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EFFECTIVENESS OF AN INFORMATION BOOKLET ON KNOWLEDGE REGARDING MANAGEMENT OF POLYCYSTIC OVARIAN SYNDROME AMONG THE YOUNG FEMALE ADULT OF SELECTED SENIOR COLLEGES.

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Abstract*:* **Introduction:** Polycystic ovarian syndrome (PCOS) is a common hormonal disorder in women of reproductive age, characterized by irregular periods, high androgen levels, and ovarian cysts. Though its exact cause is unclear, genetic and environmental factors, along with insulin resistance, play a role, but proper management can help control symptoms and reduce complications **Objectives:** 1) To assess the pre – test knowledge score regarding management of polycystic ovarian syndrome among the young female adult of selected senior colleges. 2) To assess the effectiveness of information booklet on knowledge regarding management of polycystic ovarian syndrome among the young female adult of selected senior colleges. 3) To find the association of pre-test knowledge of study findings with selected demographic variables. **Methodology:** A pre-experimental one-group pretest-posttest study was conducted on 70 young female adults using non-probability convenience sampling. After IEC approval and consent, baseline knowledge was assessed, followed by an information booklet on PCOS management. A post-test after seven days measured knowledge improvement, analyzed using descriptive and inferential statistics. **Results:** This study assessed the effectiveness of an information booklet on PCOS management among 70 young female adults. Pre-test knowledge was poor or average in most participants, but post-test scores showed significant improvement (mean: 22.42 ± 4.203, $t = 17.074$, $p < 0.01$). Age, family income, and health status were significantly associated with knowledge levels. The study demonstrated high reliability (0.866) and strong correlation (0.861), confirming the intervention's effectiveness. **Conclusion:** The study confirmed the booklet's effectiveness in increasing PCOS knowledge ($p < 0.01$), with age, income, and health status as key factors. Findings highlight the need for targeted education for young women. Future research should explore similar studies on a larger scale.

Keywords: ***Information booklet, Polycystic ovarian syndrome.***

I. INTRODUCTION

The term polycystic ovarian syndrome was first described by Irving Stein and Micheal Leventhal as a triad of obesity, hirsutism and amenorrhea in 1935 when they observed the relation between obesity and reproductive disorders. It is hence also known as the Stein- Leventhal Syndrome or Hyper androgenic an ovulation and is the most common endocrine ovarian disorder affecting approximately 2-8% women of reproductive age. Nowadays, it is also referred to as the, Syndrome i.e. ovulatory disruption, ovarian confusion, overproduction of insulin, and over nourishment. Polycystic Ovarian Syndrome (PCOS) is the most common endocrine disorder and hormonal disorder among women between the age between 18-44 years. It affects approximately 2% to 20% of 18- 44 years of age group. It is one most of the leading endocrine disease and the hormonal disease and which affects one in 15 women in worldwide. The incidence of PCOS in adolescents is estimated to be 11% to 26%, with approximately 50% being overweight. The main risk factor for polycystic ovary syndrome (PCOS) is a family history of it. A family history of diabetes may increase the risk for PCOS because of the strong relationship between diabetes and PCOS.[1]

Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder affecting an estimated 6–13% of reproductive-aged women worldwide. Alarmingly, up to 70% of affected women remain undiagnosed, underscoring significant gaps in awareness and healthcare delivery.[2]

Polycystic Ovarian Syndrome (PCOS) is a common health problem that is increasingly affecting adolescent girls and young women during their reproductive years. It is a hormonal disorder that leads to menstrual disturbances and the formation of multiple abnormal cysts in enlarged ovaries. As a result, normal ovulation is disrupted, making it difficult for affected women to conceive. If left untreated, PCOS can lead to serious health complications such as diabetes mellitus and heart disease. According to a study by the PCOS Society, one in every ten women in India has PCOS, making it a prevalent endocrine disorder among women of reproductive age. Additionally, six out of every ten women diagnosed with PCOS are teenage girls.[3]

PROBLEM STATEMENT

"To assess the effectiveness of an information booklet on knowledge regarding management of polycystic ovarian syndrome among the young female adult of selected senior colleges."

