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## Effectiveness of self-learning material on knowledge regarding polycystic ovarian syndrome among adolescent girls

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### Abstract

**Background:** Polycystic ovarian disease is a heterogeneous, multisystem endocrinopathy in women of reproductive age with the ovarian expression of various metabolic disturbances and a wide spectrum of clinical features such as obesity, menstrual abnormalities and hyperandrogenism.

**Methodology:** A quantitative approach with pre experimental one group pretest post-test design was adopted for the study. The samples from the selected PUC and degree colleges from Kalaburgi were selected using convenient sampling technique. The sample consisted of 50 adolescent girls. The tools used for data collection was structured knowledge questionnaire.

**Results:** The study result reveal that, Pretest knowledge scores ranged from 6-20 as against possible range of 0- 30. The mean pretest knowledge score is 12.04 with standard deviation  $\pm 3.29$  and the median score is 12. The posttest knowledge scores ranged from 16-30 as against possible range of 0-30. The mean of posttest knowledge scores is 23.52 with standard deviation  $\pm 3.64$  and median of 24 in group. The mean difference between the pretest and posttest knowledge mean scores is 11.48. This indicates an increase in knowledge scores after undergoing self-learning material. To find significance of the gain in knowledge paired 't' test value was computed and the obtained value of 't' (49) = 27.12 is found to be significant at 0.05 level of significance.

**Conclusion:** Health care professionals should give importance of health education on various reproductive health problems in school health programme and take interest to promotion of health among adolescent population. This study gave the evidence that, through self-learning material, knowledge of adolescent girls regarding health-related behaviour can be improved.

**Keywords:** Effectiveness, polycystic ovarian syndrome, adolescent girls, self-learning material

### Introduction

Polycystic ovarian syndrome (PCOS) was originally described in the year 1935 by Stein and Leventhal as a syndrome manifested by obesity, amenorrhea, hirsutism and obesity associated with enlarged polycystic ovaries. Both polycystic ovaries could be recognized by ultra-sound scan and also the same features with biochemical abnormalities- raised luteinizing hormone (LH) level and low normal follicle stimulating hormone (FSH), giving a reversal of the LH: FSH ratio, and raised androgen levels-within the normal female range but associated with higher free androgen index due to lower sex hormone binding globulin (SHBG). Both insulin resistance and hyperinsulinemia are found in anovulatory adolescents with polycystic ovarian syndrome being more evident in obese adolescents.

Polycystic ovarian disease is a heterogeneous, multisystem endocrinopathy in women of reproductive age with the ovarian expression of various metabolic disturbances and a wide spectrum of clinical features such as obesity, menstrual abnormalities and hyperandrogenism. To diagnose polycystic ovarian syndrome, adrenal and androgen secretory ovarian tumour should be excluded.

Current incidence of polycystic ovarian syndrome (5–6%) is fast increasing lately due to change in lifestyle and stress. It is also becoming a common problem amongst adolescents, developing soon after puberty. Amongst infertile women, about 20% infertility is attributed to anovulation caused by polycystic ovarian syndrome.

Some of the women who develop cardiovascular disease, hypertension, endometrial cancer and type 2 diabetes later in life appear to have suffered from polycystic ovarian syndrome in earlier years. Polycystic ovary syndrome cannot only be on the radar of family and adult healthcare providers. There is growing evidence that polycystic ovary syndrome also a

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pediatric syndrome. Because some females reach menarche as early as 8-9 years old, polycystic ovary syndrome needs to be a topic of concern for healthcare providers early in a child or adolescent's reproductive health. However, with the current lack of awareness, many people do not access the treatment they need, and hence, they suffer for much longer than they have to.

