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Knowledge on PCOS among the Nursing Students of a Selected College, Mangaluru

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Abstract

Polycystic ovarian syndrome (PCOS) is an endocrine disorder commonly affecting the adolescent girls. Globally, the prevalence rate is around 4 to 12% and it affects 5 to 10% women in their reproductive age group. The study was conducted to assess the knowledge on PCOS among the student nurses. This was a questionnaire-based cross-sectional study among 350 adolescent girls of a selected nursing college recruited using stratified random sampling. A predesigned, pretested, semistructured 16-item questionnaire containing two components—basic knowledge on PCOS (8) and treatment and prevention of PCOS (8), was used for data collection and the results were analyzed. Results revealed that all the adolescent girls (350; 100%) belonged to the age group of 18 to 20 years. It was noted that 306 (87.4%) of students had inadequate knowledge, whereas 44 (12.6%) students had adequate knowledge on PCOS. Significant association was found between primary source of information ($p = 0.012$) and knowledge on PCOS at 0.05 level of significance. The study concluded that conduction of planned teaching programs is necessary to increase comprehensive knowledge with regard to detection of presenting symptoms and foster early diagnosis and treatment of the syndrome thereby promoting overall health.

Keywords
- polycystic ovarian syndrome
- adolescent girls
- nursing students

Introduction

Adolescence is a transitional phase that turns an amateur child to a responsible adult where a lot of physiological, psychological, and functional growth is witnessed in a human body. During this period, human mind reaches to the utmost intensity of physical and sexual maturity and highly sophisticated level of reasoning.[1] As a child turns to be pubertant, lot of morphological and anatomical changes occur that are supposed to induce physiological changes and therefore consistent awareness regarding the choices of lifestyle must be enforced during this phase to reduce the instances of disease.[2]

Polycystic ovarian syndrome (PCOS) is a condition in which woman has an imbalance of female sex hormones. This may lead to changes in the menstrual cycle, cyst in the ovary, failure to conceive, and other health problems.[3] The World Health Organization stated that "3.4% of the women population were pretentious by PCOS in 2012."[1] Globally, PCOS is prevalent ranging from 2.2 to 26%. Asian countries like China and Sri Lanka had a prevalence rate of 6.3 and 7.5%, respectively. The studies conducted in India perpetually

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stated that South India and Maharashtra had a prevalence rate of 9.6 and 22.2%, respectively.[4]

It is very difficult to diagnose this syndrome in the early stage of adolescence as their main concerns are regarding the aesthetic appearance and hardly focus in the maintenance and well-being of their own health. Increased peer interaction and present societal ideologies to promote sedentary lifestyle and instant food habits have made it more obvious for the adolescents to develop this syndrome.[3]

PCOS cannot be prevented, but once diagnosed, it is very important to follow the treatment instructions and modify the lifestyle accordingly to prevent further complications.[5] A study conducted in 10 schools at Trivandrum among 343 pubertant girls to check upon the morbidity rate of PCOS revealed that 339 (98%) were found with the symptoms of PCOS out of which 37.6% were under nourished, 8.6% of them were overweight, and 2.6% were obese. It was noticed in the above study that bewilderment and sedentary lifestyle were considered to be the foremost factors contributing to the syndrome and the adolescent girls need to be enlightened with adequate knowledge concerning PCOS to prevent at the earliest.[6,7]

In this study, the knowledge of nursing students will be assessed on PCOS prevention. Since PCOS is a leading endocrinological disorder during young adulthood and long-term complication could include infertility and difficulty for conception, the investigator felt there is necessity to investigate and develop the latest data pertaining to the syndrome so that prevention of modifiable risk factors causing PCOS could be intensified. A nurse's role is to inform young adult girls of the importance of reducing PCOS symptoms and avoiding future obstacles.[7]

Materials and Methods

A quantitative research approach with cross-sectional design was used to evaluate the knowledge of 350 adolescent girls studying in a selected nursing college. The subjects were recruited using the proportionate stratified random sampling technique. The strata were formed based on the year of study. Students from BSc Nursing and General Nursing and Midwifery (GNM) were selected randomly based on the number of students in the class. Seventy students each were selected from 1st to 3rd BSC Nursing, 50 from 4th BSc Nursing, and 30 each from 1st to 3rd year GNM. All the students irrespective of their previous obtained knowledge on PCOS were selected for the study. Data collection took place from September 2020 to October 2020. All girls selected for the study were given structured knowledge questionnaire on PCOS.

