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To assess the effectiveness of structured teaching programme on knowledge regarding polycystic ovarian syndrome (PCOS) among nursing students of college of nursing

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Abstract
Polycystic ovarian syndrome is the defining as the endocrine disorder that cause excess secretion of male hormone androgen. It causes the amenorrhea, infertility, polycystic ovaries. Polycystic ovarian syndrome (PCOS) is an endocrine disorder that mainly affects the women between ages of 18-44. It affects 1 in 15 women all over the world. A quantitative evaluative approach using questionnaire on polycystic ovarian syndrome, Pre experimental one group pre-test & post-test design was used. Purposive sampling technique was used to select 60 samples from the nursing students of college of Nursing. Pre-test done followed by structured teaching programme on knowledge regarding PCOS. A post-test was conducted after 2 weeks of structured teaching programme. The tools used for data collection, Part 1: Demographic variables, Part 2: Assessing knowledge regarding polycystic ovarian syndrome. The result revealed that pre-test mean value of knowledge 13.9±4.328 was lesser than post-test mean value 19.354±6.3. The effectiveness of STP obtained, "t" test value is 8.38 which is found to be greater than the, "t" table value ($p=0.0001 < 0.01$ level) at 59df. Since the obtained t value is significant at $p < 0.0001$ level, Therefore research hypotheses (H1) is accepted. It is inferred that, there is significant difference between pre-test and post-test knowledge regarding Polycystic ovarian syndrome PCOS among nursing students. The study concludes that the structured teaching programme was very effective in providing knowledge regarding Polycystic ovarian syndrome.

Keywords: Effectiveness, structured teaching programme

Introduction
Polycystic Ovarian Syndrome (PCOS) is the most common endocrine disorder among women between the ages of 18-44. It affects about 2% to 20% of this age group. It is one of the leading endocrine diseases and affects 1 in 15 women all over the world [1]. The term Polycystic Ovarian Syndrome (PCOS) was first described by Irving Stein and Michel Leventhal as the Trinity of 'Amenorrhoea', '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 'Hyper androgenic anovulation' and is also the most common endocrine ovarian disorder in about 2-8% of women of reproductive age [2]. Now a days, it is also called 'Syndrome O' means over nourishment, overproduction of insulin, ovarian dysfunction and ovulatory rupture. Polycystic Ovary Syndrome (PCOS) is a collection of symptoms due to high androgens for women[3]. A major factor in the risk of polycystic ovary syndrome (PCOS) is its family history. A family history of diabetes may increase the risk of PCOS due to potency the relationship between diabetes and PCOS [19]. Signs and Symptoms of Polycystic Ovarian Syndrome (PCOS) include irregular or no menstrual periods, heavy periods, excessive hair on the body and face, acne pelvic pain, pregnancy difficulties and patches of thick darker, Velvety skin. Associated conditions include type 2 diabetes, obesity, sleep apnea, heart disease, mood disorders, endometrial cancer, high blood pressure, dyslipidemia, hyperinsulinemia, and infertility. Polycystic ovarian syndrome (PCOS) cannot be prevented [4]. But the early diagnosis and treatment helps prevent long-term complications, such as infertility, metabolic syndrome, obesity, diabetes, and heart disease [20]. Gynecological problems of reproductive age group occupy a special space in the spectrum of Gynecological disorders of all ages [5]. There is no cure for PCOS, but controlling it reduces the risk of infertility, miscarriage, diabetes, heart disease and cancer.

Current lifestyle, eating habits, exposure to toxins and inherited tendency to metabolic disorders such as obesity, hyperlipidemia, diabetes and high blood pressure and hypertension have contributed to a common problem faced by today's female population [6].

