

Assessment of the Impact of a Structured Educational Program on PCOS Knowledge Among Adolescent Girls in a Chosen Area of Tarn Taran District, Punjab

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Abstract

*Polycystic ovary syndrome (PCOS) is a health condition characterized by elevated levels of androgen hormones, irregular menstrual patterns, and the existence of small cysts on one or both ovaries. The disorder can be morphological or biochemical. Prevention of PCOS includes lifestyle modifications that are to manage weight, exercise, and dietary changes. **Aim and Objectives:** The main goal of this study was to assess the efficacy of a structured educational program in improving the understanding of PCOS among adolescent girls. **Methodology:** This study utilized quantitative research methodology and employed a pre-experimental design. The sample comprised 60 adolescent girls selected from specific regions within Tarn Taran district. Convenience sampling was the technique of choice, and a self-structured questionnaire was employed to evaluate their knowledge. A structured teaching program was delivered and post-test was taken. Reliability and validity of the tool was established. **Results:** The findings show that majority of adolescent girls belongs to age group of 20 years. Majority of adolescent girls had normal body mass index. The onset of menarche occurs after the age of 12 years. Maximum adolescent girls were vegetarian and belonged to rural areas. A significant number of adolescent girls consumed a high amount of junk food. Majority of adolescent girls had normal menstrual cycle and have occasional exercise routine. Regarding knowledge, majority of girls had average knowledge (96.7%) regarding PCOS during pretest. The findings show that after post-test all (100%) the girls had good knowledge regarding PCOS. **Conclusion:** Majority of adolescent girls had good knowledge regarding PCOS.*

Keywords: Polycystic ovary syndrome (PCOS), knowledge, adolescents, structured teaching program

INTRODUCTION

Polycystic ovarian syndrome (PCOS) is a condition in which many tiny cysts develop in the ovaries that leads to imbalance in hormones. PCOS is a relatively common endocrine disorder. The term PCOS was coined by Arving Stein and Micheal Leventhal in 1935 as a combination of 'amenorrhea,' 'obesity,' and 'hirsutism' when they observed the connection between obesity and reproductive issues. It is also known as the syndrome 'o,' which stands for overfeeding, overproduction of insulin, and disturbances in ovulation. PCOS is a health condition marked by increased androgen hormone levels, irregular menstrual patterns, and the existence of small cysts on either one or both ovaries. Hyperandrogenism is a key clinical feature of PCOS and can lead to the inhibition of follicular development, the formation of ovarian microcysts, anovulation, and changes in menstrual patterns [1].

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The exact origin of PCOS is not fully understood, but it is thought to stem from a blend of genetic, environmental, and familial elements. Other risk factors include elevated insulin production, long-term use of seizure medication (valproate), lack of physical activity, exposure to infectious and toxic agents that can increase androgen levels, which in turn contribute to the development of PCOS.

Common signs and symptoms of PCOS encompass irregular or absent menstrual periods, excessive body and facial hair (hirsutism), discomfort, acne, and difficulties in conceiving. PCOS also heightens the likelihood of premature birth and miscarriage during pregnancy. Furthermore, PCOS can result in infertility, type 2 diabetes, obesity, sleep apnea, and hypertension. It is important to note that not all women with PCOS experience all of these symptoms [2].

The prevention of PCOS includes the lifestyle modifications that are to manage weight, by exercise and dietary changes. Exercise includes moderate exercise, jogging, swimming, cycling, and brisk walking and dietary changes include food that are low in sugar and fat and have low glycemic index. Foods with a low glycemic index such as wheat, barley, jowar, kidney beans, spinach, cabbage, *methi* (fenugreek) greens, carrots, radishes, guavas, cherries, apples, oranges, and more should be consumed. These foods promote a gradual and steady release of insulin in the body, facilitating efficient energy utilization rather than fat storage. It is advisable to steer clear of refined carbohydrates typically present in processed foods like rice, potatoes, and sugar. Sugar-containing drinks like soda and juice should be avoided.

As a result of unawareness of this disorder, it is important to provide information to adolescent girls about the PCOS as it has severe symptoms and complications that leads to infertility. So, by providing knowledge, the girls can prevent and control the disease.

NEED OF THE STUDY

PCOS is a common health concern that tends to become more frequent in adolescent girls and young women during their reproductive years. It is one of the endocrine disorders with prevalence rate of is 3.7% to 22.5%. PCOS is the most common endocrine dysfunction in fertile women.

