
VIDEO-ASSISTED TEACHING ON KNOWLEDGE REGARDING POLYCYSTIC OVARIAN SYNDROME AMONG BASIC B.SC. NURSING SEMESTER-II STUDENTS: A PRE- EXPERIMENTAL STUDY

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Abstract

Background

Polycystic Ovarian Syndrome (PCOS) is a common endocrine and metabolic disorder affecting women of reproductive age. It is characterized by a combination of reproductive, hormonal, and metabolic abnormalities and may have important consequences for menstrual health, fertility, body weight, psychological well-being, and long-term metabolic health. Nursing professionals have an important role in health education, early recognition, lifestyle counselling, referral, and support for women experiencing PCOS. Consequently, nursing students need adequate knowledge regarding its concept, pathology, clinical manifestations, diagnosis, management, and lifestyle modification. Conventional teaching methods may not always provide sufficient opportunities for students to visualize complex physiological and pathological processes. Video-Assisted Teaching (VAT) integrates visual and auditory information and may improve comprehension and retention.

Aim

The study aimed to evaluate the effectiveness of Video-Assisted Teaching on knowledge regarding PCOS among Basic B.Sc. Nursing Semester-II students and to determine the association between pre-test knowledge and selected demographic variables.

Methods

A quantitative evaluative approach with a one-group pre-test post-test pre-experimental design was adopted. Sixty Basic B.Sc. Nursing Semester-II students from selected nursing colleges in Vadodara were selected through simple random sampling. Data were collected using a structured tool consisting of a socio-demographic profile and a 30-item multiple-choice knowledge questionnaire covering the concept, pathology, manifestations, diagnostic aspects, and lifestyle management of PCOS. A 30-minute Video-Assisted Teaching programme was subsequently administered. Pre-test and post-test scores were analyzed using descriptive statistics and a paired *t* test. Chi-square analysis was used to examine associations between pre-test knowledge and selected demographic variables.

Results

Of the 60 participants, 96.66% were aged 18–20 years, all participants were female and belonged to a science stream, and 98.33% were unmarried. Two-thirds (66.66%) resided in urban areas, while mass media was the reported source of information for 55% of participants. None had previously attended formal PCOS training, workshops, or conferences. In the pre-test, 8 (13.33%) students had poor knowledge, 42 (70%) had average knowledge, and 10 (16.66%) had good knowledge. Following Video-Assisted Teaching, no student remained in the poor-knowledge category, 13 (21.66%) had average knowledge, and 47 (78.33%) demonstrated good knowledge. The pre-test mean score was 16.45 ± 4.50 , while the source reports a post-test mean of 24.07, representing a mean gain of 8.03 marks. The paired *t* value was 16.08 at 59 degrees of freedom, exceeding the reported tabulated value of 2.00 at the 0.05 level. The study therefore reported a statistically significant improvement in knowledge following VAT.

Conclusion

Video-Assisted Teaching was found to be an effective educational strategy for improving knowledge regarding PCOS among Basic B.Sc. Nursing Semester-II students. The marked shift from average and poor knowledge toward good knowledge following the intervention supports the incorporation of structured multimedia teaching into nursing education.

Keywords: Polycystic Ovarian Syndrome, Video-Assisted Teaching, Nursing Students, Knowledge, Nursing Education, PCOS, Pre-test, Post-test.

1. Introduction

Polycystic Ovarian Syndrome is a heterogeneous endocrine and metabolic disorder affecting women of reproductive age. It is commonly associated with hyperandrogenism, ovulatory dysfunction, and polycystic ovarian morphology. Depending on diagnostic criteria and population characteristics, PCOS affects a substantial proportion of women worldwide. The condition may manifest through menstrual irregularities, hirsutism, acne, weight-related problems, infertility or subfertility, and metabolic abnormalities. It may also be associated with long-term risks such as type 2 diabetes and psychological difficulties.

Early adulthood is an important period for health education concerning reproductive and metabolic health. Nursing students represent an important group because, as future healthcare professionals, they will be expected to provide health education, identify possible symptoms, encourage appropriate lifestyle practices, and support women in seeking timely professional evaluation.

Teaching PCOS effectively requires students to understand interconnected concepts involving reproductive physiology, endocrine changes, clinical manifestations, diagnostic approaches, treatment, and lifestyle modification. Video-Assisted Teaching can combine narration, text, illustrations, animation, and other visual information to make these concepts easier to understand. The source manuscript specifically identifies VAT as a strategy for making complex physiological mechanisms easier to comprehend and retain.

The present study was therefore conducted to evaluate whether a structured Video-Assisted Teaching programme could improve knowledge regarding PCOS among Basic B.Sc. Nursing Semester-II students.

Objectives

1. To assess knowledge regarding PCOS before and after administration of the Video-Assisted Teaching programme.
2. To determine the association between pre-test knowledge scores and selected demographic variables.

