

# Effectiveness of Video-Assisted Teaching Module on Knowledge, Attitude and Body Mass Index (BMI) Scaling Down Among Over-Weight Women Diagnosed with PCOS in Selected Hospitals of Madhya Pradesh\*

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## Abstract

*A quantitative research approach with experimental research design, with pre-test and post-test control group design and multiple time series design in this study. The purpose was, to assess the effectiveness of the video assisted teaching module was evaluated in terms of the knowledge gain on polycystic ovarian syndrome among 480 samples from a total of 652 over-weight women diagnosed with polycystic ovarian syndrome in selected hospitals of Madhya Pradesh. The subjects were randomly divided into two groups of equal size of 240 each using lottery method. On the 7th month of data collection sample size reduced from 240 to 210 in experimental and control group 210. The pre-test knowledge of over-weight women diagnosed with PCOS showed that majority of them had poor (50.95%), 48.80 percent of them had average and only 0.5% of total selected over-weight women had good knowledge scores. In the pre-test attitude of over-weight women diagnosed with polycystic ovarian syndrome was evaluated. 90.5 percent women's attitude towards polycystic ovarian syndrome was strongly unfavourable, 9.05 percent had unfavourable attitude and only 1.0 percent of total selected over-weight women had favourable attitude towards polycystic ovarian syndrome. Experimental and control group comparisons was carried out to identify the differences in improvement of knowledge. Before administration of video-assisted teaching module, 92.4 percent had strongly unfavourable, after administration no one was found in this grade. 7.6 percent had unfavourable attitude regarding polycystic ovarian syndrome before administration of video-assisted teaching module but after administration post-test attitude data showed that none (0.0%) were over-weight under unfavourable attitude category. There was significant association between knowledge and demographic variables at 0.05 level of significance with the demographic variables of: educational qualification, menstrual cycle, exercise habits and BMI status. Over-weight women with PCOS do not have adequate knowledge, or an appropriate attitude towards their diagnosed disease, whereas post intervention the knowledge score and attitude both were good, positive and favourable.*

Polycystic ovarian syndrome (PCOS) can be prevented and managed with some basic life style changes. One in 10 women of child bearing age are affected with it. There is a need to spread awareness on PCOS. With a positive attitude, adequate knowledge and some basic life-style modifications women affected by polycystic ovarian disease (PCOD), can live a normal and healthy life free from the complications associated with PCOD.

## Objectives

- To evaluate the pre-test knowledge of over-weight/obese women diagnosed with polycys-

tic ovarian syndrome (PCOS)

- To evaluate the effectiveness of the video assisted teaching module in terms of the knowledge gain on polycystic ovarian syndrome.
- To find the interrelation between the knowledge and attitude with chosen demographic variables.
- To find the interrelation between the body mass index with chosen demographic variables.
- To assess the effectiveness of the video-assisted teaching module on body mass index scaling down to normal.
- To compare the findings of the experimental and control group in terms of the knowledge attitude and body mass index (BMI) scaling

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down to normal.

### **Hypothesis**

**H1:** There is significant difference between mean pre-test and mean post-test knowledge score regarding PCOS among over-weight women diagnosed with this condition.

**H2:** There is significant effect of video-assisted teaching module on knowledge score regarding PCOS among over-weight women diagnosed with this condition.

**H3:** There is significant difference between mean pretest and mean posttest attitude score regarding PCOS among over-weight women diagnosed with this condition.

**H4:** There is significant effect of video-assisted teaching module on attitude score regarding polycystic ovarian syndrome among over-weight women diagnosed with this condition.

**H5:** There is significant difference between mean pretest and mean post-test time series BMI score among over-weight women diagnosed with PCOS in terms of scaling down to normal.

**H6:** There is significant effect of video-assisted teaching module on post-test time series BMI score among over-weight women diagnosed with polycystic ovarian syndrome in terms of scaling down to normal.

### **Need of the study**

The WHO in 2019 suggested that approximately 75 percent of women remain undiagnosed even after visiting multiple health care providers. In an article published on 20 Sept 2018 in Times of India estimated that PCOS has affected 10 million women globally. On 26 Sept 2019 The Hindu quoting experts it was reported that 20 percent of Indian women are affected by PCOS. In 2019, The Lancet using Rotterdam criteria indicated that 15-20 percent of women are affected. The National Health Portal India (NHP) (June 2019) estimated that globally prevalence of PCOS are highly variable ranging from 6 percent to as high as 26 percent. In few Asian countries it was 2-7.5 percent while in China and Sri Lanka it was 6.3 percent. According Indian Fertility Society 2019, prevalence rate of PCOS in India is in the range of 3.7-22.5 percent. If left untreated PCOS can be a precursor to many life-threatening conditions including type II diabetes, hypertension, cardiovascular disease, and stroke & kidney problems.