Polycystic ovarian syndrome is an endocrine disorder which affects the adolescent girls. It affects 5% to 10% of women in their reproductive age. Joshi B *et al.* found that globally, prevalence estimates of polycystic ovary syndrome are highly variable, ranging from 2.2% to as high as 26%. Joshi B *et al.* found that the prevalence of polycystic ovary syndrome was 22.5% by Rotterdam and 10.7% by Androgen Excess Society criteria. Vaidya R. *et al.* found that according to World Health Organization, there are polycystic ovary syndrome affected 116 million women worldwide in 2012 (3.4% of women).

Sanchez N *et al.* found that the prevalence of polycystic ovary syndrome in adult women aged 18-45 years in the US is estimated to be 6.6%. A study in South China, the prevalence of insulin resistance, dyslipidemia, and metabolic syndrome in polycystic ovary syndrome adolescents with BMI > 85th percentile was 74.4%, 39.5%, and 14% vs 32.9%, 14.1%, and 0%. In comparison in polycystic ovary syndrome subjects with BMI < 85th percentile, the prevalence of metabolic syndrome in young Korean women with polycystic ovary syndrome was 14.5%, nearly 3.5 times greater than in age-matched women in Korean urban population (4.3%). The most frequently occurring component of metabolic syndrome was low high-density lipoprotein cholesterol (45%), and the least frequent was high fasting serum glucose level (0.9%).

The onset of polycystic ovary syndrome occurs mainly during the adolescence. They suffer from both physical and psychological morbidity. Signs and symptoms of polycystic ovary syndrome cause psychological morbidity and can negatively affect quality of life of adolescents. Also, if untreated, polycystic ovary syndrome can lead to complications. Early recognition, prevention, and treatment are important to prevent long-term sequel. So, present study is conducted to assess the effectiveness of information material regarding polycystic ovarian syndrome.

### Objectives

1. To assess knowledge regarding polycystic ovarian syndrome among adolescent girls before and after the administration of self-learning material.

### Results

#### a. The findings related to socio-demographic variables of participants

**Table 1:** Frequency and percentage distribution of socio-demographic variables of participants N=50

Samples Characteristics	Frequency f	Percentage (%)
<b>Age in years</b>		
1. 15 - 16	28	56
2. 16 - 17	19	38
3. 17- 18	03	06
<b>Religion</b>		
1. Hindu	39	78
2. Christian	04	06
3. Muslim	07	14
<b>Occupation of parents</b>		
1. Agriculture	03	06

2. To determine the effectiveness of self-learning material regarding polycystic ovarian syndrome in terms of gain in knowledge scores of adolescent girls.
3. To find the association of pre-test level of knowledge of adolescent girls with their selected personal variables.

### Hypothesis

**H<sub>1</sub>:** The mean post-test knowledge scores of adolescent girls regarding polycystic ovarian syndrome, who have undergone the self-learning material, will be significantly higher than their mean pre-test knowledge scores.

**H<sub>2</sub>:** The level of knowledge of adolescent girls regarding polycystic ovarian syndrome will be significantly associated with their selected personal variables.

### Methodology

**Research Approach:** Quantitative Research Approach

**Research Design:** Pre experimental one group pretest-post-test design

**Sampling technique:** Non-Probability; Convenient Sampling Technique

**Sample size:** 50

**Setting of study:** Selected PUC and Degree colleges of Kalaburgi

**Tool used for data collection:** Following tools used for the data collection

- **Part I: Demographic data:** It consists of 9 items related to demographic data of participants
- **Part II: Structured knowledge questionnaire:** This section consists of 30 structured multiple choice items with the multiple options for each item to assess the knowledge of adolescent girls regarding polycystic ovarian syndrome

### Procedure of data collection

Data was collected after obtaining administrative permission from administration of selected PUC and degree colleges of Kalaburgi. The investigator personally explained the participants the need and assured them of the confidentiality of their responses. The investigator gathered participants in a auditorium of college and conducted Pre-Test, Soon after the test, the self-learning material was distributed to all participants. On 8th day post-test was given with the same structured knowledge and took about 45 minutes to complete the post-test.

