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Research Article

To assess KAP (Knowledge, Attitude, Practice) & develop awareness about Polycystic Ovary Syndrome among patients of different age groups in a tertiary care hospital.

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ABSTRACT

Background: PCOS is a complex endocrine-metabolic syndrome characterized by hyperandrogenism (biochemically), polycystic ovaries (morphologically), inhibition of follicular development, anovulation, menstrual changes, infertility dominates which cause massive effect on female health.

Aim: The aim of this study is to assess the knowledge, attitude and practice of the participants to predict awareness, analyse and impart knowledge about PCOS and pharmacological and non-pharmacological management.

Material and methods: A questionnaire was prepared for assessing the basic Knowledge, Attitude and Practice (KAP) of PCOS patients in KAP questionnaire for comprehensive understanding of patient's knowledge about PCOS. The study was conducted in the department of gynaecology & obstetrics (in-patient, out-patient) of MMIMSR hospital over a period of 6 months.

Results & conclusion: From the study it was concluded that only 24.66% of PCOS patient population have knowledge about PCOS, 11.60% of patients have a certain attitude towards PCOS and 37.1% patients practice appropriate regime for management of PCOS.

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INTRODUCTION

Polycystic Ovary Syndrome is a term used for one of the common genetically complex endocrine system disorders that affects reproductive-aged women. (1) It is a condition in which numerous small cysts are formed in one or both ovaries and the ovaries become enlarged. This heterogeneous disorder is characterized by hyperandrogenism (biochemically), polycystic ovaries (morphologically), and ovulatory dysfunction. (2) In India, 10% of women are affected by PCOS. It can occur at any time during a woman's life but mostly it occurs between 5% and 10% of women belonging to the age group of 15 and 44 or during the reproductive age. (3) PCOS patients have functional ovarian hyperandrogenism (FOH) and functional adrenal hyperandrogenism (FAH), but the anovulatory symptoms such as oligomenorrhea, amenorrhea, and infertility are mainly due to FOH. (2) Inhibition of follicular development leads to the formation of microcysts, thus the cysts in PCOS are the follicles at varying stages of maturation and atresia. (2) Hyperandrogenic and cutaneous manifestations include hirsutism, acne, male pattern hair loss, acanthosis nigricans, seborrhoea, striae, acrochordons. sleep apnea, weight gain, and obesity are the other clinical symptoms. (4) Studies endorsed that the diagnoses of PCOS could be made after determining the clinical manifestations of the disease, but it is difficult to final diagnose on this basis, therefore, the following specified steps could be considered to diagnose the disease which includes –age of onset of the manifestations (puberty, middle age, menopause-premenopausal or postmenopausal), symptoms of virilization involves- (hirsutism, acne, male pattern baldness, disturbed menstrual cycle, sexual dysfunction, deepening of the voice, muscle mass), other symptoms such as obesity, weight gain, metabolic defects and the rate of onset of the symptoms is also important for the diagnoses. (5) Three of the diagnostic criteria mentioned (a)NICHD/NIH Criteria (1990):-

National Institute of Child Health and Human Development/ National Institute of Health; (b) ESHRE/ASRM Rotterdam Criteria (2003):- European Society for Human Reproduction and Embryology and the American Society for Reproductive Medicine; (c)AES Criteria (2006):- Androgen Excess Society; as shown by several studies uses these characteristic features as a diagnostic tool for PCOS – Clinical hyperandrogenism/ biochemical signs of hyperandrogenism, oligo-ovulation and / anovulation (oligo-ovulation specifically less than 8 menses in a year), polycystic ovaries (Increased ovarian volume >10ml). (6) PCOS has numerous accelerating complications though differing from woman to woman mostly includes infertility, insulin resistance, a metabolic syndrome which includes cardiovascular disease, high triglyceride and low HDL, high blood pressure, etc; which is affecting the overall health of the entire women ratio. (7)

