

Screening of Polycystic Ovarian Syndrome in Young Females of Gujarat

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ABSTRACT

Polycystic Ovarian Syndrome (PCOS) is a metabolic disorder characterized by hyperandrogenism and insulin resistance. It is the most common endocrinopathy affecting premenopausal women, with a prevalence of approximately 4.6%. The life style, eating habits, lack of exercises and mental stress make PCOS widely prevalent in young girls. In spite of this, Polycystic Ovarian Syndrome is under diagnosed and under treated. It is important to screen PCOS as early as possible in the course of disease so that diagnosis, education, and appropriate preventive action and treatment of these patients can be initiated. The primary aim of the study is to screen young females for PCOS. It is a prospective descriptive study. A Google questionnaire was sent via WhatsApp to total 600 girls (16-24 yrs age) from 18 different colleges of Gujarat. The whole purpose of the study was well explained in detail to them in a prior message and if they were willing to participate in the study then they were asked to fill the questionnaire. The females with any systemic illness, with pregnancy, taking birth control pills and not knowing English were excluded. The response rate was 90.66%. A standard and valid screening questionnaire for diagnosis of PCOS was used along with other details. If the score is ≥ 2 then the female is consistent with the diagnosis of PCOS. The sample size is 539. The mean age was 20.69 ± 2.5 years and the mean age of menarche was 13.54 ± 1.54 years. The mean BMI was found to be $22.39 \text{ Kg/m}^2 \pm 5.84$. Total 12.1% young girls were screened of having PCOS and 11.9% having confirmed diagnosis of PCOS. PCOS is highly prevalent in young girls though it is under-reported and undertreated.

Key words: Polycystic ovarian syndrome, young females, Gujarat, Screening

INTRODUCTION

Polycystic Ovarian Syndrome (PCOS) is a metabolic disorder characterized by hyperandrogenism and insulin resistance⁽¹⁾. It is the most common endocrinopathy affecting premenopausal women, with a prevalence of approximately 4.6%⁽²⁾. A consensus from a conference sponsored by the National Institutes of Health in 1990 determined that the criterion standard diagnosis of PCOS is clinical, defined by the following factors:

- Presence of ovulatory dysfunction (irregular menstrual cycles and sub fertility);
- Presence of hyperandrogenism (hirsutism or acne); and
- Exclusion of other related disorders.⁽³⁾

Most often, patients present with menstrual dysfunction, oligomenorrhea, or infertility⁽⁴⁾. They can also present with a pregnancy-related complication, such as gestational diabetes^(5,6) or spontaneous abortion^(7,8). Hirsutism or acne could be the patient's primary concern, which can result in profound psychological distress⁽⁷⁾.

Polycystic Ovarian Syndrome is associated with several comorbid conditions, including type 2 diabetes ⁽⁹⁾, dyslipidemia ⁽¹⁰⁾, hypertension ⁽¹¹⁾, obstructive sleep apnea ⁽¹²⁾, endometrial carcinoma, and potentially breast and ovarian cancer ⁽¹³⁾.

The life style, eating habits, lack of exercises and mental stress make PCOS widely prevalent in young girls. In spite of this, Polycystic Ovarian Syndrome is under diagnosed and under treated. This is because of lack of awareness in young females regarding its symptoms and manifestations. These young girls then face difficulties in conception and so will be diagnosed later when they consult for infertility. It is important to screen PCOS as early as possible in the course of disease so that diagnosis, education, and appropriate preventive action and treatment of these patients can be initiated.

Aims and Objectives:

The primary aim of the study is to screen young females for PCOS.

The objectives are:

1. To check the awareness level in young females regarding PCOS and its manifestations.
2. To check the concern of young females regarding their irregular menstruations.
3. To make the young females aware about PCOS and its consequences.

METHODOLOGY

The study has been passed and approved by the Institutional Review Board of Smt. NHL Municipal Medical College, Ahmedabad. It was a prospective study done for 3 months duration from June 2019 to Aug 2019. Maximum number of young females (16 to 24 years) were tried to be recruited from different colleges of Gujarat including Physiotherapy, Pharmacy, Engineering, Medical and Nursing. The Google questionnaire was sent via WhatsApp to total 600 girls from 18 different colleges of Gujarat. The whole purpose of the study was well explained in detail to them in a prior message and if they

were willing to participate in the study then they were asked to fill the questionnaire. The females with any systemic illness, with pregnancy, taking birth control pills and not knowing English were excluded. Total 544 girls have responded to the questionnaire so, the response rate was 90.66% which was a very good to be considered.

The Google questionnaire was accompanied by a message which included a brief introduction of the authors, contact numbers of them, introduction about the study and request to participate. The exclusion criteria were also well mentioned in the message and it was clearly mentioned that if they are willing to participate in the study then only have to fill the form. The representative from each class of each college was directly sent message and a questionnaire by authors of the study and was asked to forward it to maximum no. of girls of their college.

