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Expert Opinion Article

Assessment of Pre and Post Interventional Study on Knowledge, Attitude and Practice Among PCOS Women in Government Hospital, Saharanpur, U.P.

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Abstract

Polycystic Ovary Syndrome stances as a widespread endocrine disorder which affects females between reproductive years, yet awareness and management practices remain inadequate in many regions. This study aimed to assess the efficiency of a structured educational intervention on the knowledge, attitude, and practice (KAP) levels related to PCOS among women attending a government medical college in Saharanpur, Uttar Pradesh. A total of 138 women diagnosed with Polycystic Ovary Syndrome participated in this pre-post interventional study. Baseline KAP data were collected through a validated questionnaire, followed by a health education session comprising lectures, visual aids, and distribution of informational materials. Questionnaire after the intervention to evaluate changes in participant responses. The research showed significant progress in every evaluation area. Knowledge scores exhibited the biggest improvement with additional developments detected in both attitude and practice. Paired t-tests executed statistical evaluation which validated the significant changes ($p < 0.05$). Structured health education developed specifically for the context delivers essential benefits which help address misconceptions and encourage better decision-making and better healthcare practices among women who have PCOS. The research suggests outpatient services should implement these programs as a regular component to enhance early detection and better disease management results.

Keywords: *Polycystic Ovary Syndrome, Health Education, KAP Study, Women's Health, Behavioral Change*

1. Introduction

1.1 Background

Polycystic Ovary Syndrome (PCOS) is a prevalent endocrine disorder affecting a substantial proportion of women during their reproductive years worldwide. Characterized by menstrual irregularities, hyperandrogenism, and polycystic ovarian morphology, PCOS poses a significant public health challenge due to its multifaceted clinical manifestations and long-term health implications (Teede et al., 2018). The global prevalence of PCOS among women of reproductive age varies between 4% and 20%, influenced by diagnostic criteria and ethnic diversity (Azziz et al., 2016).Clinically, PCOS presents with a spectrum of symptoms, including amenorrhea, oligomenorrhea, infertility, hirsutism, acne, and obesity (Rosenfield & Ehrmann, 2016). Beyond reproductive health, PCOS is strongly associated with metabolic comorbidities such as insulin resistance, type 2 diabetes mellitus, dyslipidemia, cardiovascular disease, and an increased risk of endometrial hyperplasia (Teede et al., 2013). Despite its broad impact, PCOS remains under-recognized and inadequately managed in many populations, largely due to limited awareness and misconceptions about the disorder.Emerging evidence indicates that insufficient knowledge and inaccurate beliefs about PCOS hinder timely diagnosis and effective self-management, thus exacerbating disease progression (Chaudhari, Mazumdar, & Mehta, 2018). Assessing the knowledge, attitudes, and practices (KAP) related to PCOS is essential for designing targeted educational interventions aimed at improving health literacy and outcomes.

Several studies underscore the variability in PCOS awareness among different populations. For instance, research by Patel and Rai (2018) revealed poor symptom recognition and treatment misconceptions among young women in Central India. Similarly, a study by Bukhari et al. (2023) found that while Saudi women exhibited moderate awareness of PCOS, substantial deficiencies persisted in their attitudes and management practices.Addressing these knowledge gaps through structured health education programs can foster positive behavioral changes and enhance the quality of life among affected individuals. The present study proposes a pre-post interventional design to evaluate the effectiveness of a health education module in improving KAP levels among women attending a government hospital in Saharanpur. The findings are expected to inform public health strategies and clinical practices aimed at reducing the burden of PCOS through improved patient education and adherence to management protocols.

1.2 Objectives

Primary Objective

- To estimate the effect of a structured health education intervention on KAP related to PCOS.

Sub-objectives

- Evaluate baseline levels of knowledge, attitude, and practices about PCOS.
- Measure the changes in KAP post-intervention and evaluate the effectiveness of the educational program.