OBJECTIVE

1. To assess the pre – test knowledge score regarding management of polycystic ovarian syndrome among the young female adult of selected senior colleges.
2.To assess the effectiveness of information booklet on knowledge regarding management of polycystic ovarian syndrome among the young female adult of selected senior colleges.
3.To find the association of pre-test knowledge of study findings with selected demographic variables.

HYPOTHESIS

H_0: There is no significant difference between pre-test and post- test knowledge score after an information booklet on knowledge regarding management of polycystic ovarian syndrome among young female adult of selected senior colleges.
H_1: There is significant difference between pre-test and post - test knowledge score after an information booklet on knowledge regarding management of polycystic ovarian syndrome among young female adult in selected senior colleges.

MATERIAL AND METHOD

Study Design: Pre-experimental, One group pretest post-test research design
Study settings: this study was conducted in selected senior colleges of Nagpur district, Maharashtra India
Population of the Study: Young female adult
Sample: Young female adult (18-25 years) of selected senior colleges.

Sample size: 80 subjects (including 10 % dropout)

Cochran formula for sample size estimation:
Confidence level (Z)-1.96
Margin of error (E)-0.10
Sample proportion (P) – 76.47% q=(1-p)= 1- 0.7647 = 0.2353
N = Z2 p q /e2

The estimated sample formula,

$=(1.96)^2 \times 0.7647 \times 0.2353/(0.10)^2$
$= 3.8416 \times 0.7647 \times 0.2353/0.01$
$= 0.6912/0.01$
N = 69.12
N= 70 participants needed in the study
N = 80 participants needed including 10 % dropout.

Sample technique: Non-probability convenience sampling technique

RESEARCH CRITERIA

Inclusion Criteria

Young female adult (18-25 years) of selected senior colleges who have given consent to participate in the study.

Exclusion Criteria

Those who have attended any information on knowledge regarding management of polycystic ovarian syndrome.

Variables

Independent variables: Information booklet
Dependant variables: knowledge

Data Collection Tool

Section A: -Socio-demographic data of young female adult
Section B: -Self-Structured knowledge questionnaire regarding management of polycystic ovarian syndrome
Section C: - Knowledge score

Description Of Tool And Knowledge Assessment

Section A: Demographic data of young female adult of selected senior colleges. (This section consists of 7 items include age, marital status, type of family, residence, family income, field/stream, health problems, Familiarity with polycystic ovarian syndrome)

Section B: - Questionnaire consist of 30 items regarding knowledge on management of polycystic ovarian syndrome. Each item has four options with one most appropriate answer. The maximum score for correct response to each item was one and for wrong answer it was zero. Knowledge levels are categorized as Poor for scores between 0 and 15 (0%–50%), Average for scores between 16 and 22 (51%–75%), and Good for scores between 23 and 30 (76%–100%).

Details of pilot study conducted:

A sample of 12 participants from selected senior colleges was chosen using convenience sampling. The pilot study was conducted from 2nd to 9th December 2024 after obtaining necessary permissions and informed consent. Data were analyzed using basic statistical methods. The pilot helped assess the feasibility of the study, identify time requirements, and refine the data collection process.

Reliability (%): 0.866, confirming the tool's reliability and validity for measuring the intended constructs.

Description of Intervention:

The intervention in this study was an information booklet aimed at improving knowledge regarding the management of polycystic ovarian syndrome (PCOS) among young female adults in selected senior colleges. The booklet was developed based on a comprehensive review of literature and expert guidance, and it included information on the causes, symptoms, diagnosis, lifestyle modifications, medical treatment, and prevention of PCOS. After administering the pre-test, the information booklet was distributed to the participants. They were given sufficient time to read and understand the content. To assess the effectiveness of the intervention, a post-test was conducted seven days later using the same self-structured questionnaire.

Study Procedure And Data Collection:

The study was conducted only after the approval of the IEC. Permission to conduct study taken from concerned authority. Written informed consent was obtained from all participants. Each participant received a code number and self-administered questionnaires. A self- administered questionnaires obtained information on socio- demographic of participants. Thereafter baseline knowledge assessed. This approach ensures the accuracy, reliability, and validity of the study results. Thereafter, Investigator delivered an information booklet on the management of polycystic ovarian syndrome for the participants on the same day. After seven days post-test for knowledge assessment was conducted.

