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Original Research Article

Survey to assess knowledge about polycystic ovarian syndrome in females of reproductive age group: a hospital-based study

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ABSTRACT

Background: Polycystic Ovarian Syndrome (PCOS) is the most common endocrine disorder affecting women of reproductive age. Many women remain undiagnosed due to lack of awareness about its signs, symptoms, and complications and associated risk factors. Educating women about PCOS is key for early diagnosis and effective management. This study aims to assess knowledge about PCOS in females of reproductive age group.

Methods: A cross-sectional observational study was conducted from June to August 2023 at the gynaecology OPD of Punjab Institute of Medical Sciences, Jalandhar. A total of 150 women aged 18–45 years participated by filling a structured and validated questionnaire designed in English and Punjabi. Data were analysed using MS excel.

Results: The majority of respondents (54.7%) were aged 21–30 years and from urban areas (64.7%). Most were students (50%) with education up to 10+2 (49.3%). Awareness of PCOS symptoms varied, with obesity (66%), hair loss (63.3%), and acne/oily skin (59.3%) being the most recognized. Only 38% identified junk food as a risk factor, while 52.7% believed obesity leads to PCOS. Complications like ovarian cancer (29.3%) and diabetes mellitus (24.7%) were less recognized. Awareness about lifestyle modifications such as healthy diet (83.3%) and regular exercise (79.3%) was high. Health workers (76.7%) were the primary source of information.

Conclusions: There is a significant gap in knowledge about PCOS among reproductive-age females. Increased awareness through education, seminars, and counselling is essential for early detection and prevention. Health seeking behaviour should be encouraged.

Keywords: Awareness, Knowledge, Polycystic ovarian syndrome

INTRODUCTION

The new definition of polycystic ovarian syndrome (PCOS) states it as a combination of signs and symptoms of androgen excess and ovarian dysfunction in the absence of other specific diagnoses.¹ It is the most common endocrine disorder present in women of reproductive age group and affects 8-13% of women in their reproductive age globally where up to 70% of affected women remain undiagnosed worldwide.² It is the commonest cause of anovulation and a leading cause of infertility.³ The prevalence is increasing day by day especially in the females of reproductive age group. Females present at the

OPD with complaints of amenorrhea, acne, hair loss, hirsutism, fatigability, anxiety and depression.³⁻⁷ These problems decrease quality of life of a person especially for working females decreasing their productivity, effecting their work- life balance and thereby triggering their stress and emotional levels.^{8,9} Many studies suggest that there is a lack of knowledge among the females about the signs and symptoms of PCOS leading to them to ignore their health condition.^{7,10-12} They usually seek medical attention when they experience additional complications like difficulty in conceiving, insulin resistance or obesity.^{8,12} These incidences are higher in females of low income and minimal education particularly of rural residence. Late

diagnosis leads to more complications like infertility, gestational diabetes, spontaneous abortions and insulin resistance show high incidence in them.^{3,5,12}

Reports have shown that educating the females about PCOS can lead to an effective management of PCOS. There is a limited number of researches conducted in the level of awareness of PCOS among females and lack of knowledge to determine the factors responsible for the same. A few studies states that females in India lack knowledge about PCOS.

Few studies were conducted in Punjab focussing on prevalence of PCOS.^{13,14}

As PCOS also runs in families, an early knowledge can help the females to or be self-aware preventing the diseases or making them seeking the medical help early.¹⁵

This study aims to asses knowledge about PCOS in females of reproductive age group.

METHODS

It was a cross-sectional observational study conducted between June to August 2023 in the gynaecology OPD of Punjab Institute of Medical Sciences, Jalandhar. Consecutive 150 females fulfilling the study criteria were included. The inclusion criteria included females between age group of 18-45 years of age presenting to the OPD of Gynaecology. Females of age less than 18 years and pregnant females were excluded.

Data collection and analysis

The data was collected on a pre-validated well-structured questionnaire typed on google form in English and the vernacular language Punjabi and printed. A written consent was obtained from each participant for their cooperation and their confidentiality was assured prior conducting the questioning session. The questions were well-explained to the participants in vernacular language and the answers were marked.

The well-structured questionnaire was crafted by a panel of three experts of Gynaecology. Questionnaire version-1 was formed and pre-test on 10 females fulfilling the inclusion criteria. The questionnaire was refined and underwent another pre-test. Then after a thorough discussion, analysis and study, a well-structured, validated and pre-tested questionnaire was crafted for data collection. It consists of sociodemographic data, risk factors, symptoms, contributing factors, lifestyle changes and source of information of PCOS.

Statistical analysis

The data was later entered on MS Excel 2019 version and was checked for any incomplete data or inconsistencies.

Frequency distribution of the responses obtained were tabulated using EpiInfo software.