### **Review of literature**

Lisa J Moran Jodie C, Avery, Vivienne Moore (2019), presented their examination on the theme, Self-reported polycystic ovarian disorder and profiles of Health among Women of different-genera-

tions.

Vaduneme, Kingsley, Oriji (2019), in their exploration study, Prevalence of Polycystic Ovary Syndrome (PCOS) among Infertile Women Attending Fertility Clinic at a University Teaching Hospital in Nigeria. It had been a cross-sectional examination among 174 women.

Joshi Beena, Patil Anushree, Mukherjee Srabani, et al (2020) investigated the status of polycystic ovarian disorder in all youthful and young females live in Mumbai. A cross-sectional system-based investigation was done in Mumbai to assess the prevalence of (PCOD) among 778 adolescents and youths between 15 to 24 years. It was accepted that PCOS broke down in youngsters during their puberty and screening could offer chance to thwart future morbidities.

Nisreen Khalid, Albezrah Aref, Farzana Rizwan Arein (2020) examined the Knowledge, practice and demeanour towards weight reduction among the women living with PCOS. The fundamental goal of study was to perceive the information, practices and demeanor related with weight reduction among the women determined to have polycystic ovary issue of regenerative and young women.

### **Methodology**

A quantitative research approach with experimental research design was used with pre-test and post-test control group design and multiple time series pattern. A non-probability purposive sampling technique was employed; 480 samples from a total of 652 over-weight women diagnosed with PCOS as per the sample selection criterion. They were randomly divided into two groups of equal size of 240 each by using lottery method. The data collection tools were socio-demographic variables, structured knowledge questionnaire, modified Likert's scale and metric BMI formula. The tools were sent to 12 experts including doctors, senior nurses and professors for validation. The reliability of the tools was calculated using Cronbach's alpha attitude (0.73) and knowledge score was 0.78. Forty over-weight women diagnosed with PCOS were selected for the evaluation of the reliability of structured knowledge questionnaire and attitude scale from a total of 80. The tools were highly reliable. The pilot study was done on 80 over-weight women diagnosed with PCOS (November 2016-january 2017), 40 each control and experimental group. Samples were taken from Mission and District Hospital, Damoh (MP).

Final data collection process and schedule: Formal permission obtained from the management of four selected hospitals of Madhya Pradesh (Dis-

trict Hospital Damoh, District Hospital Ratlam, Netaji Subhash Chandra Bose Medical College & Hospital Jabalpur, Mahatma Gandhi Memorial Medical College & Hospital, Indore) to conduct the main study from January 2017 to June 2019. A maximum of 652 over-weight women diagnosed with PCOS were screened for present experimental study. Out of them 480 over-weight women diagnosed with PCOS fulfilled the inclusion criteria. After establishment of inclusion-exclusion criteria all selected over-weight women diagnosed with PCOS (N=480) were divided into two groups of equal size of 240 each using lottery method.

Video assisted teaching programme on PCOS comprised of three parts including basic information, diet modification and exercises for women with PCOS to assess the effect of video-assisted teaching module on knowledge and attitude by using pre-test post-test control group design and effect of video-assisted teaching module on BMI status in time series. To collect data researcher visited individual samples for 7-month time series, 7 times in every 30 days interval researcher asked for samples for their height and weight measurement to collect BMI status.

After necessary instructions and information about the study, the subjects was explained about the study procedure; their willingness to participate in the study was recorded. Then, the questionnaires and attitude scale to measure the knowledge and attitude were administered After administration of three part video-assisted teaching module the researcher transferred video-assisted teaching module to their mobile phones so that over-weight women of the experimental group are enabled to watch and learn any time till seven months. Researcher was continuously in contact with the experimental group to see whether over-weight women diagnosed with PCOS followed the

video-assisted teaching module instructions or not.

In the 7-month of data collection tenure, enrolled samples of experimental and control group were reduced up to 210. Statical methods were used for data collection. Prevalence of an outcome variable along with 95 percent confidence limits was calculated. Both descriptive and inferential statistics were carried out. Results on continuous measurements are presented using mean  $\pm$  standard deviation (Min-Max) whereas the results on categorical measurements are presented using numbers (%).

