

A study of knowledge and awareness on polycystic ovarian syndrome among nursing students in a tertiary centre in South India

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ABSTRACT

Objectives: This study was conducted to evaluate the knowledge and awareness on PCOS among nursing students. **Methodology:** This was a questionnaire based cross sectional study conducted in the Department of Obstetrics and Gynaecology in a Tertiary Care Centre among the nursing students. A pre-designed, pre-tested, semi-structured 15 items questionnaire containing 3 components: knowledge about risk factors (6), clinical symptoms & signs (4) and complications (5) of PCOS was used for online data collection and the results were analysed. **Results:** Around 88 students participated in the study. Majority of the students (89.8%) claimed polycystic ovarian syndrome (PCOS) to be the most common endocrinological problem. Regarding the knowledge about the risk factors, 83 students were aware of obesity as the risk factor. In view of knowledge on long term complications, 62 students (70.45%) were aware about metabolic syndrome, 51 students (57.95%) about hypertension, 50 participants (56.81%) about being prone for diabetes mellitus, 60 students (68.18%) about risk of endometrial cancer. **Conclusion:** Even though the nursing students had knowledge regarding the risk factors associated with PCOS, their awareness about the complications of PCOS is significantly less. Effective educational intervention conducted especially for nurses can significantly increase their level of knowledge on PCOS.

Keywords: PCOS, questionnaire, risk, complication.

Polycystic ovarian syndrome (PCOS) is an endocrine disorder which commonly affects the adolescent girls. It affects 5% to 10% of women in their reproductive years¹. PCOS has a wide range of presentation in adolescents as menstrual irregularity, hirsutism, acne and acanthosis nigricans. It is important to make an early diagnosis in order to prevent early and late sequel of the syndrome.² The pathophysiology responsible for the development of polycystic ovaries has puzzled gynaecologists and endocrinologists for many years and has proven very difficult to define³. However, the main pathogenesis still could be hormonal imbalance and insulin resistance. PCOS is associated with increased metabolic and cardio-vascular

risk factors due to increased insulin resistance.⁴ In more than 40% of cases, PCOS is associated with obesity, as well as impaired glucose tolerance, type 2 diabetes, and the metabolic syndrome⁵. India has witnessed about 30% rise in PCOS cases in the last couple of years. Lack of knowledge and lifestyle changes are considered to be the major factor leading to rapid increase in incidence of PCOS in recent years, resulting in complications. Awareness of PCOS symptoms and complications among the health care workers is essential for early treatment and to prevent serious complications. The gap in the level of knowledge and perception when assessed among nurses can be used as a tool to improve the education of the public on PCOS. This study

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was conducted to evaluate the knowledge and awareness on PCOS among nursing students in a tertiary centre in South India.

Methodology

This is a questionnaire based cross sectional study conducted in the department of obstetrics and gynaecology in a tertiary care centre from March 2020 to May 2020. The survey was conducted among the nursing students by consecutive sampling after informed and written consent. A pre-designed, pre-tested, semi-structured 15 items questionnaire containing 3 components: knowledge about risk factors [obesity, sedentary life style, lack of physical exercise, junk food intake, familial inheritance - (6)], clinical symptoms & signs [menstrual irregularities, hirsutism, acanthosis nigricans, infertility- (4)] and complications [metabolic syndrome, dyslipidaemia and coronary artery disease, endometrial cancer, diabetes mellitus, psychological upset - (5)] of PCOS was used for online data collection.

The data collected were analysed through descriptive analysis as frequencies and percentages after entry into microsoft excel sheets. Chi square test was used to test the association between different variables. P value <0.05 was considered significant.

Results

Among 95 participants, 88 students responded to the online questionnaire. The study group belonged to age group of 18-22 years, mean age being 21.4 years. Majority of the students belonged to middle socio- economic status and from rural areas. Majority of the students (89.8%) claimed PCOS to be the most common endocrinological problem in reproductive age group.

