

# Effect of Knowledge Intervention on Polycystic Ovarian Syndrome among the Students of PJTSAU

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## **Authors' contributions**

*This work was carried out in collaboration among all the authors. Author KSS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors RGR and TVH managed the analyses of the study. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Polycystic ovarian syndrome (PCOS) is one of the most common reproductive endocrinological disorders with a broad spectrum of clinical manifestations affecting about 6-8% women of reproductive age. Many adolescent girls and women lack knowledge of Polycystic ovarian syndrome. The present study was designed so as to evaluate the knowledge of sixty undergraduate girl students from College of Community Science, Saifabad, Hyderabad, PJTSAU before and after the intervention programme on Polycystic ovarian syndrome. Knowledge assessment schedule developed by Kalpana, [1] was used with modifications as a data collection tool. High levels of knowledge was observed to be on basic terminology and definitions (31.6%), pathophysiology of the disease (16.6%), complications of Polycystic ovarian syndrome (21.6%), and management of Polycystic ovarian syndrome (26.6%) before the educational programme. An educational programme was provided as intervention to improve the students' knowledge level regarding

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Polycystic ovarian syndrome. Then, a post test was conducted to measure the effectiveness of the intervention. The knowledge level of 83.3%, 68.3%, 75% and 83.3% of the total sample was found to be high on basic terminology and definitions, pathophysiology, complications and management of Polycystic ovarian syndrome respectively. Mean scores of the post-test were significantly higher compared to their values at pre-test ( $p < 0.001$ ). Thus the results prove that the knowledge intervention in the form of educational programme is effective in enhancing the knowledge of the students.

*Keywords: Poly cystic ovarian syndrome; knowledge; intervention; girl students.*

## 1. INTRODUCTION

The polycystic ovarian syndrome is one of the most common endocrine reproductive metabolic disorders of humans, affecting 5-15% of women worldwide. The symptoms of PCOS include hyperandrogenism, ovulatory dysfunction, polycystic ovarian morphology, gonadotropic abnormalities and insulin resistance. With early detection and effective management of PCOS many long-term complications can be prevented. Both pharmacological and non-pharmacological approaches do exist for effective management of PCOS [2]. However, the success of treatment always depends on the compliance which is influenced by individuals' understanding of the disease. Hence, educating the target population and creating awareness about the disease is an integral part of prevention and/or early detection that ultimately reduces the risks associated with PCOS. Hence the present study was planned with the objective of imparting the knowledge on PCOS through structured intervention programme and analysis of its effectiveness.

## 2. MATERIALS AND METHODS

### 2.1 Research Design and Setting

The study was carried out as an experimental research at College of Community Science, Professor Jayashankar Telangana State Agricultural University, Hyderabad.

### 2.2 Selection of Sample

Simple random sampling design was used to select a sample of 60 female students by following the inclusion criteria of students accepted to participate in the study and perusing under graduation

### 2.3 Tool of Data Collection

Knowledge assessment tool designed by Kalpana, [1] with modifications was used for the

present study which also includes socio demographic characteristics of the respondents. The tool was divided into following parts:

Part 1: Concerned with the terminology of the PCOS containing 15 questions.

Part 2: This part of the tool consists of four questions related to the pathophysiology of the disease.

Part 3: It contains 4 questions to assess the knowledge of the students regarding complications of PCOS.

Part 4: This part deals with the management of PCOS and contains 9 questions.

The level of knowledge of the respondents was determined whether they have high, moderate and poor knowledge by giving the score of 1 for the wrong answer and 2 for the correct response. For each area of knowledge the scores were summed up and divided by number of items to get the class intervals.

### 2.4 Knowledge Intervention

Structured teaching programme was given with the help of PPT and videos in English and Telugu regarding PCOS and its management after the pre-test as a knowledge intervention.

### 2.5 Data Analysis Procedure

The data collected were analysed using 20.0 version of SPSS. The data were tabulated, categorized and summarized using percentages, means and t-Test was applied to know the effect of the given knowledge intervention.

