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An Analysis Of The Effects Of Polycystic Ovarian Syndrome On Women's Reproductive Health

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Abstract
Polycystic Ovary Syndrome (PCOS) is a frequently occurring endocrine condition in women of reproductive age and a primary factor in subfertility linked to ovulation. Moreover, insufficient awareness regarding PCOS, its management, and lifestyle modifications affects the outcome. This qualitative research explores women's understanding and perceptions of the syndrome, its treatment options, and the lifestyle modifications needed to combat it. A total of 120 individuals with PCOS were chosen through purposive sampling from Vriddhachalam. Telephonic interviews were carried out as well. The themes encompassed women's understanding, causes, complications and risk factors, treatment of PCOS, and their perceived significance of health-promoting behaviors like physical activity, sleep habits, and perceived societal support. The significance of nutrition, physical activity, and a wellness-oriented lifestyle were other pertinent factors emphasized by the respondents. While the medications assisted participants in achieving consistent menstrual cycles, they also had side effects mentioned in the discussion. A small number of respondents indicated that they were unaware of PCOS when they were diagnosed in their youth. The research improves the comprehension of PCOS through a qualitative perspective that has cultural significance in addition to relevant clinical and lifestyle impacts.

Keywords: Polycystic Ovarian Syndrome, Mensural effects, Treatment, Life style changes

Introduction

PCOS, where the ovaries release numerous undeveloped eggs that can form cysts, is significantly affected by two main factors: a) considerable lack of awareness regarding the syndrome and b) lifestyle alterations. Although knowledge of healthy practices like diet is seen as a key element in the effective management and oversight of the condition, it also significantly influences the regulation of 'sex steroid metabolism.' Previous research has indicated that a "high-fat and low-fiber" diet can elevate circulating androgen levels. Nonetheless, excessive lipid consumption might lower Sex Hormone Binding Globulin (SHBG) levels and elevate the free androgen index. A rise in body fat, particularly around the abdomen, is associated with heightened metabolic risk. Specialists and physicians should advocate for initial treatments like a nutritious diet and consistent physical activity for PCOS.

PCOS is a prevalent health issue in both developed and developing nations, affecting 4 percent to 12 percent of women of reproductive age in India; however, there have been few studies, primarily qualitative in nature, conducted on the topic. Nonetheless, while some crucial observations by endocrinologists and gynecologists indicate a notable rise in PCOS cases among women, particularly those who are unmarried, it has also been noted that potential high-risk individuals possess limited awareness of the syndrome and its related effects. The present research seeks to investigate how the understanding and awareness of PCOS, related therapies, and everyday lifestyle adjustments might transform the lives of individuals diagnosed with this condition. Additionally, because there are few studies in this field, particularly involving women, employing qualitative research methods, this study holds increased importance in uncovering valuable insights for the research goals. Consequently, the

findings of this study would be significantly more pertinent for women with PCOS in helping them manage and combat the syndrome effectively.

Objectives

To investigate the socio-demographic background of the participants.
T assess the connection between PCOS and the demographic information in Vriddhachalam.
To detect symptoms implicated in PCOS development.
To identify the relationship between family history of PCOS and its occurrence.

Research Design

This study utilized a qualitative explorative research design to investigate the intended objectives by conducting semi-structured interviews over the phone. The semi-structured questions explored the participants' understanding and awareness of PCOS and its related treatments. Additionally, their respective impact on essential lifestyle adjustments for efficient handling of the syndrome. The schedule for the interview was created with the help of a comprehensive literature review. Ultimately, questions were created and validated by two specialist gynecologists and a researcher in reproductive health. Necessary adjustments have been implemented based on the recommendations and feedback, confirming the face validity of the interview schedule. Once the interview schedule was completed, it was confirmed by interviewing a few participants.

