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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

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Abstract
Polycystic ovarian syndrome (PCOS) is a common endocrine system disorder among women of reproductive age. Women with PCOS may have enlarged ovaries that contain small collections of fluid — called follicles — located in each ovary as seen during an ultrasound exam. The Prevalence of PCOS among adolescent girl in school is 9.13% to 36% [1]. PCOS is an endocrine disorder most often, symptoms first appear in adolescence, and around the start of menstruation polycystic ovarian syndrome is a condition in which a woman's level of sex hormone estrogen and progesterone are out of balance [2]. This leads to growth of ovarian cyst (benign masses of the ovaries). PCOS can cause problems with a woman menstrual cycle fertility, cardiac function and appearance.
The present study aims is to evaluate the effectiveness of STP regarding causes and prevention of PCOS among adolescent girls and to find out the association between knowledge score regarding PCOS with selected demographic variable among the among adolescent girls at Govt. senior secondary school Nahan.

Keywords: The key words of this study include knowledge, PCOS, causes and prevention, STP, adolescent girl Govt. senior secondary school Nahan.

Introduction
PCOS is an endocrine disorder most often, symptoms first appear in adolescence, and around the start of menstruation polycystic ovarian syndrome is a condition in which a woman's level of sex hormone estrogen and progesterone are out of balance. This leads to growth of ovarian cyst (benign masses of the ovaries). PCOS can cause problems with a woman menstrual cycle fertility, cardiac function and appearance. Classical PCOS has the symptoms of weight gain, failure to ovulate, infrequent periods, infertility, facial hair, acne, hair loss and a predisposition to diabetes. The real underlying issue is insulin resistance, which is caused due to various factors like too many carbohydrates in the diet (about 30% of the population cannot cope with a "normal" amount of bread and sugar), damaged vegetable oils called trans-fat, smoking, environmental toxins such as BPA, birth control pill Common signs and symptoms of PCOS include; menstrual disorder: PCOS mostly produces oligomenorrhoea (few menstrual periods) or amenorrhea (no menstrual period) but other type of menstrual period.Acne and hirsutism (male pattern of hair growth), metabolic syndrome: this appear as a tendency toward central obesity and other symptom associated with insulin resistance. There's no specific test to definitively diagnose Polycystic ovarian syndrome. The diagnostic evaluation of PCOS are physical examination including pelvic examination, blood test includes fasting cholesterol and triglyceride level and glucose tolerance test. The measure diagnostic tool is pelvic ultrasound, it can show the appearance of yours ovaries and the thickness of the lining of your uterus. The treatment of PCOS is given according to signs and symptoms if women have problems related to menstrual cycle then doctor may recommend combination birth control pills. If women trying to become pregnant then doctor recommend medication to regulate ovulation like oral Clomiphene and Metformin. To reduce excessive hair growth doctor may recommend birth control pills to decrease androgen production, another medications are Spironolactone.

Yoga asanas that are specific for women help a lot in keeping the symptoms of PCOS away. Suryanamaskar and other yoga asanas that help control stress can help a lot in taking care of the woman suffering from PCOS. It will also help you have a good.

Need of Study

The researcher found that the awareness regarding causes and prevention of Polycystic Ovarian Syndrome is very little among the adolescent girls and adolescent girls have higher incidences of PCOS. If the adolescent girls have knowledge regarding causes and prevention of PCOS then we can able to decrease and early diagnose PCOS among adolescent girls. According to an article in Women Health, Poly cystic ovarian syndrome (PCOS) affects 7-10% of those in the childbearing age with symptoms often presenting during adolescence and young adulthood. In women of Indian subcontinent, prevalence rates of as high as 50% have been detected[9].The common features of normal puberty in adolescents mainly are menstrual irregularities and insulin resistance, obscure PCOS diagnosis in addition to lack of defined diagnostic criteria for PCOS in this age group. Bhattacharya (February 2008) concluded that discovering one risk factor for PCOS in women should prompt the clinician to search for other risk factors to trigger early diagnosis

Objectives

The objectives of the study are-

1. To assess the pre-test knowledge score regarding causes and prevention of PCOS among adolescent girls at Govt. senior secondary school Nahan.
2. To prepare and implement structured teaching program regarding causes and prevention of PCOS among adolescent girls at Govt. senior secondary school Nahan.
3. To assess the post-test knowledge score regarding causes and prevention of PCOS among adolescent girls at Govt. senior secondary school Nahan.
4. To compare the pre-test and post-test knowledge score regarding PCOS among adolescent girls at Govt. senior secondary school Nahan.
5. To find out the association between knowledge score with selected demographic variables.