## 3. RESULTS AND DISCUSSION

As indicated in Fig. 1, about (42%) of the students are between the age of 19-20 years, while 33% of the respondents are in the age range of 17-18 years, the age group of 21-22 years constituted to be 25% of the respondents.

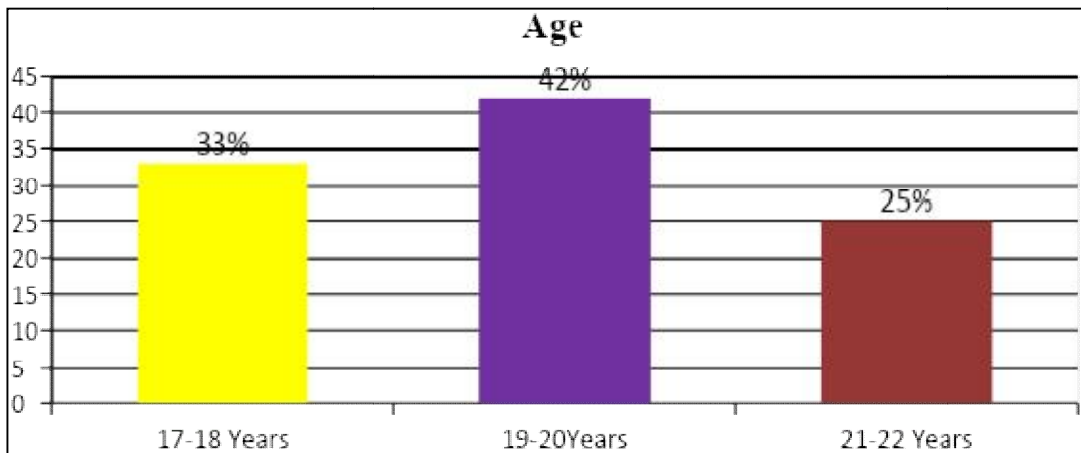


Fig. 1. Percent distribution of the sample by the age (n=60)

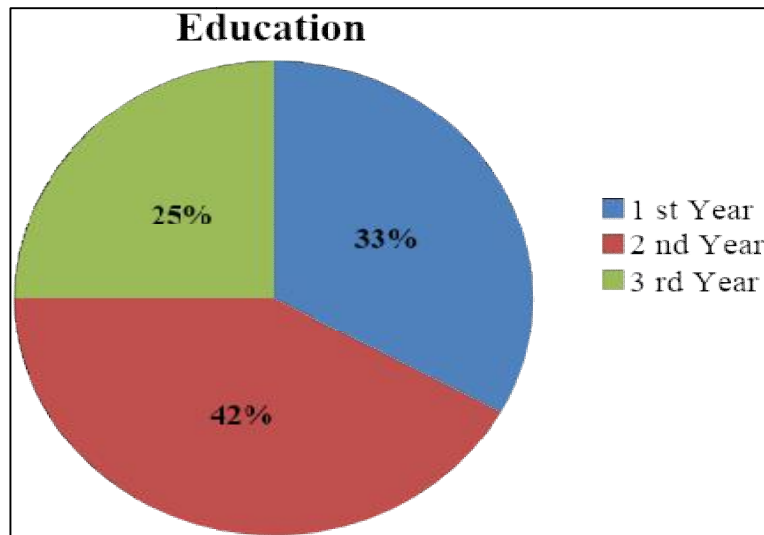


Fig. 2. Percent distribution of sample by year of study (n=60)

