VIDEO-ASSISTED TEACHING PROGRAM ON KNOWLEDGE REGARDING POLYCYSTIC OVARIAN SYNDROME AMONG ADOLESCENT GIRLS: A STUDY IN COIMBATORE, INDIA

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ABSTRACT

Background: Polycystic Ovarian Syndrome (PCOS) is one of the most common endocrine disorders affecting adolescent girls. Lack of awareness regarding its causes, symptoms, complications, and management leads to delayed diagnosis and increased risk of long-term health problems. This study aimed to evaluate the effectiveness of a video-assisted teaching programme in improving knowledge regarding PCOS among adolescent girls at PPG College of Nursing, Coimbatore. **Methodology:** The study adopted a quantitative evaluative research approach with a one-group pre-test post-test pre-experimental design. Imogene King's Goal Attainment Theory was used as the conceptual framework. A total of 40 adolescent girls were selected using simple random sampling technique. Data were collected using a structured knowledge questionnaire along with demographic variables. Pre-test was conducted, followed by administration of video-assisted teaching programme, and post-test was conducted after 7 days. Data were analysed using descriptive and inferential statistics including mean, standard deviation, and paired 't' test. **Results:** The findings revealed that the mean knowledge score in the pre-test was **7.63** out of 25, corresponding to a mean percentage of **30.52%** with a standard deviation of **2.9**. After the intervention, the mean score increased to **19.80**, with a mean percentage of **79.20%** and a standard deviation of **2.6**. The mean difference score was **12.17** and the improvement in mean percentage was **48.68%**, indicating a substantial increase in knowledge levels. The calculated paired 't' value was **24**, which was found to be statistically highly significant at $\mathbf{p < 0.001}$ level. This clearly shows that the video-assisted teaching programme was effective in improving knowledge regarding PCOS among adolescent girls. **Conclusion:** The study findings clearly demonstrate that video-assisted teaching is an effective and beneficial educational intervention for significantly improving knowledge regarding PCOS among adolescent girls. Early educational strategies can enhance awareness, promote healthy lifestyle practices, and help in prevention of complications associated with PCOS.

Keywords: PCOS, adolescent girls, video-assisted teaching programme, knowledge, nursing education.

INTRODUCTION

Adolescence is a crucial developmental phase characterized by rapid physical, psychological, and reproductive maturation. During this period, adolescent girls undergo significant hormonal changes that influence their reproductive health. One of the most common endocrine disorders affecting this group is Polycystic Ovarian Syndrome (PCOS), which has emerged as a major public health concern worldwide. PCOS is a complex hormonal disorder characterized by irregular menstruation, hyperandrogenism, and polycystic ovarian morphology. It not only affects reproductive health but also has long-term metabolic and psychological implications **(Teede et al., 2018)**.

PCOS is increasingly being diagnosed among adolescent girls due to lifestyle changes, including sedentary habits, unhealthy dietary patterns, obesity, and stress. The condition often begins during adolescence but remains undiagnosed due to lack of awareness and overlapping symptoms with normal pubertal changes. Early identification and management are essential to prevent complications such as infertility, type 2 diabetes mellitus, metabolic syndrome, and cardiovascular diseases **(Azziz et al., 2016)**.

The Growing Burden of PCOS among Adolescent Girls

The prevalence of PCOS varies globally, ranging from 6% to 20% depending on diagnostic criteria and population studied. In India, the prevalence is steadily rising, particularly among urban adolescent girls. Studies have reported that a significant proportion of adolescent girls exhibit symptoms such as irregular menstrual cycles, acne, hirsutism, and weight gain, which are often ignored or misunderstood **(Nidhi et al., 2011)**.

A cross-sectional study among college students revealed that nearly 70% of adolescent girls had inadequate knowledge regarding PCOS, including its causes, symptoms, and complications **(Joseph et al., 2016)**. Similarly, another study found that 62% of participants had poor knowledge, 28% had moderate knowledge, and only 10% had adequate knowledge regarding PCOS **(Kumari et al., 2018)**. These findings highlight a critical gap in awareness, which can delay diagnosis and management.

Furthermore, PCOS is associated not only with physical health issues but also with psychological problems such as anxiety, depression, and reduced self-esteem. Adolescents often hesitate to discuss menstrual and reproductive health issues due to cultural stigma and lack of proper guidance, further worsening the problem **(Begum et al., 2020)**.

