

Article

A Study to Assess the Effectiveness of an Awareness Programme on Knowledge Regarding Prevention of Polycystic Ovarian Syndrome among Adolescent Girls at a Selected School, Puducherry

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Abstract:

Background of the Study: One of the most common endocrine disorders of reproductive age women is polycystic ovary syndrome (PCOS). Women with PCOS are at risk for infertility, endometrial cancer, metabolic disorders, and cardiovascular disease. Awareness of the signs and symptoms of PCOS can be effective in diagnosing early stage PCOS and promoting quality of life (QoL). This study assesses the awareness of PCOS in schoolgirls and their mothers.

Aim of the study: The main aim of this study is to evaluate the effectiveness of an awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls.

Methodology: The design adopted for the study was a true experimental pre-test and post-test control group design. A computer-generated sampling method was used to select 80 adolescent girls. 40 samples were in study group and 40 samples were in control group. Pre-test was done with a structured knowledge questionnaire. Awareness programme was given to the study group. On the 7th day post-test was conducted for both study and control group with the same knowledge questionnaire. The collected data were analyzed based on the above-mentioned objectives by using descriptive and inferential statistics.

Results and discussion: The result of the present study in comparison with post-test mean, standard deviation of knowledge score between the study group and control group among adolescent girls was 14.88±1.897, 9.10±2.240 the calculated 't' value was 12.44 shows statistically significant difference on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in study than the control group.

Conclusion: The results of the study concluded that the awareness programme was effective and the adolescent girls gained knowledge regarding prevention of polycystic ovarian syndrome.

Keywords: Awareness Programme, Polycystic ovarian syndrome, Adolescent Girls

INTRODUCTION

Polycystic ovarian syndrome (PCOS) also referred to as Stein–Leventhal syndrome^[1] is a heterogeneous endocrine disorder in women of reproductive age and is associated with a broad range of health conditions including hypertension, dyslipidemia, insulin resistance, hyperandrogenemia, and type 2 diabetes mellitus (T2DM).^[2] Globally, the prevalence of PCOS is estimated to be between 5.5% and 12.6% in women in the age group of 17–45 years.⁽³⁾ In India, the prevalence estimates are between 8.2% and 22.5% depending on the diagnostic criteria used.^(4,5)

The most common endocrine disorder, Polycystic Ovarian Syndrome (PCOS), is one of the primary causes of infertility in women. If a young girl has a family history of PCOS, is overweight or obese, or maintains a sedentary lifestyle, she may be at risk developing the condition. Although the exact origin of this syndrome is still unknown, hyperandrogenism, extended anovulation, and reproductive system abnormalities are used to make the diagnosis when primary diseases of the ovaries, adrenal glands, and pituitary glands have been ruled out.⁽⁶⁾ Women with PCOS are 11 times more likely to develop metabolic syndrome and glucose intolerance than age-matched controls.⁽⁷⁾ However, early PCOS diagnosis and therapy can prevent long-term metabolic issues. A small amount of weight loss can improve mental, reproductive, and metabolic health. Improving metabolic, reproductive, and mental health—all crucial elements in alleviating the burden of PCOS—can be achieved with modest weight loss.⁽⁸⁾

OBJECTIVES OF THE STUDY

- To assess the pre-test and post-test level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls.
- To evaluate effectiveness of an awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls.
- To associate the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected demographic variables.
- To associate the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected clinical variables.

HYPOTHESIS

H1: There is a significant difference in the pre-test and post-test level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in the study group.

H2: There is a significant association between pre-test level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls and the selected demographic variables in the study and control group.

H3: There is a significant association between pre-test level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls and the selected clinical variables in the study and control group

MATERIALS AND METHODS

The data collection was started after obtaining permission from the Institutional Review Committee (IRC NO: ICON IRC-2021-2022-009). The data was collected over a period of four weeks from 17.07.2023 to 31.08.2023 at Government Higher Secondary School, Kathirkamam, Puducherry. The investigator was given self-introduction and explanation about the study protocol to the samples. After this, informed consent was obtained from all the samples. The design adopted for the study was a true experimental pre-test and post-test control group design to assess the effectiveness of an awareness programme on knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls. A simple random sampling technique (computer generated sampling method) was used to select 80 adolescent girls. 40 samples were in study group and 40 samples were in control group. Pre-test was done with a structured knowledge questionnaire. The researcher given awareness programme with power point presentation regarding prevention of polycystic ovarian syndrome which includes anatomy and physiology of female reproductive system. Definition of PCOS, causes, Risk factors, signs and symptoms, diagnosis, prevention and medical and surgical management and complications for 45 minutes to the study group and the control group received regular intervention. On the 7th day post-test was conducted for both study and control group with the same knowledge questionnaire. After post-test information booklet was given to both study and control group. The collected data was analyzed based on the above-mentioned objectives by using descriptive and inferential statistics.