RESULTS

A total 150 participants completed the given questionnaire where majority (54.7%) respondents were of 21-30 years of age group where maximum belong to urban residence (64.7%) while the remaining (35.3%) to rural. Also, maximum females (49.3%) had 10+2 education whereas (35.3%) were graduated. Majority of the respondents (50%) were students and significant number (26.7%) were housewives. The maximum annual family income obtained was 5 lakhs or less from 28.6% respondents. Most of the respondents (66.7%) were unmarried while 30% were married (Table 1).

Table 1: Sociodemographic details of participants.

Variables	Frequency	Percentage
Age groups (years)		
18 to 20	50	33.3
21 to 30	82	54.7
31 to 40	15	10
41 to 45	3	2
Education		
10	12	8
10+2	74	49.3
Graduated	53	35.3
Illiterate	8	5.3
Post graduate	3	2
Occupation		
Student	75	50
Housewife	40	26.7
Teacher	12	8
Office worker	10	6.7
Labourer	9	6
Engineer	2	1.3
Entrepreneur	2	1.3
Annual family income		
1 lakh or less	39	26
3 lakhs or less	26	17.4
5 lakhs or less	43	28.6
7 lakhs or less	20	13.3
10 lakhs or less	12	8
More than 10 lakhs	10	6.7
Marital status		
Unmarried	100	66.7
Married	45	30
Divorced	4	2.7
Widow	1	0.7
Residence		
Urban	97	64.7
Rural	53	35.3

38% females were aware that junk food is a risk factor of the risk factor in PCOS followed by sedentary lifestyle (36.7%), obesity (34.7%) and familial (20.7%). Also, maximum respondents (52.7%) chose obesity as diseases leading to PCOS while 43.3% and 12% were of thyroid disorders and hyperprolactemia (Table 2).

Table 2: Knowledge of risk factors and diseases leading to PCOS.

Variables	Frequency	Percentage
Risk factors		
Junk food	57	38
Sedentary lifestyle	55	36.7
Obesity	52	34.7
Familial	31	20.7
Diseases leading to PCOS		
Obesity	79	52.7
Thyroid disorders	65	43.3
Hyperprolactemia	18	12
Others (diet)	1	0.7

Table 3: Knowledge of symptoms of PCOS.

Variables	Frequency	Percentage
Symptoms		
Obesity	99	66
Hair loss	95	63.3
Acne/oily skin	89	59.3
Mood swings	89	59.3
Easy fatiguability	82	54.7
Hirsutism	61	40.7
Irritability	60	40
Anxiety	49	32.7
Infertility	39	26
Depression	41	23.7
Acanthosis nigricans/ darkening of nape	32	21.3
Hot flushes	32	21.3
Breast tenderness	30	20
Deep/ hoarse voice	14	9.3

Majority of participants (66%) were aware that obesity is the symptom of PCOS, also significantly hair loss (63.3%), acne/oilyskin (59.3%), mood swings (59.3%), easy fatiguability (54.7%), hirsutism (40.7%), irritability (40%), anxiety (32.7%), infertility (26%), depression (23.7%), acanthosis nigricans/darkening of the nape (21.3%), hot flushes (21.3%), breast tenderness (20%), deep/hoarse voice (9.3%) (Table 3). 29.3% participants were aware of ovarian cancer as the associated complication, additionally diabetes mellitus (24.7%), followed by dyslipidemia (18.7%), uterine cancer (15.3%) and metabolic syndrome (13.3%). Significantly 70% respondents were aware of delayed periods as a symptom of irregularities of menstruation followed by irregular flow (40.7%), amenhorrea (34%), scanty flow (23.3%) and excessive flow (19.3%) (Table 4).

Table 4: Knowledge of associated complications in PCOS.

Variables	Frequency	Percentage
Associated complications		
Ovarian cancer	44	29.3
Diabetes mellitus	37	24.7
Dyslipidemia	28	18.7
Uterine cancer	23	15.3
Metabolic syndrome	20	13.3
Symptoms of irregularities of menstruation		
Delayed periods	105	70
Irregular Flow	61	40.7
Amenhorrea	51	34
Scanty flow	35	23.3
Excessive flow	29	19.3

Table 5: Knowledge of life modification in PCOS.

Variables	Frequency	Percentage
Life style modifications		
Healthy diet	125	83.3
Daily 30min exercise	119	79.3
Weight management	71	47.3
Reduce sugar and carbohydrates	48	32

Table 6: Source of information of PCOS.