2. Methodology

2.1 Study Design

The research held at the gynecology outpatient department (OPD) of the Government Medical College in Saharanpur, Uttar Pradesh, India through a pre-post interventional design. The research method evaluated how structured health education affected Knowledge, Attitude, and Practices (KAP) related to Polycystic Ovary Syndrome (PCOS) among facility visitors.

2.2 Study Population and Sampling

The research included females 18–40 years of age, who visited the gynecology OPD and received PCOS diagnosis through consecutive sampling. The study selected participants through specific inclusion and exclusion criteria as explained below. The research involved 138 participants as its total sample group.

Inclusion Criteria

- Women attending the OPD detected with PCOS.
- Participants aged ranges from 18 to 40 years.

Exclusion Criteria

- Respondents younger than 18 years old.
- Pregnant women.

2.3 Educational Intervention

The intervention delivered structured health education through three main components:

- Delivered an interactive presentation about the PCOS through PPT.
- The presentation included essential PCOS information with symptoms descriptions, management approaches, and their effects.
- Distribution of informational and educational materials pamphlet, booklet.

2.4 Data Collection

The KAP questionnaire served as the instrument to collect data through its structured and validated format. The questionnaire divided its content into three sections which included knowledge, attitude, and practices with ten questions per section to evaluate each domain.

2.5 Data Analysis

In this research analysed the gathered data to determine how participants distributed across various demographic categories including their age group and educational level and occupational field and marital status and family medical background and residential location. The researchers used descriptive statistics to present both demographic information and KAP score data. Frequency and percentage distribution served as the method for displaying categorical data. The evaluation of educational session effectiveness relied on analysing KAP scores from before and after the intervention.

The analysis used appropriate statistical tests including Chi-square tests to evaluate significance levels at $p < 0.05$ for categorical variables. The data was organized in tables to show the effects of the educational session on the study participants.

3. Results and Discussion

Table 1: Demographic Distribution of Study Respondents (N = 138)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	18–25	60	43.48%
	26–30	37	26.81%
	31–35	24	17.39%
	36–40	17	12.32%
Education Level	Graduate	56	40.58%
	Undergraduate	38	27.54%

	Primary Education	20	14.49%
	High School	14	10.14%
	Postgraduate	6	4.35%
	Uneducated	4	2.90%
Occupation	Homemaker	60	43.48%
	Student	39	28.26%
	Self-employed	34	24.64%
	Professional	5	3.62%
Marital Status	Married	90	65.22%
	Unmarried	48	34.78%
Diet Type	Non-vegetarian	90	65.22%
	Vegetarian	38	27.54%
	Eggatarian	10	7.25%
Area of Residence	Rural	100	72.46%
	Urban	38	27.54%
Family History of PCOS	Yes	47	34.06%
	No	63	45.65%
	Maybe	28	20.29%

The demographic information of 138 women in ta diagnosed with PCOS who took part in the study appears in Table 1. Epidemiological data supports the findings that 43.48% of participants fell within the 18–25 age bracket since PCOS typically emerges during late adolescence and early adulthood (Barthelmess, E. K., & Naz, R. K., 2014). Graduate-level participants made up 40.58% of the sample population indicating a well-educated population that could affect their response to health interventions (Teede et al., 2018). The study population primarily consisted of homemakers (43.48%) who might experience PCOS symptoms due to their reduced physical activity levels (Lim et al., 2012).