RESULTS AND DISCUSSION

Table 1: Frequency and percentage wise distribution of the demographic variables among adolescent girls in the study and control group

S.NO	DEMOGRAPHIC VARIABLES	STUDY GROUP (n=40)	CONTROL GROUP (n=40)
(N=80)			

		(n)	(%)	(n)	(%)
1	Age in years				
	14 years	13	32.5	11	27.5
	15 years	13	32.5	12	30
	16 years	11	27.5	11	27.5
	17 years	3	7.5	6	15
2	Religion				
	Hindu	29	72.5	33	82.5
	Christian	7	17.5	4	10
	Muslim	4	10	3	7.5
	Others	0	0	0	0
3	Type of family				
	Joint family	12	30	11	27.5
	Nuclear family	25	62.5	25	62.5
	Extended family	3	7.5	4	10
4	Educational status				
	9 th standard	9	22.5	9	22.5
	10 th standard	9	22.5	12	30
	11 th standard	10	25	8	20
	12 th standard	12	30	11	27.5
5	Dietary Pattern				
	Vegetarian	10	25	8	20
	Non-Vegetarian	3	7.5	2	5
	Both (a) & (b)	27	67.5	30	75
6	Do you like junk foods				
	Yes	27	67.5	23	57.5
	No	13	32.5	17	42.5

The frequency and percentage distribution of demographic factors among the teenage females in the study and control groups is displayed in table 1 above. The majority of teenage females in the study group—13, or 32.5%—were between the ages of 14 and 15; in contrast, the majority of the control group—12, or 30%—were between the ages of 15 and 15. The majority of teenage girls in Study 29 (72.5%) and Control 33 (82.5%) were Hindu. The majority of teenage females in the study and control 25 (62.5%) groups were from nuclear families. The majority of teenage girls in the study group had an educational status of 12th grade (30%), while the majority of 12th grade (30%) in the control group had an educational status of 10th grade. The majority of teenage girls in the research 27 (67.5%) and control 30 (75%), respectively, were vegetarians and non-vegetarians. Both in the Study 27(67.5%) and control 23(57.5%) group majority of adolescent girls like junk foods.

Table 2: Frequency and percentage wise distribution of the Clinical variables among adolescent girls in study and control group.

(N=80)

SL. NO	CLINICAL VARIABLES	STUDY GROUP (n=40)		CONTROL GROUP (n=40)	
		(n)	(%)	(n)	(%)
1	BMI				
	<18-21	12	30	13	32.5
	22-25	13	32.5	11	27.5
	26-29	11	27.5	7	17.5
	Above 30	4	10	9	22.5
2	Regulation of Menstrual Cycle				
	Regular Cycle	29	72.5	27	67.5
	Irregular Cycle	11	27.5	13	32.5
3	Do you have pain during menstruation				
	Yes	28	70	30	75
	No	12	30	10	25
4	Duration of menstruation				

	2-3 days	13	32.5	5	12.5
	4-5 days	14	35	17	42.5
	6-7 days	11	27.5	12	30
	more than 7 days	2	5	6	15
5	Frequency of menstruation				
	20-24 days cycle	8	20	11	27.5
	25-29 days cycle	16	40	10	25
	30-35 days cycle	16	40	19	47.5
6	Any Family history of PCOS				
	Yes	11	27.5	4	10
	No	29	72.5	36	90

The frequency and proportion of clinical variables among teenage females in the study and control groups are displayed in table 2 above. The majority of teenage girls in the study group had BMIs of 22–25 (32.5%), while the majority of the control group had BMIs of <18–21 (32.5%). The majority of teenage girls in Study 29 (72.5%) and Control 27 (67.5%) were on the Regular Cycle. The majority of teenage girls in Study 28 (70%) and Control 30 (75%), respectively, experienced pain during their periods. The majority of teenage females in Study 14 (35%), as well as the control group (17.5%), had menstruation for 4-5 days. The majority of teenage girls in Study 16 (40%) and Control 19 (47.5%) had menstrual cycles lasting 30 to 35 days. The majority of teenage girls in Study 29 (72.5%) and Control 36 (90%) groups did not have family history of PCOS.