Statistical Analysis:

The study used descriptive statistics (frequency, percentage, mean, SD) to summarize data. Inferential methods included the Paired T-test to compare pre- and post-intervention scores, and the Chi-square test to find associations between knowledge levels and demographic variables.

Consent And Ethical Approval:

The present study was approved by the Institutional Ethics Committee and concemed authorities of Government Medical College, Nagpur (GMC/IEC/2023-24/2093 dated 23.02.2024). All participants and guardian of participant of this study were asked to read and sign the written informed consent form. Participants were informed that participation in this study is voluntary and they can withdraw at any time. Confidentiality was ensured throughout the study.

RESULTS

SECTION-A

Table 1: Percentage Wise Distribution Of Young Female Adult According To Their Demographic Characteristics.

Demographic Variables	No. Of Young Female Adult	Percentage (%)
Age(yrs)		
18-19 yrs	10	14.3
20-21 yrs	20	28.6
22-23 yrs	19	27.1
24-25 yrs	21	30.0
Marital Status		
Married	13	18.6
Unmarried	57	81.4
Widow	0	0
Divorce	0	0
Type of family		
Nuclear Family	49	70.0
Joint Family	15	21.4
Extended Family	5	7.1
Single Parent Family	1	1.4
Residence		
Urban	61	87.1
Rural	9	12.9
Family income (per month)		
Rs. 15,000 - 30,000/-	24	34.3
Rs. 30,000 - 45,000/-	17	24.3
Rs. 45,000 - 60,000/-	20	28.6
Rs. 60,000 and above	9	12.9
Field/ Stream (specify your stream of education)	70	100
Health Problem (if any specify)	No any 58	82.9
	PCOS 10	14.3
	Thyroid 2	2.9

SECTION-B

Table 2 : Assessment with level of pre- test knowledge score.

Knowledge Score (PRE)	Score Range	Level of Knowledge Score	
		Frequency (f)	Percentage (%)
Low Score	0 to 50%	25	35.7
Average Score	51% to 75%	44	62.9
Good Score	76% to 100%	1	1.4
Minimum Score		6	
Maximum Score		21	
Mean Knowledge Score		12.01± 3.381	

The pre-test knowledge scores of the 70 participants were categorized into three levels. A total of 25 participants (35.7%) fell into the "Low Score" category, scoring between 0 to 50%, while the majority, 44 participants (62.9%), achieved an "Average Score" ranging from 51% to 75%. Only 1 participant (1.4%) scored in the "Good Score" range of 76% to 100%. The scores ranged from a

minimum of 6 to a maximum of 21. The mean knowledge score was 12.01, with a standard deviation of ±3.381. These findings indicate that most participants had an average level of knowledge, with relatively few scorings in the low or good categories.

Table 3 : Assessment with level of post- test knowledge score.

Knowledge Score (POST)	Score Range	Level of Knowledge Score	
		Frequency (f)	Percentage (%)
Low Score	0 to 50%	2	2.9
Average Score	51% to 75%	19	27.1
Good Score	76% to 100%	49	70
Minimum Score		10	
Maximum Score		30	
Mean Knowledge Score		22.42± 4.203	

The post-test knowledge scores of the 70 participants showed a marked improvement compared to the pre-test. Only 2 participants (2.9%) remained in the "Low Score" range (0–50%), while 19 participants (27.1%) achieved an "Average Score" (51–75%). Notably, the majority—49 participants (70.0%)—scored in the "Good Score" range (76–100%). The scores ranged from a minimum of 10 to a maximum of 30. The mean knowledge score increased to 22.42, with a standard deviation of ±4.203. These findings clearly indicate a significant improvement in participants' knowledge levels following the intervention, with most attaining high scores.