Importance of Early Awareness and Education

Adolescence is the ideal period for health education interventions, as awareness gained during this stage can influence lifelong health behaviours. Early education regarding PCOS can help adolescent girls recognize symptoms, seek timely medical care, and adopt healthy lifestyle practices. Preventive strategies such as balanced diet, regular physical activity, and stress management play a crucial role in reducing the risk and severity of PCOS.

Health education delivered through structured teaching programmes has been proven effective in improving knowledge and awareness. However, traditional lecture methods may not always be engaging or effective for adolescent learners. Innovative teaching methods, such as video-assisted teaching, provide better visualization, enhance understanding, and improve retention of information.

Role of Video-Assisted Teaching in Improving Knowledge

Video-assisted teaching is an effective educational strategy that combines visual and auditory learning, making complex concepts easier to understand. It has been widely used in nursing education and health promotion to improve knowledge and learning outcomes.

Several studies have demonstrated the effectiveness of video-assisted teaching in enhancing knowledge among students. A quasi-experimental study reported a significant improvement in knowledge scores among participants after video-based education **(Kaur et al., 2017)**. Similarly, another interventional study found that video teaching significantly improved reproductive health awareness among adolescent girls compared to traditional methods **(Gupta et al., 2018)**. These findings suggest that video-assisted teaching is a powerful tool for health education.

Need for the Present Study

Despite the increasing prevalence of PCOS, awareness among adolescent girls remains inadequate. Many girls lack basic knowledge about the condition, its risk factors, complications, and preventive measures. This lack of awareness often leads to delayed diagnosis and poor health outcomes.

In the present study, it was observed that majority of adolescent girls had no previous knowledge regarding PCOS, emphasizing the urgent need for effective educational interventions. Video-assisted teaching, being an engaging and learner-friendly method, has the potential to significantly improve knowledge levels.

The researchers have undertaken this study to evaluate the effectiveness of a video-assisted teaching programme in improving knowledge regarding PCOS among adolescent girls. This study aims to provide

evidence-based support for the use of innovative teaching strategies in nursing education and adolescent health promotion.

By enhancing awareness and knowledge, this study contributes to early detection, prevention of complications, and promotion of healthy lifestyle practices among adolescent girls, ultimately improving their reproductive and overall health outcomes.

METHODS

This study aimed to assess the effectiveness of a video-assisted teaching programme on knowledge regarding Polycystic Ovarian Syndrome among adolescent girls at PPG College of Nursing, Coimbatore. A quantitative evaluative research approach was adopted with a pre-experimental one-group pre-test post-test design.

The sample size of the study comprised 40 adolescent girls aged between 17–19 years studying at the selected setting. A simple random sampling technique was used to select the participants for the study, ensuring equal chance of selection for all eligible subjects. The study setting was chosen based on feasibility, accessibility, availability of participants, and cooperation from the institution.

The criteria for sample selection included adolescent girls who were willing to participate, available during the period of data collection, and able to understand Tamil or English. Participants who were already diagnosed with PCOS or had previously attended similar educational programmes were excluded from the study.

Data were collected using a structured knowledge questionnaire along with demographic variables. A pre-test was conducted to assess the baseline level of knowledge regarding PCOS. Following this, a video-assisted teaching programme was administered, covering aspects such as causes, symptoms, complications, prevention, and management of PCOS. The post-test was conducted after 7 days using the same tool to evaluate the effectiveness of the intervention.

The collected data were analysed using descriptive and inferential statistics. Mean, standard deviation, and mean percentage were used to describe the knowledge scores, while the effectiveness of the intervention was assessed using paired ‘t’ test. The association between knowledge scores and selected demographic variables was analysed using chi-square test.

The present study received formal ethical clearance from the Institutional Ethical Committee of PPG College of Nursing. Informed consent was obtained from all participants prior to data collection. Confidentiality and

anonymity of the participants were strictly maintained throughout the study, and ethical principles were adhered to at all stages of the research process.

Data Collection Tools

Demographic Data:

A structured questionnaire was used to collect demographic data. This section consisted of variables such as age, year of study, religion, type of family, residence, source of health information, and previous knowledge regarding Polycystic Ovarian Syndrome.

Structured Knowledge Questionnaire to Assess Knowledge:
A structured knowledge questionnaire was used to assess the level of knowledge regarding PCOS among adolescent girls. The questionnaire consisted of 25 multiple-choice questions covering areas such as causes, symptoms, risk factors, complications, prevention, and management of PCOS. Each correct answer was awarded one mark, and the total score was 25.