Insufficient knowledge among PCOS patients has a direct impact on the health as well as the treatment of PCOS which ultimately demands the need of the study. (12) Patients don't consult gynecologist with the symptoms of hirsutism, acne or baldness, due to inadequate knowledge about PCOS symptoms. These alarming symptoms that require Gynecologist visit needs to be given significant importance. (13) Most PCOS patients visit OPD with the complaint of an irregular menstrual cycle or lower abdominal pain or with the complaint of infertility. (14) Several studies have shown that 60-90% of infertility is because of PCOS that implicates the need for awareness about the disease to the patients. (15) For PCOS care, it's crucial to keep track of all symptoms, their onset, drug history (including doses) and any home remedies used, as well as any co-morbid conditions. (5) Unawareness about the association of co-morbid conditions with the syndrome as well as its complications make patients less determined for the treatment of PCOS. (16) Inadequate knowledge of the triggers, such as stressors, and other life circumstances, may also exacerbate disease

severity. To receive adequate care, a fast recovery, and health improvement, the patient should be provided with all pertinent details. (17) The aforementioned complications and inadequate knowledge demand the need for awareness regarding the disease. (18) Women belonging to the low- socioeconomic areas with the least medical facilities tend to neglect startling symptoms of PCOS and attempts to treat it with home remedies. This void must be filled with education and knowledge among women about the critical value of PCOS care and the devastating effects it can have on one's mental and physical wellbeing. (15) This study aims to assess the knowledge about PCOS, its symptoms, causes, co-morbid conditions & complications, patient's attitude towards the disease, and the practice regime they follow. (19)

MATERIAL & METHODS:

This hospital-based cross-sectional prospective observational study was carried out for a period of 6 months. A total of 100 subjects of reproductive age group (12- 50) diagnosed with PCOS were recruited from the in-patient and out-patient department of gynaecology & obstetrics (in-patient, out- patient) of MMIMSR hospital, Mullanawhich is a tertiary care teaching hospital with different specialties and provides healthcare facilities to the people residing in and around Ambala district. KAP of the subjects was assessed using an 18 item self-structured questionnaire. KAP of the Subjects were assessed on a three-point Likert scale from low (0) to high (3). Post assessment, education regarding the disease, the importance of lifestyle management, and treatment was provided by direct conversation and through the distribution of patient information leaflets (PILs). Data were collected and were statistically analyzed. [20][21]

Using the following KAP questionnaire, sample patients were cross-questioned to evaluate the knowledge, attitude, and practice regarding PCOS.

SUBJECT RECRUITMENT

Subjects enrolled in the study using the following inclusion and exclusion criteria:

Inclusion criteria

- All the PCOS patients of different age groups- teenage, premenopausal, and postmenopausal.
- Patients with a previous history of PCOS as well as newly diagnosed patients are enrolled in the study.

Exclusion criteria

- Patients who are not diagnosed with PCOS

Sources of data

All the data was collected by interviewing the patient or the patient's caretaker. (22)

Statistical analysis

Microsoft Office Excel version 2007 was used to conduct a descriptive analysis and review of the data collected in the data collection form and the KAP questionnaire. The responses were converted in percentiles furthermore represented in the tabular as well as graphical form. (22)

RESULTS

Section A- Knowledge regarding PCOS

On studying the knowledge about the disease among 100 PCOS patients considered for the study- 50% belong to the rural area, 30% belong to the semi-urban and only 20% were from the urban area which further indicated the awareness and education level of patients regarding PCOS.

Knowledge of patient regarding the disease and its association of endocrine disorders and other co-morbid condition along with PCOS were studied and concluded that 18% of the patient population were aware of the disease and only 20% have some knowledge of its association with other diseases. Only about 1.5 % of the PCOS patients aware of the cause of the disease.

When the patients' knowledge of their chief complaints and their association with the medical condition (PCOS) was evaluated, it was discovered that only 19.50 percent of them thought their chief complaints were linked to their current medical condition.

According to the results of a survey of patients' awareness of whether or not their current medical condition is curable, 66.5 percent of patients believed their current medical condition was curable.

According to a study, 93% of PCOS patients agree that maintaining hygiene is advantageous in PCOS, 1% thought that using oral

contraceptives will cause PCOS, and 28% believe that their current medical condition is a reason for their infertility.

The cumulative score for all knowledge-based questions represents the knowledge of 100 patients of different age groups about PCOS, and it was determined that only 24.66 percent of PCOS patients were aware of the condition.