2. Business	25	50
3. Coolie	2	4
4. Health care sector	02	04
5. Others	18	36
<b>Education of father</b>		
1. ≤ Lower primary school	02	04
2. High school	12	24
3. PUC	02	04
4. ≥ Diploma and Degree	34	68
<b>Education of mother</b>		
1. ≤ Lower primary school	01	02
2. High school	16	32
3. PUC	13	26
4. ≥ Diploma and Degree	20	40
<b>Place of residence</b>		
1. Rural	07	14
2. Semi urban	15	30
3. Urban	28	56
<b>Parents income/month</b>		
1. Below 4000/-	02	04
2. 4001- 8000/-	10	20
3. 8001- 12000/-	21	42
4. 12001 & above	17	34
<b>Educative seminar on polycystic ovarian syndrome at school or elsewhere</b>		
1. Yes	---	---
2. No	50	100

## B. Effectiveness of self-learning material

### 1. Description of adolescent girls' knowledge regarding polycystic ovarian syndrome

**Table 2:** Mean, Standard deviation, Median, and Range of pre-test and post-test knowledge scores of adolescent girls in experimental group on polycystic ovarian syndrome N: 50

Pre-Test				Post-Test			
Mean	SD	Median	Range	Mean	SD	Median	Range
12.04	±3.29	12	6-20	23.52	±3.64	24	16-30

The data presented in Table 2 shows that the pretest knowledge scores ranged from 6-20 as against possible range of 0- 30. The mean pretest knowledge score is 12.04 with standard deviation ±3.29 and the median score is 12. The posttest knowledge scores ranged from 16-30 as against possible range of 0- 30. The mean of posttest knowledge scores is 23.52 with standard deviation ±3.64 and median of 24 in group.

## II. Gain in knowledge: comparing pretest and posttest scores

### 1. Significance of difference between pretest and posttest knowledge scores.

**Table 3:** Mean, mean difference, SD difference, SEMD, and paired 't' test of pretest and posttest knowledge scores of adolescent girls on prevention of polycystic ovarian syndrome N= 50

Knowledge score	Mean	Mean difference	SD difference	SEMD	Paired 't' test	Level of significance
Pretest	12.04	11.48	±2.86	0.405	27.12	S (p<0.05)
Post-test	23.52					

't' (49) = 1.991 p=0.05

The data presented in Table 3 shows that, the mean difference between the pretest and posttest knowledge mean scores is 11.48. This indicates an increase in knowledge scores after undergoing self-learning material. To find

significance of the gain in knowledge paired 't' test value was computed and the obtained value of 't' (49) = 27.12 is found to be significant at 0.05 level of significance.

Hence, the research hypothesis H<sub>1</sub> is supported. This indicates that the gain in knowledge is not by chance and the adolescent girls who have undergone the self-learning material on polycystic ovarian syndrome, significantly gained knowledge.

## C. Findings related to association of knowledge scores of adolescent girls with their selected personal variables

The computed Chi-square value for association between level of knowledge of adolescent girls regarding polycystic ovarian syndrome and their selected personal variables were not found to be statistically significant at 0.05 level expect for place of residence and attending to seminar on polycystic ovarian syndrome. Therefore, the findings partially support the hypothesis H<sub>2</sub> inferring that adolescent girls pretest level of knowledge regarding polycystic ovarian syndrome are highly associated with place of residence and attending to seminar on polycystic ovarian syndrome.

## Conclusion

Incidence of polycystic ovarian syndrome affects the health of the adolescent girls and women's of reproductive age group but they are lacking adequate knowledge related to this disorder. The self-learning material is an effective method to increase their knowledge. Hence, health care professionals should give importance of health education on various reproductive health problems in school health programme and take interest to promotion of health among adolescent population. This study gave the evidence that, through self-learning material, knowledge of adolescent girls regarding health related behaviour can be improved.

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