Data Collection

Data collection instruments included sociodemographic data and knowledge questionnaire on PCOS. The sociodemographic tool included four items and two subitems. The knowledge questionnaire included 16 multiple-choice questions. There were two domains including the basic knowledge on PCOS in the first domain and the second domain was about prevention and treatment regarding PCOS. Both the domains had eight questions each. Each correct answer was carrying 1 score and therefore the maximum possible score of questionnaire was 16. The tool was validated by eight experts from the department of OBG, Medical College and also from the OBG nursing department. The content validity index was more than 0.92 and the scale content validity was more than 0.98 for the validated tool. The tool had reliability (internal consistency) of 0.79 measured using Karl Pearson correlation coefficient. Self-reported techniques were used during the data collection.

Statistical Analysis

The data was analyzed using SPSS version 16. Descriptive statistics such as frequency, percentage, mean and standard deviation were used. For inferential statistics, chisquared test was used to find the association with selected demographic variables.

Results

The result showed that all the adolescent girls were between the age group of 18 and 21 years. Three-hundred twelve (89.1%) adolescents were consuming mixed diet, whereas 29 (8.3%) were nonvegetarians. All the adolescents were involved in one or the other physical activities, out of which 297 (84.9%) adolescents were performing exercise, 50 (14.3%) were doing yoga and meditation, and 3 (0.9%) involved in sports activities. Around 197 (56.3%) have received primary information on PCOS out of which 68(19.4%) have received from relatives and 56(16%) from mass media.

In terms of level of knowledge among adolescent girls on PCOS, 306 (87.4%) had inadequate knowledge, whereas 44 (12.6%) had adequate knowledge on PCOS.

The mean and standard deviation of overall knowledge score on PCOS was 8.2 ± 1.3 and the mean percentage knowledge score was 51.25%. The domain wise mean and standard deviation and mean percentage knowledge score are depicted in ►**Table 1**. The study also showed that knowledge on PCOS was significantly associated with source of information ($p < 0.012$) at 0.05 level of significance. ►**Table 2** depicts the knowledge about clinical presentation of PCOS and complications.

Discussion

Women of reproductive age commonly suffer from PCOS, a chronic, heterogeneous endocrine disorder. PCOS increases the risk of a variety of dermatologic, oncologic, metabolic, reproductive, and psychological disorders.[8] To educate the community about PCOS risk factors, presentation, and complications, paramedical workers and students should be informed about these factors, symptoms, and complications.[8]

In this study, majority of (47.7%) of the students belonged to the age group of 20 years, while 312 (89.1%) consumed mixed food. All girls performed one or the other physical activity out of which 297(84.9%) performed exercise. One-hundred ninety-seven (56.3%) of adolescent girls had some information about PCOS. The finding of this study is congruent with the similar study conducted by at Salem among 44

Table 1 Mean, standard deviation, and mean percentage of knowledge score, $n = 350$

Domain	Item	Mean ± SD	Mean knowledge score (%)
Basic knowledge (Domain 1)	8	4.04 ± 1.34	50.50
Treatment and **prevention (Domain 2)**	8	4.42 ± 0.75	55.25
Overall knowledge score on PCOS	16	8.21 ± 1.31	51.25

Abbreviations: PCOS, polycystic ovarian syndrome; SD, standard deviation.
Maximum overall score =16, Minimum overall score = 0.

Table 2 Knowledge about clinical presentation of PCOS and complications, $n = 350$

Sl. no.	Questions	Yes	No
Clinical Presentation of PCOS			
1.	Menstrual abnormalities	(292) 83.42%	(58) 16.58%
2.	Abnormal male type of hair distribution	(159) 45.42%	(191) 54.48%
3.	Infertility	(294) 83.42%	(56) 16.58%
4.	Velvety patches over nape of neck suggestive of insulin resistance in PCOS	(123) 35.14%	(227) 64.86%
PCOS left untreated can cause			
1.	Metabolic syndrome	(103) 29.42%	(247) 70.58%
2.	Endometrial cancer	(111) 31.71%	(239) 68.29%
3.	Prone to become diabetic	(198)56.71%	(152) 43.29%
4.	Psychological upset	(166) 47.42%	(184) 52.58%
5.	Dyslipidemia	(102) 29.14%	(248) 70.86%
6.	Coronary artery disease	(55) 15.71%	(295) 84.29%
7.	Hypertension	(56)16%	(294) 84%