Hypotheses

H1: The mean post-test knowledge score would be significantly higher than the mean pre-test knowledge score at the 0.05 level of significance.

H2: There would be a significant association between pre-test knowledge scores and selected demographic variables.

2. Methodology

Research Approach and Design

A quantitative evaluative research approach was adopted. A one-group pre-test post-test pre-experimental design was used to assess the change in students' knowledge following the Video-Assisted Teaching programme.

The design can be represented as:

$$O_1 \rightarrow X \rightarrow O_2$$

Where:

- **O₁**: Pre-test assessment of knowledge
- **X**: Video-Assisted Teaching programme
- **O₂**: Post-test assessment of knowledge

Study Setting

The study was conducted in selected nursing colleges in Vadodara, Gujarat.

Population

The target population comprised Basic B.Sc. Nursing Semester-II students.

Sample and Sampling Technique

The sample consisted of 60 Basic B.Sc. Nursing Semester-II students. A simple random sampling technique was used for participant selection.

Inclusion Criteria

Students were included if they:

- Were studying in Basic B.Sc. Nursing Semester-II.
- Were willing to participate.
- Were available and accessible during data collection.

Exclusion Criteria

Students studying in programmes or semesters other than Basic B.Sc. Nursing Semester-II and those unwilling to participate were excluded.

Data Collection Instrument

The data collection tool consisted of two sections.

Section A: Socio-Demographic Profile

Section B: Structured Knowledge Questionnaire

A 30-item multiple-choice questionnaire was used to assess knowledge regarding PCOS. Each correct answer received one mark, giving a maximum possible score of 30. The questionnaire covered the concept, pathology, clinical manifestations, diagnostic aspects, and lifestyle management of PCOS.

Intervention

A structured 30-minute Video-Assisted Teaching programme on PCOS was administered after the pre-test. The teaching addressed relevant aspects of PCOS intended to improve students' understanding of the condition.

Data Collection Procedure

The pre-test was administered to assess baseline knowledge. Following completion of the pre-test, the Video-Assisted Teaching programme was provided. A post-test was subsequently conducted using the structured knowledge questionnaire to determine knowledge gain.

Data Analysis

Descriptive statistics were used to summarize demographic characteristics and knowledge scores. Frequency and percentage were calculated for categorical variables, while mean and standard deviation were used for knowledge scores. A paired *t* test was applied to compare pre-test and post-test knowledge scores. Chi-square analysis was used to examine associations between pre-test knowledge and selected demographic variables.

The level of significance was set at $p < 0.05$. The study reports a paired *t* value of 16.08 with 59 degrees of freedom and a tabulated value of 2.00.

3. Results

Demographic Characteristics

Among the 60 participants, 96.66% were aged 18–20 years. All participants were female and belonged to the science academic stream. Almost all participants (98.33%) were unmarried. Regarding habitat, 66.66% resided in urban areas. Mass media was identified as the main source of information regarding PCOS by 55% of students. Importantly, none of the students had previously attended a formal PCOS training programme, workshop, or conference.

Table 1. Selected demographic characteristics of participants (N = 60)

Demographic variable	Finding
Age 18–20 years	96.66%
Female	100%
Science stream	100%
Unmarried	98.33%
Urban residence	66.66%
Mass media as information source	55%
Previous formal PCOS training	0%

Pre-Test and Post-Test Knowledge

The mean pre-test knowledge score was 16.45, whereas the source reports a post-test mean of 24.07 in the main results and abstract. The resulting mean difference was 8.03 marks.

Table 2. Comparison of pre-test and post-test knowledge scores

Parameter	Pre-test	Post-test
Maximum score	30	30
Total obtained score	987	1444
Mean score	16.45	24.07
Mean difference	—	8.03
Knowledge improvement	—	Marked

Knowledge-Level Distribution

Before the intervention, 8 (13.33%) students had poor knowledge, 42 (70%) had average knowledge, and 10 (16.66%) had good knowledge.

After VAT, no participant had poor knowledge, 13 (21.66%) had average knowledge, and 47 (78.33%) had good knowledge.

Table 3. Distribution of students according to knowledge level

Knowledge level	Score range	Pre-test n (%)	Post-test n (%)
Poor	0–10	8 (13.33%)	0 (0%)
Average	11–20	42 (70.00%)	13 (21.66%)
Good	21–30	10 (16.66%)	47 (78.33%)
Total		60 (100%)	60 (100%)

Paired *t* Test

The source reports a pre-test mean of 16.45 ± 4.50 and a post-test mean of 24.70 ± 3.80 in Table 3, although the abstract and earlier results section report 24.07. The reported mean difference is 8.03, and the calculated *t* value is 16.08.