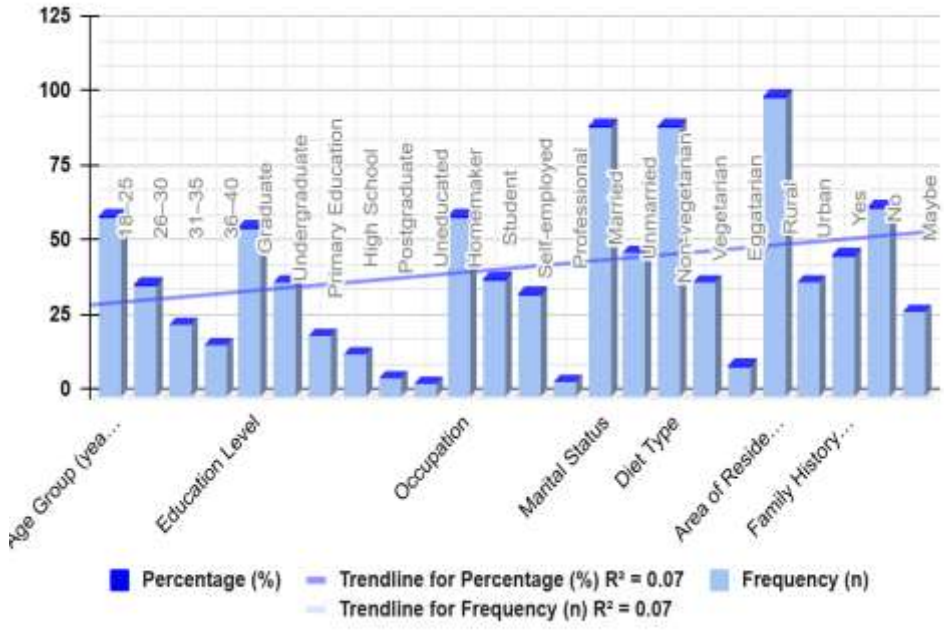

Figure 1: Demographic Distribution of Study Respondents

The marital status data revealed that 65.22% of the participants were married which highlights the importance of reproductive health management in PCOS treatment for this population. The dietary patterns revealed that 65.22% of participants ate non-vegetarian foods while this eating habit could affect both insulin resistance & hormonal balance in PCOS (Moizé et al., 2013). Rural residency proved to be the most common residential area at 72.46% indicating potential difficulties in healthcare access along with difficulties in education. The data revealed that 34.06% of participants had family members with PCOS which supports genetic factors in the expansion of this condition (Azziz et al., 2016). Research evidence reveals a necessity to introduce education-based lifestyle courses for the specific population under investigation.

Table 2: Pre-intervention Knowledge Level about PCOS among Participants (N = 138)

Knowledge Level	Frequency (n)	Percentage (%)
Poor	59	42.75%
Moderate	68	49.28%
Good	11	7.97%

Table 2 shows how 138 participants distributed their knowledge about Polycystic Ovary Syndrome (PCOS) before receiving educational information. The results showed that 42.75% of participants displayed poor knowledge about PCOS and 49.28% had moderate understanding of the condition. The survey revealed that only 7.97% of participants had good knowledge about PCOS while the rest showed inadequate understanding despite the widespread occurrence of this condition.