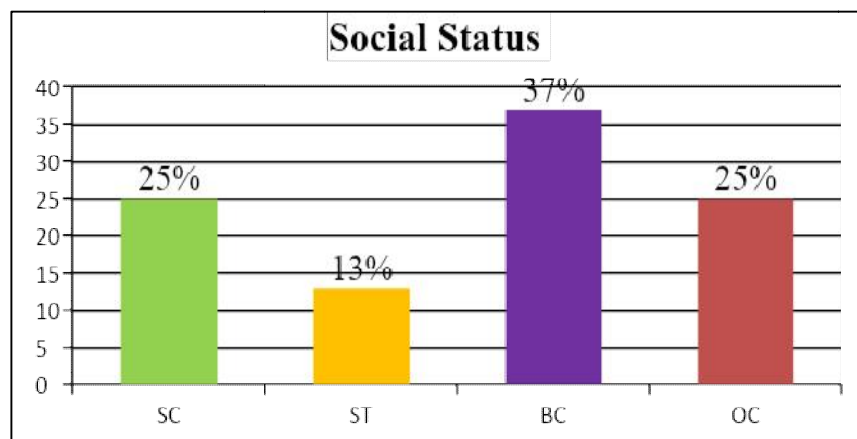


Fig. 3. Percent distribution of sample by social status (n=30)

With regard to education of the respondents among the participated students, 42% are of second year, 33% are first year whereas 25% are from third year of community science. As far as social status is considered BCs participation was high (37%) followed by 25% SCs and 25% OCs, STs participation was of 13% Fig. 3. Nativity and residence is also considered as one of the influential factors of the PCOS development. In the present study 65% were from rural background while 35% were from urban background.

Vegetarians are of 15% and non-vegetarians are 85% among the respondents. Fig. 5 illustrate that 75% of the students have 3 meals per day, 2 meals were taken in a day by 15% and 10% have four meals per day. It was observed that 48% of the respondents miss breakfast very frequently, lunch was skipped by 18% of the students and 8% of the respondents miss dinner, 25% of the respondents skip no meal in their

daily diet. Among the respondents 38% had 1 troublesome/ sleepless night in a week where as 23% had 2 nights of disturbed sleep about 13% experience 3 disturbed sleeps and 10% had more than 3 troublesome nights in a week while 15% had no problematic sleep. In the current study 52% of the girls had attained menarche at the age range of 14-16 years while 48% attained during the age of 11-13 years. When the respondents were asked about the source of information about the PCOS, 45% of them said that they received the information through mass media, 32% from health personnel and 23% from friends and relatives. About 18% of the students family members had PCOS while 82% had no family history of PCOS. Majority of the (58%) respondents opined that unhealthy diet is the causative factor for PCOS, while 15%, 12%, 8% and 7% perceived hereditary, lack of exercise, over eating and stress respectively as causative factor of PCOS.

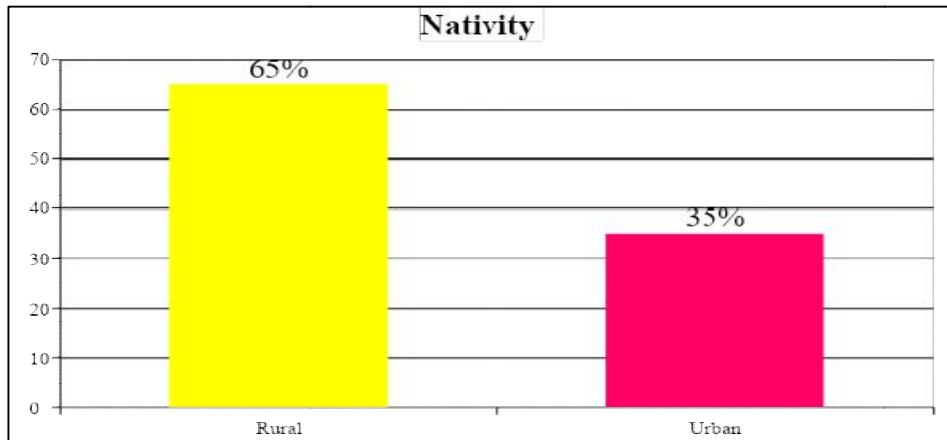


Fig. 4. Percent distribution of sample by social status (n=60)