PCOS is a common problem among teen girls and young girls. In fact, 10% of girls have PCOS. The common features of normal puberty in adolescent are menstrual irregularities and insulin resistance. PCOS is the most frequently documented endocrine disorder, with possible lifelong health implications. A study conducted on adolescent girls aged 12 to 19 years at Balaji Hospital in Vellore, Tamil Nadu, India, aimed to determine the prevalence of PCOS among this age group. The research findings indicated that 18% of the subjects had been diagnosed with PCOS, and it was more prevalent among participants from urban areas compared to those from rural areas. Previous research indicates that approximately 20% to 25% of Indian women in their childbearing years experience PCOS. Obesity is also a major cause of PCOS and about 60% of women with PCOS are obese, and 35% to 50% have fatty liver. About 70% have insulin resistance, 60% to 70% have high levels of androgen, and 40% to 60% have glucose intolerance [3].

A study on teen girls and college girls in several colleges around India shows that higher rate of PCOS (9.13%–22.5%) that affects 1 out of 10 women of childbearing age. The cases of PCOS increased by approximately 36% during the period from 2007 to 2008, indicating a significant rise in PCOS among adolescent girls. The recent studies revealed that the current rate is 2.2% to 26% [4].

Keeping the above facts in mind, we find that PCOS impacts patient's quality of life but is given last consideration due to lack of awareness and knowledge. PCOS crucially affects the quantity and quality of new generation which serves as the backbone to the society. So, there is need to improve knowledge of adolescent girls regarding PCOS which is possible only by health education. So, we have decided to impart a structured teaching program on knowledge regarding PCOS.

Aim of the Study

The study's objective was to evaluate the knowledge about PCOS among adolescent girls living in a designated area of Tarn Taran district, Punjab.

Objectives

1. To evaluate the initial knowledge about PCOS among adolescent girls living in a specific region of Tarn Taran district.
2. To provide structured teaching program regarding PCOS among adolescent girls residing in selected area of district Tarn Taran.
3. To evaluate the knowledge about PCOS among adolescent girls in a chosen area of Tarn Taran district after the educational intervention.

REVIEW OF LITERATURE

In a descriptive study by Sehar [5] at Rufaida College of Nursing in New Delhi, knowledge about PCOS was assessed among 60 nursing students using a structured questionnaire. The findings indicated that the majority of nursing students, specifically 60%, possessed an average level of knowledge. Additionally, 38.33% exhibited good knowledge, while only 1.66% displayed poor knowledge regarding PCOS. To summarize, the study determined that the majority of nursing students possessed a moderate level of knowledge regarding PCOS [5].

Patel and Rai [4] conducted a cross-sectional study to assess the knowledge about PCOS among women in Indore city. Samples of 400 women of age group 18 to 30 years were selected for study. A semi-structured questionnaire was used as a research tool for collecting data. The study results revealed that only 41% of women were aware of the term PCOS, and 46% women were aware about organ system involved in disease. A total of 49% of women knew about various sign and symptoms associated with PCOS. The study concluded that very few of young women understand about the disease [4].

Upadhye et al. [6] conducted a study to assess the knowledge on PCOS among medical students in Maharashtra. A sample of 200 medical students was chosen for the research, and data collection was conducted using a structured questionnaire. The results revealed that 33% of the girls obtained knowledge about PCOS from their teachers, while 19% received information from friends, and 11.5% acquired it from media sources like newspapers. Additionally, 5% of the girls gathered information from the internet, while 28% of the girls remained unaware of PCOS. The study's conclusion suggests that it is essential to incorporate education about the disorder and counseling for adolescents into the curriculum. This would raise awareness about PCOS and the necessary lifestyle modifications [6].

Haq et al. [7] conducted a mixed-method research study aimed at assessing the knowledge of PCOS among female science students from various public universities in Quetta, Pakistan. They selected a sample of 500 female science students for their study. To collect data, they used a self-developed questionnaire as their research tool. The study's findings indicated that 72.5% of the respondents initially lacked awareness about PCOS but gained knowledge through informational brochures. After receiving an educational intervention, 90.2% of the subjects had acquired adequate knowledge about PCOS. The study concluded that there is a need for various educational programs to disseminate information about PCOS [7].