Table 1-Knowledge based questions asked for study and analysis:

Q. No.	Knowledge based questions	Points	Total score for 100 patients	Marks scored by 100 patients	Percentage obtained
1	Are you aware of PCOS?	No- (0), partially known- (1), yes- (2)	200	36	18%
2	What are your sources of information?	Health personnel- (1), friends- (1), teachers- (1), parents- (1), mass media-(1), no information- (0)	500	23	4.6%
3	Do you know about the causes of PCOS?	No- (0), partially known- (1), yes- (2)	200	3	1.5%
4	Do you think your chief complaints are associated with your medical condition?	No- (0), partially known- (1), yes- (2)	200	39	19.5%
5	Do you think your current medical condition is curable or not?	No- (0), partially known- (1), yes- (2)	200	133	66.5%
6	Do you think your current medical condition is associated with your other medical conditions? (If any)	No- (0), partially known- (1), yes- (2)	200	40	20%
7	Do you think maintaining hygiene is beneficial?	No- (0), partially known- (1), yes- (2)	200	186	93%
8	Do you think using oral contraceptives can trigger PCOS?	No- (0), partially known- (1), yes- (2)	200	2	1%
9	Do you think that your current medical condition is responsible for infertility?	No- (0), partially known- (1), yes- (2)	200	56	28%
10	Total score for knowledge-based questions	Points obtained by 1 patient *100	2100	518	24.66%

Table 2- Knowledge based question about the sources of information about PCOS.

S.NO.	Q2. What are your sources of information?	No. Of patients having information from the below mentioned sources
1.	Health Personal	17
2.	Friends	1
3.	Teachers	0
4.	Mass media	5
5.	Parents	0
6.	No information	77

Total score for knowledge-based questions.

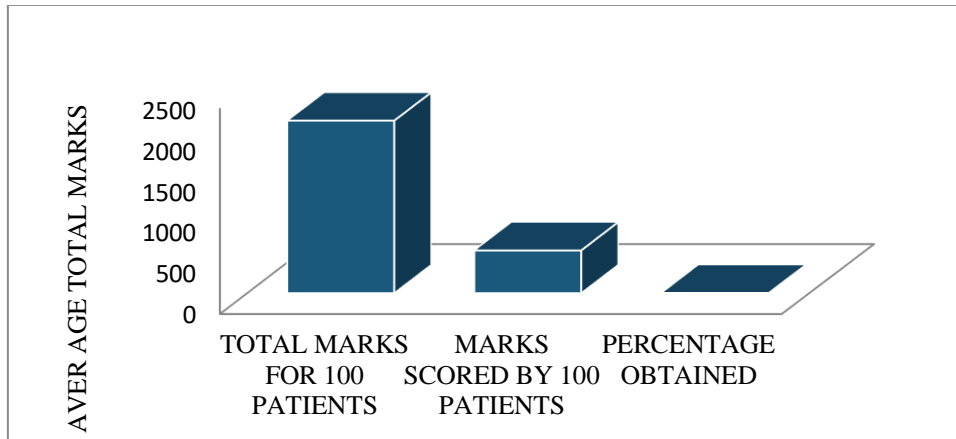


Figure 1- Total score for all the knowledge based question.

Section B- Attitude towards PCOS

After observing PCOS patients' perceptions and attitudes toward the disease, as well as whether they believe PCOS has an impact on their femininity, it was discovered that out of 100 PCOS patients, not a single one believes PCOS has an impact on their femininity.

Further to this, when anxiety among PCOS patients about conceiving a child was assessed, it was observed that 26% of the patient population was anxious about conceiving a child due to PCOS.

In addition, when the patient population's perception of PCOS affecting their physical

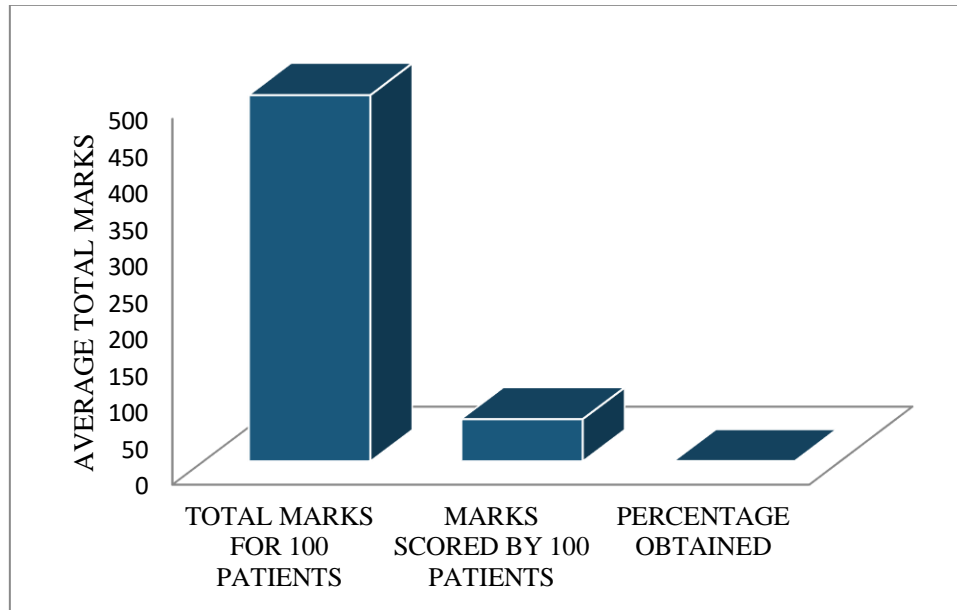
appearance was assessed, 9% of the patients believed that PCOS was affecting their physical appearance.