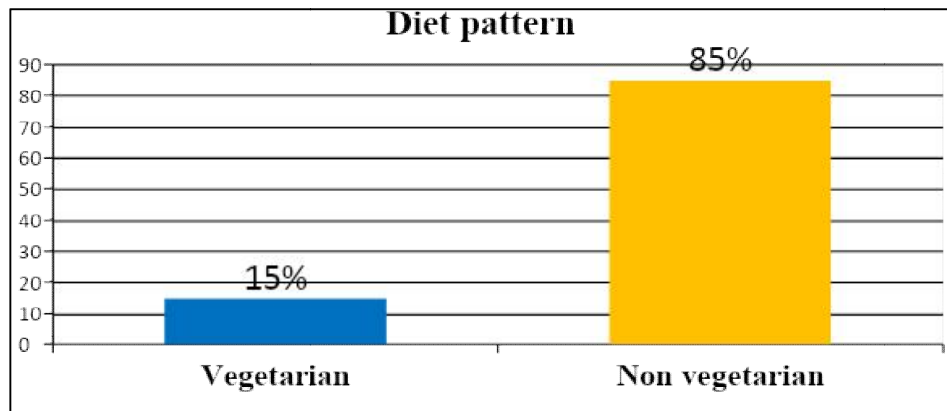


Fig. 5. Percent distribution of sample by their diet pattern (n=60)

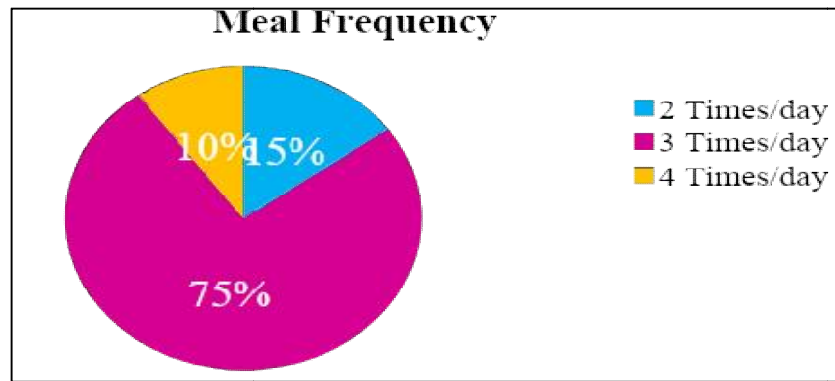


Fig. 6. Percent distribution of sample by meal frequency they follow (n=60)

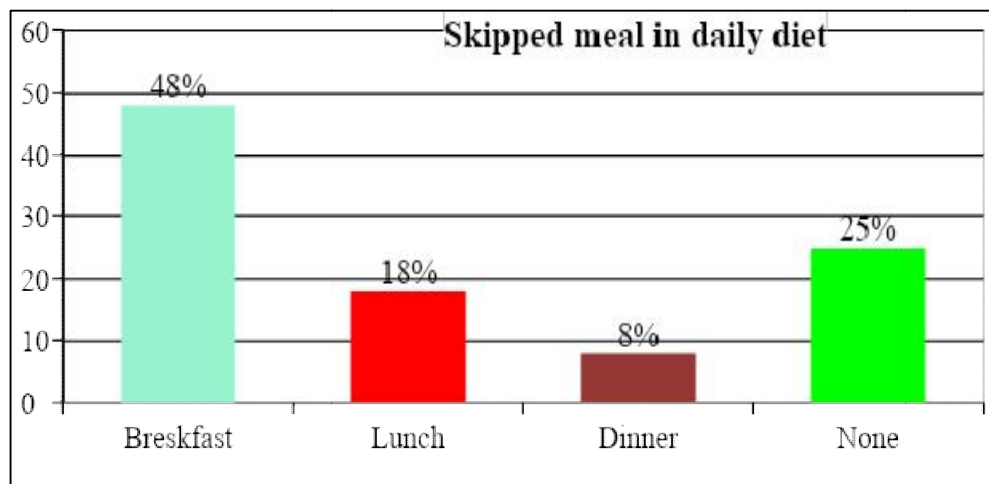


Fig. 7. Percent distribution of sample by social status (n=60)