The knowledge about the risk factors for PCOS is illustrated in table 1. Regarding the knowledge about the risk factors, 83 students were aware of obesity as the risk factor, 73 participants knew that sedentary life style and lack of physical exercise can increase the risk for PCOS.70% of the students accepted that junk food intake is associated with PCOS. Only half of the participants had the knowledge about familial inheritance of PCOS. Table 2 depicts the knowledge about clinical presentation of PCOS. On analysing the awareness about the clinical presentation, 85% responded as menstrual irregularities, half of them had knowledge about hirsutism (abnormal male type of hair distribution) and acanthosis nigricans (velvety patches over nape of the neck)

Table 1: Knowledge regarding risk factors for PCOS

Questions on risk factor	Yes (n=88) No. (%)	No (n=88) No. (%)
Obesity	83(94.31%)	5(5.68%)
PCOS has familial inheritance	55(62.5%)	33(37.5%)
Sedentary life style and lack of physical exercise can increase the incidence of PCOS	73(82.95%)	15(17.05%)
Junk food intake is associated with PCOS	62(70.45%)	26(29.55%)
PCOS can occur in lean women	53(60.22)	35(39.78%)

PCOS – Polycystic ovarian syndrome (56.81% and 61.36% respectively). Interestingly, majority of them (84.09%) knew that PCOS can cause infertility.

Knowledge about the long-term complications associated with PCOS among the study participants is shown in table 3. In view of knowledge on long term complications, 62 students (70.45%) were aware about metabolic syndrome, 59 students (67.04%) about dyslipidaemia and risk for coronary artery disease, 51 students (57.95%) about hypertension, 50 participants (56.81%) about being prone for diabetes mellitus, 60 students (68.18%) about risk of endometrial cancer. However almost all of them knew that the life style modification is the first line of management in PCOS.

Table 2: Knowledge about clinical presentation of PCOS

Questions	Yes (n=88) No. (%)	No (n=88) No. (%)
Menstrual abnormalities	75(85.22%)	13(14.78%)
Abnormal male type of hair distribution (hirsutism)	50(56.81%)	38(43.19%)
Infertility	74(84.09%)	14(15.91%)
Velvety patches over nape of neck (acanthosis nigricans) suggestive of insulin resistance in PCOS	54(61.36%)	34(38.64%)

Chi square test was used to test the association between known demographic characteristics like age, sex, educational level and knowledge and awareness about PCOS. Younger the nurse, lower the knowledge level on PCOS (p=0.04). Third year nursing students had more knowledge on risk factors and complication compared to first year students which was statistically significant (p< 0.001). Similarly female students had more knowledge and awareness on PCOS compared to male nursing students (p< 0.01).

Table 3: Awareness about complications due to PCOS

Questions	Yes (n=88) No. (%)	No (n=88) No. (%)
PCOS left untreated can lead to metabolic syndrome	62(70.45%)	26(29.55%)
PCOS can lead to endometrial cancer	60(68.18%)	28(31.82%)
PCOS patients are prone to become diabetic	50(56.81%)	36(43.19%)
PCOS can cause psychological upset	74(84.09%)	14(15.91%)
PCOS can cause dyslipidemia and is a risk factor for coronary artery disease	59(67.04%)	29(32.96%)
PCOS if left untreated can cause hypertension	51(57.95%)	37(42.05%)
In PCOS the first line of management is life style modification	71(80.68%)	17(29.32%)

Discussion

Polycystic ovarian syndrome (PCOS) is a heterogeneous, chronic endocrine disorder commonly diagnosed in women of reproductive age. PCOS increases the risk for various dermatologic, oncologic, metabolic, reproductive, and psychological aberrations. In 1935, Stein IF et al first described a symptom complex associated with anovulation.⁶ They described seven patients with amenorrhea, hirsutism and enlarged polycystic ovaries. They reported that all seven resumed menses and that two became pregnant after bilateral wedge resection of ovaries. The knowledge about the risk factors, presentation and complication of PCOS among para medical workers and students is of paramount importance to educate the community.

