A study to assess the effectiveness of planned teaching programme on the knowledge regarding Polycystic Ovarian Syndrome among girls of selected schools of city Ludhiana, Punjab.

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***Abstract*- Introduction: Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder that affects individuals, primarily women, during their reproductive years. This complex condition is characterized by a combination of symptoms, including irregular menstrual cycles, excessive androgen (male hormone) levels, and the presence of multiple small cysts on the ovaries. The exact cause of PCOS remains elusive, but it is believed to involve a combination of genetic, hormonal, and environmental factors. PCOS, often emerges during adolescence, affecting young girls. Due to lack of knowledge regarding PCOS, the adolescent girls go through the physiological and emotional stresses. In Indian society, most of the girls do not get adequate knowledge regarding their own body's physiological changes such as obesity, dysmenorrhea and irregular menstrual cycles. If we are providing accurate knowledge regarding PCOS to the girls, it will be helpful for them to identify PCOS. Therefore, a pre-experimental study will be undertaken to assess the effectiveness of planned teaching programme on knowledge regarding PCOS among girls of selected schools in city Ludhiana, Punjab.**

Methodology: A pre-experimental research design was used to conduct pre-test and post-test among girls of selected schools in Ludhiana, Punjab. Total enumerative sampling technique was used to collect data with structured MCQ questions to assess knowledge regarding Polycystic Ovarian Syndrome.

Result: The post-test mean value knowledge score among girls was significantly higher than the pre-test knowledge score.

Conclusion: The administration of planned teaching programme has significantly improved the knowledge of girls regarding Polycystic Ovarian Syndrome. Hence, it can be concluded that planned teaching programme was an effective strategy to raise the level of knowledge among girls regarding Polycystic Ovarian Syndrome.

***Keywords*- Polycystic Ovarian Syndrome, Planned teaching programme, Effectiveness, Knowledge.**

I. INTRODUCTION

Puberty refers to the transition from childhood to adulthood accompanied by sexual maturity, physical and psychological changes and development of secondary sexual characters. Every individual's timetable for puberty is primarily influenced by heredity, although environmental factors such as diet and exercise, lack of physical activity also exert influence.(1) It is important for both teenagers and their family to understand what is happening to the teenagers physically, cognitively and socially.(2)

The average age of puberty is at 11 years for girls. The most notable change is the onset of menstruation. Menstruation is the monthly shedding of endometrium lining of uterus which is driven by hormones. In Indian context the age of onset of menstruation or menarche is generally between 11 to 15 years.(1)

At present adolescents are being attracted to the current technological world and has greater impact on their life style in all aspects. So they need more guidance and care. Specifically, adolescent girls need more consideration in their health because the current gynaecological problems are gradually arising and that stem up the girls to pass through their motherhood. Polycystic ovarian syndrome is one of the most growing gynaecological and endocrinal problem, which is most common among adolescent girls. It adversely affects their life process and leading them to infertility in later life, thus it prevents them to enjoy their motherhood and cause more stress throughout their life.(3)

Menstrual Cycle irregularities can have many different causes including extreme weight loss or gain, Pelvic inflammatory disease, dysmenorrhea, menorrhagia, amenorrhea, premature ovarian failure or polycystic ovarian syndrome. The term Polycystic Ovarian Syndrome was first described by Irving Stein and Michel Leventhal as the Trinity of "Amenorrhea,

Obesity, and Hirsutism." In 1935 when they observed a link between obesity and reproductive defects. Hence, it is also known as 'Stein-Leventhal Syndrome' or 'Hyperandrogenic anovulation'. It is also called Syndrome O i.e. over nourishment, overproduction of insulin, ovarian dysfunction and ovulatory rupture.(4)

Polycystic Ovarian Syndrome is a heterogenous disorder that is defined by a combination of signs and symptoms of androgen excess and ovarian dysfunction with the clinical manifestation of Oligoamenorrhea, subfertility, hirsutism and acne. Polycystic Ovarian Syndrome means "many cysts" which causes clusters of small, pearl sized cyst in the ovaries. The cysts are filled with fluid which contain eggs that not so far been released because of hormone disparity.(5)

Reproductive health problems are prevalent in adolescent age group and are associated with ovulation, menstruation and growth. This could be due to various etiological factors including polycystic ovarian syndrome and tumors of ovary.(6)

Globally, the prevalence of Polycystic Ovarian Syndrome is estimated to be between 5.5% and 12.6% in women in the age group of 17 to 45 years. In India, the prevalence estimates are between 3.7% and 22.5% depending on the diagnostic criteria used.(7) Lack of knowledge and lifestyle changes are considered to be major factor leading to rapid increase in incidence of PCOS.(8)

Procrastination in diagnosis may lead to the deterioration of comorbidities, posing challenges to the adoption of lifestyle modification, which play a critical role for improving Polycystic Ovarian Syndrome symptoms and quality of life. Awareness and accurate diagnosis serve as the primary phases in PCOS management, ultimately enhancing the patient's quality of life. Early diagnosis and care involve addressing the specific symptoms and effective management of PCOS and reducing the risk of associated health complications. It is pivotal to consult a healthcare provider for proper evaluation and guidance.

