REVIEW PAPER

A PRE EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING POLYCYSTIC OVARIAN SYNDROME AMONG ADOLSCENT GIRLS IN SELECTED SCHOOL AT VARANASI, U.P. INDIA

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ABSTRACT

Background: Polycystic Ovarian Syndrome (PCOS) is one of the most common hormonal disorders affecting adolescent girls and women of reproductive age. Lack of awareness regarding PCOS can lead to serious health complications. A pre experimental study to assess the effectiveness of structured teaching programme on knowledge and attitude regarding polycystic ovarian syndrome among adolescent girls in selected school at Varanasi, UP, India.

Methodology: A pre-experimental one group pre-test and post-test research design was adopted for the study. 30 adolescent girls were selected using convenient sampling technique. Data were collected using a structured knowledge questionnaire and an attitude scale. A pre-test and post-test was conducted using the same tools. The collected data were analyzed using descriptive and inferential statistics, including mean, standard deviation, paired t-test, and chi-square test.

Result: In the pre-test, 12 (40%) participants had poor knowledge and none had good knowledge. In the post-test, 23 (77%) participants had good knowledge regarding PCOS. Regarding attitude, in the pre-test, 12 (40%) had unfavourable attitude and 18 (60%) had moderately favourable attitude. In the post-test, 3 (10%) had unfavourable attitude, 12 (40%) had moderately favourable attitude, and 15 (50%) had favourable attitude. The mean pre-test knowledge score was 6.9 and the mean post-test score was 16, with a mean difference of 9.1. The calculated t-value indicated a statistically significant difference between pre-test and post-test scores at 0.05 level of significance. The study concluded that adolescent girls had inadequate knowledge and moderately favourable attitude regarding PCOS. Therefore, there is a need to improve awareness through health education programmes to promote early identification and management of PCOS and the structured teaching programme was highly effective in improving knowledge and attitude regarding PCOS among adolescent girls.

Keywords: PCOS, Structured Teaching Programme, Adolescent Girls, Knowledge, Attitude

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Introduction : Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine disorders among women of reproductive age. It is characterized by hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology. This syndrome has far-reaching implications for reproductive, metabolic, and psychological health. [1]. Polycystic ovarian syndrome (PCOS) is a complex disorder, and several abnormalities are involved in the spectrum of this syndrome. The prevalence of PCOS varies between 5 and 10% among adult women of reproductive age; however, its prevalence among adolescents is lower, having been reported between 1.1% (4)

Need of the study: Polycystic Ovary Syndrome (PCOS) is an endocrine disorder affecting women of reproductive age, characterized by hormonal imbalances, reproductive abnormalities, and metabolic disturbances.(2) An estimated 65.77 million to 69.5 million women of reproductive age worldwide were living with PCOS in 2021.The global number of new cases increased from 1.48 million in 1990 to 2.3 million in 2021. Up to 70% of affected women remain unaware of their condition.(3) Polycystic ovary syndrome (PCOS) is a significant contributor to female infertility and other various metabolic disorders.(3) According to the Ministry of Health and Family Welfare, Government of India, the prevalence of Polycystic Ovary Syndrome (PCOS/PCOD) in India ranges from 3.7% to 28% among women in the age group of 12–40 years. Studies indicate that 1 in 5 young Indian women suffer from PCOS. Early identification is crucial because timely lifestyle changes and treatment can mitigate complications. However, lack of awareness hinders early diagnosis: globally up to 70% of PCOD cases go undetected.(3)

Objectives :

1. To assess the pre-test knowledge regarding PCOS among adolescent girls (11-19)
2. To assess the pre-test attitude regarding PCOS among adolescent girls.
3. To administer the structured teaching program on PCOS to adolescent girls.
4. To assess the post-test knowledge levels after the administration of a structured teaching programme.
5. To find out the effectiveness of the structured teaching programme by comparing pre-test and post-test attitude scores regarding PCOS among adolescent girls.
6. To find out the association between post-test knowledge regarding PCOS and demographic variables.

Operational Definitions:

Assess: It refers to the systematic measurement and evaluation of the level of knowledge and attitude regarding PCOS among adolescent girls (11-19) using a structured knowledge questionnaire and attitude scale before and after the structured teaching programme.

Knowledge: It refers to the level of understanding and awareness of adolescent girls(11-19) regarding PCOS, including its symptoms, complications, prevention, and management, as measured by their responses to a structured questionnaire.