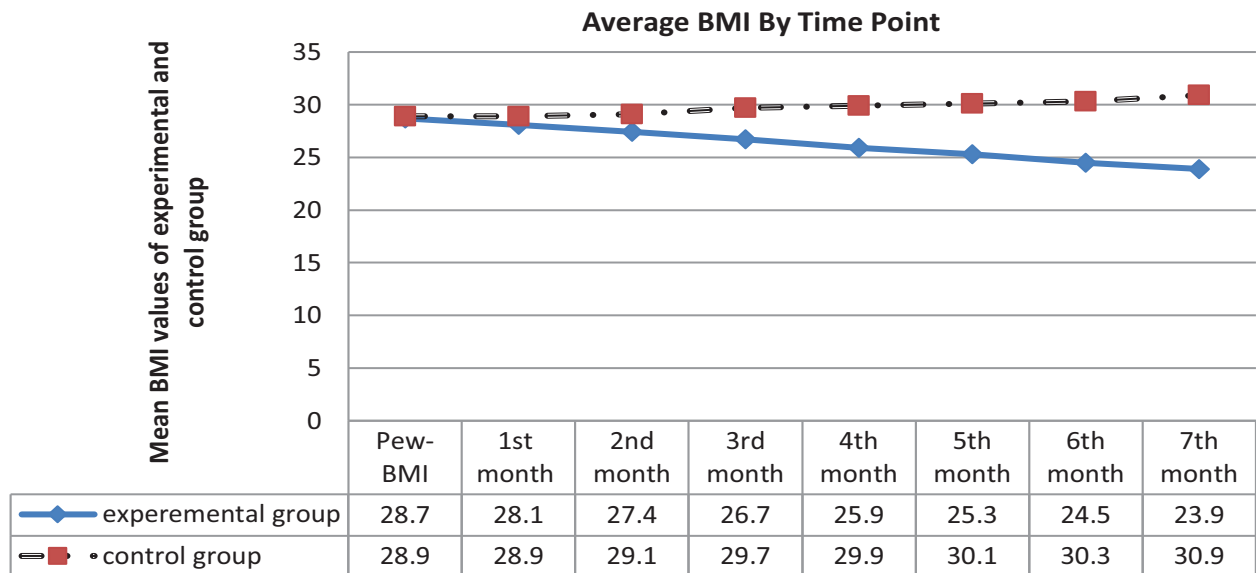
It was assumed that the observations on large sample recorded for continuous variables had followed a normal distribution overall assuming the normality of the gathered data. Therefore, parametric tests utilized to determine the significance of mean differences of scores. However, Z-test was used to identify the significance of mean differences in total scoring of Knowledge, attitude and BMI of over-weight women of experimental and control groups between baseline and post-administration stages. The reliability of the tools was calculated using Cronbach's alpha. The probability value,  $p > 0.05$  was considered as statistically insignificant. However, the probability value from  $p < 0.05$  to  $p < 0.02$  was considered as statistically significant while from  $p < 0.01$  to  $p < 0.001$  was considered as statistically highly/strongly significant.

## Results

The this study showed that there was significant association of demographic variables of educational qualification, menstrual cycle, Exercise habit and BMI status with knowledge. There was significant association of demographic variables of age in years, onset of menarche, type of family,

**Table 1: Knowledge and attitude scores of over-weight women diagnosed with PCOS**

Knowledge	Experimental group				Control group			
	Pre-test		Post-test		Pre-test		Post-test	
	Freq	%	Freq	%	Freq	%	Freq	%
Poor (score 0-11)	120	57.1	0	0		44.8	93	44.3
Average (score 12-23)	89	42.4	2	1.0	116	55.2	117	55.7
Good (score 24-34)	1	0.5	208	99.0	0	0.0	0	0.0
Attitude	Experimental group				Control group			
	Pre-test		Post-test		Pre-test		Post-test	
	Freq	%	Freq	%	Freq	%	Freq	%
Strongly favourable (153-190)	0	0.0	186	88.6	0	0.0	0	0.0
Favourable (115-152)	0	0.0	24	11.4	2	1.0	3	1.4
Unfavourable (77-114)	16	7.6	0	0.0	22	10.5	23	11.0
Strongly unfavourable (38-76)	194	92.4	0	0.0	186	88.6	184	87.6



**Fig 1: Average BMI by time point.**

menstrual cycle, dietary pattern and educational qualification with attitude.

Pre-test and post-test knowledge towards polycystic ovarian syndrome among over-weight women diagnosed PCOD among the experimental and control group: from a total of 210 samples in the pre-test 120 had poor score 89 had average and 1 had good. In the post-test 208 samples had good 2 average and none of the samples had poor knowledge score (Table 1). Among the control group pre-test knowledge, 94 had poor 116 had average and none had good scores there was no significant difference in the post-test knowledge score in the control group.