II. METHOD

Research Approach:

A quantitative research approach was used to assess the effectiveness of planned teaching programme on the knowledge regarding Polycystic Ovarian Syndrome among girls of selected schools of city Ludhiana, Punjab.

Research Design:

Pre-experimental one group pre-test post- test design was used to assess the effectiveness of planned teaching programme on the knowledge regarding Polycystic Ovarian Syndrome among girls of selected schools of city Ludhiana, Punjab.

Research Setting:

The present study was conducted in the selected schools of district Ludhiana, Punjab i.e. Guru Nanak Public School, Indian Public School, Rajindra Model Senior Secondary School, Ludhiana.

Target Population:

The target population was girls studying in class 10^{th}.

Sample Size:

The total number of girls as per inclusion / exclusion criteria were 104 on the day of pre-test, out of which 64 were from Guru Nanak Public School, 22 were from Indian Public School and 18 were from Rajindra Model Senior Secondary School, Ludhiana. On the day of post-test, data was collected from 50 girls from Guru Nanak Public School as 10 girls from pre-test were absent and 4 of them gave incomplete data, 20 were from Indian Public School as 1 was absent and 1 gave incomplete data, 14 were from Rajindra Model Senior Secondary School as 2 were absent and 2 gave incomplete data. So after excluding absent and incomplete data, 84 students were selected.

Sampling Technique:

Total enumerative sampling technique (excluding boys) was used to select the sample for the study. Sample following enumerative sampling technique was 84.

Study Procedure:

1) Permission from Ethical committee of DMC&H, Ludhiana
2) Established Inclusion & Exclusion criteria
3) Subjects were selected by total enumerative sampling technique
4) Written informed consent was taken from subjects
5) Data was collected by self structured MCQ questionnaire by self-report method
6) Pre-test conducted to assess knowledge regarding Polycystic Ovarian Syndrome
7) Planned teaching program was given to the subjects regarding Polycystic Ovarian Syndrome
8) Post-test conducted after 7 days

III. RESULTS

Distribution of girls as per socio-demographic profile:

It was found that 51(60.7%) girls were in CBSE board and 33(39.3%) girls were in PSEB board. 62(73.8%) girls were 15 years old followed by 12(14.3%) and 10(11.9%) were 16 and 14 years old respectively. 78(92.9%) girls belonged to urban area and 6(7.1%) belonged to rural area. 60(71.4%) girls belonged to Sikh religion and 24(28.6%) belonged to Hindu religion. 49(58.3%) were from nuclear family and 35(41.7%) were from joint family.

Educational status of 47(56%) girl's father was graduation or above followed by 33(39.2%) educated upto secondary followed by 3(3.6%) and 1(1.2%) were illiterate and upto primary respectively. Educational status of 53(63.1%) girl's mother was graduation or above followed by 27(32.1%) educated upto secondary followed by 3(3.6%) and 1(1.2%) were educated upto primary and illiterate respectively. As per occupation 83(98.8%) girl's father were working while only 1(1.2%) was non-working. 59(70.2%) girl's mother were non-working while 25(29.8) were working.
In context of socioeconomic status, 39(46.4%) were from upper middle class (II), 19(22.6%) were from lower middle class (III), 13(15.5%) were from upper class (I) and 13(15.5%) were from upper lower class (IV).
5(6%) girls had previous information about Polycystic Ovarian Syndrome while 79(94%) were not having any previous information about it. Internet was the main source of information regarding Polycystic Ovarian Syndrome for 5(6%). 83(98.8%) girls reported no family history of Polycystic Ovarian Syndrome except 1(1.2%) girl. Only 1(1.2%) girl had history of Polycystic Ovarian Syndrome among her sister from 1-6 months.
Hence, it is concluded that more than half 60.7% and 73.8% girls were from CBSE board and were 15 years old respectively. Maximum 92.9% girls were residing in urban area. Majority 71.4% girls belonged to Sikh religion. More than half 58.3% girls were from nuclear family. Educational status of more than half 56% and 63.1% of girl's father and mother was graduation and above respectively. Majority 98.8% of girl's father were working. More than two-third 70.2% of girl's mother were non-working. Less than half 46.4% girls were from upper middle class (II). Majority 94% girls had no previous information about Polycystic Ovarian Syndrome.