Table 1: Scoring Procedure for Knowledge Assessment

Level of Knowledge	Score Range
Poor Knowledge	0 – 8
Moderate Knowledge	9 – 16
Adequate Knowledge	17 – 25

Preparation and Administration of Video-Assisted Teaching Programme

The video-assisted teaching programme was developed by the investigator based on an extensive review of literature and expert guidance. The content included definition, causes, signs and symptoms, risk factors, complications, prevention, and management of PCOS.

The video was prepared in a simple and understandable language using audio-visual aids such as images, animations, and voice explanations to enhance learning. The duration of the video was approximately 20–30 minutes.

The programme was administered to the participants in a classroom setting using appropriate audio-visual equipment. All participants were made comfortable and attentive before starting the session. The investigator ensured active participation and clarified doubts after the session.

The intervention was given once, and participants were allowed to interact and discuss the content for better understanding. A post-test was conducted after 7 days using the same structured questionnaire to assess the effectiveness of the teaching programme.

Validity and Reliability

The validity of the tool and video-assisted teaching programme was established through consultation with experts. The tool was validated by five experts from the field of nursing and one expert from the medical field. Necessary modifications were made based on their suggestions.

The reliability of the tool was established using the test-retest method, and the reliability coefficient was found to be $\mathbf{r \approx 0.8}$, indicating that the tool was reliable for the study.

Data Collection Procedure

The participants who fulfilled the inclusion criteria were selected using a simple random sampling technique. Their general information was collected using a structured questionnaire. A pre-test was conducted using a structured knowledge questionnaire to assess the baseline level of knowledge regarding Polycystic Ovarian Syndrome.

Following the pre-test, the investigator administered the video-assisted teaching programme to the participants in a classroom setting using appropriate audio-visual aids. The session included detailed information on causes, symptoms, complications, prevention, and management of PCOS. Participants were encouraged to actively listen and clarify their doubts after the session.

The intervention was given once, and adequate time was provided for understanding the content. After 7 days, a post-test was conducted using the same structured knowledge questionnaire to assess the effectiveness of the video-assisted teaching programme.

Plan for Data Analysis

The collected data were analysed using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to assess the level of knowledge among participants.

Inferential statistics were used to evaluate the effectiveness of the video-assisted teaching programme. The paired ‘t’ test was applied to compare the pre-test and post-test knowledge scores.

The association between the level of knowledge and selected demographic variables was analysed using the chi-square test.

RESULTS AND DISCUSSION

This section deals with the analysis and interpretation of collected data to assess the effectiveness of Video Assisted Teaching Programme on knowledge regarding PCOS among adolescent girls in a selected college.

The collected data were organized, tabulated, and analysed using descriptive and inferential statistics

SECTION I: Description of the Demographic Variables of Adolescent Girls
SECTION II: Pre-Test Knowledge Score of Adolescent Girls on PCOS
SECTION III: Effectiveness of Video Assisted Teaching on PCOS In Terms of Knowledge Gain
SECTION IV: Association of Knowledge Score of Adolescent Girls Regarding PCOS with Demographic Variables

SECTION I: DESCRIPTION OF THE DEMOGRAPHIC VARIABLES OF ADOLESCENT GIRLS

Table 2: Frequency and Percentage Distribution of Demographic Variables (N = 40)

S.No	Demographic Variable	Category	Frequency (f)	Percentage (%)
1	Age	15–16	0	0%
		17–18	37	92.5%
		19–20	3	7.5%
2	Year of Study	I Year	40	100%
		II Year	0	0%
3	Religion	Hindu	25	62.5%
		Christian	10	25%
		Muslim	5	12.5%
4	Type of Family	Nuclear	34	85%
		Joint	6	15%
5	Residence	Rural	11	27.5%
		Urban	29	72.5%
6	Source of Health Information	TV/Media	0	0%
		Internet	0	0%
		Health Personnel	0	0%
		Friends/Family	0	0%
		Nil	40	100%
7	Previous Knowledge of PCOS	Yes	1	2.5%
		No	39	97.5%

Data on demographic variables of adolescent girls: Table 2 shows the data on demographic variables of adolescent girls reveal that majority of the participants were in the age group of 17–18 years (n=37) 92.5%, followed by (n=3) 7.5% in the age group of 19–20 years, and none in the age group of 15–16 years.

Regarding year of study, all the participants (n=40) 100% was studying in I Year.

With regard to religion, majority of participants (n=25) 62.5% were Hindus, followed by (n=10) 25% Christians and (n=5) 12.5% Muslim.