Attitude-An attitude is defined as a learned, measurable predisposition of an individual to respond positively or negatively toward a specific object, person, idea, or situation, which can be observed and quantified through responses on structured tools such as questionnaires, rating scales (e.g., Likert scale), or behavioural indicators.

PCOS (Polycystic Ovary Syndrome): It is defined as a common hormonal disorder affecting adolescent girls of reproductive age, characterised by irregular menstrual cycles, excess androgen levels, and the presence of multiple small cysts in the ovaries.

Adolescent girls: It is defined as females typically aged 11-19 transitioning from childhood to adulthood.

Assumption:

1. Respondents will answer the questionnaire honestly.
2. Participants have comparable educational exposure (all are school students) and are willing to learn about health issues.
3. Knowledge levels can be accurately measured by a structured questionnaire.

Hypothesis:

Hypothesis (H_1): There will be a significant improvement between pre-test and post- test knowledge level regarding PCOS among adolescent girls after a structured teaching programme.

Hypothesis (H_0): There will be no significant improvement between pre-test and post- test knowledge level regarding PCOS among adolescent girls after a structured teaching programme.

Delimitations:

- It includes adolescent girls aged 15-19 years who are only studying in selected school.
- Data is collected via a questionnaire, which may be subject to respondent recall bias.
- Current knowledge and intervention are measured; no follow-up is included

Conceptual Framework: The conceptual framework of the present study is based on **General System Theory** proposed by **Karl Ludwig von Bertalanffy (1968)**. This theory explains the relationship between input, process and output. It helps to understand how various factors influence the knowledge regarding PCOD among adolescent girls.

Methodology:

Research Approach: A Quantitative Research Approach was Considered Most Effective for Assessing the Knowledge and Attitudes of Adolescent Girls regarding PCOS.

Research Design: A Pre-Experimental One-Group Pretest-Posttest Research Design was used to assess the knowledge and attitudes of Adolescent Girls.

Research Setting: Based on the Geographical Proximity Feasibility of conducting the study and availability of samples, the research study was conducted at Baba Siddhnath Inter College, Varanasi.

Population: The Target Population for the Study was Adolescent Girls.

Sample: In this study, samples are Adolescent girls of Baba Siddhnath Inter College, Varanasi.

Sample Size: In this study, the Chief Investigator selected 30 Adolescent girls studying in Baba Siddhnath Inter College, Varanasi.

Sampling Technique: In this study, the Chief Investigator used a non–probability convenience sampling Technique

Criteria for Selection of Samples:

Inclusion criteria:

- Adolescent Girls who are studying in Baba Siddhnath Intercollege.
- Who reads, writes and understands both English and Hindi both languages.
- Who are willing to participate in this study.

Exclusion Criteria:

- Male students are excluded.
- Girls who are not willing to participate in the study.
- Those who are not able to participate due to any physical or psychological health condition.

Content Validity: Content Validity of the tool was obtained based on Specialized Opinion from different experts from different fields, comprising of 3- Obstetrician, 6 – Nursing experts in Obstetrics & Gynaecology Nursing, 1- Nursing expert in Community Health Nursing, 1- Nursing Expert in Medical Surgical Nursing.

Reliability of Tool: Reliability is the consistency of the set of measurements or a measuring instrument, often used to describe a test. For assessing the reliability of the tool by using the test-retest method. The reliability coefficient of knowledge was r=0.711, and attitude was r= 0.939. Both of these coefficients were greater than 0.7, and hence the tool was found reliable and feasible.

Ethical Consideration: Ethical Permission was taken from the institutional research ethical committee. Administrative Permission was taken from the Head of the organization, Baba Siddhnath Inter College, Varanasi. Informed Consent was obtained from the samples, and it was assured that the confidentiality of the information provided would be maintained.

Pilot Study: Pilot study is a small-scale preliminary study conducted in order to test the feasibility, relevance and practicability of the study. A pilot study was conducted for 5 samples, in which it was seen that the study was feasible.

Preparation Of the Tool:

Research tool can be defined as the instrument in hands of a researcher to measure what they intend to in their study. A structured questionnaire is used for

the collection of data. The tool was based on the objectives for the study. The tool consists of 3 parts:

Section A- It consists of demographic data.
Section B- It consisted of 20 questions on knowledge regarding PCOS. Each question has four responses. The correct answer was given a score of '1' and the wrong answer '0'.

