications of hyperandrogenism, and polycystic ovaries. It is essential to exclude other potential causes of androgen excess and anovulatory infertility. Demographic profile was collected using self-administer questionnaires. Anthropometric assessment was done with tape, weighing scale and sadiometer. No invasive sonographic scanning was done to identify the PCOS. Ferriman gallwey scale used to find out the degree of hirsutism.

Inclusion criteria:

- Young women with the age group of 18-30 years.
- Young women who have given the written informed consent.

Exclusion criteria:

- Young women with some other illness.

DATA COLLECTION PROCEDURE

All the participants were explained regarding the study and written informed consent was obtained. The study was conducted for the period of two month. Demographic profile was collected using self-administer questionnaires. Totally 300 young women were screened by validated questionnaire using Rotterdam criteria. Out of 300, 150 potential samples were selected for the study. Anthropometric assessment was done, and non-invasive sonographic scanning was used to confirm the cases with PCOS. Awareness questionnaires was used to assess the knowledge and awareness regarding PCOS. The collected data was analyzed through descriptive and inferential data using SPSS statistics software version 26.

RESULTS

Demographic data shows that in the aspect of age group 212 (70.7%) were in 18-25 years and 88 (29.3%) were in 26-30 years. Regarding education level, 270 (90%) were educated and 30 (10%) were illiterate. In family income, 198 (66%) were had income above Rs.10,000 – Rs.15000, 102 (34%) income were above Rs.15000. Previous knowledge regarding PCOS, 248 (82.7%) were had previous knowledge and 52 (17.3%) did not had previous knowledge. On Body mass index, 74 (24.7%) were overweight, 28 (9.3%) were underweight and 198 (66%) were normal weight.

Table: 1 Cases of PCOS confirmed based on Rotterdam's criteria N=300

S.NO	PCOS suspect Cases	Frequency	Percentage
1.	Irregular periods (>35 days)	123	41%
2.	Hirsutism	63	21%
3.	Both Irregular periods (>35 days) and Hirsutism	27	9%
4.	Absent	87	29%
150 were cases with irregular periods, both irregular periods and Hirsutism were screened by USG.			
1.	USG finding of multiple cysts	62	20.6%

In this study, findings revealed that out of 123 subjects, irregular menstrual cycles lasting more than 35 days were observed. Additionally, 63 subjects presented with hirsutism. Notably, 27 subjects experienced both irregular menstrual cycles and hirsutism. Further analysis involved screening 150 subjects who exhibited irregular menstrual cycles along with hirsutism using ultrasonography (USG) to detect poly ovarian cysts. Results indicated that 62 of these subjects had multiple cysts, confirming their diagnosis of polycystic ovary syndrome (PCOS).

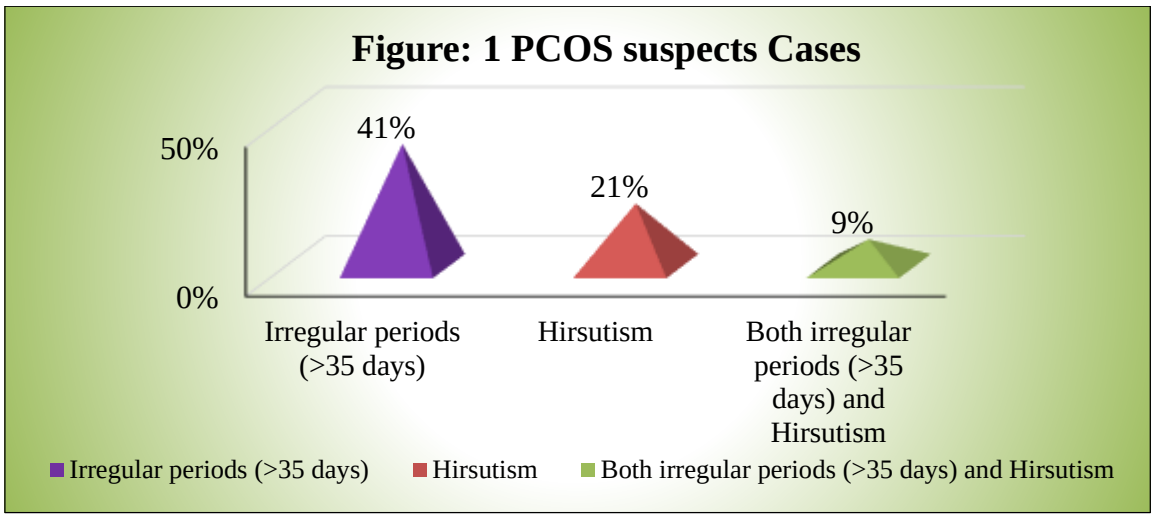

Table: 2 Anthropometric measurements among PCOS young women N=300

Anthropometric Measurements	Mean ± SD
Age in years	24.71 ± 4.327
Weight in Kg	69.56 ± 9.67
Height in cm	154.21 ± 16.021
BMI in Kg/m²	27.54 ± 4.714
Waist circumference	91.05 ± 11.041
Hip circumference	108.24 ± 10.41