Sample Size

A total of one hundred twenty young women (N = 120) diagnosed with PCOS, selected through purposive sampling from Vriddhachalam (Table 1), aged 19 to 25 years, were included in the study. The participants of the study indicated that the age for PCOS diagnosis was between 15 and 18 years (N = 80) and 19 years or older (N = 40). Among the undergraduates (N = 70) and postgraduates (N = 50), most identified as students, while two were employed in professional roles (students = 80, professionals = 40).

Table 1 Socioeconomic details of the participants

Socioeconomic	Variables	Frequency (N=120)	Percentage
Education	Under Graduation	70	58.33
	Post-Graduation	50	41.67
	Total	**120**	100.00
Occupation	Student	80	66.67
	Working	40	33.33
	Total	**120**	100.00
Residence	Urban	50	41.67
	Rural	70	58.33
	Total	**120**	100.00
PCOS diagnosed at age	15-18 years	80	66.67
	19 and above	40	33.33
	Total	**120**	100.00

Source : Primary Data

Sampling Method

Utilizing a purposive sampling technique, potential study participants were contacted to gauge their interest in taking part in the planned semi-structured telephone interview. The method of conducting interviews by phone was selected. Before conducting the telephone interviews, the suitable time for them to take part in the study was verified. Additionally, a rapport and trust developed between the interviewees and the author who conducted the sessions. They were informed about the study's

objective, and consent was obtained to record the phone interview while assuring them that their identity would remain confidential. The respondents were asked to clarify any unclear questions posed to them. Every phone interview ranged from 45 to 50 minutes. Following the telephonic interviews, the second author transcribed the recordings, and the other authors cross-verified the transcriptions. Furthermore, following the analysis of the data by the first three authors, it was evaluated by the remaining authors. Some sample questions from the interview schedule are shown in Table 2.

Table 2 PCOS among the Respondents

Variables	Levels	No. of Respondents	Percentage
Knowledge of PCOS	Poor understanding	32	26.67
	Fair Understanding	44	36.67
	Good Understanding	14	11.67
	Very Good	20	16.67
	Excellent Understanding	10	8.33
	Total	**120**	**100.00**
Perceived Causes of PCOS	Genetic	20	16.67
	Environmental	40	33.33
	Hormonal	36	30.00
	Life Factors	18	15.00
	Others (Specify)	6	5.00
	Total	**120**	**100.00**
Treatment options and Awareness	Limited Knowledge	44	36.67
	Basic Knowledge	36	30.00
	Good Knowledge	20	16.67
	Very Good Knowledge	12	10.00
	Excellent Knowledge	8	6.67
	Total	**120**	**100.00**
Medication adherence	Yes	74	61.67
	No	46	38.33
	Total	**120**	**100.00**
Family Support	No support	7	5.83
	Little support	10	8.33
	Moderate Support	26	21.67
	Good Support	32	26.67
	Excellent Support	45	37.50
	Total	**120**	**100.00**
Perceived impact of PCOS	Minimal Impact	41	34.17
	Mild Impact	22	18.33
	Moderate Impact	35	29.17
	Significant Impact	4	3.33
	Sever Impact	18	15.00
	Total	**120**	**100.00**
Importance of Treatment	Not Important at all	8	6.67
	Somewhat Important	10	8.33
	Neutral	21	17.50
	Important	30	25.00
	Very important	51	42.50
	Total	**120**	**100.00**
Coping Mechanism	Emotional Support	18	15.00
	Stress Management	52	43.33
	Support Groups	12	10.00

	Counselling	30	25.00
	Others	8	6.67
	Total	**120**	**100.00**
Life style changes	Dietary Exercise	40	33.33
	Exercise	32	26.67
	Weight Management	35	29.17
	Stress Reduction	8	6.67
	Others (Specify)	5	4.17
	Total	**120**	**100.00**
Cognitive Impact	No Impact	32	26.67
	Mile Impact	34	28.33
	Moderate Impact	28	23.33
	Significant Impact	16	13.33
	Severe Impact	10	8.33
	Total	**120**	**100.00**

Source : Primary Data

Knowledge of PCOS

From the Table 2 given, 26.67 percent of the respondents had poor understanding, 36.67 percent of the respondents comes under fair understanding, 11.67 percent of the respondents had good understanding, 16.67 percent of the respondents had very good knowledge and 8.33 percent of the respondents excellent understanding about PCOS.