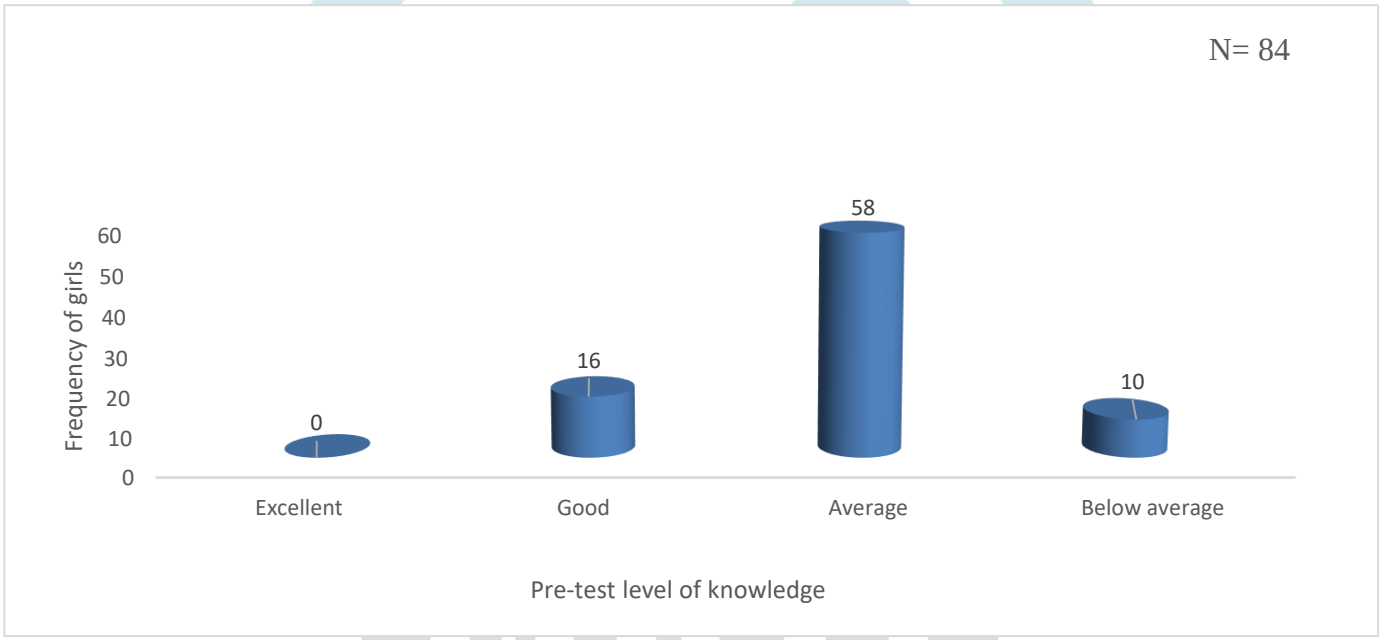

Fig1:- Frequency distribution of girls according to their pre-test level of knowledge regarding Polycystic Ovarian Syndrome

Figure 1 depicts frequency distribution of girls according to their level of knowledge in pretest. 58(69%) had average level of knowledge followed by16(19%) had good level of knowledge followed by 10(11.9%) had below average level of knowledge while no subject had excellent level of knowledge. Hence, it can be concluded that more than two-third of girls had average knowledge regarding Polycystic Ovarian Syndrome.