The anthropometric parameters of the study population reveals the mean age of the participants was 24.71 years, with a standard deviation of 4.327 years, indicating a relatively young age group with moderate variability. The average weight recorded was 69.56 kg, with a standard deviation of 9.67 kg, suggesting a moderate spread of weights within the sample. In terms of height, the mean was 154.21 cm, with a standard deviation of 16.021 cm, indicating a considerable variation in heights among the participants. The calculated BMI (Body Mass Index) averaged at 27.54 kg/m², with a standard deviation of 4.714 kg/m², reflecting a sample

group with, on average, a higher BMI. Waist circumference averaged at 91.05 cm, with a standard deviation of 11.041 cm, indicating moderate variability in waist sizes among participants. Hip circumference had an average of 108.24 cm, with a standard deviation of 10.41 cm, indicating a range of hip sizes within the sample. Overall, the data suggests that the study population comprised predominantly young individuals with moderate variability in weight, height, BMI, waist circumference, and hip

Table:3 Awareness regarding Polycystic Ovarian Syndrome (PCOS) among young women

N=300

S.NO	Awareness of PCOS	Number	Percentage
1.	Aware of PCOS	114	39%
2.	Not aware of PCOS	186	61%

The data provided offers insight into the awareness levels of Polycystic Ovary Syndrome (PCOS) within a specific group. Among the 300 individuals surveyed, 114 individuals, representing 39% of the group, were found to be aware of PCOS. Conversely, a significant portion of the surveyed population, comprising 186 individuals or 61%, were found to be unaware of PCOS. This data underscores a notable gap in knowledge and awareness concerning PCOS within the surveyed population. Efforts to increase education and awareness about PCOS may be imperative to ensure early detection, proper management, and support for individuals affected by this syndrome.

Figure: 2 Pie diagram representing the Awareness of PCOS among young women

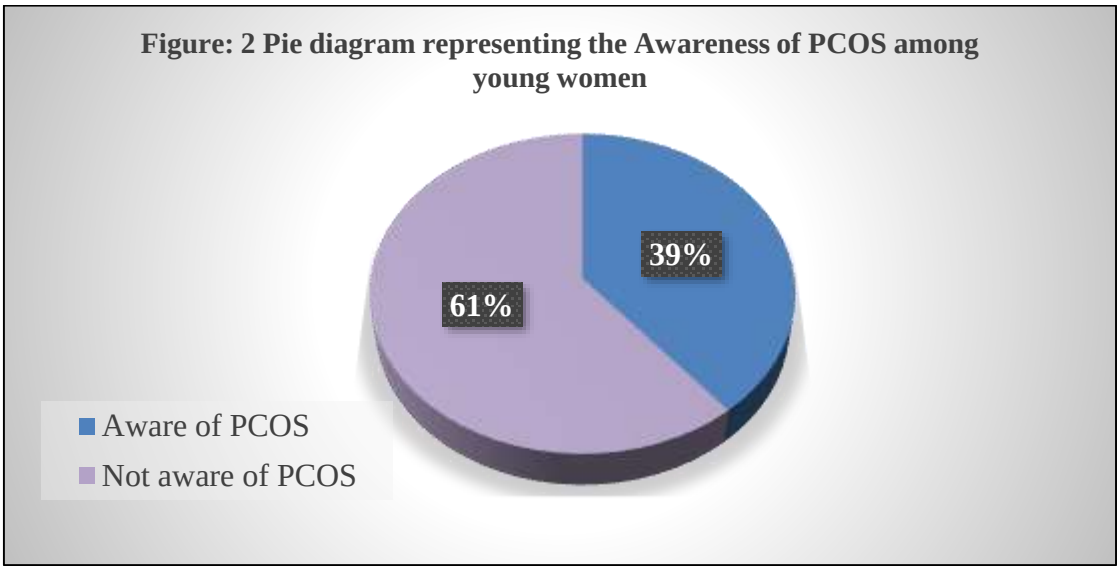

Table 3: Association of PCOS with selected Predisposing factors (n=62)

