

# To Assess the Awareness of Polycystic Ovarian Syndrome and Providing Dietary Counseling Among Adult Women in a Tertiary Care Center – A Cross Sectional Study

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## ABSTRACT

**Background:** Polycystic ovarian syndrome (PCOS) is a condition in which there is an imbalance of female sex hormones among women. It is a common health problem among adult and teenagers women which may lead to abnormal menstrual cycle, cyst in the ovary, unable to conceive and other health problems. Lifestyle modification and lack of knowledge are considered to be the major factor leading to this phenomenon. There is a necessity to increase awareness among women especially nutritional interventions so as to avoid major cases of fertility related problems in the future. **Objectives:** To assess the knowledge about PCOS among adult women & provided nutritional counseling. **Methodology:** The population based cross sectional study was conducted at a tertiary care center in Puducherry. Pre-designed, pre-tested structured questionnaire was used for collection of data. The response to questionnaire was collected and nutritional advices were provided on the study population. The data was analyzed through frequency and percentage using excel. **Result:** The frequency of the lifestyle modification and nutritional awareness to combat the disease among the study population was found to increase with increase in educational qualification **Conclusion:** Lifestyle modification and dietary habit awareness talks to adult women are the prime factors to control its manifold complications in future.

**Key Words:** Polycystic ovarian syndrome, abnormal menstrual cycle, fertility problem, awareness talks, dietary modification

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## INTRODUCTION

Polycystic ovarian syndrome (PCOS) is a heterogeneous endocrine disorder leads to the development of metabolic and reproductive disorder. This multifaceted clinical manifestation comprises of hyperandrogenism, menstrual dysfunction, infertility, pregnancy complications and an increased prevalence of obesity and abdominal obesity. PCOS enact as risk factors in development of impaired glucose tolerance and cardiovascular diseases, furthermore it is a significant cause of distress to most women affected by it. Genetic and environmental contributors to hormonal disturbances with other factors including obesity,

ovarian dysfunction and hypothalamic pituitary abnormalities contribute to the etiology of PCOS [1]. Women suffering with polycystic syndrome have 25-30% chances of developing impaired glucose tolerance when they reach 30 years of age and 8% of them have been reported with type 2 diabetes every year [2]. Also women diagnosed with PCOS have an increased risk of menstrual problems, hirsutism, infertility, miscarriage, obesity, cardiovascular complications, endometrial cancer, and a seven time increased risk of Type II diabetes [3]. One study reported that conservative treatment enhances the sustainable weight reduction through dietary changes and exercise. Modification of lifestyle factors such psychological stressors, doing exercise are also important in the treatment of PCOS [4]. One current

survey states that nutritional awareness program in relation to PCOS will help women be aware of the risk factors, so that the condition can be diagnosed and treatment can be done at an early stage [5]. It was also found that such awareness program had positive impact with decrease in depression and good understanding of disease, its course and its treatment, resulting in healthier lifestyle and a more optimistic attitude(9). Even though the adverse health consequences associated with polycystic ovarian syndrome are substantial, most women are not aware of the risk and mostly lifestyle modification, a balanced diet and regular exercises are of utmost important for a healthy life [6].

Thus the present study was conducted to assess the knowledge about PCOS among adult women, and provide a solution to control the disorder by lifestyle modification and dietary habit awareness talks, which would pave way to control its manifold complications in future.

## **MATERIAL AND METHODS**

A cross sectional study was performed on 96 women of age group 20-40 years coming to Out Patient Departments of Obstetrics and Gynecology Department, Mahatma Gandhi Medical College and Research Institute which formed the inclusion criteria and pregnant women were excluded from the study. Duration of the study was 6 months from September 2020 to November 2021. This study has been approved by the institutional ethics committee and written informed consent was obtained prior to the study and thus has been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. A simple random sampling method was used to pick subjects for the study. Pre-designed, pre-tested, semi-structured questionnaire in regard to age, education, marital status, knowledge, signs, symptoms, complication of PCOS and its awareness measure like nutritional habits & life style

modification was used for data collection. Nutritional aspects & life style modification awareness sessions were conducted for the study population. Incomplete questionnaires were excluded from the study. The data collected was analyzed through percentages and frequencies using Excel.