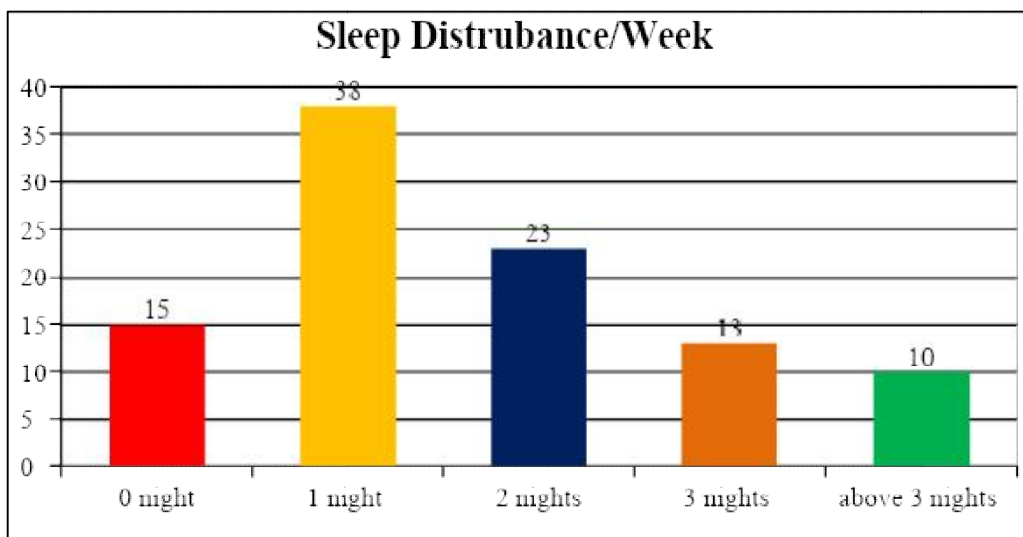


Fig. 8. Percent distribution of sample by sleep disturbance (n=60)

