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A Study to Evaluate The Effectiveness of Self Instructional Module on Knowledge Regarding Polycystic Ovarian Syndrome among Adolescent Girls

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Abstract: *"Education is given for sake of individuals with a view to save from destruction"*

Thompson

Adolescents – young people between the age of 12 and 19 years – are often thought of as a healthy group. It is the transition stage between childhood and adolescence. Also many serious diseases in adulthood have their roots in adolescence. For example, tobacco use, sexually transmitted infections including HIV, and poor eating and exercise habits lead to illness or premature death later in life1.

Hormone imbalances are becoming increasingly common due to changes in diet and other environmental factors. In the past, hormone problems usually affect older women, usually in their forties or fifties. Today, more teenage girls are showing signs of hormone imbalance. For a teenage girl, problems associated with a hormone imbalance can be particularly disturbing and embarrassing2.

There are a multitude of factors, both positive and negative, that influence health and wellbeing of adolescents. Some factors can be biologically determined while others are social in nature3.

Adolescents form a large section of population of India, about 22.5%. Adolescent girls have to be focused more as it is a period of rapid physical growth, sexual, physiological, and psychological changes. Habits and behavior picked up during adolescence have lifelong impact4

The establishment of a regular menstrual cycle is an important process for an adolescent girl. The challenge is to distinguish normal individual variation from real endocrine or organic problems. Avoiding too early unnecessary intervention without missing relevant abnormalities requires a firm grasp of process of physiological sexual development as well as of the symptoms and etiology of relevant abnormalities5.

The term polycystic means many cysts and Poly cystic ovarian syndrome (PCOS) gets its name because of clusters of small, pearl size cysts in ovaries. These cysts are fluid-filled bubbles (called follicles) that contain eggs that have not yet been released because of hormonal imbalance6.

It is a well-known fact that Poly cystic ovarian syndrome (PCOS) and infertility go hand in hand. PCOS, a major cause of infertility in women, is related to the absence of ovulation (unovulatory infertility). The fact is that most women don't find out they have PCOS until they want to have a baby. After possibly trying for a year or more without success, a woman will visit her doctor who confirms the problem. However, many of the symptoms and characteristics of PCOS are present in a young girl even before she begins menstruation – and the impact of this condition far extends what we have thought to date. This information alone has caused some researchers to question whether PCOS is a genetic or hereditary issue7.

Adolescents 'challenge is that PCOS is a systemic, complex disorder that needs to be actively managed by them for the rest of their life. They need to go to a deeper level and develop certain health practices that will help their body to naturally minimize the symptoms and long- term risks of polycystic ovary syndrome.8

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If you don't get to work on improving your health practices today, you may pay a heavy price later on.9
Don't need to let PCOS ruin your life. You can take action to build and protect your health. You can still live the life of your dreams, but it will take some dedicated work.6
PCOS cannot only be on the radar of family and adult healthcare providers. There is growing evidence that PCOS is also a pediatric syndrome. Because some females reach menarche as early as 8-9 years old, PCOS needs to be a topic of concern for healthcare providers early in a child or adolescent's reproductive health.9
A quasi experimental one group pre-test post-test research design to evaluate the effectiveness of self-instructional module on knowledge regarding polycystic ovarian syndrome among adolescent girls. The study conducted on 60 samples. Samples were selected by Simple random sampling. Data was collected using structured questionnaire instrument.
The data revealed that, 31.7% of the respondents had inadequate knowledge regarding PCOS before the administration SIM. But after the administration of SIM 77.3% had adequate knowledge
In the preset study the knowledge scores of adolescent girls were found to be significant with the demographic variables like age, place of residence and previous knowledge. Hence it indicates that there is association between the knowledge scores of students and the selected demographic variables.

Keywords: PCOS (Poly Cystic Ovarian Syndrome), SIM (Self Instructional Module), Adolescent Girls

I. INTRODUCTION

Polycystic ovarian syndrome is a problem in which a woman's hormones are out of balance. It can cause problems with the menstrual periods and make it difficult to get pregnant. It may also cause unwanted changes in the look. If it is not treated, over time it can lead to serious health problems, such as diabetes and heart disease. Polycystic ovarian syndrome (PCOS) is common, affecting as many as 1 out of 15 women. Often the symptoms begin in the teen years. Treatment can help control the symptoms and prevent long-term problem [11].

