Original Research Article

Knowledge, attitude and awareness towardspolycystic ovarian syndrome among women of south east coastal population of India

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ABSTRACT

Background: Polycystic Ovarian syndrome (PCOS) is aheterogeneous disorder characterized by systemic dysfunctions and hormonal imbalance causing many morbidities. The incidence is on higher margin especially among Tropical Countries the major reason being inadequate awareness and knowledge about the disease condition. Studies available on PCOS focusses only on clinical diagnostics rather than reassuring awareness to combat the condition

Aims & Objectives: To assess and analyse the knowledge, attitude and awareness towards Polycystic Ovarian Syndrome among women of South East coastal population of India

Materials and Methods: The study included 150 participants and analysed multiple parameters including sociodemographic profile, knowledge and awareness in a validated questionnaire format.

Results: Among the participants, the awareness on PCOS is still below the expected margin with similar results on knowledge and attitude on practices.

Conclusion: The present study observed that the current level of awareness on PCOS among the South-Eastern population is still in low key though relatively better than past decades and emphasizes the need to health education and awareness programmes to be incorporated in educational system improve to combat the low knowledge among rural population especially utilizing different sources, targeted approach to provide clear, appropriate and tangible information and preventive measures

1. Introduction

Polycystic ovarian syndrome (PCOS) is an endocrine disorder and the condition is characterized by ovulatory dysfunction contributed by imbalance of female sex hormones.[1]

PCOS is one of the most common health problem among teenagers and young women constituting around 5% to 10% of women presenting to the Obstetrics & Gynaecology OPD of Tropical Countries.[2] Researchers have proposed that PCOS is related with hereditary transmission as a past pathophysiology and the mechanism is associated with various other comorbid risk factors.[3]

In more than 40% of the presenting cases load, PCOS was observed to be associated with obesity, as well as impaired glucose tolerance, type 2 diabetes mellitus and metabolic syndromes. Being a heterogeneous endocrine disorder with a spectrum systemic manifestations including reproductive pathology, psychological disorders etc.

PCOS still stays as a condition with diagnosis of exclusion.[4,5] The condition also has many similar mimickers clinically often warranting multisystem approach. Being an endocrine disorder, is associated with many morbidities including increased of myocardial infarction.[6]

While World Health Organisation (WHO) states the condition under Group II disorder of ovulation involving dysfunction of hypothalamus-pituitary-ovarian axis.

Many proposals had been postulated in picking up PCOS with own pros and cons. Rotterdam criteria recommended

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from European countries is being followed worldwide in categorizing PCOS which includes presence of any 2 of the following conditions namely: [7,8]

1. Excess of androgen
2. Ovulatory dysfunction/anovulation
3. Polycystic ovaries (detected by diagnostic procedures

Inspire of modern era in medicine, the prevalence of PCOS has been increasing among the adolescent population especially towards coastal population according to a recent survey. The incidence of PCOS is on higher margin as many women remain as a case of underdiagnosed or delayed recognition of signs and symptoms [9,10]

Many instances PCOS is under-evaluated among adolescent girls not only among rural population but also Coastal regions which is evident by high incidence of PCOS cases reported from South Eastern coastal population. Also the awareness of PCOS and its associated co-morbidities among women is debatable in coastal areas. [3,11,12]

Studies had been carried out on PCOS which emphasizes only on the diagnostic modalities and clinical categorization but studies focussing on awareness of the condition is very sparse which subsequently results in increase in case load. The studies that had been conducted to analyse the problem of PCOS, states that only one-third of affected females has gained some awareness of the condition and its complications and rest of the study population are unaware of either sequelae or morbidities. [12]

Being a developing Country, with many endemic pathological conditions rather than a sequelae of endocrine disorder like PCOS it is believed that knowledge on awareness on PCOS and its consequences will have a good impact on reducing the incidences

2. Materials and Methods

The cross-sectional study was conducted for a period of 6 months as a part of Short term project approved by Indian Council of Medical Research (ICMR- STS-Reference Id: 2018- 05660). After approval from ICMR, Institute Ethical committee clearance was obtained to commence the study.

2.1. Study Design

Questionnaire based study using a set of validated questions which covers knowledge, attitude and awareness. The questions were validated by using a pilot study and prior references conducted on this domain.

2.2. Type of study

Quantitative observational cross-sectional study.

2.3. Sampling Methods and sample size

Patients presenting to Obstetrics and Gynaecology OPD of Mahatma Gandhi Medical College & Research Institute, Puducherry.

2.4. Sample size

150 (calculated with 5% error)

2.5. Inclusion criteria

1. Patients presenting to OPD and with PCOS
2. Age of the participant is above 18 years old

2.6. Exclusion criteria

1. Participants age less than 18 years old
2. Antenatal women

The Questionnaire Consisted of 4Sections: A set of validated questionnaire was drafted and validated using a pilot study. The questionnaire covered aspects of knowledge, attitude and awareness and categorized into sections as described below

3. Data Analysis Plan

3.1. First section

Socio-Demographic profile and characteristics of the presenting patients which included age, education profile, marital status, residence(rural/urban), presenting complaints in terms of menstrual history, weight gain, history of infertility, hirsutism etc. to determine if the patients suffered from any of the PCOS signs and symptoms

3.2. Second section

To assess the knowledge of Polycystic Ovary Syndrome among the presenting cases in terms of yes/No questionnaire format

3.3. Third & Fourth section

This included Open-ended Question to evaluate, the symptoms, attitude and practices relevant to PCOS and presenting complaints of.