Perceived Causes of PCOS

About 16.67 percent of the respondents are genetically caused, 33.33 percent of the respondents are environmental, 30 percent of the respondents are hormonal imbalances, 15 percent of the respondents caused on behalf their life factors and 5 percent of the respondents are caused by other specified reasons.

Treatment options and Awareness

A highest of 36.67 percent of the respondents had limited knowledge on its treatment, 30 percent of the respondents had only basic knowledge, 16.67 percent of the respondents had good knowledge, 10 percent of the respondents had very good knowledge and 6.67 percent of the respondent excellent knowledge on treatment options and awareness in PCOS.

Medication adherence

The respondents of 61.67 percent are in the medical adherence and 38.33 percent of the respondents are in the medical adherence for PCOS.

Family Support

About 5.83 percent of the respondents had no support from their family, 8.33 percent of the respondents had little support, 21.67 percent of the respondents are getting moderate support, 26.67 percent of the respondents having good support and 37.50 percent of the respondents are getting an excellent support from their family towards PCOS.

Perceived impact of PCOS

A maximum of 34.17percent respondents are perceived on a minimal impact, 18.33percent of the respondents are on a mild impact, 29.17percent of the respondents are in moderate impact,

3.33percent of the respondents are on a significant impact with others and 15 percent of the respondents are perceived a severe impact on PCOS.

Importance of Treatment

About 6.67 percent of the respondents had conscious on PCOS treatment is not at all important, 8.33 percent of the respondents had said it was somewhat important, 17.50 percent of the respondents are in a neutral response in the treatment, 25 percent of the respondents having good aware on its importance on treatment and 42.50 percent of the respondents are having well aware and agreeing it as very important of treatment for PCOS.

Coping Mechanism

The respondents of 15 percent had emotional support as a mechanism on PCOS, 43.33 percent of the respondents are on a stress management, 10 percent of the respondents are in support group mechanism, 25 percent of the respondents are under counselling and 6.67 percent of the respondents are on the other mechanism towards PCOS.

Life style changes

The PCOS changed 33.33 percent of the respondents to do dietary exercise on their lifetime, 26.67 percent of the respondents are on exercise, 29.17 percent of the respondents are in weight management, 6.67 percent of the respondents are under stress reduction and 4.17 percent of the respondents are on the other specified changes on PCOS.

Cognitive Impact

About 26.67 percent of the respondents had cognitively no impact on PCOS, 28.33 percent of the respondents are on a mild impact, 23.33 percent of the respondents are in moderate impact, 13.33 percent of the respondents are on a significant impact with others and 8.33 percent of the respondents are in a severe impact on PCOS.

Analysis of Data

The traditional content analysis approach was utilized in the research. This qualitative research instrument aids in defining meaning via pertinent words, themes, or ideas found within the specific qualitative data. The codes were transcribed, classified, and interpreted by hand. The interviews that were recorded underwent transcription and multiple processing phases to thoroughly comprehend the collected data and verify the respondents' shared information was familiar. The sentences and paragraphs from the interviews and analysis units were summarized according to their content and context. The condensed meaning units were categorized and tagged with codes following the principles provided by Elo and Kyngas (2008). Subsequently, the codes were categorized, and subcategories were created by analyzing their similarities and differences. Codes that were more frequently utilized and aligned closely with the current study objectives received greater emphasis.