A key sign of PCOS is irregular or missed periods because the effects of the condition on the ovaries can make a girl stop ovulating. However, because it can take up to 2 years after her first period for a girl's menstrual cycle to become regular, it can be hard to recognize missed periods as a sign of PCOS in teen girls. Imbalanced hormone levels can cause changes in a girl's entire body, not just her ovaries [12].

First described polycystic ovarian syndrome, (PCOS), was characterized as a disorder involving irregular menstrual cycles, infertility, obesity, and overproduction of testosterone. Since then, studies have shown that high insulin levels in the blood are common in PCOS and contribute to the overproduction of testosterone. Additional studies have confirmed that women with polycystic ovarian syndrome have an increased risk of developing metabolic disturbances, including type II diabetes and lipid (blood fat) abnormalities. Women with PCOS also have a high rate of obstructive sleep apnea, a breathing disorder. Sleep apnea itself appears to cause or Worsen high insulin levels and may contribute to the metabolic disturbances ofPCOS.

The polycystic ovarian syndrome (PCOS) often presents in adolescence with menstrual disorders, acne and hirsutism. The early diagnostic signs are sometimes dismissed as _normal changes of adolescence, and the opportunity to save the teenager from the stigmata of the syndrome is missed. The finding that the metabolic syndrome is a possible long-term sequel of PCOS now presents a challenge to make an early diagnosis, educate patients regarding the importance of weight control and exercise, and treat accordingly both symptomatically and prophylactically. The use of long-term insulin sensitizers, particularly metformin, for these purposes in adolescents is now the subject of an inter-disciplinary debate. Good, hard supportive data are not yet forthcoming but, as in the adult, the establishment of metformin treatment for the hyperinsulinaemic adolescent with PCOS may precede the evidence [12]

II. OBJECTIVES OF STUDY

To assess the knowledge of adolescent girls on polycystic ovarian syndromebefore self-instructional module.

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To find the difference between pre and posttest knowledge scores on self-instructional module of polycystic ovarian syndrome among adolescent girls.
To find the effectiveness of self-instructional module in terms of gain in posttest knowledge score.
To find the association between knowledge scores of adolescent girls on polycystic ovarian syndrome with selected demographic variables.

III. MATERIALS AND METHODS

A quasi experimental one group pretest post-test research design to evaluate the effectiveness of self-instructional module on knowledge regarding polycystic ovarian syndrome among adolescent girls. The study conducted on 60 samples. Samples were selected by simple random sampling. Data was collected with following structured tool.

Part A: Demographic Performa

The characteristics included in the base line preforms it contains 8 items such as age, sex, religion, area of residence, type of family, annual family income, previous knowledge and source of information regarding PCOS.

Part B: Structured knowledge questionnaire

It included 30 knowledge questions of which nine items were related to anatomy and physiology related to ovary, information about PCOS, Three items regarding risk factors of PCOS, Two items regarding treatment about PCOS, six items regarding prevention of PCOS, ten items regarding complications of PCOS.

The questionnaire consists of 30 multiple-choice items, each had 4 alternatives responses. Each item had only one correct response. A score value of one was allottedto each correct response and for wrong response zero was awarded. 30 were the maximum obtainable score.

Below 50% - Inadequate Knowledge
Above 51-75% - Moderate knowledge
Above 75% - Adequate knowledge

The content validity of questionnaire was established by experts. The experts were selected on the basis of their expertise, experience and interest in the problem being studied. They were from different specialties i.e. Nursing, Midwifery Nursing, Education, Research, and Statistics. They were requested to give their opinions on the appropriateness and relevance of the items in the tool. Necessary modifications were made as per the expert's advice. The reliability of tool was for knowledge 0.85 and for practice 0.90.

Final study was conducted on 60 samples. The sample for the study comprised of adolescents girls, who met the designated criteria were selected through simple random sampling technique. Objectives of study was discussed and obtained consent for participation in study. Base line data was assessed by administering a structured assessment questionnaire. Based on the objective and the hypothesis the data was analyzed by using various statistical tests i.e. %age, mean, t test and chi square test.