3.4. Questionnaire validation

A self-administered, pre-tested and structured questionnaire with options(close ended-multiple choice questions) were drafted [Annexure-1] The questionnaires were framed with novelty adapted from literature and with assistance from peer experts and validated using a pilot study to avoid 'sampling bias'. The questions were kept simple, clear and straight forward without any leading questions to avoid bias (response bias).

The aims and objectives were explained to the participants prior to handing out the questionnaires in language of their understandings [Annexure-2]. It was made certain that the language of the questionnaire was modified for distinct understandings.

The participants were ensured that enrolling in the study is solely voluntary and the participant's details will be anonymized (to avoid voluntary bias)

3.5. Statistical data

Analysis of results was performed using Microsoft Excel, analysed data using descriptive statistics, with frequency and percent and the result was presented using tables. The level of significance was set at 5%. The Statistical Package for Social Sciences (SPSS) version 21.0 was used for the statistical analysis.

4. Results & Observations

Around 150 patients participated in the study aged above 18 years and the results were analysed based on the observations and tabulated below

Table 1: Analysis on Sociodemographic characteristics (n=150)

Sociodemographic characteristics & Presenting symptoms	Mean ± SD or n (%)
Age (years)	31.2 ± 6.3
Education	
i. 5th standard	16(16)
ii. 10th standard	15(15)
iii. 12th standard	51(51)
iv. Graduate	68(68)
Residence	
i. Rural	31
ii. Urban	119
Marital status	
i. Unmarried	
ii. Married	35
iii. Marriage duration in terms of years	115
Presenting complaints	
i. Delay in pregnancy	60
ii. Menstrual problems	63
iii. Hirsutism	5
iv. Weight gain	15
v. Others	7

4.1. Statistical analysis

Statistical analysis was done which showed participants who were well educated had good knowledge and awareness of PCOS & its symptoms and morbidities (p value<0.005) compared to rest of the categories. Similar results are seen among participants who had prior knowledge of PCOS were significantly proportion to awareness of morbidities and

Table 2: Analysis on Knowledge of study participants about PCOS

Knowledge of PCOS	(n)(%)
Knowledge about ovarian cystic disease before presentation	
i. Yes	134
ii. No	16
If yes, source of knowledge	
i. Friends	59
ii. Health education awareness	50
iii. Mass social media	41
Are you aware about the morbidities and associated problems of the disease condition	
i. Yes	122
ii. No	28
If yes, awareness of the following morbidities	
i. Delay of pregnancy	84 (68.8%)
ii. Menstrual problems	38 (31.2%)
Awareness of modalities of treatment i. Yes	96
ii. No	54
If yes, awareness about the treatment methodologies	
i. Weight reduction and medical management	43(44.7%)
ii. Ovarian cystectomy/ surgical procedures	32 (33.3%)
iii. Injectable mode of management	4 (4.12%)
iv. Other modalities	17 (17.8%)

practices to be followed.

5. Discussion

Ovaries are bilateral gonadal organs of female reproductive systems possessing an anatomic location at the pelvic region. Being a dynamic organ it is exposed to many hormonal substrate and also centrally controlled by axis mechanisms (hypothalamo-pituitary-ovarian axis). It has been observed that incidence of non-neoplastic lesions of ovary dominates than its counterpart neoplastic lesions owing to many underlying aetiologies.

Polycystic Ovarian Syndrome (PCOS) is one among the several non-neoplastic lesions of ovary which accounts around 12-14% of overall incidence of non-neoplastic ovarian pathology encountered. Carton et al [1]

PCOS being a heterogeneous endocrine associated disorder with a spectrum of metabolic and reproductive pathological features, globally it ranges between 6 to 26% with much higher incidence among Tropical countries like India as proposed by Panda et al. [2,3]

The reason attributed to higher incidence of PCOS is lack of adequate awareness, knowledge and attitude towards practices related to etiology of the condition [3,4] This condition prevails higher among south eastern coastal population of India as per Indian Council of Medical Research data, thus warranting for health education awareness programme. [3,5] Several studies had been conducted on PCOS which focussed only on diagnostic criteria and

Table 3: Analysis of symptoms of PCOS (n=150)

Symptoms of PCOS	(n)(%)
Irregular menstrual cycles	
i. Yes	78
ii. No	72
Facial acne	
i. Yes	48
ii. No	102
Hirsutism	
i. Yes	56
ii. No	94
Impaired fertility	
i. Yes	59
ii. No	91
Weight gain/obesity	
i. Yes	56
ii. No	94
Hair loss	
i. Yes	34
ii. No	116
Pelvic pain	
i. Yes	53
ii. No	97
Abortion/Miscarriage	
i. Yes	36
ii. No	114
Early menarche/puberty signs	
i. Yes	20
ii. No	130
History of diabetes	
i. Yes	23
ii. No	127
History of hypertension	
i. Yes	13
ii. No	137