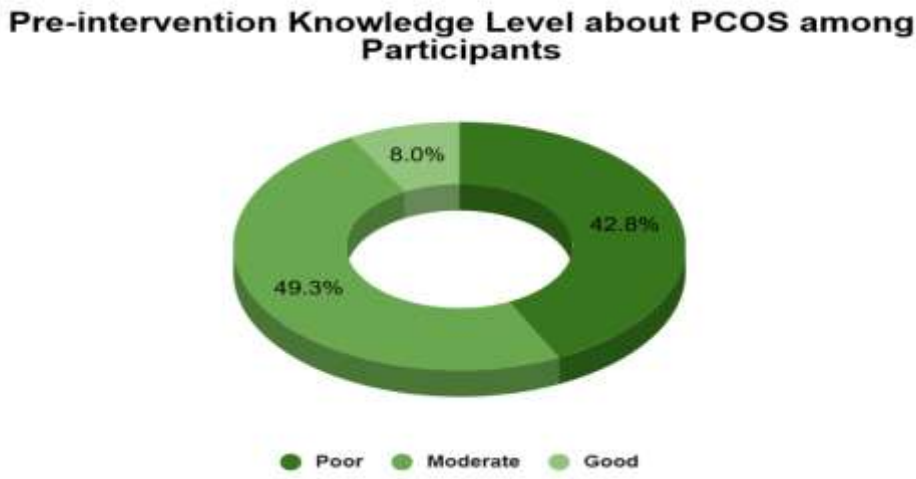

Figure 2: Pre-intervention Knowledge Level about PCOS among Participants

The research results match previous studies which showed women in developing regions have limited understanding of PCOS. Deswal, et al., (2020) discovered that insufficient education levels and weak public health outreach activities lead to incorrect understanding and poor symptom recognition of PCOS. Kaur, et al., (2023) conducted research which demonstrated that educated women also displayed knowledge deficits about PCOS because of its limited presence in standard health education programs. The delay of diagnosis because of poor awareness will heighten patients' risks for infertility as well as metabolic disorders & psychological distress (Teede et al., 2018). The high number of participants with poor or moderate knowledge levels demonstrates the necessity for organized awareness programs that should be implemented in primary healthcare facilities. Educational programs showing effectiveness help people identify PCOS symptoms earlier and teach better life choices and improve patients' medication compliance.

Table 3: Pre-intervention Attitude Level toward PCOS among Participants (N = 138)

Attitude Level	Frequency (n)	Percentage (%)
Poor	36	26.09%
Moderate	83	60.14%
Good	19	13.77%

Table 3 presents the participants' attitudes toward PCOS before any educational intervention. The research data indicates that 60.14% of women held moderate attitudes yet 26.09% displayed poor attitudes. The percentage of women who showed positive or good attitudes toward PCOS management and understanding reached only 13.77%. The data shows that most women hold a neutral stance regarding PCOS knowledge and management. The presence of negative or indifferent attitudes toward reproductive health issues can result from cultural stigmas and incorrect information as well as insufficient dialogue about reproductive health (Inayat Ali, A., Azam, I., Tikmani, S. S., & Saleem, S., 2025). Women may internalize PCOS-related symptoms like infertility, hirsutism, and irregular menstruation as personal failures, further lowering their health-seeking behavior (Ali, et al., 2022). A positive attitude is crucial for proactive engagement in treatment and lifestyle modifications. As per Acharya, et al., (2018), behavioral change and self-management are significantly influenced by individual attitudes, especially when living with chronic syndromes like PCOS. Therefore, the findings reflect a need not just for knowledge dissemination, but also for structured counseling and community-based awareness initiatives that challenge misconceptions & endorse a helpful environment for women.

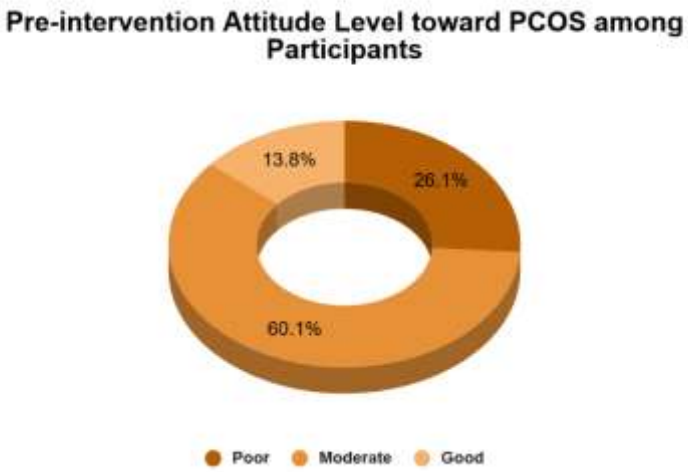

Figure 3: Pre-intervention Attitude Level toward PCOS among Participants

Table 4: Pre-intervention Practice Level regarding PCOS among Participants (N = 138)

Practice Level	Frequency (n)	Percentage (%)
Poor	34	24.64%
Moderate	58	42.03%
Good	46	33.33%