In terms of the role of family history or genetic component in PCOS, only 23% of patients believe that their family history or hereditary plays some role in their medical condition.

Based on the total marks of PCOS patients for attitude-based questions, 11.60 percent of the patient population has a certain attitude towards the disease, reflecting a very low attitude or negative perception of PCOS.

Table 3- Attitude Based Questions Asked For Study:

Q. No.	Attitude based questions	Points	Total score for 100 patients	Marks scored by 100 patients	Percentage obtained
1	Do you think PCOS is affecting your femininity?	No- (0), yes- (1)	100	0	0
2	Do you feel anxious about conceiving a child?	No- (0), yes- (1)	100	26	26%
3	Do you think PCOS is affecting your physical appearance?	No- (0), yes- (1)	100	9	9%
4	Do you think Family history or hereditary plays any role in your medical condition?	No- (0), yes- (1)	100	23	23%
5	Do you feel uncomfortable during sexual intercourse?	No- (0), yes- (1)	100	0	0
6	Total score for attitude-based questions	Points obtained by 1 patient *100	500	58	11.6%

Total score for Attitude based questions.*Figure 2- Total score for all the attitude based question.*

Section C- Practice regime followed for PCOS

The number of questions asked to patients in order to understand the type of practice regimen they adopt. Following a review of the practice schedule, it was discovered that 20.66 percent of the patient population have taken preventive measures such as physical exercise, home remedies, and medicine for PCOS.

Moreover, the findings demonstrate that 88 percent of patients follow a vaginal hygiene routine on a daily basis, during menstruation, and after sexual intercourse.

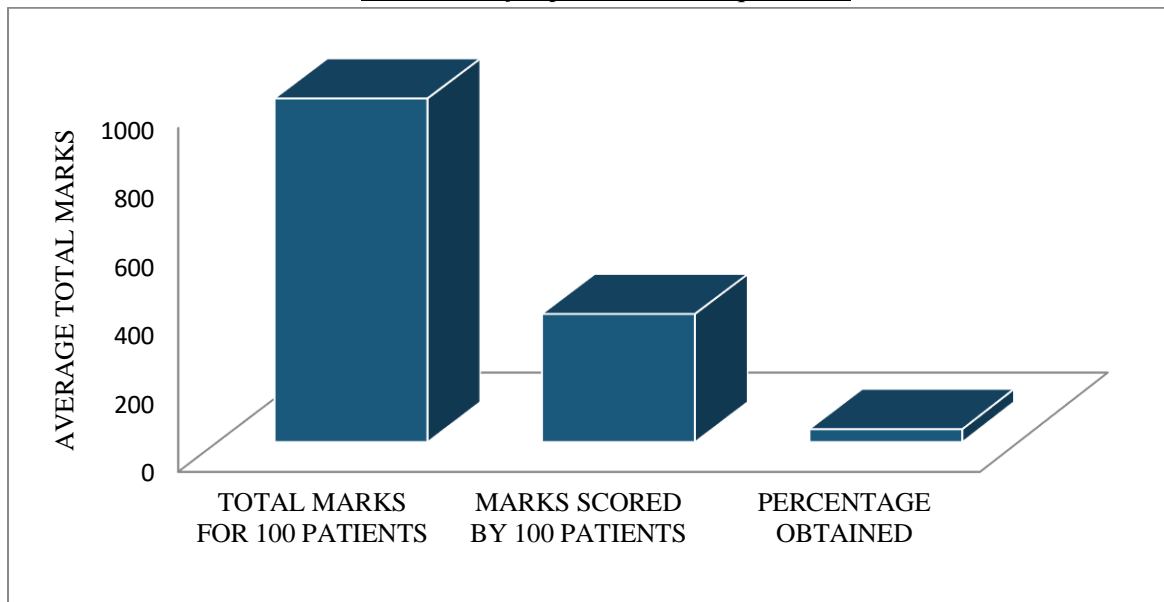
Furthermore, only 2.33 percent of PCOS patients have taken preventive steps such as cosmetic treatments, home remedies, and medication for acne and hirsutism, despite the fact that these are the most prominent cutaneous symptoms.