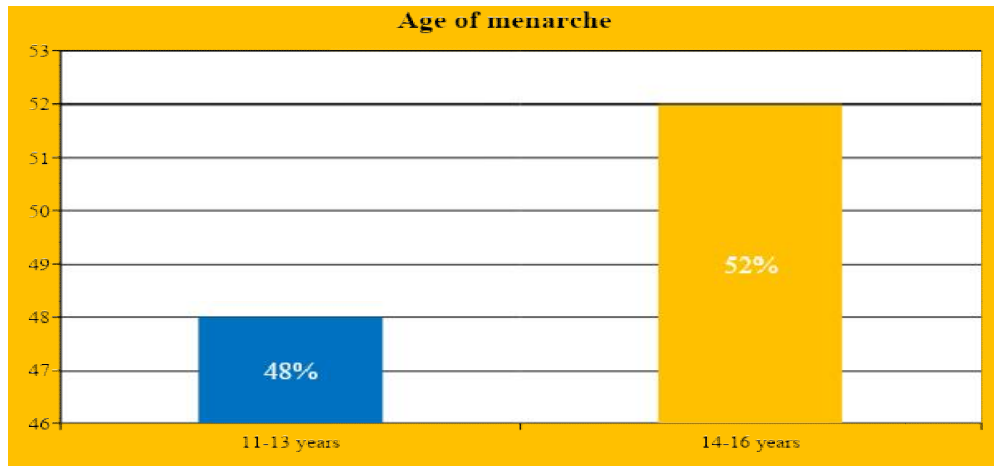


Fig. 9. Percent distribution of sample by attainment of menarche

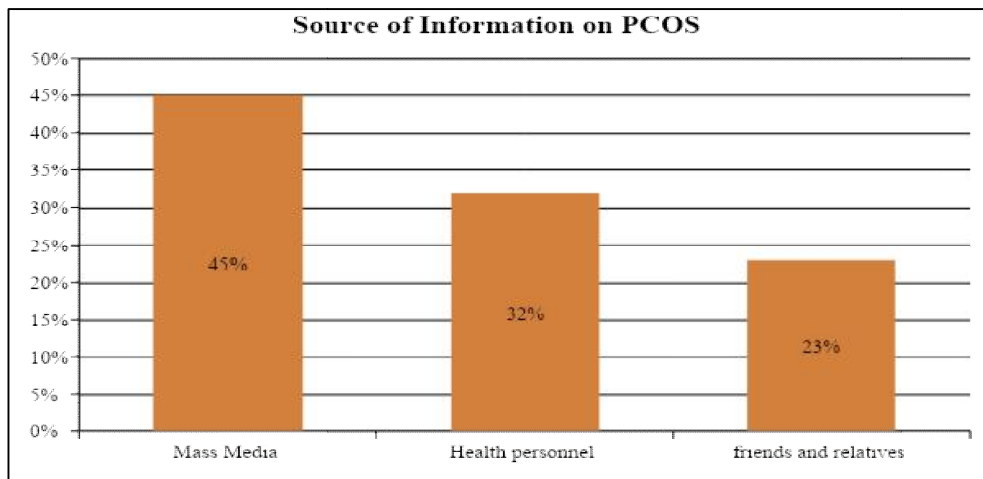


Fig. 10. Source of information regarding PCOS

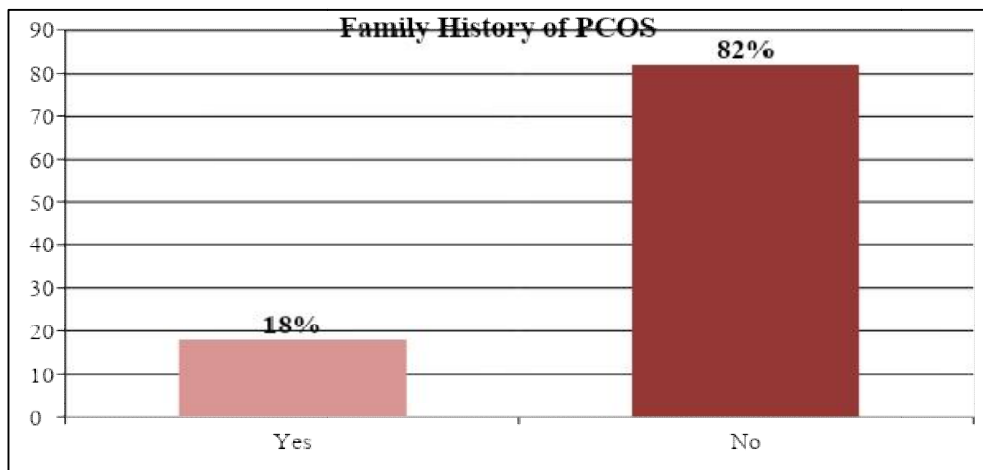


Fig. 11. Percent distribution of sample based on family history of PCOS

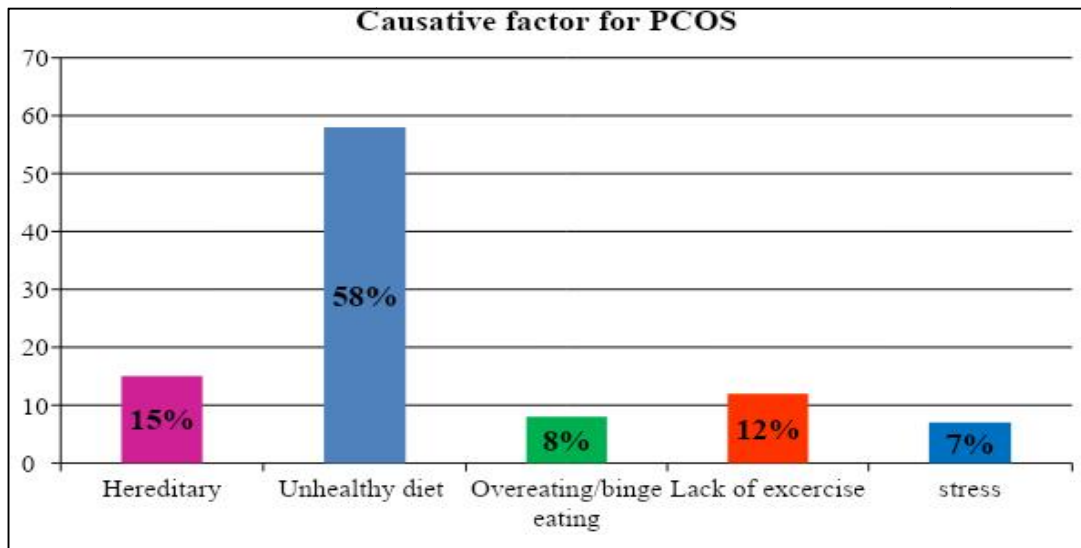


Fig. 12. Percent distribution of sample based on their perception of causative factor of PCOS

### 3.1 Effect of Intervention on Knowledge Levels of Students

From the pre- test results it was observed that majority of the respondents had moderate knowledge on all the analysed domains namely basic terminology (68.3%), pathophysiology