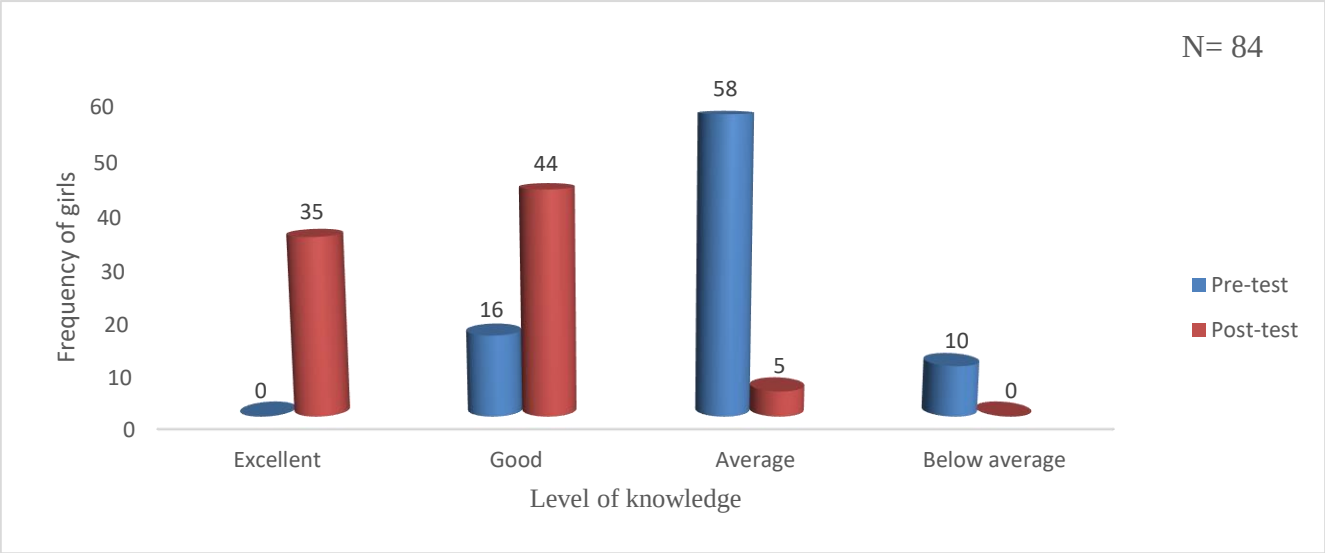

Fig 2: Frequency distribution of girls according to their level of knowledge regarding Polycystic Ovarian Syndrome

Figure 2 depicts frequency distribution according to their level of knowledge in pre-test and post-test. In pre-test more than half 58(69%) girls had average knowledge followed by very few 16(19%) and 10(11.9%) girls had good and below average knowledge respectively while no subject had excellent knowledge. Whereas in post-test more than half 44(52.4%) girls had good knowledge followed by 35(41.7%) girls had excellent knowledge followed by very few 5(6%) girls had average knowledge while no subject had below average knowledge. Hence, it can be concluded that in pre-test more than half girls had average knowledge whereas in post-test more than half girls had good knowledge.

Fig 3: Line diagram showing pre-test and post-test knowledge mean score regarding Polycystic Ovarian Syndrome

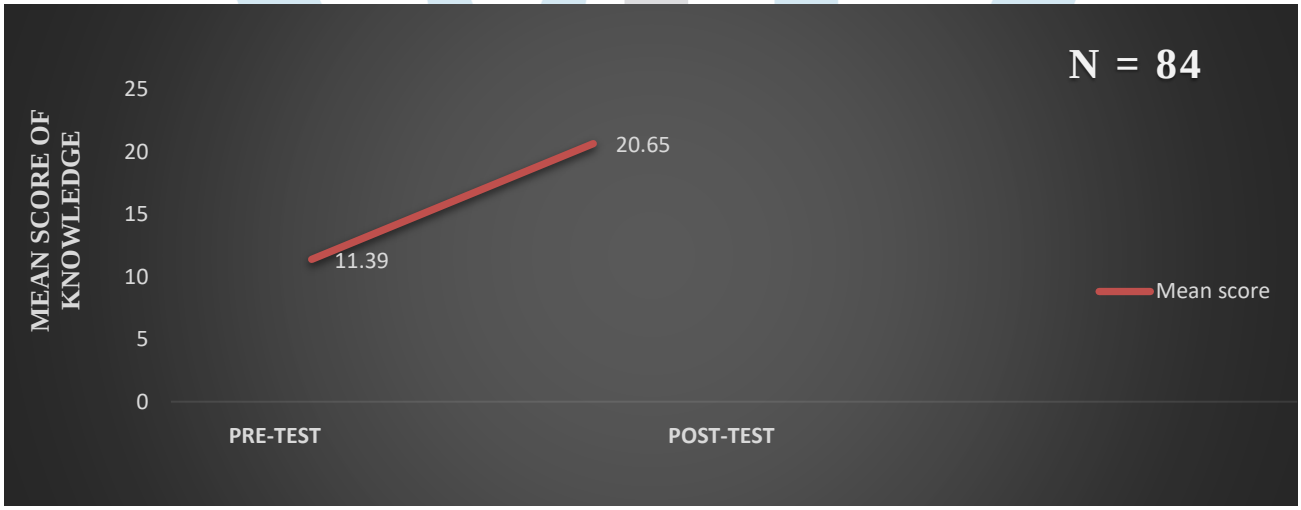

Figure 3 depicts line diagram showing visual comparison of pre-test mean score which was 11.39 while there was increase in post-test mean score which was 20.65. Hence, it can be concluded that there was increase in mean knowledge score of girls which shows that planned teaching programme was effective.