Regarding type of family, most of the participants (n=34) 85% belonged to nuclear family, whereas (n=6) 15% belonged to joint family.

Regarding residence, majority (n=29) 72.5% were residing in urban areas and (n=11) 27.5% were from rural areas.

Regarding source of health information, all the participants (n=400) 100% reported that they had no previous source of information regarding PCOS.

Regarding previous knowledge of PCOS, majority (n=39) 97.5% had no prior knowledge, while only 9n=1) 2.5% had some previous knowledge.

The overall distribution clearly indicates that most of the participants had limited exposure to information regarding PCOS.

SECTION II: PRE-TEST KNOWLEDGE SCORE OF ADOLESCENT GIRLS ON PCOS

Table 3: Distribution of Pre-Test Knowledge Scores (N = 40)

Knowledge Level	Frequency (f)	Percentage (%)
Poor Knowledge	24	60%
Moderate Knowledge	16	40%
Adequate Knowledge	0	0%

Data on pre-test knowledge score of adolescent girls on PCOS: Table 3 shows the data on pre-test knowledge scores of adolescent girls regarding PCOS show that majority of participants had inadequate knowledge.

Out of 40 participants, 24 (60%) had poor knowledge, 16 (40%) had moderate knowledge, and none of the participants had adequate knowledge.

The findings clearly indicate that the baseline knowledge regarding PCOS among adolescent girls was unsatisfactory, and there was a strong need for an educational intervention to improve awareness and understanding.

SECTION III: EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON PCOS IN TERMS OF KNOWLEDGE GAIN

Table 4: Comparison of Pre-Test and Post-Test Knowledge Scores (N = 40)

Knowledge Level	Pre-Test f (%)	Post-Test f (%)
Poor Knowledge	24 (60%)	0 (0%)
Moderate Knowledge	16 (40%)	8 (20%)
Adequate Knowledge	0 (0%)	32 (80%)

Data on pre-test and post-test knowledge scores of PCOS: Table 4 shows the data on pre-test and post-test knowledge scores clearly demonstrate a marked improvement in knowledge after the Video Assisted Teaching Programme.

In the pre-test, majority 24 (60%) had poor knowledge, followed by 16 (40%) with moderate knowledge, and none had adequate knowledge.

However, in the post-test, there was a significant shift in knowledge levels. None of the participants had poor knowledge, 8 (20%) had moderate knowledge, and majority 32 (80%) had adequate knowledge.

This shift from lower to higher knowledge categories indicates a positive impact of the teaching programme in improving awareness regarding PCOS among adolescent girls.

Table 4(a): Mean, Standard Deviation and Paired 't' Test of Knowledge Scores

Test	Mean	Mean %	Median	SD	Paired t value
Pre-test	7.63	30.52%	8	2.9	24.00
Post-test	19.80	79.20%	20	2.6	

Data on effectiveness of video assisted teaching programme: Table 4(a) shows the data on effectiveness of Video Assisted Teaching Programme shows a significant improvement in knowledge scores after intervention.

The mean pre-test score was 7.63 (30.52%) with a standard deviation of 2.9, indicating low baseline knowledge with moderate variation among participants.

After the intervention, the mean post-test score increased substantially to 19.80 (79.20%) with a reduced standard deviation of 2.6, indicating not only improved knowledge but also more uniform performance among participants.

The calculated paired 't' value was 24.00, which is statistically highly significant at $p < 0.001$ level. This indicates that the Video Assisted Teaching Programme was highly effective in improving the knowledge regarding PCOS among adolescent girls. Hence, the research hypothesis H1 is accepted.

SECTION IV: ASSOCIATION OF KNOWLEDGE SCORE WITH SELECTED DEMOGRAPHIC VARIABLES

Table 5: Association between Pre-Test Knowledge Scores and Demographic Variables (N = 40)

Variable	χ^2	p-value	df	Significance
Age	0.82	0.66	2	NS
Religion	1.24	0.54	2	NS
Type of Family	0.56	0.45	1	NS
Residence	0.73	0.39	1	NS
Previous Knowledge	0.91	0.34	1	NS

Data on association between knowledge score and demographic variables: Table 5 shows the data on association between pre-test knowledge scores and selected demographic variables reveal that there was no statistically significant association between knowledge score and demographic variables.

Age, religion, type of family, residence, and previous knowledge of PCOS were not found to be significant at $p < 0.05$ level.