For Obesity, 38% of PCOS patients have taken some kind of preventive action, including certain medication or lifestyle changes.

According to the overall score for practice-based questions, just 37.1 % of PCOS patients are indulged in practicing one or other kind of preventive measures for irregular menstruation, acne, hirsutism and obesity.

Table 4- Practice Based Questions Asked For Study:

Q.No.	Practice based questions	Points	Total marks for 100 patients	Marks scored by 100 patients	Percentage obtained
1	Have you taken any preventive measures for irregular menstrual cycles?	No- (0), yes- (1) Physical activity- (1), home remedies- (1), medication- (1)	300	62	20.66%
2	Do you practice the vaginal hygienic conditions?	No- (0), yes- (1) On regular basis- (1), during menses- (1), during intimation- (1)	300	264	88%
3	Have you taken any preventive measures for acne or hirsutism?	No- (0), yes- (1) Cosmetic treatment- (1), home remedies- (1), medication- (1)	300	7	2.33%
4	Have you taken any medicine/adopted any lifestyle modification for obesity?	No- (0), yes- (1)	100	38	38%
5	Total score for practice based questions.	Points obtained by 1 patient *100	1000	371	37.1%

Total marks for practice-based questions.*Figure 3- Total score for practice-based questions.***Section D- Comprehensive KAP results**

Comprehensive results represent the all-inclusive score for Knowledge, Attitude & Practice. Among a total score of 2100, 500

&1000 the score of knowledge, attitude & practice was 518, 58 & 317 respectively.

Comprehensive KAP results:

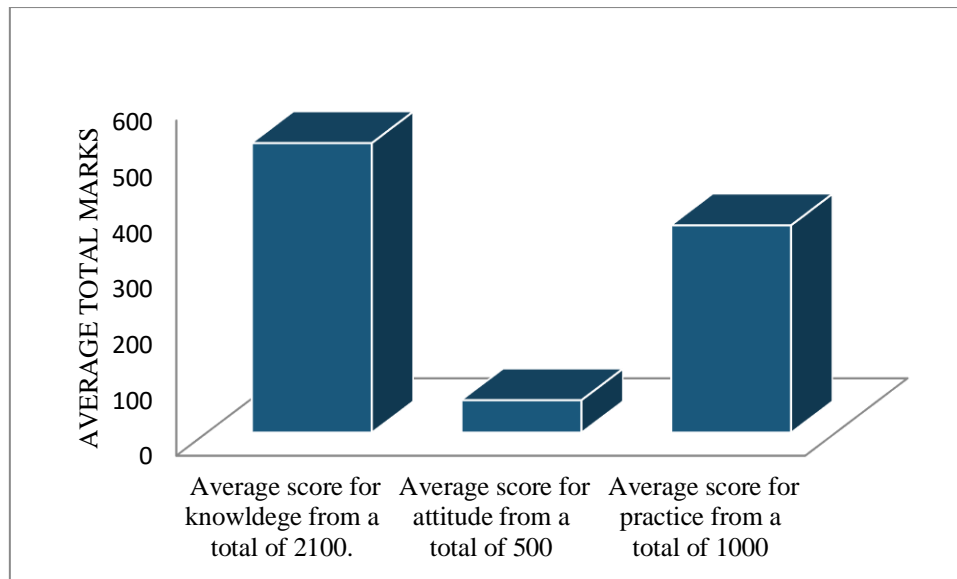


Figure 4- Composite score for all the knowledge, attitude, and practice based questions.