S.NO	Predisposing Factors	PCOS Present	Percentage	P value
1.	Age • 18-25 years • 26-30 years	 38 24	 61.3% 38.7%	P=0.0916
2.	BMI • Underweight • Normal • Overweight	 8 18 31	 12.9% 29% 50%	P<0.005
3.	Activity • Regular physical activity • No physical activity	 12 50	 19.4% 80.6%	P=0.125
5.	Family History • Yes • No	 52 10	 83.9% 16.1%	P<0.001

*BMI – Body Mass Index

The data presents a comprehensive overview of various predisposing factors for polycystic ovary syndrome (PCOS) among the study participants. Firstly, in terms of age distribution, a notable majority, representing 61.3% were between the 18-25 years category, while 38.7% were aged between 26-30 years, suggesting a relatively even distribution across the two age brackets. However, the statistical analysis yielded a p-value of 0.0916, indicating that age did not significantly correlate with PCOS susceptibility.

Secondly, concerning Body Mass Index (BMI), the analysis revealed that 12.9% were classified as underweight, 29% had a normal BMI, and a significant majority, accounting for 50%, were categorized as overweight. The p-value is less than 0.005 highlights a significant association between BMI and PCOS predisposition.
Thirdly, with regard to activity level, only 19.4% were engaged in regular physical activity, while the majority, totaling 80.6%, reported no physical activity. However, the statistical analysis did not find a significant association between activity level and PCOS susceptibility, as indicated by the p-value of 0.125.

Finally, regarding family history, a substantial majority, comprising 83.9% of the participants, reported a positive family history of PCOS, while only 16.1% indicated no familial link to the condition. The highly significant p-value of less than 0.001 underscores the strong correlation between family history and PCOS susceptibility. These findings collectively underscore the multifaceted nature of PCOS predisposition, with factors such as BMI and family history has significant impacts on PCOS. Further exploration and understanding of these factors could offer valuable insights into the prevention and management of PCOS.

DISCUSSION

Polycystic ovary syndrome (PCOS) is a chronic endocrine disorder that can cause a range of symptoms, including irregular periods, excess hair growth, weight gain, high cholesterol, and fertility issues. It is the most common hormonal disorder among women of reproductive age and is a leading cause of infertility. PCOS can also have serious long-term health consequences. Raising public interest in PCOS through media exposure or public service announcements can help increase awareness and prevent the disease[8].

In the present study, the prevalence of PCOS is 20.67%, 39% of young women were aware of PCOS, 61 % were not aware about the PCOS. The prevalence of selected predisposing factors for Polycystic Ovary Syndrome (PCOS) within a sample group of 300 individuals, expressed in percentages. Among the age groups, 61.3% of individuals aged 18-25 years and 38.7% of those aged 26-30 years exhibit PCOS predisposing factors. In terms of Body Mass Index (BMI), 12.9% classified as underweight, 29% with a normal BMI, and 50% classified as overweight show these factors. Activity levels also seem to influence PCOS, with 19.4% of individuals engaging in regular physical activity and 80.6% reporting no physical activity demonstrating predisposing factors. Moreover, family history appears to play a role, as 83.9% of individuals with a family history of PCOS and 16.1% without such a history exhibit predisposing factors. These percentages highlight the varied nature of PCOS risk factors and emphasize the need for comprehensive assessment and management strategies.

A study by Zhang, Q et al. conclude that younger women with PCOS are more likely to experience menstrual problems, hyperandrogenism, infertility, metabolic syndrome, and insulin resistance. Specialists must recognize that women with PCOS may experience a range of health issues beyond their initial symptoms[9].

CONCLUSION

PCOS is a common problem among females after puberty. Many young women were unaware of the disease's symptoms and management, which may have skewed the observed disease burden away from its true prevalence. This endocrine disorder is characterised by hormonal imbalances, particularly hyperandrogenism and increased testosterone activity, which has a significant impact on women's health.

The prevalence of PCOS predisposing factors varies across different demographic groups, with age, BMI, physical activity, and family history playing crucial roles. Younger age groups and overweight individuals show a higher prevalence of these factors. Lack of physical activity and family history of PCOS are also significant risk factors. A comprehensive approach to management is essential, including lifestyle modifications such as dietary changes and regular physical activity. Early screening and personalized treatment plans are crucial, especially for individuals with a family history of PCOS. Education and awareness campaigns for healthcare professionals and the general population are essential to improve early detection and overall management of PCOS predisposing factors. Further research is needed to better understand the underlying mechanisms and optimize therapeutic strategies for PCOS management.

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There are no funding sources for this study.

CONFLICTS OF INTEREST :
Not Interest.

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