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# Treatment seeking behavior among patients with polycystic ovarian syndrome (PCOS)—A cross-sectional study from Northern India

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## Abstract:

**BACKGROUND:** Polycystic ovarian syndrome (PCOS) has now become a common problem among adolescent girls and young women in India. However, little is known about the treatment and satisfaction incurred from it. Our study aimed to assess the treatment-seeking behaviour among patients with PCOS.

**MATERIALS AND METHODS:** The cross-sectional study was carried out in gynecology OPD of PGIMER, Chandigarh. Women with PCOS, 275, visiting the gynecology OPD were included. The treatment-seeking behavior for PCOS was elucidated among cases using a questionnaire. This included parameters like healthcare consulted, preferred system of medicine, referral pattern, treatment efficacy, and expenses incurred. Univariate descriptive analysis was used to present the results.

**RESULTS:** The majority (68%) of the study participants were less than 25 years of age. The average weight was 66.78 ( $\pm$ 13.0) Kg. Half of the participants were students. More than 70% belonged to the upper or upper-middle class. The study participants were diagnosed with PCOS at an average age of 21.4 ( $\pm$ 4.7) years. The minimum age reported at diagnosis was 11 years, and the maximum age of diagnosis was 36 years. Most respondents preferred Allopathic treatment followed by homeopathy and Ayurveda. Few also opted for other treatment choices like diet therapy, yoga & meditation, weight loss supplements, and home remedies. Treatment efficacy ranged between 17.3%-34.2%. The majority of respondents reported the treatment to be moderately expensive. Most respondents (58.91%) were hardly influenced, while 16% were quite influenced by PCOS medicine or treatment advertisements.

**CONCLUSION:** PCOS patients opt for different treatment options but generally find the treatment less effective and expensive.

## Keywords:

Allopathic, ayurveda, health care agency, homeopathy, hyperandrogenism, anovulation, polycystic ovarian syndrome, treatment efficacy

## Introduction

Polycystic ovarian syndrome (PCOS) is a heterogeneous disorder affecting women of reproductive age.<sup>[1]</sup> With the change in our lifestyles, the prevalence of PCOS is increasing. In Indian women, its prevalence rate is between 3.7- 41%.<sup>[2,3]</sup>

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In PCOS, the production of androgen hormones may increase. A decrease in sex hormone binding globulin (SHBG) may also occur, resulting in an elevated level of free testosterone. Most PCOS patients manifest insulin resistance. Apart from this, high luteinizing hormone (LH) levels, normal or low follicular stimulating hormone (FSH),

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and an abnormal LH to FSH ratio may also be seen.<sup>[4]</sup> Clinical features of PCOS include menstrual problems or anovulation, hirsutism, insulin resistance, obesity, infertility, etc.

Timely treatment is essential to manage the condition and reduce the risk of long-term morbidities like metabolic and cardiovascular disorders, reproductive complications (miscarriage, premature delivery), and psychological ailments (anxiety, depression).<sup>[5,6]</sup>

Treatment or health seeking behaviour is patients' seeking and acceptance of health services. It is defined as "the process of remedial actions that an individual accepts to improve their perceived disease".<sup>[7]</sup> It is a dynamic and continual process governed by intrinsic and extrinsic factors.

In India, a developing country, the treatment seeking behaviour for gynecological morbidity is abysmal.<sup>[8]</sup> This could be attributed to poor access to health care, medicines, ignorance, treatment cost, time constraint, etc. The inability to seek timely treatment can contribute to the national morbidity burden and poorer quality of life.

Few studies have explored the patients' experiences regarding PCOS diagnosis and their treatment seeking behaviour.<sup>[5,9,10]</sup> However, this aspect still needs to be studied in depth as various factors govern it.

Thus, this study was planned to ascertain women's treatment seeking behavior with PCOS.

## Materials and Methods

### Study design and setting

A cross-sectional concurrent mixed-method study was conducted at the tertiary care OPD of PGIMER, Chandigarh, India, from 2016 to 2018. The results of qualitative data are shared in this study.