Section C- Attitude scale on PCOS (5-point Likert scale) It consisted of 10 questions on attitude regarding PCOS each question has five responses, namely, strongly agree (5), agree (4), not confirm (3), disagree (2), strongly disagree (1). The total attainable score for attitude was 50.

Result:

SECTION 1: Distribution Of Demographic Variables (n = **30)**

S.No	Variable	Category	Freq (f)	(%)
1	Age	11–13	4	13.33%
		14–16	8	26.67%
		16–20	18	60.00%
		Above 20	0	0%
2	Standard	9th	4	13.3%
		10th	9	30%
		11th	8	26.7%
		12th	9	30%
3	Religion	Hindu	28	93.3%
		Muslim	2	6.7%
		Christian	0	0%
		Others	0	0%
4	Type of Family	Nuclear	8	26.7%
		Joint	21	70%
		Extended	1	3.3%
5	Place of Residence	Urban	6	20%
		Rural	19	63.3%
		Semi-urban	5	16.7%
6	Monthly Income	Below 10000	4	13.3%
		10001–25000	17	56.7%
		25001–50000	7	23.3%
		Above 50000	2	6.7%
7	Age at Menarche	<12 years	7	23.3%
		12–14 years	20	66.7%
		15–17 years	3	10%
		>17 years	0	0%
8	Menstrual Cycle Regularity	Regular	19	63.3%
		Irregular	7	23.3%
		Occasionally irregular	4	13.3%
9	Family History of PCOD	Yes	2	6.7%
		No	19	63.3%
		Not sure	9	30%
10	Source of Information	Health professionals	0	0%
		Internet/social media	5	16.7%
		Friends/family	2	6.7%
		Books/academic study	16	53.3%
		No prior information	7	23.33%

Table 1: Frequency and Percentage Distribution of Demographic Variables

SECTION 2: Frequency distribution of Pre-test level of knowledge regarding PCOS among adolescent girls (11-19 years)

Knowledge Score	Grade	Pre-test Score	%	Mean	SD
0 – 6	Poor	12	40%	6.9	1.29
7 – 13	Moderate	18	60%		
14 – 20	Good	0	0%		
total		30	100%		

TABLE – 2 Frequency and percentage distribution of pre-test knowledge of adolescent girls. Above table depicts that pre-test mean knowledge score of participants was 6.9 with a standard deviation of 1.29.

SECTION 3: Frequency distribution of Post-test level of knowledge regarding PCOS among adolescent girls..

Knowledge Score	Grade	Post-test Score	%	Mean	SD
0 – 6	Poor	0	0%	15.3	2.35
7 – 13	Moderate	7	23%		
14 – 20	Good	23	77%		
TOTAL		30	100%		

TABLE – 3 Frequency and percentage distribution of post-test knowledge of adolescent girls. The table shows a significant improvement in knowledge among all participants and the post-test mean knowledge score of respondents was 15.3 with a standard deviation of 2.35.

SECTION 4: Frequency distribution of pre test and post-test level of attitude regarding PCOS among adolescent girls

Attitude Score	Level of Attitude	Pre-test (f)	Pre-test (%)	Post-test (f)	Post-test (%)
10 – 23	Unfavourable	12	40%	3	10%
24 – 36	Moderately favourable	18	60%	12	40%
37 – 50	Favourable	0	0%	15	50%
TOTAL		30	100%	30	100%

TABLE – 4 Frequency and percentage distribution of pre-test and post-test level of attitude regarding PCOD among adolescent girls. This findings indicates that the structured teaching programme was effective in improving the attitude of adolescent girls regarding PCOS.

Section 5: The effectiveness of structured teaching programme on knowledge regarding PCOS among adolescent girls

KNOWLEDGE SCORE	CATEGORY	PRE-TEST	POST-TEST	t-value	Remarks
0 – 6	Poor	12	0	t = 26.4	Highly Significant ($p < 0.05$)
7 – 13	Average	18	7		
14 – 20	Good	0	23		
TOTAL		30	30		

TABLE – 5 Frequency and Percentage distribution of the difference between pre- test and post-test level of knowledge.

Hence, the structured teaching programme was found to be highly effective in improving knowledge regarding PCOS among adolescent girls.