SECTION-C

Table 4 : Significance of difference between knowledge score in pre and post test

		Mean	N	Std. Deviation	Std. Error Mean	df	T-test	P-value
Knowledge	Pre	12.0143	70	3.38150	0.40417	69	17.074	<0.01
	Post	22.4286	70	4.20342	0.50240			

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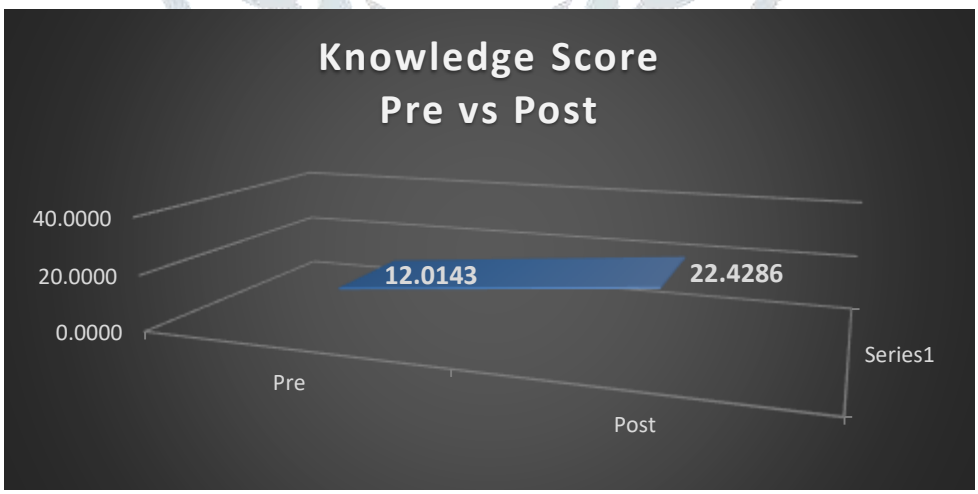

Figure 1 : Graphical Representation of Comparative assessment of Knowledge (Pre vs Post)

SECTION-D

Table 5 :- Comparative assessment of Knowledge category vs Age using Chi- Square Analysis.

			Knowledge category			Total	Chi Sq	P-value
			Poor	Average	Good			
Age	18 – 19 years	Frequency	1	9	0	10	7.882	0.0247
		%	4.0%	20.5%	0.0%	14.3%		
	20 – 21 years	Frequency	7	12	1	20		
		%	28.0%	27.3%	100.0%	28.6%		
	22- 23 years	Frequency	10	9	0	19		
		%	40.0%	20.5%	0.0%	27.1%		
	24- 25 years	Frequency	7	14	0	21		
		%	28.0%	31.8%	0.0%	30.0%		
Total		Frequency	25	44	1	70		
		%	100.0 %	100.0%	100.0%	100.0%		

The cross-tabulation showed a significant association between age and knowledge level among 70 participants. Most participants across all age groups had average knowledge, while only one person (from the 20–21 age group) had good knowledge. The Chi-square value (7.882) and p-value (0.0247) indicate this relationship is statistically significant, meaning age had a meaningful impact on knowledge level.

Table 6 :- Comparative assessment of Knowledge category vs Family income using Chi- Square Analysis.

			Knowledge category			Total	Chi Sq	P-value
			Poor	Average	Good			
Family income (per month)	Rs. 15,000 - 30,000/-	Frequency	9	14	1	24	5.546	0.0476
		%	36.0%	31.8%	100.0%	34.3%		
	Rs. 30,000 - 45,000/-	Frequency	3	14	0	17		
		%	12.0%	31.8%	0.0%	24.3%		
	Rs. 45,000 - 60,000/-	Frequency	9	11	0	20		
		%	36.0%	25.0%	0.0%	28.6%		
	Rs. 60,000 and above	Frequency	4	5	0	9		
		%	16.0%	11.4%	0.0%	12.9%		
Total		Frequency	25	44	1	70		
		%	100.0%	100.0%	100.0%	100.0%		

The study analyzed the association between family income and knowledge level among 70 participants. The Rs. 15,000–30,000 group had the highest proportion (34.3%), with 9 poor, 14 average, and 1 good knowledge score. Other income groups had no participants with good knowledge. The Chi-square value was 5.546 and the p-value was 0.0476, indicating a statistically significant relationship, suggesting that family income may influence knowledge levels.

Table 7 :- Comparative assessment of Knowledge category vs Health Problem using Chi- Square Analysis.