### Participants and sampling

Females aged 18–40 years with PCOS diagnosis per the Rotterdam criteria were selected for study inclusion.<sup>[11]</sup>

Exclusion criteria included women with abnormal thyroid and/or prolactin levels and the presence of co-morbidities like cardiovascular disease, pulmonary disease, diabetes, and endometriosis. Pregnant women were also excluded from the study. The calculated sample size was 275, including non-response, at alpha 0.05 and power 80%,  $p = 0.20$ .

### Data collection

A self-developed treatment-seeking behavior questionnaire was pilot tested and administered to gather quantitative information from the subjects on

socio-demographics, PCOS diagnosis, level of healthcare agency consulted (Allopathy, Ayurveda, Homeopathy, others including self-medication, diet, etc.), decision making in choosing health agency, treatment efficacy, and expenses incurred.

### Data analysis

SPSS 23.0 (IBM, USA) was used for analyzing quantitative data. Normality of the continuous data was checked using Kolmogorov–Smirnov test. Univariate descriptive analysis was used to present the results. The continuous data were presented as mean  $\pm$  standard deviation (SD) or median (interquartile range), while categorical data were calculated as count and proportions.

### Ethical consideration

Ethical approval was taken from the PGIMER's ethics committee. All subjects were included in the study after obtaining written informed consent.

## Results

Socio-demographic variables are described in Table 1.

Results: The reported minimum age of study participants was 18 years and the maximum was 39 years. The mean age was 24.05 ( $\pm$  4.5) years. Majority (68%) of the subjects were less than 25 years of age. Only 9.8% were above the age of 30 years. Their weight ranged from 34.0 - 105.0 Kg. The average weight was 66.78 ( $\pm$  13.0) Kg.

As depicted in Table 1, majority of the participants (65.1%) were unmarried. Around 70% of the participants were graduates and post graduates, and belonged to upper or upper middle class. The study participants were diagnosed with PCOS at an average age of 21.4 ( $\pm$  4.7) years. The minimum age reported at diagnosis was 11 years and the maximum age of diagnosis was 36 years.

Approximately 50% patients consulted two or three health care agencies, while 14.2% consulted only one agency. More than five agencies were consulted by 16.8% of the patients.

Figure 1 shows that participants consulted health care agencies. Allopathic treatment was the preferred choice of treatment in all the eight agencies consulted followed by homeopathy and Ayurveda. After consulting 5 health care agencies, hardly any participant opted for Ayurveda or Homeopathy.

The other choice of treatment opted were desi illaj, diet consultation, yoga and meditation, weight loss supplements, and home remedy. Few of the respondents visited diet clinics to take dietary consultations during 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 6<sup>th</sup> agency they consulted. Very few also took weight loss supplements.

Table 2 shows 34.2 % of the respondents found the first treatment to be effective; 24.4% had no relief from the treatment taken through 1<sup>st</sup> agency. In all the health agencies consulted, the respondents reported the efficacy of treatment to be effective ranging from 17.3%-34.2%.

Majority of respondents reported the treatment to be moderately expensive.

The maximum respondents consulted the health care agency with the referral of family or relatives followed by personal choice/self-decision as described in Figure 2.

Figure 3 depicts that most respondents (58.91%) were hardly influenced, while 16% were quite influenced by PCOS medicine or treatment advertisements.

### Discussion

Community-based studies highlight that many women in developing countries do not report their reproductive health problems since they are subject to many social and economic constraints.<sup>[12]</sup> Their treatment-seeking behavior for any disease is determined by many factors, for example, amount of discomfort and severity of symptoms or disability caused by the morbidity.<sup>[13,14]</sup>

Majority of the participants in this study were young, well-educated, and from upper and upper middle class. This shows that PCOS is the disease of young, literate, and “well off” females. Both unmarried and married females were affected by the condition.