A study conducted in Hoshangabad, India to test the effectiveness of the of education programme on their knowledge on PCOS revealed a positive correlation between education and level of knowledge ⁷(Gupta et al, 2017). Sunanda B et al found that 76% of the samples were with average knowledge and 10.7% with good knowledge regarding polycystic ovarian syndrome⁸. Sills ES et al found that more than 97% (n =638) of the respondents were familiar with PCOS, while 1.9% had not been told about PCOS, and < 1%, told that they are uncertain.⁹

The awareness among our study participants about obesity as the risk factor was as high as 94.31%, similar to other study done by Alessa et al.¹⁰ This result is promising in terms of prevention of future increase in the incidence of PCOS among adolescent girls. More than 40% of women with PCOS are obese¹¹. There is an increasing awareness of PCOS among the adolescent population along with an increase in diagnosis and an increased incidence of established co-morbidities such as obesity and type 2 diabetes.

Majority of our study people were aware of PCOS and the symptoms associated. In a study by Alessa et al. among aware females, most women were aware of associated symptoms, as irregular menstrual cycle, facial acne, hirsutism, reduce fertility, weight gain, abortion, pelvic pain¹⁰. In a study by Haq et al, 407(90.2%) subjects were having adequate knowledge about PCOS after educational intervention.¹² Similar results were observed in a study by Mohammed et al¹³.

In a study by Jena et al among adolescent girls, of 965 patients, only 27 (2.79 %) were aware of an entity called PCOS. Majority (70%) were aware that diet restriction and exercise were the primary modalities of treatment, whereas,

only 3.7% knew about the role of contraceptive pills in PCOS¹⁴. Rao et al found in their study that majority of participants ranked their PCOS knowledge as "Know some" or less (66.3% women and 83% of men).¹⁵ Upadyay in his study among medical students concluded that 72% of participants were aware of PCOS while 28% were unaware of PCOS¹⁶.

In the present study, most participants were aware of menstrual abnormalities and infertility as common clinical presentation. Similarly, irregular menstrual cycle was the most commonly reported clinical feature in a study by Piltonen et al, followed by obesity and infertility¹⁷. The most commonly reported comorbidities were reduced fertility, type 2 diabetes, gestational diabetes, insulin resistance, and cardiovascular disease risk factors.¹⁷ Insulin resistance being a common feature associated with this condition led to the conclusion that, there is a causal relationship between metabolic disorders and PCOS¹⁸.

PCOS increases the risk to metabolic disorder which is the leading cause of diabetes and cardiovascular disease. In our study, only half of the study participants had knowledge about diabetes mellitus and hypertension as a long-term complication of PCOS, which needs educational intervention. Surprisingly, 70% of them were aware of the term metabolic syndrome as a complication of untreated PCOS. Alessa et al in their study found that many participants were aware of complications related to PCOS like breast and uterus cancer, hyperandrogenaemia, anxiety and psychological disturbance¹⁰. However, in a study by Patel and Rai, 46% of the people did not know about the role of lifestyle changes like diet, lack of physical activities, stress and obesity that are involved in the pathogenesis of the disorder.¹⁹ Case studies have shown that women with PCOS are anxious, depressed and have eating and bipolar disorders. The depression is most likely to occur in the teenage girls because of consciousness of their physique²⁰. In our study, majority of the participants (84.09%) agreed that PCOS can cause psychological upset.

In another study conducted in the United States of America amongst physicians, one third of the respondents in the study did not know the diagnostic criteria they used in diagnosing the condition. They were also unaware of the cardio metabolic comorbidities associated with the condition; however the psychological complications such as depression, anxiety and low quality of life were mentioned²¹. A combination of hyper insulinemia, hyperandrogenism, and oligo-anovulation increases the risk of endometrial cancer

and other endometrial disorders.²² Long term complications such as pre-eclampsia, gestational diabetes are found in women with PCOS. Their unborn children suffer complications such as fetal macrosomia, small for gestational age and perinatal mortality.

Conclusion

Even though the nursing students had knowledge regarding the risk factors associated with PCOS, their awareness about the complications of PCOS is significantly less. Effective educational intervention conducted especially for nurses can significantly increase their level of knowledge on PCOS.

Conflict of interest: None. **Disclaimer:** Nil.

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