IV. STATISTICAL METHODS

The data collected from the participants was planned to be analyzed on the basis of the objectives of the study using descriptive and inferential statistics. Data was organized data in a master data sheet.

Data analysis is the systematic organization of research data and the testing of research hypothesis using that data.

The plan of data analysis was as follows

The data was entered in a master sheet.

Data was analyzed using descriptive and inferential statistics. Description of the subjects with respect to demographic variables waspresented in terms of frequency and percentage.

Mean, Standard Deviation, and Mean Percentage was used to evaluate theknowledge level.

Statistical significance of the effectiveness of SIM was analyzed using Paired t'test.

Chi-square test was used to find out the relationship between demographicvariables and knowledge level

Results would be represented in tables and graphs.

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V. RESULTS

Section I: Description of Socio demographic data

Findings of section I table 1 depicts that majority of adolescent girls 81.7 percent were in the age group of 18-21years followed by 18.30 percent were in the age group between 15-18 years, socio-demographic variable related to religion indicates that 48.3% of adolescent girls were Hindus, 30% were Christians and remaining 13.3% of them were Muslims among them 41 % belongs to nuclear family, 37.0% belongs to joint family and 22% were from extended family, 31.7% father had graduation, 26.7% PUC, 21.7% had primary education where as 20% had no formal education and 36.7% mother had graduation, 23.3% PUC,15% had primary education where as 25% had no formal education. Demographic findings also revealed that annual income of the family. 30% of them had income between Rs.1000-2000, 28.3% had income between Rs.3000-4000, 23.3% of them had income between Rs.5000-6000, 18.3% were having income more than Rs.6000 and 45% of adolescent girls were residing in suburban area, 30% in urban area and 25% in rural area among them only 48.3% of adolescent girls had previous knowledge regarding PCOS and 51.7% had no information, 23.3% had information from the familymembers, 15% from friends and 10% from mass media.

N=60

Demographic variables		**Freq**	**%**
Age	15 -18 yrs	11	18.3%
	18 -21 yrs	49	81.7%
Religion	Hindu	29	48.3%
	Christian	18	30.0%
	Muslim	8	13.3%
	Others	5	8.3%
Type of family	Nuclear family	25	41.7%
	Joint family	22	36.7%
	Extended family	13	21.7%
Father education	Primary education	13	21.7%
	PUC	16	26.7%
	Graduation &above	19	31.7%
	No formaleducation	12	20.0%
Mother education	Primary education	9	15.0%
	PUC	14	23.3%
	Graduation &above	22	36.7%
	No formaleducation	15	25.0%
Monthly income	Rs.1000-2000	18	30.0%
	Rs.3000-4000	17	28.3%
	Rs.5000-6000	14	23.3%
	>Rs.6000	11	18.3%
Residence	Rural	15	25.0%
	Sub urban	27	45.0%
	Urban	18	30.0%
Heard about poly cysticovarian	Yes	29	48.3%
	No	31	51.7%
if yes source of information	Family members	14	23.3%
	Friends	9	15.0%
	Mass media	6	10.0%
	No information	31	51.7%

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Section II: Comparison of pre-test and post-test knowledge scores

N=60

	No. of Adolescent girls	Mean ± SD	Paired t-test
Pretest	60	11.13±2.76	t=25.58P=0.001***
posttest	60	23.20±2.29	significant

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant atP≤0.001

Findings in table 2 depicts the On an average, in pretest, Adolescent girls are having 11.13 score and in posttest, Adolescent girls are having 23.20 score. Difference is 12.07 score. The difference between pretest and posttest knowledge score is large and it is statistically significant. It means in posttest they are able to answer 12 questions more than pretest. Differences between pretest and posttest score was analyzed using paired t- test.