of the disease (83.3%), complications of PCOS (78.3%) and management of PCOS (73.3%). High levels of knowledge was observed to be 31.6%, 16.6%, 21.6%, and 26.6% on basic

terminology, pathophysiology of the disease, complications of PCOS and management of PCOS respectively Fig. 12. Interestingly no respondent had poor knowledge on all the knowledge items indicating their degree of awareness of the disease. Pre-test results indicate that very less proportion of the respondents had adequate knowledge levels in all the analysed domains. Similar results were reported by Mohamad, [3]; Nimo Biam, [4].

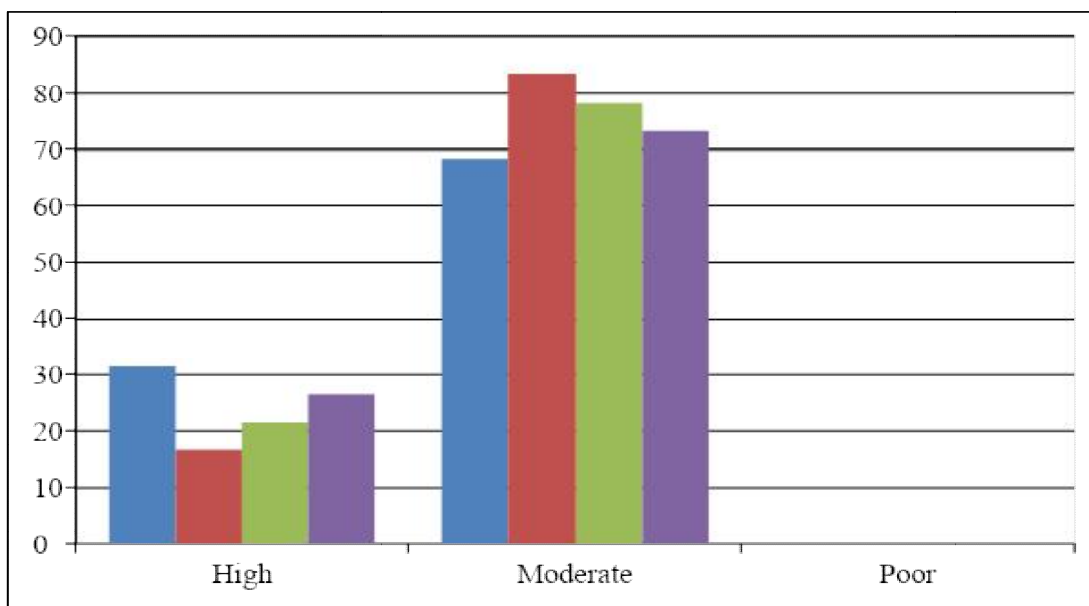
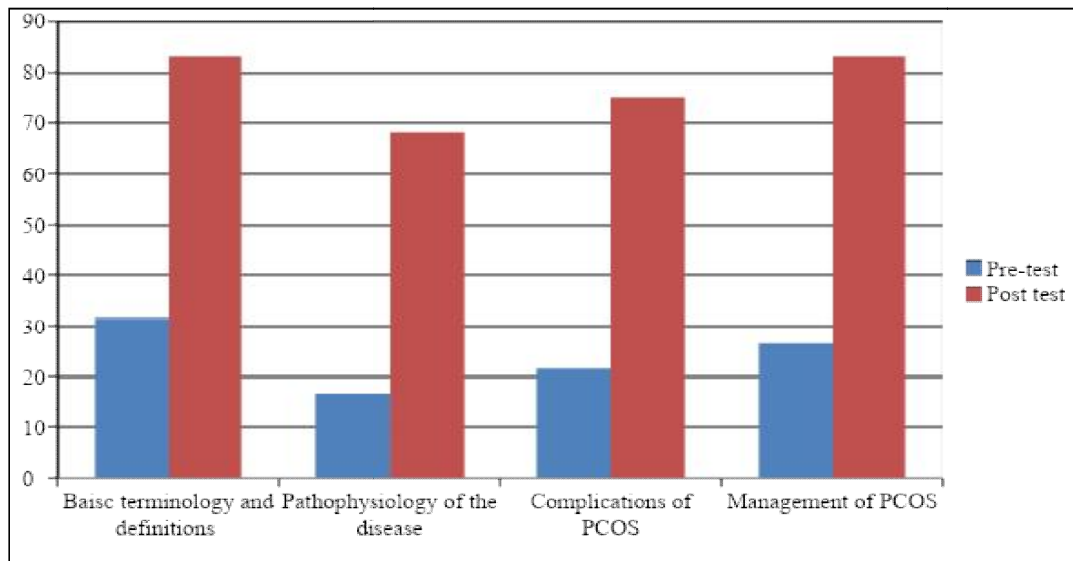