**Table 1: Socio-Demographic profile of the respondents (n=275)**

Variables	n (%)
<b>Education</b>	
Post graduate	92 (33.5)
Under graduate	106 (38.5)
Senior Secondary (11 <sup>th</sup> -12 <sup>th</sup> )	55 (20.0)
Secondary (9 <sup>th</sup> -10 <sup>th</sup> ) or Upper Primary (6 <sup>th</sup> -8 <sup>th</sup> )*	22 (8.0)
<b>Employment status</b>	
Unemployed	13 (4.7)
Employed	67 (24.4)
Housewife	64 (23.3)
Student	131 (47.6)
<b>Income (socioeconomic status)#</b>	
Rs 6261 and above (upper class)	147 (53.5)
Rs 3099-6260 (upper middle class)	65 (23.6)
Rs 1835-3098 (middle class)	35 (12.7)
Rs <1834 (Lower middle & below)	28 (10.2)
<b>Marital status</b>	
Unmarried	179 (65.1)
Married <sup>o</sup>	96 (34.9)

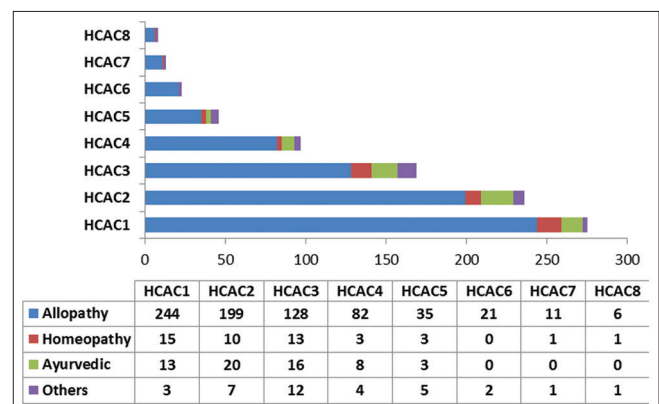
\*Only 3 went to upper primary school (Classification-Indian Standard of Education, GOI, Ministry of HRD, New-Delhi, 2014). #BG Prasad socioeconomic classification for 2016. Income (per capita monthly income). <sup>o</sup>One subject was married but separated

In general, women have little knowledge about PCOS and its treatment. They try various treatments (often together)—allopathic, homeopathic, and ayurvedic. They are often exploited by quacks who put them on “Desi illaj.” They end up wasting a lot of money. It also worsens their health. Quite often, their symptoms and problems keep worsening. They often lose hope of an easy recovery. In our study also, around 60% of the participants consulted three and more agencies. Few of the respondents visited diet clinics to consult a nutritionist.

Allopathic treatment usually dominates as the choice of treatment in our society.<sup>[8,15]</sup> Even in our study, it was the preferred choice of treatment in all the eight agencies consulted. This is in concordance with the prevailing health culture of pill fixation through which people look for quick relief. They wish to get relieved from symptoms as early as possible without even bothering to know about the cause for their condition.<sup>[16]</sup>

Generally, many medicines are prescribed to PCOS cases like the oral contraceptive pills (to regularize periods) and metformin (to improve insulin sensitivity). They get only temporary relief and that too till they take medication. Once they stop taking medicine, the condition relapses. Dissatisfied with the treatment, they frequently change treatment agencies in a hope to get different treatment and better results. Unsatisfied with the outcome, they seek multiple treatments in series. They switch doctors and health agency. Some (1/3<sup>rd</sup>) of the respondents in our study reported no relief from the treatment taken from first agency.

Around 2/3<sup>rd</sup> of our study respondents found the treatment to be moderately to very expensive. In the twenty-first century, focus of medical care has a strong emphasis on diagnostic tests. The cost of investigation/lab test for confirmation of diagnosis is high. The high cost of laboratory investigations in general makes the overall treatment expensive. The treatment cost increases