The pre-test attitude among the experimental group 194 samples had strongly unfavourable and 16 had unfavourable attitude whereas in the post-test 186 samples had strongly favourable and 24 had favourable attitude. In the control group 186 samples had strongly unfavourable and 22 had unfavourable attitude, in the post-test 184 had strongly unfavourable and 23 had unfavourable attitude scores.

### Discussion

In pre-test 57.1 percent of the women from experimental group had poor knowledge, 42.4 percent had average knowledge and 0.5 percent had good knowledge about PCOS. In post-test 0.5 percent had good knowledge and 1 percent had average knowledge about PCOS. Average pre-test knowledge score was 9.9 which increased to 31.8 in post-test. T-value for this test was 71.9 with 209 degree of freedom. Corresponding p-value was small (0.05), so the null hypothesis is rejected. In pre-test 7.6 percent women from experimental group had unfavourable attitude and 92.4 percent

had strongly unfavourable attitude about PCOS. In post-test 7.6 percent women from experimental group had favourable attitude and 88.6 percent had strongly favourable attitude about PCOS. Average pre-test attitude score was 67 which increased to 167.1 in post-test. T-value for this test was 116.2 with 209 degrees of freedom. Corresponding p-value was small (less than 0.05), so the null hypothesis is rejected. Average BMI at baseline was 28.7, BMI in first month was 28.1, in second month were 27.4, in third month were 26.7, in fourth month were 25.9, in fifth month were 25.3, in sixth month were 24.5 and in seventh month were 23.9. T-values for this comparison were 36.9, 53, 58.8, 66, 63.2, 76.3 and 81.3 in months 1 through 7 respectively (Fig 1).

Corresponding p-values were 0.000, which were small (0.05), hence the null hypothesis was rejected. Video-assisted teaching module was proved to be significantly effective in improving the BMI (scaling down to normal). This has been supported by Grei Shele, Jessica Genkil & Diana Speelman (2020), In their study on Effects of Exercise on Hormones in Women with Polycystic Ovary Syndrome. The motivation behind the examination was to find the proof for the effect of different exercise mediations on hormone levels in women with PCOS. Polycystic ovary syndrome is a common endocrine disorder that affects 8-12 percent of women. Lifestyle changes, including increased physical activity, are the first line of action in the management of PCOS. All subjects included moderate exercise of 12 - 24 weeks. Consistent improvement in ovulation reduced insulin resistance (9-30%) and weight loss (4.5-10%). Progress does not depend on the type of exercise, frequency or length of exercise.

## Recommendations

A similar study can be done on: (a) a larger sample including other states or countries. A survey study could be done to find out the population actually affected with PCOD in different states or countries; (b) infertile women due to (PCOS) and the effect of lifestyle modifications; (c) the same population to further check the fertility rate in the control and experimental group and compare the findings.

Studies could be conducted of the psychological state of mind and the effects of PCOS on day-to-day life. Studies could be conducted on women with PCOS and with complications associated.

## Nursing Implications

*Nursing Practice:* Nurses may emphasise activities that enhance healthy and productive behaviour. Findings of this study indicated inadequate knowledge, unfavourable attitude. There is a requirement for health education regarding PCOS which shall help early intervention and prevention of complications.

*Nursing Education:* Nursing educators could train nursing students to acquire knowledge and skills in assessing the requirements of the patients with PCOS and plan teaching programmes as required in hospitals, health care facilities and community settings.

*Nursing Administration:* The nurse administrators can plan creative policies for providing education to women with PCOS. They can also organise implement and evaluate educational programmes which help to improve knowledge as well as meet the future needs and raise the standards of obstetrics & maternal services. Necessary administrative support should be provided for policy making and regulation for including topics in teaching programme girls in friendly health services or clinics

*Nursing Research:* This study highlights the knowledge, attitude and body mass index scaling down among over-weight women with (PCOS), and prevention and lifestyle modifications. There is a need for evidenced-based practice on a septic lifestyle modification and its effects on normal life along with prevention of complications, or the risk factors associated with this syndrome.

## Conclusion

In this study women diagnosed with PCOS did not have adequate knowledge, or an appropriate attitude towards their diagnosed disease. The BMI also did not scale down to normal without the proper intervention or information in the experimental group. Further, a good knowledge score was noted post-intervention in the experimental group. Women attitude also drifted from strongly unfavourable and unfavourable to favourable and strongly favourable attitude among the experimental group.

In fact, there was significant body mass index scaling down to normal of women in experimental group. But when compared with control group, there was insignificant change in knowledge or attitude whereas the body mass index was noted to scale upwards.

Hence it could be concluded that the intervention prepared by researcher on PCOD helped the over-weight women not only to favor a positive attitude and knowledge but also helped to scale down the BMI to normal thus improving the quality of life and reducing the complications.

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