Section III: Item wise analysis of pre-test and post-test knowledge scores to evaluate effectiveness of self – instructional module

N = 60

Knowledge on	Knowledge score				Paired t-test
	Pretest		Posttest		
	Mean	SD	Mean	SD	
General information of PCOS	2.62	1.30	5.43	1.49	t=11.12, P=0.001*** significant
Causes of PCOS	1.85	.90	3.72	.90	t=1074, P=0.001*** significant
Signs and symptoms of PCOS	1.77	1.31	4.03	1.26	t=9.79, P=0.001*** significant
Risk factors of PCOS	.83	.72	1.63	.52	t=7.04, P=0.001*** significant
prevention and treatment	4.07	1.49	8.38	2.49	t=12.20, P=0.001*** significant

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

Data in table 3 reveals the item wise knowledge score of adolescent girls regarding PCOS shows that General information of PCOS aspects among Adolescent girls, in pretest, are 2.62 score where as in posttest they are having 5.43 score, and the difference is 2.81. This difference between pretest and posttest is large and it is statistically significant. Findings of Causes of PCOS aspects, in pretest among Adolescent girls are 1.85 score where as in posttest they are having 3.72 score, so the difference is 1.87. This difference between pretest and posttest is large and it is statistically significant. Data of Signs and symptoms of PCOS in pretest of Adolescent girls 1.77 score where as in posttest it is 4.03 hence the difference is 2.27. This difference between pretest and posttest is large and it is statistically significant. Data about Risk factors of PCOS in pretest of Adolescent girls was 0.83 score where as in posttest 1.63 hence the difference is 0.80. This difference between pretest and posttest is large and it is statistically significant. Considering prevention and treatment aspects, in pretest of Adolescent girls was 4.07 where as in posttest 8.38 score, therefore the difference is 4.32. The difference between pretest and posttest is large and it is statistically significant.

Section IV: Association between Knowledge of adolescent girls Regarding PCOS with Different Selected Variables.

Results of the study reveals that Association between level of knowledge and their demographic variables. In pretest there is no statistically significant difference. In posttest, Elders urban, previous knowledge on polycystic ovarian adolescents aregained more knowledge than others. Statistical significance was calculated usingPearson chi square test.

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VI. DISCUSSION

The pretest knowledge score of was 31.7% and mean score was 2.7 and the posttest knowledge score was 77.3%.and the mean score is 23.30. Thus the result shows that the adolescent girls had significantly increased their knowledge after the administration of SIM. There is a significant increase of 40.2% knowledge after the administration of SIM. The statistical significance in knowledge score was calculated using 't test. The difference between pre and posttest knowledge score was significant. The paired' value was 25.58 at p=0.001 level.

VII. CONCLUSION

The conclusions were drawn on the basis of the findings of the study that existing knowledge is found around 31.7 % on PCOS. The enhancement in knowledge was significant with administration of SIM.

Implications

The findings of the study have certain important implications for the nursing profession in the field of Nursing Practice, Nursing Education, Nursing Administration, Nursing Research and Community Health Nursing.

Nursing education

Education is the key component to update and improve the knowledge of an individual. In the present scenario, knowledge on PCOS is much deficient among the adolescent girls as well as the nursing staffs. Hence, there is a need to include these components into present curriculum prescribed by INC. It is the duty of maternity nurses to educate their clients. Hence, to excel in this strategy nurses need to be well equipped with enormous amount of knowledge that will convince clients approaching them. In-service education regarding this topic should be conducted to improve the knowledge of the staff nurses who are working in the obstetric departments.

Nursing administration

Nurse administrators are the key persons to plan, organize and conduct in- service education programmes. Nurse administrator's support should be necessary to conduct and evaluate health education programmes. They can help to improve the knowledge of the staff nurses working in maternity departments by providing various teaching programmes with the help of various AV aids. They are in a key position to organize, implement and evaluate educative programmes which will in turn helps to improve the knowledge as well as to meet the future needs and accelerate the standards of maternity services.

Nursing practice

Nursing is an art and a science. As a science, nursing is based upon a body of knowledge that is always changing with new discoveries and innovations. When nurses integrate the science and art of nursing into their practice, the quality of care provided to clients is at a level of excellence that benefits clients in numerous ways. They are the key persons of the health team, who plays a vital role in the promotion and maintenance of health. They can provide adequate teaching to both parents and family members so that they will come to know about the recent changes Hence the nurses should have adequate knowledge to improve the standards of maternity care.

Nursing research

The main goal of the nursing research is to improve the knowledge of nursing students through the implementation of evidence based practice. The study provides a baseline data for conducting other research studies. The study will be a motivation for the budding researchers to conduct similar studies in large scale. The study will be a reference for the research scholars. Further research works can be conducted with every medical condition to identify most effective knowledge imparting strategies.

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