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Chart – 1 Effect of PCOS on Reproductivity Health - Structural Fit

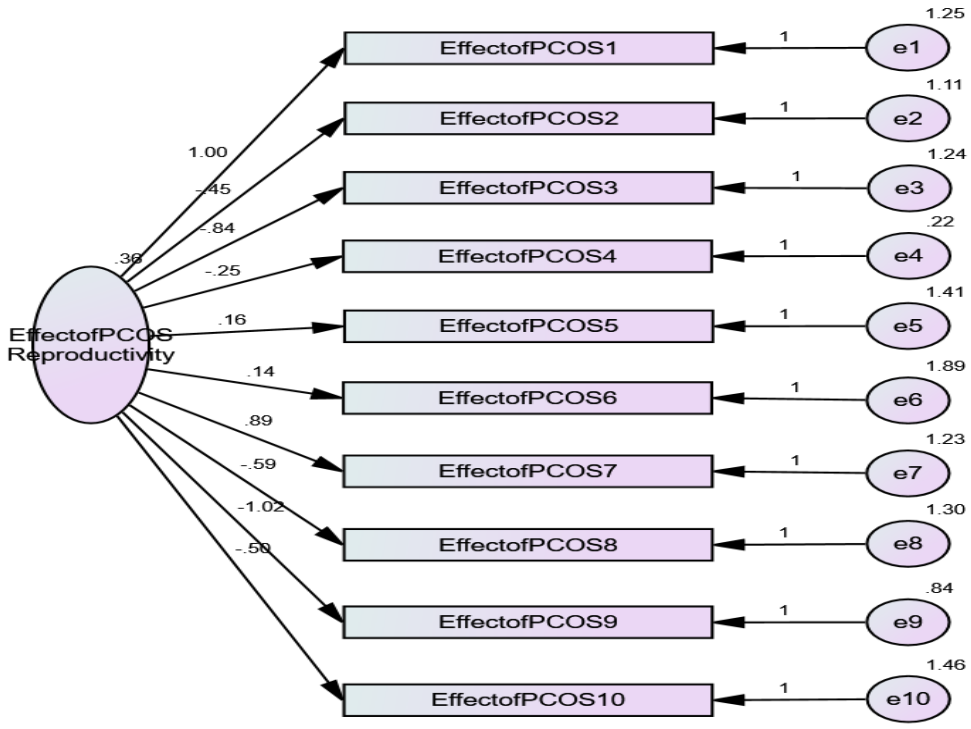

Table 3 GFI and Base Line Comparisons

Model Fit	Result	Cut Off Value
GFI	0.949	> 0.90
AGFI	0.909	> 0.80
IFI	0.987	> 0.90
TLI	0.978	> 0.90
CFI	0.985	> 0.90

Source : Computed from Primary Data

Table 3 shows the model fit indicate a good fit of the data to the above model, with Goodness of Fit Index (GFI) at 0.949, exceeding the recommended level cut-off value of 0.90. Similarly, AGFI, IFI,TLI and CFI are good fit. These results suggest that the model is a good representation of the underlying data structure, providing a reliable basis for interpreting the effects of PCOS on reproductive health.

Table 4 Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Knowledge of PCOS	<---	Effect of PCOS Reproductivity	1.000				
Perceived Causes of PCOS	<---	Effect of PCOS Reproductivity	0.445	0.249	1.790	0.074	
Treatment options and Awareness	<---	Effect of PCOS Reproductivity	0.838	0.310	2.706	0.007	
Medication adherence	<---	Effect of PCOS Reproductivity	0.252	0.114	2.210	0.027	
Family Support	<---	Effect of PCOS Reproductivity	0.163	0.241	0.677	0.499	
Perceived impact of PCOS	<---	Effect of PCOS Reproductivity	0.143	0.270	0.530	0.596	
Importance of Treatment	<---	Effect of PCOS Reproductivity	0.889	0.317	2.806	0.005	
Coping Mechanism	<---	Effect of PCOS Reproductivity	0.591	0.269	2.197	0.028	
Life style changes	<---	Effect of PCOS Reproductivity	1.017	0.328	3.097	0.002	
Cognitive Impact	<---	Effect of PCOS Reproductivity	0.501	0.276	1.817	0.069	