Table 3: Frequency and percentage wise distribution of pre-test and post -test of the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in study group and control group (N=80)

LEVEL OF KNOWLEDGE	STUDY GROUP n=40				CONTROL GROUP n=40			
	Pre-test		Post-test		Pre-test		Post-test	
	n	%	n	%	n	%	n	%
Inadequate knowledge	4	10	0	0	6	15	0	0
Moderately adequate knowledge	3	8	1	2.5	3	82.5	3	97.5
Adequate knowledge	2	5	2	72.5	1	2.5	1	2.5

The above table shows that frequency and percentage wise distribution of pre-test and post -test of the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in study group and control group. In the study group majority of adolescent girl's pre-test level of knowledge regarding prevention of PCOS 34 (85%) had Moderate, 4 (10%) had Inadequate and 2 (5%) had adequate level of knowledge Whereas in the post-test majority of adolescent girls 29 (72.5%) had adequate and 11 (27.5%) had Moderate level of knowledge. Similarly in control group the pre-test level of knowledge regarding prevention of PCOS Majority of adolescent girls 33 (82.5%) had Moderate, 6 (15%) had Inadequate and 1 (2.5%) had adequate level of knowledge whereas in the post-test Majority of adolescent girls 39 (97.5%) had Moderate and 1 (2.5%) had adequate level of knowledge.

Table 4: Comparison of pre-test and post-test scores knowledges regarding prevention of polycystic ovarian syndrome in study group and control group (N=80)

GROUP	TEST	MEAN	SD	MEAN DIFFERENCE	't' VALUE	'p' VALUE
STUDY GROUP	Pre-test	9.20	2.289	5.67	18.89	0.000** HS
	Post-test	14.88	1.897			
CONTROL GROUP	Pre-test	8.58	1.960	0.525	1.22	0.229 NS
	Post-test	9.10	2.240			

**-p < 0.001 highly significant , NS-Non-Significant.

The above table shows that, the comparison of pre-test and post-test scores of knowledge regarding prevention of polycystic ovarian syndrome in study group and control group. In study group, the mean and standard deviation of effectiveness of the awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in the pre-test was 9.20±2.289 and the post- test was 14.88±1.897. The calculated paired 't' test value of t = 18.89 shows statistically highly significant at p< 0.000 level difference of effectiveness of the awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls.

Similarly, in control group the mean and standard deviation of effectiveness of the awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in the pre-test was 8.58±1.960 and the post- test was 9.10±2.240. The calculated paired 't' test value of t = 1.22 shows statistically non-significant difference on effectiveness of the awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in control group.

Table 5: Comparison of post-test, mean, standard deviation and 't' test scores of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls between the study and control group.

(N=80)

GROUP	MEAN	STANDARD DEVIATION	MEAN DIFFERENCE	't' VALUE	'p' VALUE
Study group	14.88	1.897	5.77	12.44	0.000 **HS
Control group	9.10	2.240			

**p<0.001 HS- highly significant, NS-Non-Significant.

The above table shows that, the comparison of post-test, mean, standard deviation and 't' test scores of knowledges regarding prevention of polycystic ovarian syndrome among adolescent girls between the study and control group. In the post-test the mean and standard deviation was 14.88±1.897 and the mean score in the control group was 9.10±2.240. The calculated independent 't' test value of t = 12.44 shows statistically significant difference between effectiveness of the awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls. Hence the research hypothesis H1 was accepted.

Association between the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected demographic and clinical variables in study and control group.

There is no significant association found between the pre-test level of knowledge on prevention of polycystic ovarian syndrome with their demographic and clinical variables among adolescent girls in study and control group respectively. Hence the research hypothesis H2 and H3 were rejected.

DISCUSSION

DISCUSSION BASED ON THE OBJECTIVES:

The first objective was to assess the pre-test and post-test level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls.

In this study, result indicates that in the pre-test level of knowledge in study group 34(85%) had moderate level of knowledge, 4(10%) had inadequate level of knowledge and 2(5%) had adequate level of knowledge. Whereas in the post-test 29(72.5%) had adequate level of knowledge and 11(27.5%) had moderate level of knowledge. In the control group level of knowledge in the pre-test was 33(82.5%) had moderate level of knowledge, 6(15%) had inadequate level of knowledge and 1(2.5%) had adequate level of knowledge. Whereas in the post-test 39(97.5%) had moderate level of knowledge and 1(2.5%) had adequate level of knowledge.