Need of the study

Adolescent health plays an important role in a nation's health condition. In India 35% of adolescents are suffering from PCOS. It is mainly due to the life style changes [7]. There are two main reasons for the increase of PCOS diagnoses in Indian women, the adoption of unhealthy eating habits and a sedentary lifestyle. Whereas older generations of Indian women eat traditional, lower calorie foods with less sugar [8]. Many young Indian girls today eat a steady diet of junk food. Within the past two decades, India began relying on Westernized diets and lifestyle. It is predicted that they may see up to a six-fold increase in obesity prevalence in the next ten years especially for India who already has the highest rates of diabetes in the world (WHO 2009). The proper awareness helps them in prevention and early identification of PCOD, thereby reducing its complications like diabetes, hypertension and cardiovascular diseases [9]. The diverse and complex female endocrine disorder polycystic ovary syndrome (PCOS), which affects 1 in 15 women worldwide, is a major economic health burden that is likely to expand together with obesity The high prevalence of overweight and obesity (BMI 30 kg/m2) is significantly contributing to the overall burden of PCOS worldwide [10]. The PCOS is reported to be a growing problem with adolescent girls. Adolescents may experience the full range of symptoms including irregular or complete absent of menstruation. Polycystic ovarian syndrome (PCOS) accounts for 90% of women with oligomenorrhea, 30% of women with amenorrhea and Over 70% of women with anovulation [11]. Many research has proved that PCOS predisposes the women including adolescent girls to additional health problems.10Most studies showed that polycystic ovaries are present in 3-7% of women worldwide. Overweight and obesity are common findings in polycystic ovary syndrome (PCOS) [12]. In the short term, weight reduction improves both metabolic and endocrine aspects of PCOS as well as clinical markers such as ovulation [13]. Lifestyle modification with modest weight loss goals of 5-10% appear to be equally effective in restoring fertility and may be more compatible with long-term success. The investigator is motivated to help them by conducting a structured teaching program on knowledge regarding Polycystic Ovarian syndrome among nursing students [14].

Objectives

1. To assess the pretest knowledge level on PCOS among nursing students College of Nursing.
2. To assess the effectiveness of structured teaching programme on PCOS among nursing students
3. To identify the difference between the post test and pre-test knowledge regarding PCOS among college of Nursing students.
4. To find out the association between the pre-test knowledge regarding PCOS among nursing students of college of nursing with selected demographic variables.

Hypothesis

H1 - There will be a significant difference between pre-test and post-test knowledge regarding PCOS among nursing students.

H2 - There will be a significant association between the pre-test knowledge score and selected demographic variables regarding PCOS among nursing students.

Material and Methods

The study design was Pre Experimental one group Pre-Test Post-Test design. The population of the study was nursing students of GNM 2nd year, 3rd year, B.Sc. nursing 2nd year, 3rd year of Integral college of nursing Lucknow. Purposive sampling was used to select the samples for the study. Self-administered knowledge based questionnaire was used. The content validity was established by giving the tool to 6 experts from the field of obstetrics. The reliability of the tool was done before by the pilot study. The main study was conducted after the pilot study. The data obtained was analyzed based on the objectives and hypothesis, using descriptive and inferential statistics.

Ethical Aspect

Ethical approval obtained from the Institutional Ethic Committee and permission obtained from department of HOD's of College of Nursing to conduct the study and informed consent was taken from all participants before initiating the study.

Variables

Dependent Variables: Knowledge of nursing students regarding polycystic ovarian syndrome.

Independent Variables: Structured teaching programme on knowledge regarding polycystic ovarian syndrome.

Setting of the study

The population consists of 60 nursing students of College of Nursing.

Criteria for sample selection

Inclusion Criteria

- All students who are in GNM 2nd year, 3rd year and BSc. Nursing 2nd year, 3rd year.
- Those who will be physically present at the time of data collection.
- Those who willing to participate.

Exclusion criteria

Those who do not willing to participate.
Those who will not be present at the time of data collection

Results

The table shows that, Among 60 nursing students, 10% having adequate knowledge regarding Polycystic ovarian syndrome,68.3% having moderate and 21.7% having inadequate knowledge in pre-test and in post-test 51.7% in adequate knowledge, 38.3% in moderate knowledge and 10% in inadequate knowledge. The research reveals that there was significant difference in Pre and Post-test Knowledge of nursing students regarding polycystic ovarian syndrome (PCOS). The findings of the study revealed that there was a significant association of pre-test knowledge with selected demographic variables such as, religion and there was an association between demographic variable and posttest knowledge level of nursing students of regarding polycystic ovarian-syndrome.