## **RESULTS AND DISCUSSION**

The study population included 96 adult women and among them 54 (56%) belonged to the age group between 20 and 30 years and 42 (44%) belonged to the age group between 31-40 years. The study showed that the level of awareness about the PCOS disease increased with increase in age. The study included 61% from rural population and 39% from urban population among adult women and all had from basic knowledge to advanced treatment modalities about PCOS disease. The educational level showed that 14% completed Post graduations, 33% women completed under graduation and 53% completed schoolings. The entire participant had knowledge about PCOS and the awareness about its complication and treatment increased with increase in educational qualification with 95% Post graduates, 78% under graduates and 22% school completed adult women respectively. The study included 83% married and 17% unmarried women. The present study showed that married women gathered all information about the disease through doctors (28%), friends & relative (13%) and internet (59%) and the ways and means to control the disease by medication, while unmarried PSCO women relied on mostly on doctors. The frequency of the lifestyle modification and nutritional awareness to combat the disease among the study population increased with increase in educational qualification with 85% Post graduates, 45% under graduates and 12% school completed adult women respectively being aware. [Figure. 1]

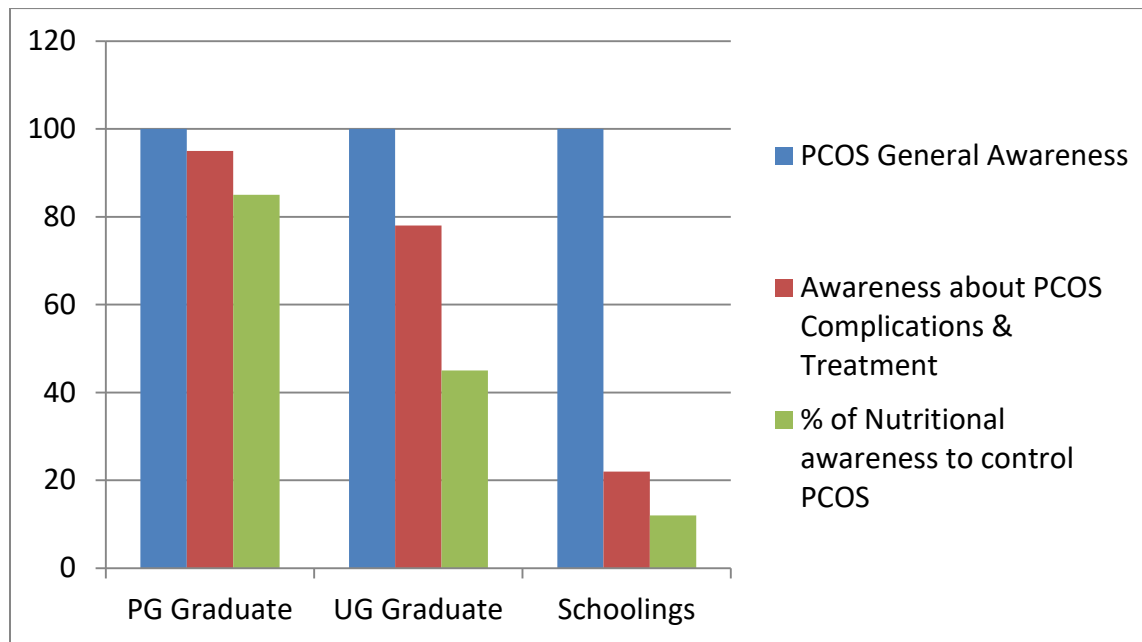


Figure 1: Bar graph showing the General awareness, Complications & Treatment, Nutritional awareness of Polycystic ovarian syndrome (PCOS), increasing with increase in the educational level of the study population

## DISCUSSION

Polycystic ovarian syndrome (PCOS) is a heterogeneous endocrine disorder leads to the development of metabolic and reproductive disorder. This multifaceted clinical manifestation comprises of hyperandrogenism, menstrual dysfunction, infertility, pregnancy related complications and an increased prevalence of obesity and abdominal obesity [7]. The prevalence of PCOS is on rise in developing nation like India which is undergoing rapid nutritional transition due to westernized diet and lifestyle. Prevention of PCOS and its complication can be controlled by lifestyle modification, dietary habit changes and generating awareness about the factors related to PCOS among adult women. One study states that there is a need for nutritional awareness in controlling the PCOS among the female population who are suffering from the disease [8]. There is thus a need to increase awareness among women in all spheres including the dietary interventions which holds a promising treatment for Polycystic Ovary Syndrome, so as to avoid major cases of fertility problems in the future [9]. In this regard, the current study was conducted to assess the general awareness about PCOS among the female population who are suffering from the disease and educating them about diet and lifestyle changes that they need to follow to reduce the complications related to PCOS.