Table 4. Paired *t* test comparing pre-test and post-test knowledge

Parameter	Value
Pre-test mean	16.45
Pre-test SD	4.50
Post-test mean reported in primary results	24.07
Mean difference	8.03
Standard error	0.58
Calculated <i>t</i>	16.08
df	59
Tabulated <i>t</i>	2.00
Significance	Significant, $p < 0.05$

The calculated *t* value of 16.08 was greater than the tabulated value of 2.00. Therefore, the reported findings support rejection of the null hypothesis and acceptance of H1.

Association with Demographic Variables

The study reports that calculated chi-square values for age, gender, religion, marital status, academic stream, habitat, and source of information were greater than the respective table values at the 0.05 level. The authors therefore reported a statistically significant association between pre-test knowledge and selected demographic variables.

4. Discussion

The present study evaluated the effectiveness of Video-Assisted Teaching on knowledge regarding PCOS among 60 Basic B.Sc. Nursing Semester-II students. The baseline findings indicated that although most participants possessed average knowledge, a substantial educational gap remained. Seventy percent of students had average knowledge, 13.33% had poor knowledge, and only 16.66% had good knowledge before the intervention. Furthermore, none of the participants had previously attended formal PCOS training, workshops, or conferences.

The lack of formal exposure is noteworthy because nursing students are future healthcare providers who may encounter women with menstrual abnormalities, obesity, infertility, hirsutism, or other manifestations associated with PCOS. Adequate knowledge is necessary for health education, early recognition, appropriate referral, and lifestyle counselling.

Following the Video-Assisted Teaching programme, a substantial improvement was observed. The proportion of students with good knowledge increased from 16.66% to 78.33%, while the proportion with poor knowledge decreased from 13.33% to zero. The average-knowledge category decreased from 70% to 21.66%, indicating a shift toward higher knowledge levels.

The mean knowledge score increased from 16.45 before the intervention to a reported 24.07 after the intervention, yielding a mean difference of 8.03 marks. The paired *t* value of 16.08 was substantially higher than the tabulated value of 2.00 at 59 degrees of freedom. The study consequently reported that the improvement was statistically significant.

These findings indicate that multimedia-based teaching can be a useful supplement to conventional nursing education. PCOS involves interconnected endocrine, reproductive, metabolic, and lifestyle concepts. Visual presentation can potentially help learners organize these concepts and understand their relationships more clearly.

The study also reported significant associations between pre-test knowledge and the selected demographic variables. This suggests that students' baseline knowledge may have varied according to their demographic and informational backgrounds.

The findings are broadly consistent with the educational rationale presented in the source manuscript and with the references cited therein concerning PCOS knowledge and video-assisted teaching. However, because this study used a one-group pre-test post-test design without a control group, improvements cannot be attributed exclusively to the intervention with the same strength as in a randomized controlled trial. Testing effects, exposure to the pre-test, or other external influences could also contribute to the observed change.

5. Conclusion

The study concluded that Video-Assisted Teaching was effective in improving knowledge regarding Polycystic Ovarian Syndrome among Basic B.Sc. Nursing Semester-II students. The proportion of students with good knowledge increased from 16.66% in the pre-test to 78.33% in the post-test, while poor knowledge declined from 13.33% to zero.

The mean knowledge score increased substantially following the intervention, and the reported paired *t* value of 16.08 demonstrated a statistically significant difference at the 0.05 level. The findings support the use of structured multimedia teaching as an additional educational strategy in nursing education.

Nursing educators may incorporate short video modules, animations, clinical illustrations, case-based videos, and interactive multimedia resources into teaching regarding reproductive and endocrine disorders. Future studies should employ larger samples, multiple institutions, control groups, and follow-up assessments to determine the effectiveness and long-term retention of video-based learning.

6. Implications for Nursing

Nursing Education

Faculty members can integrate video-based modules into obstetrics and gynecological nursing and foundational nursing courses. Short, focused videos may be particularly useful for explaining complex physiological and pathological processes.

Nursing Practice

Improved knowledge may enable student nurses to participate more effectively in reproductive-health education, early identification of potential PCOS manifestations, lifestyle counselling, and appropriate referral.

Nursing Administration

Nursing administrators can facilitate access to multimedia teaching resources and support faculty development in technology-enhanced education.

Nursing Research

Future research should compare Video-Assisted Teaching with conventional teaching, blended learning, simulation, and other educational approaches. Multi-centre studies and longer-term follow-up are recommended.

7. Limitations

1. The study used a one-group pre-test post-test pre-experimental design.
2. There was no separate control group.
3. The sample consisted of only 60 students.
4. Participants were drawn from selected nursing colleges in Vadodara, limiting generalizability.
5. The outcome measured was knowledge; long-term retention and clinical application were not reported.
6. The source manuscript contains an inconsistency in the reported post-test mean, which should be verified against the original statistical dataset before publication.

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