Table 1: Frequency and Percentage distribution of Demographic Variables

S. No.	Demographic Variables	Frequency (f)	Percentage (%)
1	**Age**		
	a) 17-18 yrs	2	3.3%
	b) 19-20 yrs	51	85%
	c) 21-22 yrs	6	10%
	d) 23-24 yrs	1	1.7%
2	**Previous educational status**		
	a) Intermediate	42	70%
	b) Graduate	12	20%
	c) Diploma	6	10%
3	**Religion**		
	a) Hindu	33	55%
	b) Muslim	26	43.3%
	c) Christian	0	0%
	d) Other religion	1	1.7%
4	**Residence**		
	a)Urban area	45	75%
	b)Rural area	15	25%
5	**Dietary pattern**		
	a) Vegetarian	30	50%
	b) Non vegetarian	30	50%
6	**Type of family**		
	a) Nuclear family	24	40%
	b) Joint family	36	60%
7	**Family monthly income**		
	a) <10,000	12	20%
	b) 10,000- 20,000	15	25%
	c) 20,000-30,000	12	20%
	d) >30,000	21	35%
8	**Previous source of information**		
	a) No information	32	53.3%
	b) Family members and friends	8	13.3%
	c)Mass media	11	18.3%
	d) Medical Person	9	15 %
9	**Family history of PCOS**		
	a) Yes	14	23.3%
	b) No	46	76.7%

Table 2: Gradation of pre-test and post-test knowledge scores regarding knowledge of PCOS

Comparison of Pretest & Posttest knowledge levels				
	Pre-test		Post-test	
Knowledge level	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Inadequate knowledge	13	21.7%	6	10%
Moderate knowledge	41	68.3%	23	38.3%
Adequate knowledge	6	10%	31	51.7%

The above table reveals that majority 41(68.3%) nursing students were having moderate knowledge about Polycystic ovarian syndrome, 13(21.7%) of nursing students were having inadequate knowledge and 6(10%) had adequate knowledge in pre-test. In post-test there is increased level of knowledge majority 31(51.7%) have adequate knowledge and 23(38.3%) of nursing students have moderate and 6(10%) has inadequate knowledge.

Table 3: Mean, Standard deviation, Standard error, t value regarding Pre-test and Post-test knowledge score among Nursing Students

Paired T-test						
Test	**N**	**Mean**	**Sd.**	**t**	**df**	**p**
Pre-test	60	13.9	4.328	8.38	59	0.0001(S)
Post-test	60	19.35	6.3			

Table 3 shows, the pre-test mean value of knowledge 13.9±4.328 was lesser than post-test mean value 19.35±6.3.The effectiveness of STP, the obtained "t" test value is 8.38 which is found to be greater than the "t" table value (p=0.0001<0.01 level) at 59df. Since the obtained t value is significant at p <0.0001 level, therefore research hypotheses (H1) is accepted. It is inferred that, there is significant difference between pretest and posttest knowledge regarding polycystic ovarian syndrome (PCOS) among nursing students of college of Nursing.

Table 4: Chi-square analysis to find out the association between pre-test knowledge score of nursing students with the demographic variables

Demographic variables	Knowledge levels			x2	df	Sig.
	Inadequate	Moderate	Adequate			
Age in Year				8.76	6	0.19 (NS)
17-18	0	1	1			
19-20	10	37	4			
21-22	2	3	1			
23-24	1	0	0			
Previous educational status				1.14	4	0.89 (NS)
Intermediate	9	28	5			
Graduate	3	8	1			
Diploma	1	5	0			
Religion				9.43	4	0.05* (S)
Hindu	9	24	0			
Muslim	4	16	6			
Christian	0	0	0			
Other religion	0	1	0			
Residence				1.68	2	0.43 (NS)
Urban area	8	32	5			
Rural area	5	9	1			
Dietary Pattern				2.81	2	0.25(NS)
Vegetarian	9	19	2			
Non-vegetarian	4	22	4			
Type of family				0.28	2	0.87 (NS)
Nuclear family	5	16	3			
Joint family	8	25	3			
Monthly family income				5.45	6	0.49 (NS)
< 10,000	5	7	0			
10,000-20,000	3	11	1			
20,000 -30,000	2	8	2			
> 30,000	3	15	3			
Previous source of information				9.05	6	0.17 (NS)
No information	4	23	5			
Family members & friends	1	7	0			
Mass media	5	5	1			
Medical person	3	6	0			
Family history of polycystic ovarian syndrome				2.15	2	0.34 (NS)
Yes	5	8	1			
No	8	33	5			