**Figure 1:** Type of healthcare agencies consulted at different time points (HCAC-n)

**Table 2: Treatment efficacy and expenses to healthcare agency contacted at different time points (HCAC-n)**

Variable Categories	HCAC-1	HCAC-2	HCAC-3	HCAC-4	HCAC-5	HCAC-6	HCAC-7	HCAC-8
Efficacy of treatment - n (%)								
Effective	94 (34.2)	65 (27.6)	34 (20.2)	22 (22.7)	11 (23.9)	4 (17.3)	4 (30.8)	2 (25.0)
Somewhat effective	77 (28.0)	60 (25.4)	34 (20.1)	24 (24.7)	8 (17.4)	7 (30.4)	3 (23.1)	1 (12.5)
Not effective	67 (24.4)	73 (30.9)	61 (36.0)	29 (29.9)	12 (26.1)	5 (21.7)	3 (23.0)	3 (37.5)
N.A.	37 (13.4)	38 (16.1)	40 (23.7)	22 (22.7)	15 (32.6)	7 (30.3)	3 (23.1)	2 (25.0)
Treatment expenses - n (%)								
Less expensive (<`500)	70 (25.5)	60 (25.4)	53 (31.4)	33 (34.0)	12 (26.1)	5 (21.7)	1 (7.7)	0 ( 0.0)
Moderately expensive (`500–`2000)	161 (58.5)	135 (57.2)	97 (57.4)	52 (53.6)	22 (47.8)	11 (47.8)	10 (76.9)	5 (62.5)
Very expensive (> `2000)	44 (16.0)	41 (17.4)	19 (11.2)	12 (12.4)	12 (26.1)	7 (30.5)	2 (15.4)	3 (37.5)
	n=275	n=236	n=169	n=97	n=46	n=23	n=13	n=8

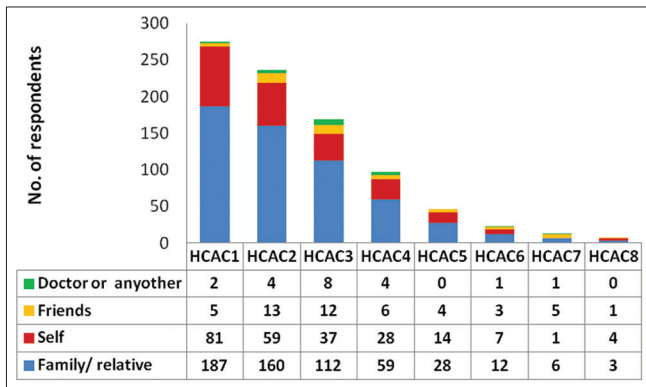


Figure 2: Treatment referral at different time points (HCAC-n)

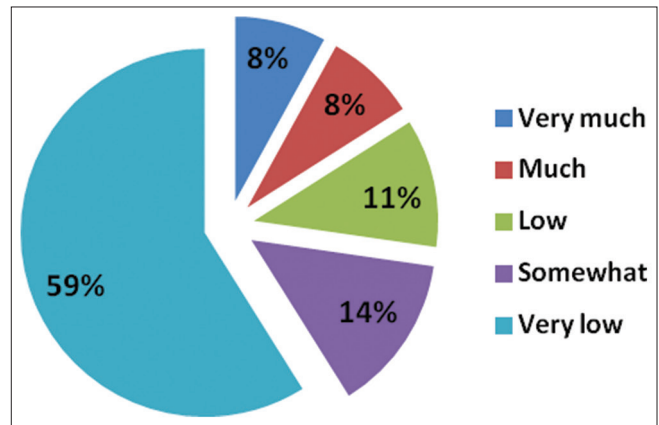


Figure 3: Influence of advertisement for taking treatment or medicine measured on likert scale

many folds in case of PCOS females seeking treatment for infertility.

India is a family-centered society. The family and relatives have a major say in personal as well as health issues. Many of respondents consulted the healthcare agency by themselves or after referral of family or relatives. This shows the role of family and relatives in seeking health treatment.

Advertisements in general influence the choices we make as a customer.<sup>[17]</sup> However, 59% of our study participants were not influenced by medicine or treatment advertisements for PCOS. Few (16%) were greatly influenced by the advertisements in media and had even tried the treatment.

**Limitation and recommendation**

The limitations of the study might stem from patients’ reporting bias. The generalizability of our results is another limitation, as the study was conducted in a single tertiary hospital. Therefore, community-based studies are recommended.

**Conclusion**

This study concludes that the PCOS patients opt for different treatment options but generally find the treatment less effective and expensive. There is a need

for controlling healthcare cost and finding alternative effective therapies.

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**Ethical clearance**

Taken from EIC.

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**Conflicts of interest**

There are no conflicts of interest.

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