Abbreviation: PCOS, polycystic ovarian syndrome.

adolescent girls. The results showed that 45% of students were within the age group of 20 years. Eighty percent of the students were consuming mixed diet and 61.3% of nursing undergraduates were having ideal weight and nobody was found to be obese among them.[9] Another study in Pondicherry conducted among nursing students in a tertiary center in South India had similar results, where the study group belonged to age group of 18 to 22 years, mean age being 21.4 years. Majority of the students belonged to middle socioeconomic status and from rural areas. Majority of the students (89.8%) claimed PCOS to be the most common endocrinological problem in reproductive age group.[8]

In this study, majority 306 (87.4%) of the adolescent girls had adequate knowledge, whereas 44 (12.4%) had inadequate knowledge on PCOS. The findings of this are contradictory with the study done by Sunanda and Nayak in Mangalore, which showed that among 150 students, most of the students (114; 76%) had average knowledge, 20 (13.3%) had poor knowledge, and 16 (10.6%) had good knowledge.[10] Another similar study by Begum and Sheeba in Coimbatore among 60 adolescent girls showed that 46(77%) had inadequate knowledge on PCOS, 14(23%) had moderately adequate knowledge, and none had adequate knowledge on PCOS.[11] This result was similar to this study on PCOS.

Results of this study showed that there is significant association between knowledge and primary source of information about PCOS ($p < 0.005$, $p = 0.012$) at 0.05 level of significance. A study done by Padma et al showed significant association between course of study, attendance to continuing nursing education (CNE) program with knowledge on PCOS.[12] Another study by Sasikala et al in Pondicherry showed that 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 with first-year students which was statistically significant ($p < 0.001$). Similarly female students had more knowledge and awareness on PCOS compared with male nursing students ($p < 0.01$).[8]A study by Begum and Sheeba in Coimbatore showed no association between selected demographic variables and knowledge on PCOS.[11]

It is vital to increase awareness about PCOS and its health risks among all ethnicities and age groups. Awareness on PCOS must be created among the nursing students. The nurse acts as an advocate in assisting the patient and family understanding the complexities of treatment decisions and manages the side effects of drugs and complications associated with PCOS. A well-informed nurse can empower the patients with knowledge of the disease and treatment. It can have more positive influence on outcome of disease.[13] Early

diagnosis and prompt treatment would help young girls to improve quality of life. In this study, it was noted that being a healthcare professional, inadequate knowledge on PCOS would pose a serious threat in the preventive aspects of healthcare. PCOS is not uncommon but due consideration on prevention of illness is recommended as it may lead to many serious complications. Counselling for adolescents should be included in the curriculum that will provide awareness toward disorder and lifestyle modification. Accurate diagnosis at a younger age may be a key to prevent many long-term consequences associated with this syndrome.

This study was delimited to a selected nursing college and the data was collected using a self-report technique. Furthermore, to generalize the result to wider extent, the awareness could be assessed in other settings (adolescent group other than health professionals, hostels and other colleges, etc.), among adolescent girls. This study clearly states that the awareness on PCOS is scare among adolescent girls and therefore appropriate counselling and preventive strategies such as technology-assisted health promotion measures, appropriate follow-up on health lifestyle, and information booklets on awareness on PCOS could be initiated to reduce the morbidity due to PCOS.

Conclusion

Due to the varied nature of PCOS, educating the adolescent girls regarding PCOS helps them to identify issues at an early stage that could help to prevent complications and improve the fertility. Effective educational intervention conducted especially for nurses can significantly increase their level of knowledge on PCOS. Healthcare personnel play a vital role in educating the adolescent girls and conducting health education in various colleges to create awareness about PCOS.

Ethical Permission

Ethical clearance was obtained from the Institutional Review Committee (IRC No. IRC/FMCON/2019/BS20) and the Institutional Ethics Committee (FMMC IEC/CCM/229/2020). Prior approval to conduct the study was obtained from the Nursing College authorities. Informed consent was obtained from every subject participating in the research study and privacy of information was guaranteed to them.

Authors' Contributions

V.M.F. contributed to data collection, data analysis, and manuscript. T.T. conceptualized the study. V.R.B. contributed to methodology. S.K.L.S. helped in manuscript and designing.

Conflict of Interest

None declared.

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