Table 4 illustrates the pre-intervention practice behaviors of participants regarding PCOS management. Among the 138 respondents, 42.03% exhibited moderate practices, 33.33% had good practices, and 24.64% showed poor engagement in PCOS-related health behaviors. While a fair proportion practiced moderate to good management, a significant minority lacked adequate self-care actions such as physical activity, dietary regulation, & treatment compliance. Poor and moderate practice levels may stem from insufficient awareness, cultural taboos, and low motivation to seek medical attention until symptoms become severe (Patel, Jaya & Rai, Shailesh, 2018). Additionally, many women may not perceive lifestyle modifications, such as regular exercise or dietary changes, as primary interventions, despite their proven efficacy in managing PCOS symptoms (Lim et al., 2012). Evidence suggests that behavioral interventions, when combined with education, can lead to long-term enhancements in hormonal balance, menstrual regularity, & metabolic outcomes (Moran et al., 2013). The 33.33% reporting good practices reflect the potential success of prior informal learning or support from healthcare professionals. However, the data collectively reinforces the need for structured and sustained intervention programs that emphasize practical, actionable steps for managing PCOS.

Table 5: Post-intervention Knowledge Level about PCOS among Participants (N = 138)

Knowledge Level	Frequency (n)	Percentage (%)
Poor	45	32.61%
Moderate	68	49.28%
Good	25	18.12%

Table 5 presents the knowledge levels of participants about PCOS following an educational intervention. Of the 138 women surveyed, 49.28% exhibited moderate knowledge, 18.12% demonstrated good knowledge, and only 32.61% remained in the poor knowledge category. Compared to the pre-intervention findings, there was a notable shift from poor to good knowledge levels, reflecting the impact of structured awareness sessions. This improvement aligns with existing

literature, which emphasizes the efficiency of targeted health education in improving disease-specific understanding. A study by Megala, et al., (2020) conveyed comparable gains in knowledge subsequently conducting awareness workshops on PCOS among adolescents. Educating women on symptoms, causes, and management strategies empowers them to recognize early signs and seek timely intervention (Acharya, et al., 2018). Despite the gains, the persistence of poor knowledge in nearly one-third of the participants indicates barriers such as limited literacy, lack of engagement, or deeply ingrained misconceptions. These findings support the recommendation by Teede et al. (2018) for ongoing, tailored, and culturally sensitive health education, especially in primary healthcare settings. Regular follow-ups and interactive formats may help sustain and deepen knowledge retention over time.

Table 6: Post-intervention Attitude Level toward PCOS among Participants (N = 138)

Attitude Level	Frequency (n)	Percentage (%)
Poor	19	13.77%
Moderate	86	62.32%
Good	33	23.91%

Table 6 demonstrates the shift in participants' attitudes toward PCOS after a structured educational intervention. Post-intervention, 62.32% of respondents displayed a moderate attitude, 23.91% exhibited a good attitude, while only 13.77% remained in the poor category. This positive shift reflects a significant improvement in participants' perspectives regarding the seriousness, management, and lifestyle implications of PCOS. Improving attitude is critical to long-term behavior change and health outcomes.