		Knowledge category			Total	Chi Sq	P-value
		Poor	Average	Good			
Health Problem (if any specify)	No	25	32	1	58	13.225	0.01
	PCOS	10	0	0	10		
	Thyroid	0	2	0	2		
Total		35	34	1	70		

The study found a statistically significant association between health problems and knowledge level (Chi-square = 13.225, p = 0.01). All PCOS participants (n=10) had poor knowledge, while those with thyroid issues (n=2) had average knowledge. Among the 58 without health problems, most had average or poor knowledge. This suggests that knowledge levels vary significantly with health conditions, especially with lower scores in those having PCOS or thyroid issues.

Based on the Chi-square analyses, several variables were examined to assess their association with knowledge levels among the 70 participants. The results indicate that age, family income, and health problems had a statistically significant relationship with knowledge levels. Specifically, the analysis revealed a significant association between age and knowledge level (Chi-square = 7.882, p = 0.0247), suggesting that knowledge levels varied meaningfully across different age groups. Similarly, family income was found to significantly influence knowledge (Chi-square = 5.546, p = 0.0476), indicating that participants from different income brackets demonstrated varying levels of knowledge, with the highest knowledge observed in the Rs. 15,000–30,000 income group. Additionally, health problems were significantly associated with knowledge levels (Chi-square = 13.225, p = 0.01), with participants suffering from PCOS exhibiting notably lower knowledge levels compared to others.

On the other hand, marital status, type of family, residence (urban vs. rural), and field of education showed no statistically significant association with knowledge levels. The p-values for these variables were well above the 0.05 threshold, indicating that they did not have a meaningful impact on knowledge in this sample. Notably, the field of education could not be effectively analyzed due to the uniform background of all participants (all were students from the same stream), leading to a Chi-square value and p-value of 0.

In summary, the findings suggest that age, income level, and presence of health problems are important factors influencing knowledge levels, while marital status, family structure, residence, and field of study do not appear to significantly affect knowledge among the participants in this study.

DISCUSSION

The study by Sarita Pandey and Dr. Sujata Deo (2020) showed a significant improvement in PCOS knowledge after an informational module (mean score increase from 8.79 to 18.30; $p<0.001$), but found no association with demographic variables and did not assess tool reliability. In contrast, my study also showed a significant knowledge gain post-intervention ($p<0.01$), identified associations with age, income, and health issues, and validated the assessment tool (r = 0.861), ensuring reliability.[4]
Similarly, the study by Nancychandra Priya P. and Shwetha M. N. (2019) assessed baseline PCOS knowledge but did not evaluate the impact of their pamphlet. No significant demographic associations were found. My study goes further by implementing and evaluating an educational intervention, demonstrating significant improvement in knowledge and linking it to key demographic factors, supported by a validated tool. Thus, my study offers a more comprehensive and evidence-based approach to improving PCOS awareness.[5]

CONCLUSION

During this study it was observed that young female adult were very conscious and interested to gain knowledge regarding knowledge of management of polycystic ovarian syndrome. The study findings indicate that before the intervention, many participants had inadequate knowledge about polycystic ovarian syndrome, its symptoms, risk factors, and management strategies. However, after providing the information booklet, there was a significant increase in the participants' knowledge scores. The improvement in post-test scores suggests that the booklet effectively enhanced awareness regarding lifestyle modifications, dietary management, medical treatment options, and long-term health risks associated with polycystic ovarian syndrome. By equipping individuals with accurate information, the booklet empowered them to take proactive measures in managing the condition, potentially leading to better health outcomes. Thus, the study supports the use of educational materials as an effective tool in improving knowledge and promoting better self-care practices for polycystic ovarian syndrome management.

RECOMMENDATIONS

1. A similar study can be conducted on large scale.
2. A similar study may be replicated with the other course of young female adult
3. A similar study can be replicated by using other innovative sources.
4. A similar study can be replicated by using other Sampling Technique.

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DECLARATION OF INTEREST:

The author declared that there are no conflicts of interest regarding the conduct of this study. This research was carried out independently, without any financial support, sponsorship, or influence from pharmaceutical companies, organizations, or other parties. All procedures and analyses were conducted solely for academic purposes as part of the M.Sc. Nursing dissertation requirement.

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