Table 1: Comparison of pre-test and post-test mean knowledge of girls

N= 84

Level of knowledge	Mean±SD	Mean%	t value p value
Pre-test	11.39±3.351	40.7%	t = -16.787
Post-test	20.65±3.388	73.7%	p = 0.00*

Maximum score = 28 *Significant at($p<0.05$)

Minimum score = 00 NS: Non-significant

Table 1 depicts the comparison of pre-test and post test mean knowledge scores of girls. In post-test mean knowledge score of girls was 20.65±3.388 and mean percentage was 73.7% followed by pre-test mean knowledge score 11.39±3.351 and mean percentage was 40.7%. The difference in mean knowledge pre-test and post-test scores is t = -16.787 which is statistically significant at p = 0.00 Therefore, null hypothesis was rejected so, it can be concluded that planned teaching programme had impact on knowledge of girls regarding Polycystic Ovarian Syndrome.

Table 2: Comparison of mean pre-test and post-test knowledge scores of girls regarding Polycystic Ovarian Syndrome.

N= 84

Components	Max score	Pre-test		Post-test		t value P value	df
		Mean±SD	Mean %	Mean±SD	Mean%		
Anatomy and physiology	8	4.13±1.463	51.6%	6.39±1.326	79.8%	t = -10.900 p = 0.00*	83
Polycystic Ovarian Syndrome	9	3.10±1.565	34.4%	6.12±1.941	68%	t = -9.769 p = 0.00*	83
Prevention and control of Polycystic Ovarian Syndrome	11	4.11±1.810	37.4%	8.05±1.605	73.2%	t = -14.914 p = 0.00*	83

*Significant at (p<0.05)
NS: Non significant

Table 2 shows the comparison of pre-test and post-test mean knowledge scores of girls regarding Polycystic Ovarian Syndrome In anatomy and physiology of female reproductive system, post-test mean knowledge score of girls was 6.39±1.326 with mean percentage 79.8% followed by 4.13±1.463 with mean percentage 51.6% in pre-test. The difference in mean knowledge pre-test and post-test score is t = -10.900 which is statistically significant at p = 0.00. In knowledge regarding Polycystic Ovarian Syndrome the post-test mean score of girls was 6.12±1.941 with mean percentage 68% followed by 3.10±1.565 and mean percentage 34.4% in pre-test. The difference in mean knowledge pre-test and post-test score is t = -9.769 which is statistically significant at p = 0.00. In section prevention and control, post-test mean knowledge score of girls was 8.05±1.605 with mean percentage 73.2% followed by 4.11±1.810 with mean percentage 37.4% in pre-test. The difference in mean knowledge pre-test and post-test score is t = -14.914 which is statistically significant at p = 0.00. Therefore, it can concluded that planned teaching programme had impact on knowledge of girls regarding anatomy and physiology of female reproductive system followed by prevention and control of Polycystic Ovarian Syndrome followed by the condition Polycystic Ovarian Syndrome

IV. DISCUSSION

The result of present study revealed that among 84 girls, majority of girls had average knowledge regarding Polycystic Ovarian Syndrome, using Pre experimental design, self structured tool, total enumerative sampling technique. As the result showed, in pre-test 58(69%) had average level of knowledge followed by 16(19%) had good level knowledge followed by 10(11.9%) had below average level knowledge while no subject had excellent level knowledge.

In pre-test more than half 58(69%) girls had average knowledge followed by very few 16(19%) and 10(11.9%) girls had good and below average knowledge respectively while no subject had excellent knowledge. Whereas in post-test more than half 44(52.4%) girls have good knowledge followed by 35(41.7%) girls have excellent knowledge followed by very few 5(6%) girls have average knowledge while no subject have below average knowledge. There was significant difference in mean knowledge score of girls. In pre-test the mean score was 11.39 while there was increase in post-test mean score which was 20.65. the difference in mean knowledge pre-test and post-test score is t = -16.787 which is statistically significant at p =0.00

It can be concluded that age, educational status of mother, occupation of father and socioeconomic status were significantly associated with knowledge of Polycystic Ovarian Syndrome.

Study reveals that there was statistically significant association of post-test knowledge with religion, educational status of mother and occupation of father regarding polycystic ovarian syndrome (p<0.05). However there was no significant association of knowledge with affiliated board, age, habitat, type of family, educational status of father, occupation of mother, socioeconomic status and information regarding Polycystic Ovarian Syndrome. Hence, it was inferred that religion, educational status of mother and occupation of father were significantly associated with knowledge of Polycystic Ovarian Syndrome.

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