A similar study was conducted by Rakhi Devi (2021), a pre-experimental study on effectiveness of structured teaching programme on knowledge regarding causes and prevention of polycystic ovarian syndrome among adolescent girls in government secondary school at Nahan. Thirty adolescent girls were selected by non-randomized technique. Pre-test level of knowledge score revealed that the majority of experimental group 11(36.6%) were inadequate, 19(63.3%) were moderate, 0(0%) were adequate. The overall post-test level of knowledge score among students that A majority of experimental group 0(0%) were inadequate, 6(20%) were with moderate knowledge, 26(80%) were with adequate knowledge.⁽⁹⁾

Soniya John (2021) conducted quasi experimental one group, a study to assess the effectiveness of structured teaching programme on knowledge regarding polycystic ovarian syndrome among adolescent girls, Bangalore. A sample of 60 adolescent girls was selected from NRI higher secondary school, Bangalore by purposive sampling technique. Collected data was analyzed by using descriptive and inferential statistics. The result showed that more than half 54 (90.0%) were having inadequate knowledge and 6 (10%) were having moderate knowledge regarding PCOS before STP.⁽¹⁰⁾

The second objective was to evaluate the effectiveness of awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls.

The result of the comparison of post-test mean, standard deviation of knowledge score between the study group and control group among adolescent girls was $14.88 \pm 1.897 / 9.10 \pm 2.240$. The calculated 't' value 12.44 shows statistically significant difference between effectiveness of the awareness programme on the level of knowledge regarding prevention of polycystic ovarian syndrome among adolescent girls in the study and control group of post-test. Hence the research hypothesis H1 was accepted.

Valarmathi Selvaraj, *et al.*, (2020) conducted a study to evaluate the impact of yoga and exercises on polycystic ovarian syndrome risk among adolescent school girls in South India. Experimental research was conducted among adolescent girls belonging to two Government run schools in Tiruvallur district of Tamil Nadu state, India, from 6th June to 9th December 2016. A standard risk assessment questionnaire was adopted for risk assessment after making few modifications (Cronbach alpha 0.86). The experimental group received lifestyle modifications (yoga for two months and walking exercise for two months), with no such intervention provided for the control group. Total of 204 (control-102; experimental-102) girls with statistically insignificant difference in demographic features were studied. During the pre-test, 85.2% (n = 87) in the experimental group and 83.3% (n = 85) the controls had "moderate risk" for PCOS. Girls with "high risk" level of PCOS were 14.8% (n = 15) and 15.7% (n = 17) in the experimental group and the control group, respectively. In post-test-1 (after yoga sessions) risk assessment, 71.6% had "moderate risk," 5.9% had "high risk" in the experimental group, whereas 87.3% had "moderate risk" and 12.7% had "high risk" in the control group. In post-test-2 (after exercise sessions) risk assessment, 48% had "moderate risk" and 0% had high risk in the experimental group, whereas 88.2% were "moderate risk" and 11.8% were "high risk" in the control group. Conclusions: Yoga and exercise were beneficial in minimizing PCOS risk, as reflected in the risk assessment score. More such interventions, covering different schools, could provide larger health benefits.⁽¹¹⁾

The third objective was to associate the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected demographic variables.

In the present study, the result indicates that the demographic variables did not show statistically significant association between the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected demographic variables in the study and control group. Hence the research hypothesis H2 was rejected.

Parimala D. Souza (2018) carried out a pre-experimental study to evaluate the impact of a planned teaching program (PTP) on polycystic ovarian syndrome (PCOS) in teenage girls in a few Mangalore high schools. The study employed a pre-experimental, one-group, pre-test, post-test design. One hundred teenage girls were chosen as the subjects using the convenience sample method. Following the evaluation of pre-intervention PCOS knowledge, PTP was given. The pre-test knowledge score and a few chosen demographic factors did not correlation and hence, there was no association.⁽¹²⁾

The fourth objective was to associate the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected clinical variables.

In this study the result indicates that the clinical variables had not shown statistically significant association between the pre-test level of knowledge on prevention of polycystic ovarian syndrome among adolescent girls with the selected clinical variables in the study and control group. Hence the research hypothesis H3 was rejected

A similar study was conducted by Sweety Joshi, and Patidar (2023),⁽¹³⁾ Pre- experimental one group pre-test post-test study. The sample was 100 adolescent girls selected by non-probability convenience sampling technique. The finding reveals that the statistically less than table value. There is no association between data with knowledge and selected clinical variables.

CONCLUSION:

The present study aimed to assess the effectiveness of an awareness programme on knowledge regarding prevention of polycystic ovarian syndrome at a selected school, Puducherry. The study revealed that there was a significant level of knowledge gained in post-test in the study group ($p < 0.001$, $t = 12.44$) when compared with the control group. Hence it was concluded that the awareness programme helps in creating awareness regarding prevention of PCOS among adolescent girls.

RECOMMENDATIONS FOR THE FUTURE STUDY

- A similar study can be conducted on a large scale to generalize the study findings.
- A similar study can be conducted in different settings.
- A similar study can be conducted by identification of the high-risk group and provide IEC regarding lifestyle modification for prevention of polycystic ovarian syndrome among adolescent girls.
- A similar study can be conducted regarding exercise for women with PCOS.

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