This indicates that the baseline knowledge of adolescent girls regarding PCOS was independent of their demographic characteristics. Hence, the research hypothesis H2 is rejected.

DISCUSSION

This section presents the findings of the study in relation to the objectives. The study was conducted to assess the effectiveness of Video Assisted Teaching Programme on knowledge regarding PCOS among adolescent girls in a selected college.

1. To assess the pre-test knowledge regarding PCOS among adolescent girls

The present study findings revealed that in the pre-test, majority of adolescent girls had inadequate knowledge regarding PCOS. Out of 40 participants, 24 (60%) had poor knowledge, 16 (40%) had moderate knowledge, and none had adequate knowledge.

This indicates that the baseline knowledge of adolescent girls regarding PCOS was low, which may be due to lack of structured teaching, inadequate exposure to reproductive health education, and limited awareness regarding hormonal disorders such as PCOS.

This finding is supported by **Ramesh et al. (2023)**, who reported that adolescent girls had poor baseline knowledge regarding PCOS before any educational intervention, emphasizing the need for structured health education programmes in college settings.

2. To evaluate the effectiveness of video assisted teaching programme

The statistical analysis of the present study showed that the Video Assisted Teaching Programme was highly effective in improving the knowledge regarding PCOS among adolescent girls.

The mean pre-test score was 7.63 (30.52%) with a standard deviation of 2.9, whereas the mean post-test score increased to 19.80 (79.20%) with a standard deviation of 2.6. The difference in mean scores indicates a marked improvement in knowledge after the intervention.

The calculated paired 't' test value was 24.00, which is highly significant at $p < 0.001$ level. Hence, the research hypothesis H1 was accepted, confirming the effectiveness of Video Assisted Teaching Programme in improving knowledge regarding PCOS.

This finding is consistent with **Sharmila et al. (2022)**, who conducted a study on effectiveness of video-assisted teaching and reported a significant improvement in post-test knowledge scores compared to pre-test scores among adolescent girls.

Similarly, **Deepa et al. (2021)** found that audio-visual teaching methods are more effective in improving knowledge retention than traditional lecture methods, supporting the present study findings.

Thus, it can be inferred that structured audio-visual teaching is an effective strategy in improving knowledge among adolescents.

3. To assess the post-test knowledge after video assisted teaching programme

The post-test results of the present study revealed a significant improvement in knowledge level among adolescent girls.

In the post-test, none of the participants had poor knowledge (0%), 8 (20%) had moderate knowledge, and majority 32 (80%) had adequate knowledge regarding PCOS.

This shift from poor and moderate knowledge levels in the pre-test to predominantly adequate knowledge in the post-test clearly indicates the effectiveness of the Video Assisted Teaching Programme.

The improvement in knowledge scores reflects better understanding, increased awareness, and enhanced learning among adolescent girls regarding PCOS.

This finding is supported by **Anitha et al. (2020)**, who reported similar results where post-test knowledge levels significantly improved after structured teaching intervention among adolescents.

4. To find association between knowledge and selected demographic variables

The chi-square analysis of the present study revealed that there was no statistically significant association between pre-test knowledge scores and selected demographic variables such as age, religion, type of family, residence, and previous knowledge regarding PCOS.

All the p-values were greater than 0.05, indicating that knowledge level was independent of demographic variables.

Hence, the research hypothesis H2 was rejected.

This finding is supported by **Lakshmi et al. (2021)**, who also reported no significant association between knowledge scores and demographic variables among adolescent girls in a similar study.

However, some studies such as **Priya et al. (2020)** reported partial association between demographic variables and knowledge levels, suggesting that the influence of demographic factors may vary depending on the population and educational exposure.

CONCLUSION

The present study was conducted to evaluate the effectiveness of Video Assisted Teaching Programme on knowledge regarding PCOS among adolescent girls in a selected college.

The findings of the study revealed that the Video Assisted Teaching Programme was highly effective in improving the knowledge regarding PCOS among adolescent girls. There was a significant increase in post-test knowledge scores when compared to pre-test scores, indicating a marked improvement after the intervention.

The statistical analysis showed a highly significant difference between pre-test and post-test knowledge scores, confirming the effectiveness of the Video Assisted Teaching Programme.

However, there was no statistically significant association between the pre-test knowledge scores and selected demographic variables of adolescent girls, indicating that knowledge level was independent of demographic characteristics.

Overall, the study concludes that Video Assisted Teaching Programme is an effective method in improving knowledge regarding PCOS among adolescent girls.

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