Sunanda and Nayak [8] conducted a descriptive study with the objective of assessing knowledge about PCOS among nursing students in Mangalore. They selected a sample of 150 student nurses for their study and employed structured questionnaires as a data collection tool. The study's findings showed that 76% of the participants had a moderate level of knowledge about PCOS, whereas 10.7% had a strong understanding of the condition. The study concluded that students' sources of information, consumption of junk food, and dietary patterns were factors associated with their level of knowledge about PCOS at a 5% level of significance [8, 9].

RESEARCH METHODOLOGY

- *Research approach:* Quantitative approach
- *Research design:* Pre-experimental: one group pre-test and post-test
- *Setting of study:* Selected area of Tarn Taran district, Punjab
- *Population:* Adolescent girls aged 13 to 21 years
- *Sample size:* 60 adolescent girls
- *Sampling technique:* Non-probability convenient sampling technique
- *Research tool:*
 - (1) Self-structured knowledge questionnaire
 - (2) Development of structured teaching program
- *Data analysis:* Descriptive and inferential statistics

Table 1. Frequency and percentage distribution of sociodemographic profile.

S.N.	Sociodemographic Variables	Frequency	Percentage
1.	Age (in years)		
	17	1	1.67
	18	8	13.3
	19	21	35
	20	22	36.7
	21	8	13.3
2.	Body mass index (BMI) kg/m ²		
	Underweight <18.5	23	38.33
	Normal 18.5–24.9	30	50
	Overweight 25–29.9	07	11.66
	Obese > 30	0	0
3.	Age at menarche		
	10 years	0	0
	11 years	0	0
	12 years	7	11.67
	More than 12 years	53	88.33
4.	Habitat		
	Urban	17	28.33
	Rural	43	71.67
	Tribal	0	0
5.	Dietary pattern		
	Vegetarian	40	66.66%
	Non-vegetarian	16	26.66%
	Eggetarian	4	6.66
6.	Menstrual cycle		
	Regular	49	81.66
	Irregular	11	18.33
7.	Junk food intake		
	Everyday	3	5
	Once a week	29	8.33
	Once in two weeks	28	46.66
8.	Regular exercise routine		
	Daily	4	6.66
	Once or twice a week	15	25
	Occasionally	34	56.66
	Never	7	11.66

Analysis and Interpretation

Organization of Data

- *Section A:* Distribution of subject's sociodemographic characteristics by percentage (Table 1).
- *Section B:* Evaluating the degree of knowledge about PCOS (Tables 2 and 3).
- *Section C:* Efficacy of a structured educational program on PCOS (Table 4).

Section A

Frequency and Percentage Distribution of Sociodemographic Profile of Subjects.

Section B

Assessing the Level of Knowledge Regarding PCOS.

Table 2. Grading the level of knowledge of samples regarding PCOS in pre-test.

S.N.	Grading	Frequency	Percentage
1.	Good (21–30)	1	1.66
2.	Average (11–20)	58	96.66
3.	Poor (1–10)	1	1.66

Table 3. Grading the level of knowledge of sample regarding PCOS in post-test.

S.N.	Grading	Frequency	Percentage
1.	Good (21–30)	60	100
2.	Average (11–20)	0	0
3.	Poor (1–10)	0	0

Section C

Assessing the Effectiveness of Structured Training Program.

Table 4. Comparison of mean and standard deviation of knowledge score of samples in pre-test and post-test.

S.N.	Knowledge	Maximum Score	Mean Score	Standard Deviation	Tabulated Value	Calculated Paired t Test Value
1	Pre-test	23	17.72	2.44	2.00	-40.69
2	Post-test	30	28.9	0.966		

CONCLUSION

The primary objective of nursing practice is to improve the awareness of adolescent girls. This study aimed to evaluate the impact of a structured teaching program on the knowledge of PCOS among adolescent girls living in a specific area of Goindwal Sahib, Tarn Taran district in Punjab. Based on the results of the study, it can be concluded that every single adolescent girl (100%) had a strong level of knowledge regarding PCOS.

Recommendations

Based on the research study's findings, the following suggestions are proposed for future research:

- Replicating the study with a larger sample size to allow for more generalized findings.
- Conducting a descriptive study to investigate the prevalence of PCOS among adolescent girls.
- Carrying out an experimental study to evaluate the impact of dietary and exercise interventions on women with PCOS.

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