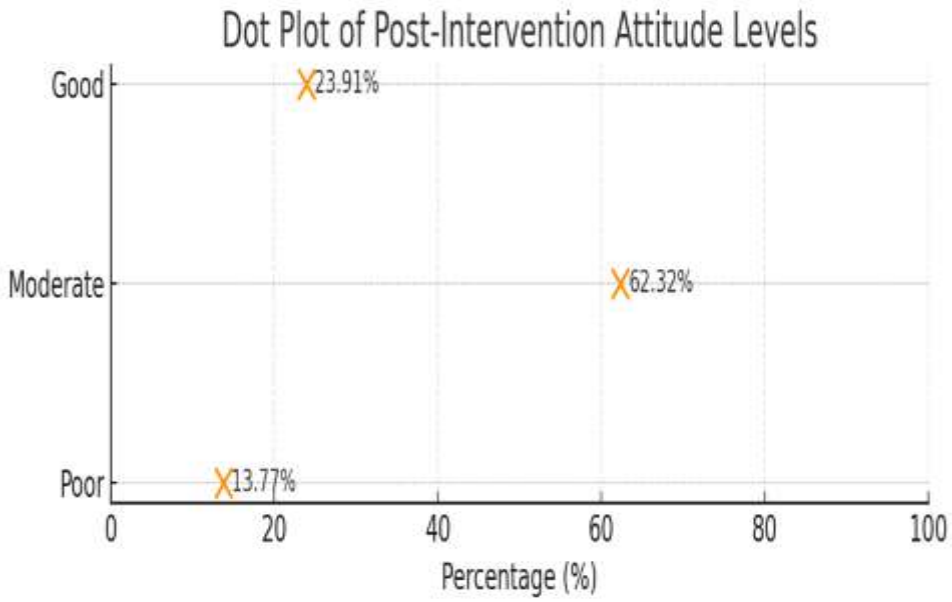

Figure 4: Post-intervention Attitude Level toward PCOS among Participants

According to the Health Belief Model, positive health attitudes are associated with higher likelihood of adopting preventive practices and adhering to treatment regimens (Champion & Skinner, 2008). The increase in good attitudes in this study line up with results from Brambilla, et al., (2022), reported that attitude scores improved significantly following targeted educational sessions on PCOS among college students. Attitude change is often more challenging than knowledge acquisition, as it involves confronting cultural myths, personal beliefs, and emotional responses. The marked reduction in negative attitudes seen in this study suggests that interactive and contextualized educational interventions can shift perceptions effectively. Continued reinforcement through community health workers or peer groups could further enhance and sustain this positive change over time.

Table 7: Post-intervention Practice Level regarding PCOS among Participants (N = 138)

Practice Level	Frequency (n)	Percentage (%)
Poor	18	13.04%
Moderate	51	36.96%
Good	69	50.00%

The structured educational intervention led to the changes in PCOS-related practices which Table 7 demonstrates. The survey revealed that half of the participants (50.00%) maintained good practice levels after the intervention but 36.96% demonstrated moderate practice levels and 13.04% continued with poor practices.

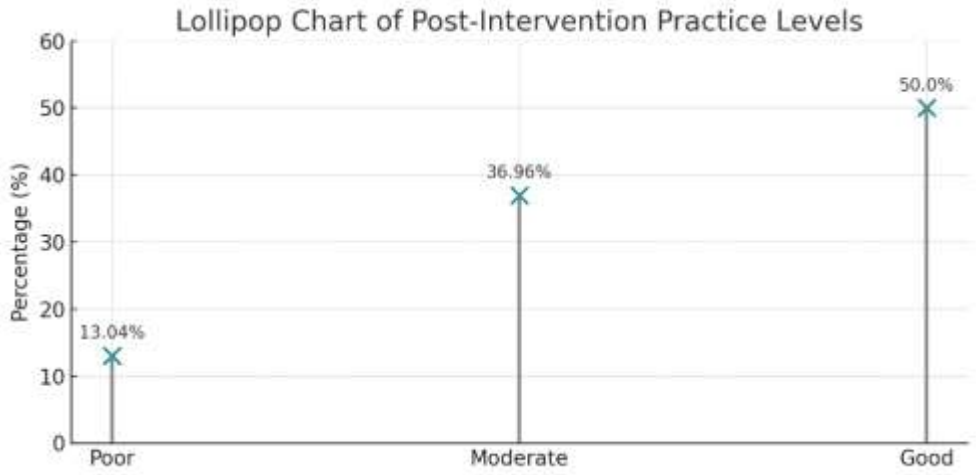

Figure 5: Post-intervention Practice Level regarding PCOS among Participants

The behavioral change demonstrates significant progress in lifestyle practices for PCOS patients because of educational strategies. The management of PCOS requires patients to follow three essential practices which include proper diet maintenance alongside regular exercise and medical advice compliance. Evidence demonstrates that structured health education leads to behavior improvements among women who have chronic conditions because of findings by Sharaf F. (2010). Targeted counseling according to Chandra, L., Goyal, M., & Srivastava, D. (2021) leads to improved lifestyle adherence among women with PCOS because they better understand the long-term advantages of their actions. The participants demonstrated both information receptiveness and motivation to adopt healthier routines through their increased good practice levels. Repeated sessions with digital or community healthcare interventions should continue for maintaining existing progress.