Variables	Frequency	Percentage
Source of information		
Health worker	115	76.7
Internet	52	34.7
Friend	42	28
Media	17	11.3
Relatives	8	5.3
Others (studies)	3	2

Also, majority of females 83.3% were aware of healthy diet as the best lifestyle modification, followed by 30min exercise (79.3%), weight management (47.3%) and reduced sugar and carbohydrate diet (32%) (Table 5). Major source of information of PCOS 76.7% was health worker, then internet (34.7%), followed by a friend (28%), media (11.3%), relatives (5.3%) and others(studies) (2%) (Table 6).

DISCUSSION

The single-centred survey was conducted to assess the knowledge of PCOS in females of reproduction age group. It includes 150 consecutive females of reproductive age group (18-45 years) coming to the OPD fulfilling the study criteria. The present study showed that majority of participants (66%) were aware of obesity as a major symptom of PCOS followed by hair loss (63.3%), acne/oily skin (59.3%) and mood swing (59.3%). In contrast to study conducted by Renuka Jakhar et al in

Gurgoan showed maximum awareness about facial acne and irregular or absent menses (10.5%) followed by obesity (9.81%).⁵ This shows that having knowledge of symptoms is utmost important for the early health seeking behaviour in order to diagnose the syndrome at an early stage. A study conducted by E. Alshdarfat et al in Jordan revealed that acne was the most reported problem due to its cosmetic association that promoted patients to seek advice.¹⁶ This shows that patients don't seek medical attention until they see an alarming sign which can lead to a potential complication. This lack of knowledge and awareness leads to a delayed diagnosis and more complications further leading to cumbersome procedure and lengthy treatments. Whereas in a study conducted on PCOS awareness among young women of central India showed 74% females were aware of acne and 46% were unaware of obesity as a symptom.¹⁶

Present study revealed that only 33% patients identified junk food as the risk factor of PCOS. 52.7% patients identified obesity as the diseases leading to PCOS and least (20.7%) were aware of the familial factors whereas in the study conducted in Gurgoan shows maximum participants identified hormonal imbalance as same with minimum awareness of insulin resistance. Knowledge regarding risk factors among women can help them from not only early diagnosis but also with preventing the disease.⁵ Also, 70% of women have the knowledge of delayed periods as asymptomatic of PCOS which is very significant.

Going further, it was seen that only 29.3% patients were aware of ovarian cancer as PCOS complications followed by diabetes mellitus (24.7%), dyslipidemia (18.7%), uterine cancer (15.3%) and lastly metabolic syndrome (13.3%) which is quite similar to the study conducted in Gurgoan which also showed that participants were aware of ovarian cancer complication.⁵ The study conducted in Central India showed about 1/3rd participants were aware of cancer and infertility as a complication whereas in study by Sasikala R et al 70% women considered it as the a major complication.³ This shows that patients are not aware of the fact that PCOS can lead to various complications which can worsen their conditions and make treatment more costly and increased number of visits to hospital as a major. About similar number of participants knew that delayed periods are associated with PCOS.

Majority of patients (83.3%) were aware of importance of healthy diet as a lifestyle modification which is highly significant followed by daily 30 minutes exercise (79.3%). On the other hand, about half of participants (46%) were unaware of role of lifestyle modifications like diet and physical activities due to lack of knowledge about disease pathogenicity. Similarly, in the study conducted in Gurgoan showed very few were aware of weight management.⁵ All the numbers draw the attention towards the importance of counselling of PCOS patients and educating them regarding the preventive measures and lifestyle modifications like weight loss and management to restore the hormonal levels.^{17,18}

Also, maximum patients (76.7%) received awareness regarding PCOS from healthcare workers indicating a greater contribution of them in spreading awareness of diseases among the patients and winning the faith of their patients. Patients tend to rely on them more than unreliable sources on Internet whereas in Saudi Arabia many women chose internet as their source of information even after being counselled by a health worker.³ About 1/3rd participants showed that teachers were major source information providers and doctors constituting only 11.5% in a study conducted in Nagpur while in Central India study friends and relatives were major source of information.^{7,16}

Limitations

It is a single centred study. Other age groups like adolescents can also be included as PCOS is a lifestyle disease and generally a lifestyle is established at this age group.

CONCLUSION

The present study shows that many females lack knowledge about symptoms, risk factors and complications of polycystic ovarian syndrome. Females become familiar with the syndrome only when they visit a doctor and seek a medical treatment. Educating females at an early age by seminars, workshops, debates and group discussions should be encouraged. Health seeking behaviour should be encouraged.

Further, a multicentred study will be conducted in future in order to study and analyse PCOS in a better and efficient way.

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Conflict of interest: None declared

Ethical approval: Study was conducted after getting approval from Ethical Committee of Punjab Institute of Medical Sciences, Jalandhar. The participation in the study was completely voluntary and the participants were informed regarding the aim of the study. The responses were obtained and the confidentiality of the participants were maintained

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