Review of Literature

A review of literature is essential aspects of research. Literature consist the following sections-

Section A: Literature related to incidence and prevalence of PCOS

Section B: Literature related to knowledge of PCOS.

Section C: Literature related to studies regarding STP on PCOS.

Section A: Literature related to incidence and prevalence of PCOS

Kalavath. D. Biradar *et al*. (2015) conducted a descriptive study of PCOS in adolescent girls among a tertiary care hospital of Bangalore. Study conducted in gynecology OPD of Dr. B.R Ambedkar Medical College, Bangalore. A total of 126 adolescent girls has been visited Gynaecology OPD from July-August 2014. Majority that is 76.2% of adolescents were in their late adolescence. Ultra report of the adolescents revealed that 30(23.8%) of them were diagnosed with PCOS.

Nidhi R *et al*. (2011) [1] conducted a study on Prevalence of Polycystic ovarian syndrome (PCOS) in Indian adolescents aged 15 to 18 years. Out of which 72 girls with oligomenorrhea and/or hirsutism were invited for biochemical, hormonal, and ultrasonographic evaluation for diagnosis of PCOS by Rotterdam criteria. The study revealed that one (0.22%) had oligo/amenorrhea with clinical hyperandrogenism, 29 (6.30%) had oligomenorrhea with polycystic ovaries, one (0.22%) had Polycystic ovaries with clinical hyperandrogenism and 11 (2.39%) had oligomenorrhea with polycystic ovaries in the presence of clinical hyperandrogenism. Thus 42 (9.13%) girls satisfied Rotterdam's criteria for PCOS, which increased to 50.46 (10.97%).The study concludes that there is a need to draws attention to the issue of early diagnosis of Polycystic ovarian syndrome(PCOS) in adolescent girls.

Kahsar miller *et al*. (2011) conducted a study on prevalence of polycystic ovarian syndrome and its etiological factor in first degree relatives of patients with polycystic ovarian syndrome (PCOS). The presence of hirsutism and hyper androgenemia was determined in the mothers and sisters of the patients with PCOS. The rates of polycystic ovarian syndrome (PCOS) in mothers and sisters of patients with PCOS were 24% and 32%, respectively, although the risk was higher in untreated premenopausal women. The study highlights that there is involvement of a major genetic component in the disorder**.**

Section B: Literature related to knowledge of PCOS. Kumarapeli V, Senevivathe A, Wijeyartne C. (Feb 2011) conducted a study to determine knowledge and awareness in adolescents with polycystic ovarian syndrome(PCOS) and self perceived severity of illness affects their HRQL(health related quality of life). Sample included in the study were 97 adolescent girls. Tool used for the study were questionnaire. Findings revealed that adolescents with PCOS scored lower on subscales measuring general health perceptions, physical functioning, general behaviour and limitations in family activities. The study highlights that PCOS and perceived severity negatively affect HRQL in adolescents and suggest a need to develop interventions to reduce the distress in patients with polycystic ovarian syndrome (PCOS).

Bindu B.R. (2013) conducted a study for the increasing incidence of PCOS in adolescence and its relation with mental stress. The sample included in the study was 50 diagnosed cases of PCOS, age group 15 years to 21 years of age. The diagnosis of PCOS is done as per Rotterdam 2003 criteria. Tools used to identify cases of stress and anxiety was standard stress assessment method. Findings revealed that the 4 cases between 40 and 50, 2 cases between 40 and 25 and the rest less than 25, an assumption was made that the role of mental stress should also be considered as a causative factor of PCOS. Thus they concluded that the stress is the major factor that causes PCOS.

Section C: Literature related to STP on PCOS

Shanmugasundaram S. (2011) mean value in experimental design was 48.69 with the standard deviation of 17.41. Whereas in the control group the mean value was only 5.36

with the standard deviation of 11.94. After structured teaching programme the paired 't' value was 17.69 with the $p<0.001$ which was highly significant. The study concluded that there was improvement in the knowledge on PCOS among adolescents girls

Materials and Methods

The Research approach adopted for the study was quantitative to assess the effectiveness of structured teaching program on knowledge regarding causes and prevention of polycystic ovarian syndrome among adolescent girls The research design adopted for the study was Pre-experimental research design.Total 30 girls (10+1, 10+2) students of Govt. senior secondary school were contributed to the study and sampling technique used for study was simple random technique.