Table 8: Comparative Analysis of KAP Scores among Participants

Paired t-test Results

KAP Dimension	Pre Mean ± SD	Post Mean ± SD	t value	p-value
Knowledge	4.06 ± 2.61	5.53 ± 2.58	6.73	0.001
Attitude	4.93 ± 2.05	6.42 ± 2.00	5.24	0.002
Practice	5.67 ± 2.50	7.14 ± 2.43	5.81	0.001

Table 8 shows how educational intervention affected participant KAP scores about PCOS. The participants demonstrated a statistically significant increase in their understanding based on the results of the knowledge score assessment which improved from 4.06 ± 2.61 to 5.53 ± 2.58 ($t = 6.73$, $p = 0.001$). The participants demonstrated significant positive changes in their attitudes toward PCOS which rose from 4.93 ± 2.05 to 6.42 ± 2.00 ($t = 5.24$, $p = 0.002$). Moreover, their practice scores improved

substantially from 5.67 ± 2.50 to 7.14 ± 2.43 (t = 5.81, p = 0.001). Previous research shows that structured education programs successfully drive up disease-related literacy levels and improve health actions (Kazemi et al., 2020). The statistical significance of results stems from interactive tools and culturally relevant materials along with reinforcement approaches. The results from practice tests confirm that better knowledge leads to lasting behavioral modifications according to Kiran, et al., (2023). Primary healthcare facilities should establish routine awareness programs to enhance PCOS outcomes according to these findings. Follow-up assessments conducted over time would offer essential information regarding how these knowledge and practice results evolve with passage of time.

Table 9: Percentage Improvement in KAP Scores among Participants (N = 138)

KAP Dimension	Percentage Improvement (%)
Knowledge	36.26%
Attitude	30.28%
Practice	25.96%

Table 9 shows the knowledge, attitude and practice (KAP) scores improvement percentages after structured education about PCOS. A 36.26% increase became the largest observed change in knowledge whereas attitude improved by 30.28% and practice improved by 25.96%. The intervention produced significant changes across all three domains yet knowledge acquisition demonstrated the greatest response. Research confirms that educational programs lead to enhanced health literacy alongside increased individual behaviors of self-care for PCOS (Barthelmess, E. K., & Naz, R. K., 2014). The increase in knowledge demonstrates that structured educational programs with presentations and printed resources produce better patient understanding by refuting incorrect beliefs about the condition. The lower improvements in both attitude and practice demonstrate the difficulties of behavioral change because it demands ongoing support and motivation (Mohamed, Hoda., 2016). These results match international research that supports ongoing education programs to connect people with necessary information while helping them maintain lifestyle modifications. Such interventions can achieve better long-term management of PCOS when accompanied by community health workers who provide peer education with follow-up mechanisms.

4. Conclusion

This research demonstrates that structured educational programs effectively enhance knowledge and attitudes and practices (KAP) among women who have Polycystic Ovary Syndrome (PCOS). The initial assessment showed extensive knowledge and attitude deficiencies among participants because many people demonstrated inadequate understanding of the condition. All aspects of KAP experienced improvements after the intervention but knowledge scores showed the largest improvement which was followed by attitude and practice results. Health education improves both disease-specific understanding about PCOS and develops essential patient behaviors which medical supervision requires. Women in semi-urban and rural healthcare settings show high receptiveness to learning methods that combine interactive and context-based approaches. The intervention successfully converted information into practical action because participants showed better self-reported lifestyle practice results. The research demonstrates that information transmission happens rapidly but permanent behavioral adjustments combined with long-term health practice adoption demands continued community interaction. This research confirms that reproductive health services should consistently provide culturally appropriate educational initiatives to their patients. Large-scale implementation of these models within community health networks linked to digital platforms presents an effective solution to reduce PCOS burden by providing women with long-term self-care tools.

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