The Google form was developed by the authors in English where the initial 8 questions were regarding the demographic detail of the participants. Next 4 questions were asked from clinical tool for diagnosis of PCOS ⁽¹⁾ which is a standard and valid screening questionnaire for diagnosis of PCOS. The next question was regarding the score obtained from the questions of clinical tool. The scoring system is well mentioned in the questionnaire itself. If the score is ≥ 2 then the female is consistent with the diagnosis of PCOS. The last three questions are to know their awareness regarding PCOS.

The questions asked in the Google form were as below.

1. Email ID
2. Name of College
3. Full name of participant
4. Contact no
5. Age (in years)
6. Age of menarche (first period)
7. Height (in meter)
8. Weight (in Kg)
9. About how long is your average menstrual cycle (time from first day of

one period to the first day of the next period)? (select ONE only)

- A. <25 d
 - B. 25-34 d
 - C. 35-60 d
 - D. More than 60 d
 - E. Totally variable
(if answer is C, D or E : put score 1)
10. Do you have a tendency to grow dark, coarse hair on your (circle ALL that apply) upper lip?
- A. chin?
 - B. breasts?
 - C. chest between the breasts?
 - D. back?
 - E. belly?
 - F. upper arms?
 - G. upper thighs?
(if answer is more than 3 sites put score 1)
11. Were you ever obese or overweight?
- A. Yes
 - B. No
(if yes, put score 1)
12. Have you ever noticed a milky discharge from your nipples (not including during pregnancy or recent childbirth)?
- A. Yes
 - B. No
(If Yes put -1 score, If No put 0 score)
13. What is the total score of the above questions? If $\neq 2$ then you are consistent with PCOS.
- A. 0
 - B. 1
 - C. ≥ 2
 - D. -1
14. Have you ever consulted any doctor for your above problems?
- A. Yes
 - B. No
15. Have you ever gone for sonography (USG) of your ovaries?
- A. Yes
 - B. No
16. Were you diagnosed to be having PCOS?
- A. Yes
 - B. No

RESULT

Total 544 girl students responded to the questionnaire and took part in the study. As there was incomplete data of 5 students, we have considered only 539 responses for statistical analysis. So, the sample size is 539. The mean age was 20.69 ± 2.5 years and the mean age of menarche was 13.54 ± 1.54 years. The mean BMI was found to be $22.39 \text{ Kg/m}^2 \pm 5.84$.

Table 1: The duration of menstrual cycle.

Duration of menstrual cycle (days)	No. of participants
<25 days	66 (12.2%)
25-34 days	383 (71%)
35-60 days	58 (10.8%)
>60 days	15 (2.8%)
Totally variable	30 (5.6%)

Table 2: Total score of the screening questionnaire:

Total score	No. of participants
0	298 (55.5%)
1	178 (32.5%)
≥ 2	64 (12.1%)
-1	0 (0%)

The above table showed that 12.1 % students were consistent with PCOS. Out of 539 participants 22.1% have consulted doctor and 22.1% have gone for sonography. Total 11.9% of them were diagnosed as having PCOS.

DISCUSSION

The primary aim of the study was to screen the young females for PCOS. The results showed that 12.1% of the participants were having ≥ 2 scores on the screening questionnaire meaning they are consistent with PCOS and require further consultation and investigations. The confirm diagnosis of PCOS can be made by USG of ovaries. On asking "Have you ever consulted doctor?" 22.1% gave positive answer. The same 22.1% had gone for sonography. 11.9% of the total participants were diagnosed of having PCOS.

The simple and short clinical screening tool used here matches with the confirm diagnosis of PCOS which was done by sonography as the percentage of both are nearly same and even the responding participants are same. (12.1% were screened

of having PCOS, 11.9% gave answer that they were diagnosed with PCOS).

It was clearly written in the message to contact the authors for any help, query or even for consultation with clear contact numbers but none of the subject has contacted. This shows that the participants were very well aware about the terminologies. 80% of the participants were from medical and paramedical courses which can be one factor to be taken into consideration.

There were 139 (25.78%) females who answered "yes" of the question whether they have ever been obese or overweight. Obesity is considered as a predictor of PCOS but cannot be considered essential for the diagnosis of PCOS (1). Here also the percentage of obesity and screened PCOS females are different which is supporting the same. The mean BMI was 22.39 Kg/m² which is considered normal. In spite of this, there are 29% participants with irregularities in menstruation and 12% diagnosed cases of PCOS.

71% of the participants had menstrual cycle of 25-34 days. This shows that 71 % were having regular menstrual cycle. Rest 29 % had irregularities where 10.8 % had 35-60 days and 2.8 % had more than 60 days cycle duration. 5.6 % participants reported that their menstrual cycle was variable. This shows high prevalence of menstrual irregularities in young girls which can be an early event of conditions developing later in life like PCOS, infertility, metabolic disorders.

The purpose to make the young female aware and alert about PCOS is though not completed as the authors did not have direct conversation with the participants mainly with the affected ones. Though the affected participants seem to be aware and concern with their disorder, further information regarding their management and lifestyle modification still need to be obtained.

The basic idea behind present study was to screen young girls for PCOS. Authors are inclined to expand the same

study by making them aware about the future consequences and also to teach them life style modification.

CONCLUSION

Total 12.1% young girls were screened of having PCOS and 11.9% having confirmed diagnosis of PCOS.

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