One study reported that the level of awareness of PCOS was significantly related to educational level; it increased with higher educational level [2]. This finding is similar to our present study since 47% were a combination of basic degree holders & post graduates; they were well aware and understood all the complications associated with PCOS disease. The rest of the study population comprising of 53% had completed schoolings, and thus were educated enough to be aware of PCOS but they were unaware of its long-term complications such as diabetes, cardiovascular disease, breast and uterus cancer, androgen excess, anxiety and psychological disturbance.

One study conducted in Canada, have reported that out of 965 young patients with mean (SD) age was 20.64 years, 70% were fully aware of PCOS, the diet restrictions and that exercise were the primary modalities of treatment [10]. In the present study the sample size was only 96, the mean age was 30 years, and 44% were fully aware of complications of PCOS and all the modalities to follow as treatment which could be due to their higher educational qualification. This result is also seen as well accepted as the study also showed that the level of awareness about the PCOS disease increased with increase in age which is well supported by the study result of Alshdaifat et al [11].

Another study concluded that, very few of the young women understood about the disease and what were the earliest

symptoms that should alarm them to consult a physician. [12] But in the present study even though, 61% participant were from rural area and 39% were from urban area all of them were aware of the disease. This could be due to the increase inputs provided by the social media and their regular usage of cell phones.

In our study more than three fourth of the participants were married (83%) and remaining (17%) women unmarried. And the present study showed that married women gathered information about the disease through doctors (28%), friends & relative (13%) and internet (59%) and the ways and means to control the disease by medication. While unmarried PCOS women relied on mostly on doctor's treatment and recommendations. They demonstrated a satisfactory level of polycystic ovary syndrome awareness and were more likely to seek information from healthcare professionals. The findings are well supported by the study result of Rajkumar et al [13]. This was due to the fact that they were scared and did not want anyone know about it, fearing that they may not get married if everyone knew that they were suffering from PCOS.

Even though 85% Post graduates, 45% under graduates and 12% school completed adult women agreed that they were aware of the nutritional interventions that they need to follow to combat the disease, almost all of the participants never got a proper dietary chart or counseling from a registered nutritionist at the tertiary care hospital and thus welcomed the awareness session on nutrition diet plan and life style modification as a promising treatment for Polycystic Ovary Syndrome [14]. At the end of the questionnaire session all the participants were provided with an awareness session on Diet protocol and lifestyle changes that they had to follow which would play an important first-line treatment for PCOS [15]. They were informed that nutritional interventions for PCOS would definitely support their regular menstrual function, regulate hormone levels, and improve other symptoms, like maintaining healthy weight and preventing long-term complications. Also all the participant were provided with inputs to reduce excess intake of fats and carbohydrates, to eat 4-5 meals/snacks per day instead of 3 heavy meals, include anti-inflammatory foods, such as cold-water fish, olive oil, avocados, red wine, dark chocolate, soluble and insoluble fiber, like whole grains, fruits, vegetables, beans, legumes, nuts, and seeds, pomegranates, onions & garlic to improve all issues associated with PCOS. At the end of the session, pamphlets covering the diet plans, do's & don'ts to combat PCOS disease were given as a take home message to reduce the health problem among adult and teenagers women suffering from Polycystic Ovary Syndrome [16]. Therefore efforts needs, to be taken on a larger scale to intensify awareness talks on Dietary Interventions to general public about PCOS and one registered nutritionist be posted at all the Out Patient Department of Obstetrics and Gynecology for counseling would definitely decrease the symptoms and complications associated with the disease.

## CONCLUSION

This study thus shows that adult women suffering from PCOS have very good knowledge only on awareness measures in general to decrease the symptoms of PCOS mainly through social media but have not dwelled on the nutritional interventions which would definitely support their regular menstrual function, regulate hormone levels, and improve other symptoms, like maintaining healthy weight and preventing long-term complications[16]. Thus Specific nutrition education from reputable sources is warranted in such population suffering from PCOS. Such nutritional awareness program will definitely have positive impact with decrease in disease complications resulting in healthier lifestyle and a more optimistic attitude.

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