Section 6: The descriptive association between post-test knowledge and demographic variable.

S. no	Demographic Variable	Category	Good	Moderate	Poor	X^2	P-value	Significant ($p>0.05$)
1	Age	11–13	1	3	0	7.21	0.027	Significant
		14–16	5	3	0			
		16–20	17	1	0			
		Above 20	0	0	0			
2	Standard	9th	1	3	0	8.34	0.039	Significant
		10th	7	2	0			
		11th	7	1	0			
		12th	8	1	0			
3	Religion	Hindu	22	6	0	1.89	0.169	Not significant
		Muslim	1	1	0			
		Christian	0	0	0			
		Others	0	0	0			
4	Type of Family	Nuclear	6	2	0	0.36	0.835	Not Significant
		Joint	16	5	0			
		Extended	1	0	0			
5	Place of Residence	Urban	3	3	0	6.45	0.040	Significant
		rural	15	4	0			
		Semi-urban	5	0	0			
6	Monthly Income	Below 10000	1	3	0	7.95	0.047	Significant
		10001–25000	14	3	0			

		25001–50000	6	1	0			
		Above 50000	2	0	0			
7	Age at Menarche	<12 years	5	2	0	0.067	0.716	Not significant
		12–14 years	16	4	0			
		15–17 years	2	1	0			
		>17 years	0	0	0			
8	Menstrual cycle regularity	Regular	15	4	0	0.59	0.744	Not significant
		Irregular	5	2	0			
		Occasionally irregular	3	1	0			
8	Menstrual cycle regularity	Regular	15	4	0	0.59	0.744	Not significant
		Irregular	5	2	0			
		Occasionally irregular	3	1	0			
9	Family History of PCOD	Yes	1	1	0	1.91	0.385	Not significant
		No	16	3	0			
		Not sure	6	3	0			
10	Source of Information	Health professionals	2	3	0	9.12	0.028	Significant
		Internet/social media	0	0	0			
		Friends/family	1	1	0			
		Books / academic study	15	1	0			
		No prior information	5	2	0			

TABLE: - 6 Chi square value and p value significance of demographic variables.

Discussion: The present study was conducted on the topic: "*A study to assess the knowledge and attitude regarding PCOS among adolescent girls in a selected school at Varanasi."*

The main aim of the study was to assess the baseline knowledge and attitude of adolescent girls regarding PCOS and to evaluate the effectiveness of a structured teaching programme in a view to improve their knowledge and attitude.

Major findings of the study:

The findings of the study are discussed under the following headings:

1. To assess the pre-test knowledge regarding PCOS among adolescent girls.
2. To assess the pre-test attitude regarding PCOS among adolescent girls.
3. To administer the structured teaching program on PCOS to adolescent girls.
4. To assess the post-test knowledge levels after the administration of structured teaching programme.
5. To find out the effectiveness of structured teaching programme by comparing pre-test and post-test attitude scores regarding PCOS among adolescent.
6. To find out the association between post-test knowledge regarding PCOS and demographic variables.

Implications:

1. ***Nursing Education*** : PCOS-related alarming signs should be incorporated into school health education programmes. Nursing students should be trained to educate adolescents about reproductive health issues.
2. ***Nursing Practice:*** Nurses can play a vital role in early identification and prevention of PCOS. Health education sessions and health camps should be conducted on regular basis in schools and colleges.
3. ***Nursing Administration:*** School authorities should collaborate with healthcare sector and professionals to organise awareness programmes and health checkups in government and private sectors. Organizational Policies of the schools and colleges should support adolescent health promotion activities**.**
4. ***Nursing Research:*** Further research can explore long-term effectiveness of teaching programmes. Studies can be conducted in different populations and settings.

Recommendations:

On the basis of the finding of the study the following recommendation have been made:

1. A similar study can be conducted on a larger sample size and different community settings to improve awareness regarding PCOS and to generalize the findings.
2. The study can be replicated in urban and rural community as a comparative study.

3. Long-term follow-up studies can be conducted to assess retention of knowledge.
4. Structured teaching programmes should be regularly implemented in schools to promote early knowledge and preventive practices.
5. More focus should be given to lifestyle modification in a view to update attitude and behavioural changes.
6. Awareness programmes involving parents and teachers may help in creating a supportive environment for adolescent girls to adopt healthy lifestyle practices and prevent complications related to PCOS.

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