The above table data shows that Chi-square value computed in pre-test knowledge scores with the selected demographic variable Religion (9.43) was significant (p<0.05) and other variables like age in year (8.76), previous educational status (1.14), residence (1.68), dietary pattern (2.81), type of family (0.28),monthly family income (5.45), previous source of information (9.05) and family history of polycystic ovarian syndrome (2.15) evidenced that there is no statistically association at p<0.05 level. Thus it can be concluded that, there is significant association between the knowledge regarding polycystic ovarian syndrome (PCOS) among nursing students with their selected demographic variable age.

Discussion

Distribution of samples according to the socio-demographic data in which there was a significant association of pre-test knowledge with selected demographic variables such as religion. In Pre-test knowledge among nursing students regarding Polycystic ovarian syndrome was found inadequate in 13(21.7%) nursing students, 41(68.3%) have moderate knowledge and 6(10%) have adequate knowledge regarding whereas in Post-test knowledge score after administration of structured teaching programme reveals that 31(51.7%) have adequate level of knowledge, where as in protest it was 6(10%), 23(38.3%) have moderate, and 6(10%) have inadequate knowledge regarding Polycystic ovarian syndrome. The post-test mean knowledge score was found higher mean (19.35) and S.D (6.3) when compared with pre -test mean knowledge score, mean was (13.9) and S.D (4.32). Calculated "t" value was 8.38 which was significant at 0.0001 level. It provide for evidence that the structured teaching programme was significantly effective in improving the nursing students knowledge on polycystic ovarian syndrome. Hence research hypothesis (H1) is accepted [15].

The result shows that there was significant association between post-test knowledge score with demographic variables such as religion (X^2=9.43), evidenced that there is statistically association at p<0.05 level. Hence the research hypothesis (H2) is accepted. There was no significant association found between the post-test knowledge score and age (X^2=8.76), previous educational status (X^2=1.14), residence (X^2=1.68), Dietary pattern (X^2=2.81) type of family (X^2=0.28), monthly income (X^2=5.45), Previous source of information (X^2=9.05) and family history of PCOS (X^2=2.15).

Conclusion

The present study was aimed at assessing the knowledge level of nursing students about polycystic ovarian syndrome (PCOS). The relevant data was collected and analyzed statistically based on the objective of the study [16]. Among 60 nursing students, 10% having adequate knowledge regarding Polycystic ovarian syndrome, 68.3% having moderate and 21.7% having inadequate knowledge in pre-test and in post-test 51.7% in adequate knowledge, 38.3% in moderate knowledge and 10% in inadequate knowledge [17]. The research reveals that there was significant difference in pre and post-test knowledge of nursing

students regarding polycystic ovarian syndrome (PCOS). The findings of the study revealed that there was a significant association of pre-test knowledge with selected demographic variables such as, religion and there was an association between demographic variable and posttest knowledge level of nursing students of regarding polycystic ovarian-syndrome [18].

Recommendation

- Similar studies can be replicated on larger samples for wider generalization mainly in the community.
- A similar study can be conducted by using pretest with an instruction module.
- Manuals, handouts can be developed and distributed regarding polycystic ovarian syndrome among nursing students.
- Similar studies can be conducted as comparative study in rural and urban settings.

Limitation of the study

- Study is limited to nursing students of College of Nursing.
- This study is limited to 3 weeks.
- The study is limited to 60 nursing students of GNM, B.Sc. nursing

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