Results

The present study, it was found that the age majority of respondents that is 20(66.6%) belongs to 15 years of age, 5(16.5%) belongs to 16 years, 3(10%) belongs to 17 years and 2(6.6%) belongs to 18 years. In relation to family history of Diabetes mellitus, majority of the respondents that is 29(96.6%) has no history of diabetes mellitus and only 1(3.3%)has family history of diabetes mellitus. food habit majority 24(80%) of respondents were Vegetarian and only 6(6%) were non-vegetarian. family history of PCOS, majority of the respondents that is 20(66.6%)has no history of PCOS and only 10(33.3%) has family history of PCOS. source of information majority of respondents that is 17(57%) used newspaper, 8(27%) used mass media, 4(13%) used magazines, 1(3%) used other sources. The area of residence of experimental group 16(53.3%) form rural, 14(46.6%) from urban. The overall pre- test level of knowledge score among adolescent girls of Govt Girl Secondary School Nahan revealed that a majority of experimental group 11(36.6%) were in adequate, 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 moderate knowledge, 26(80%) were adequate knowledge. The overall pre-test mean score in the level of knowledge of experimental group was 13.17 and standard deviation of experimental group was 2.53. The overall post -test mean score in the level of knowledge of experimental group was 28.97 and standard deviation of experimental group was 4.41. The plan of data analysis includes both inferential and descriptive statistics. The collected data were statistically analyzed and tabulated by applying descriptive statistics such as mean and standard deviation, and inferential statistics such as paired t test and chi-square test. The t' test was used to find out the score of knowledge between pre-test and post- test. The chi-square was used to find out the association between demographic variable with knowledge score in the pre-test.

Table 1: Depicts frequency and percentage distribution of pretest level of knowledge among the selected student of Govt Girls secondary school at Nahan.

Level of Knowledge	Experimental Group	
	F	%
Inadequate knowledge (0-12)	11	36.6%
Moderately adequate knowledge (13-24)	19	63.3%
Adequate knowledge (25-36)	0	0%

Pretest Level of Knowledge Score of experimental Group N=30

Table 2: Depicts frequency and percentage distribution of post test level of knowledge among students

Level of Knowledge	Experimental Group	
	F	%
Inadequate Knowledge (0-12)	0	0
Moderately Adequate Knowledge (13-24)	6	20
Adequate Knowledge (25-36)	24	80

Post-Test Knowledge Score of Experimental Group N=30 (Exp Group)

Table 3: Comparison of the pre-test and post -test knowledge score of the experimental group to determine the effectiveness of structured teaching program N=30(EXP.GROUP)

Knowledge Level	Pre-Test		Post-Test	
	F	%	f	%
Inadequate Knowledge	11	36.6	0	0
Moderately Adequate Knowledge	19	63.3	6	20
Adequate Knowledge	0	0	24	80

Table 4: Comparison of mean & standard deviation of pre-test and post-test knowledge of respondents

Group	Pre-Test		Post-Test		DF	T-test	Result
	Mean	Standard Deviation	Mean	Standard Deviation			
Experimental Group	13.7	2.53	28.97	4.42	42.56	9.87	SS

$p>0.05$

It reveals that the tabulated t-value (2) is less than the calculated t-value (9.87), with the $p>0.05$, and then we reject the null hypothesis. Hence there is significant relationship between the structured teaching programme and knowledge score among adolescent girls in Govt Girls Senior Secondary School at Nahan.

Table 5: Association of level of knowledge score with the socio-demographic variable with Post-test experimental group n=30

Variable	Inadequate Knowledge	Moderate knowledge	Adequate knowledge	DF	Table Value	Chi Square	Result
Age in Years							
15	0	4	16	4	9.49	0.03	NS
16	0	0	5				
17	0	1	2				
18	0	1	1				
Family history of diabetes mellitus							
YES	0	1	0	2	5.99	0.06	NS
NO	0	0	29				
Food habits				2	5.99	0.39	NS
Vegetarian	0	5	19				
Non vegetarian	0	1	5				
Family history of PCOS							
YES	0	2	8	2	5.99	2.13	NS
NO	0	4	16				
Source of information							
Newspaper	0	5	12	4	9.49	0.22	NS
Mass Media	0	1	7				
Magazines	0	0	4				
Other Sources	0	0	1				
Residence							
Rural	0	3	13	2	5.99	0.09	NS
Urban	0	3	11				

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