DISCUSSION :

The study was conducted on 100 patients, diagnosed with PCOS getting their treatment at the tertiary care hospital gynecology OPD in MMIMSR; KAP of the subjects was assessed using an 18 self-structured questionnaire on a three-point scale from low (0) to high (3). Post assessment, education, regarding the disease, treatment, and lifestyle modification was provided by direct conversation and through the distribution of self-structured patient information leaflets (PILs). Data collected were statistically analyzed. It was a questionnaire-based study to create awareness about PCOS by exploring the knowledge, attitude, and practice for PCOS among females so that the biochemical link of co-morbid conditions with the prescribing pattern and the various etiological factors prevailing the disease can be observed and assessed as it affects compliance to treatment modality. The study conducted made significant improvements and brought out a holistic approach to enhance patient's knowledge, change the attitude and introduce a positive practice regime for PCOS. [23, 24]

Patients' lack of education and awareness about the disease, as well as their concern, can be attributed to their inadequate understanding of the disease and its manifestation. On studying the patient's knowledge about PCOS, the results of the study show that among 100 patients 18% were aware of PCOS and only 1.5% of patients

have knowledge about the etiological causes of PCOS. Knowledge of the chief complaints such as irregular menstrual cycle, acne, hirsutism, weight gain, obesity, lower abdominal pain, excessive vaginal discharge, infertility was examined and it was found that 19.50% of patients thought that their chief complaints are associated with their current medical condition (PCOS). (25)

Patients with polycystic ovarian syndrome did not develop as much knowledge of the condition as they should have. It is imperative to provide a disease awareness programme or educational activity by a health care professional, such as a pharmacist, who can act as an information expert. The findings show that a significant number of PCOS patients have received information about their condition from various sources. 77 patients had no information about PCOS & the remaining 23 patients had common sources of information i.e., from Health personal (17) > Mass Media (5) > Friends (1). None of them got the information from Parents & Teachers.

The involvement of insulin resistance and obesity exacerbates the clinical features of PCOS; several studies have associated PCOS to other medical conditions such as T2DM, thyroid, hypertension, irregular lipid profiles, anemia, and infertility. 20% of the patient population thought that their current medical condition is associated with their other medical conditions. The most commonly occurring co-morbid condition/disease is T2DM.

Various co-morbid conditions/ diseases observed in the study population are T2DM is highly associated with PCOS followed by other diseases- thyroid, anemia, hypertension, fatty liver, rheumatoid arthritis, coronary heart disease. (26) Awareness of the advantages of preserving hygiene was also evaluated, and it was found that 93% of the patient population thought that maintaining hygiene is beneficial in PCOS. Patient's misconception about oral contraceptive use, triggering PCOS was clarified with the aid of this study. The result shows that 28% of the patients thought that their current medical condition is responsible for their infertility. According to some reports, PCOS is responsible for 60-90 percent of infertility, implying the need for patients to be educated about the disorder. (27) Patient's attitude towards PCOS marks a significant effect on the treatment of PCOS, in view of the fact that the disease has the potential of causing serious long-term health effects. Table 3 represents the attitude of respondents towards the disease and perception of PCOS affecting their physical appearance and femininity. PCOS made patients anxious about conceiving a child. The findings indicate low attitude towards the disease. Thus, one of the focal points of the study is to develop a better understanding of the disease. (28)

Due to obesity in PCOS, patients become indolent. Regular exercise, limiting carbohydrate intake and a healthy diet play a key role in keeping weight under control. (8) Maintaining a healthy life is very crucial in PCOS, weight loss can reduce insulin and androgen levels and may restore ovulation which is the main characteristic of PCOS- insulin becomes resistant, androgen level rises and an-ovulation is caused. (9) Lifestyle modification is an essential step in the treatment of PCOS, it plays an intrinsic role along with medication in the treatment. PCOS patients stand in need of indulging themselves in Physical Activities. (10) Consequently, it is very important to study the attitude of PCOS patients regarding lifestyle modification and assessing the practice regime they follow. (11)

There is a shred of strong evidence that lifestyle modification including physical exercise (structurally designed training program), yogic exercise, dietary interventions is a first-line

treatment for the management of obesity, weight gain, metabolic/ reproductive dysfunctions which are the clinical symptoms of PCOS. Regular exercise and a healthy diet need to be encouraged as it helps in reducing the future complications of PCOS. (29)

CONCLUSION

There is a need for regular counselling & educational sessions for patients diagnosed with PCOS as the perception of poor knowledge, negative attitude and lack of practice seemed to be the main reasons for compliance. The promotion of a healthy lifestyle, the need for regular physical exercise, and increased awareness programs on PCOS for physicians and patients is the need of the hour to create and implement a holistic solution to the problem.

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