Source : Computed from Primary Data

Table 5 clearly indicates that the regression weights has significant effect of PCOS on various aspects of reproductive health. The results show that the effect of PCOS on various aspects of reproductive health. The results show that the Effect of PCOS on Reproductive has a significant positive impact on Treatment options and Awareness (estimate = 0.838, p = 0.007), Medication adherence (estimate = 0.252, p = 0.027), Importance of Treatment (estimate = 0.889, p = 0.005), Coping Mechanism (estimate = 0.591, p = 0.028), and Life Style changes (estimate = 1.017, p = 0.002). However, the effects on Perceived Causes of PCOS, Family Support, and Perceived impact of PCOS are not statistically significant. The result suggests that PCOS has a substantial influence on women's knowledge, treatment-seeking behavior, and coping mechanisms, highlighting the need for targeted interventions to address these aspects.

Table 5 Suggestions

Category	Variable/ Test	Typical finding suggestive of PCOS	Purpose
Clinical Signs	Menstrual cycle pattern	Oligomenorrhea (>35-day cycles) or amenorrhea	Shows ovulatory dysfunction
	Hirsutism score (Ferriman–Gallwey)	≥8 (excess facial/body hair)	Clinical hyperandrogenism
	Acne, androgenic alopecia	Moderate–severe	Additional signs of hyperandrogenism
Hormonal Tests	Total / Free Testosterone	Elevated	Confirms biochemical hyperandrogenism
	LH/FSH ratio	>2:1 (not always required)	Suggests ovarian dysregulation
	DHEAS, Androstenedione	Elevated	Excludes adrenal source
	17-OH Progesterone	Normal (rules out CAH)	Differential diagnosis

	Prolactin, TSH	Normal (screening)	Rules out thyroid/prolactin disorders
Imaging	Pelvic ultrasound (transvaginal preferred)	≥20 follicles (2–9 mm) in one ovary and/or ovarian volume >10 ml	"Polycystic ovarian morphology"
Metabolic Parameters	Fasting glucose & insulin	Impaired fasting glucose/insulin resistance	Evaluate metabolic risk
	Lipid profile	↑Triglycerides, ↓HDL	Cardiometabolic assessment
Other Assessments	BMI & waist circumference	Overweight/central obesity common	Risk stratification
	Blood pressure	May be elevated	Cardiovascular screening

Conclusion

Numerous participants in the research conveyed comparable views regarding the significance of nutrition, physical activity, and a healthy lifestyle in managing PCOS and overall well-being. Overall, individuals diagnosed with PCOS at a younger age displayed a general lack of awareness; however, with increased age and maturity, they appeared to take necessary steps to change the situation, keeping in mind the impending social and family obligations such as marriage and having children. Additionally, it was discovered that individuals in society possessed inadequate awareness. These insights emphasize the cultural significance of perceived societal pressure on the families of unmarried women with PCOS. In essence, medications aided in achieving a consistent menstrual cycle but presented health side effects, according to some participants. Additionally, it was noted that all the participants had indicated engaging in some unhealthy behaviors in their lifestyle even prior to the diagnosis. The majority were following an unhealthy diet, not engaging in regular physical activity, and we are now trying to alter their way of living after the diagnosis.

Limitations

Mainly because of time constraints and a low rate of participation, this study was restricted to a small sample size. The interviews for the planned data collection were limited to one hundred twenty participants based on practical reasons instead of saturation assessment. Therefore, it can be observed that more interviews might have revealed extra themes. Furthermore, the qualitative aspect of the research inherently restricts its ability to be generalized. Because of insufficient data, particularly from women with PCOS, a comparison of perceptions, knowledge, and attitudes among women could not be conducted. The current study calls for future research to focus on: a) adopting a multidisciplinary and mixed methods approach to address the unresolved questions from this study, b) specifically examining the cultural aspects of women's perceptions and attitudes regarding their PCOS condition and its effective management.

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