Table 4: Analysis of attitude and practices of PCOS management among participants

Attitude & Practices about PCOS	N (%)
Weight reduction is a mode of effective treatment	
i. Yes	99
ii. No	51
If yes, what is the mode if improvement of the condition by weight reduction?	
i. Improving ovulation	31(31.5%)
ii. Improving psychological conditions	03(3.055%)
iii. Both i &ii	60 (60.72%)
iv. Other factors	5 (5.051%)
If no, reasons for ineffective	
i. Not useful	36 (70.07%)
ii. Adverse effects	05 (4.8%)
iii. Both	7 (13.7%)
iv. Other factors	3 (5.8%)
Modalities adopted to decrease weight	
i. Dieting	11 (19.3%)
ii. Sports	6 (10.5%)
iii. Both	38 (66.6%)
iv. Drugs	2 (3.6%)
Effectiveness of these modalities	
i. Useful	51 (89.4%)
ii. Not useful	6 (10.6%)
Evidence for being effective	
i. Got conceived	8 (15.7%)
ii. Menstrual cycle regulation	30 (58.8%)
iii. Psychological fitness	9 (17.7%)
iv. Others	4 (7.8%)

clinical findings rather than documenting the awareness of the sequelae of PCOS.

The present study is in concordance with Giltborg et al that analysed and highlighted awareness and knowledge of PCOS among the south eastern population.[4] PCOS being a syndrome with hormonal imbalance. Sociodemographic profile of patients has a significant role in acquiring knowledge on PCOS as demonstrated in Table-1.

The present study is in concordance with studies done byGul et al which observed that average age for PCOS presentation is third decade ranging between 25 to 32 years of age.[5] The reason attributed for this high incidence is active reproductive cycle phases and ovarian hyper stimulation which is known to occur in middle age.[5]

Education profile also plays a vital role in acquiring awareness and knowledge of PCOS as evident in the present study which is due to various health education programmes and attitudes towards practices. The present study is in concordance with studies done by Guruya et al

which proposed that 65% of graduates has knowledge about PCOS.[6] The same study also proposes urban population has higher awareness on PCOS compared to rural concurring with the present studies the reason being exposure to knowledge and few myths facts.[3,7,8]

Surprisingly the present study observed that majority of participants are married with an incidence of 78% (n=150) when compared to unmarried cases 22% (n=150). The reason being higher presentation to hospitals due to multiple factorials like delay in pregnancy, menstrual irregularities, abnormal weight gain, hirsutism presentations etc. The present study is in concordance with observations of Solomon et al[9] as elaborated in Table 1.

In context to knowledge of PCOS, majority pf participants have vague idea about cystic diseases of ovary 90 %(n=134) mostly acquired from health education awareness schedules and friends of sociodemographic. Mass media also played a significant role 30 %(n=41) as a source of propagating knowledge. The present study is in concordance with Moron et al[10]

Among the participants, 87% (n=122) are aware of the problems associated with PCOS in terms of infertility,

menstrual disorders weight gain and its sequelae concording with the observations done by Solomon et al, Moron et al[9,10]

While 64% (n=150) are aware of the treatment modalities for PCOS indicating the evidence of progression of health education and awareness programmes concurring with observations done by Moron et al [10]

With regard to awareness of symptoms of PCOS, the proportion varied in numbers. While 51% of participants aware of menstrual irregularities as presenting symptoms, still 49% of population are unaware of the symptom. Similar low awareness ratio is noted in case of facial acne, hirsutism, weight gain, infertility, chances of miscarriage and association of diabetes and hypertension, early menarche etc., as depicted in Table-3.

The observations are in concordance with Palomba et al, the reason being assuming multiple factors to be the cause of etiopathogenesis including various medical and surgical factors. [11] The alarming concern is very low participants are aware of about long term complications of PCOS especially risk for cardiovascular diseases, obesity etc.

With regard to attitudes and practices especially on treatment modalities which the patients are followed up, varied response are collected from the participants indicating grey zone in context to attitudes and practices of PCOS concurring with the observations done by Begum et al. [12] mplications

The present focussed and emphasized to acknowledge and explore the awareness, knowledge of PCOS and its complications among females from East-Coastal Population. With the observed data, PCOS still remains a formidable condition among the study population and extensive awareness will enhance proper management of the PCOS condition and reducing its co-morbidities.

6. Conclusion

The present study observed that the current level of awareness on PCOS among the South-Eastern population is still in low key though relatively better than past decades. With regard to knowledge and attitudes of PCOS, patients are still in the grey zone which could be overcome by extensive awareness programme. The present study emphasized the need to health education and awareness programmes to be incorporated in educational system improve to combat the low knowledge among rural population especially utilizing different sources, targeted approach to provide clear, appropriate and tangible information and preventive measures.

7. Limitation of Study

The study was a cross-sectional study and covered only fixed parameters validated by pilot study since the PCOS

condition is a broad entity relevant to mass population.

8. Conflicts of Interests

None.

9. Acknowledgement

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