Fig. 13. Distribution of sample by existing knowledge levels



**Fig. 14. Percent distribution of sample based on their adequate knowledge on PCOS before and after the intervention**

**Table 1. Effect of intervention on knowledge levels of university students**

S. no.	Knowledge item	Mean		t value
		Pre-test	Post-test	
1.	Basic terminology and definitions	17.91	19.3	2.76*
2.	Pathophysiology of the disease	6.38	8.41	7.4*
3.	Complications with PCOS	5.71	7.81	10.15*
4.	Management of PCOS	9.46	11.53	6.85**

From the Fig. 14 it could be concluded that before the intervention about 31.6% of the respondents had high knowledge on basic terminology and definitions while after the intervention 83.3% acquired high knowledge. With regard to pathophysiology of the disease it was observed that only 16.6 % of the respondents had high knowledge before the intervention and the percentage of the respondents with high knowledge was observed to be 68.3% after the intervention. It was noticed that 21.6% of the respondents had high knowledge on complications of PCOS, after the intervention it was increased to 75%. About 26.6% respondents had high knowledge on management of PCOS whereas after the intervention the percentage increased to 83.3%. It is evident from the above data that gain in knowledge scores for all the analysed knowledge items were higher than the initial scores. Similar results were reported by Mohamed, 2016; Amasha, [5], Simu, [6] where various knowledge imparting programmes enhanced the knowledge levels of the participants regarding PCOS.

Difference in mean knowledge levels of the respondents on various aspects before and after the intervention programme was assessed and results were given in the Table 1. Mean post-test knowledge scores were found to be higher than pre-test scores and significant difference was found in all the analysed knowledge domains indicating the effectiveness of the given knowledge intervention programme among the study participants with respect to PCOS. Similar results were reported by Atiqulla et al., [7]; Amasha and Heeba, [5]; Sowmya and Fernandes, [8]; D'Souza, [9].

#### 4. CONCLUSION

From the present study it could be concluded that the knowledge intervention programme is effective in improving the knowledge on PCOS which will help in early diagnosis of the disease. Knowledge enhancement programmes help in effective management of the disease, preventing the associated long term health complications.



## CONSENT AND ETHICAL APPROVAL

Official permission to carry out the study was taken from pertinent authorities. Informed consent was taken from all the students and they were informed that their participation is voluntary can withdraw from the study at any time.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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