



**A CROSS SECTIONAL OBSERVATIONAL STUDY ON AWARENESS AND BELIEF ON SIDDHA TREATMENT FOR SOOTHAGA VAAYU (PCOS) AMONG WOMEN ATTENDING OUTPATIENT DEPARTMENT**

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**ABSTRACT**

Polycystic ovary syndrome (PCOS) known by its name Soothaga Vaayu in Siddha classical literature is the most common form of metabolic and endocrine disorder of women, with a high prevalence among reproductive age group. PCOS is often associated with obesity, insulin resistance, diabetes, hyperinsulinemia, hypertension, and dyslipidemia. Current therapeutic strategies available for PCOS are only moderately effective in controlling symptoms and preventing complications. Hence in recent times people rely most on the alternative complimentary treatment for management of PCOS. Siddha system of traditional Medicine holds first in treating most of the metabolic syndrome. Siddha formulation through its versatile pharmacologically active components acts by multiple ways in reducing glucose there by decrease the inflammatory responses in PCOS. The main aim of the present investigation is to provide analyze the awareness and belief on siddha treatment among the women attending the outpatient department of Arignar Anna Government Hospital of Indian Medicine, Chennai, Tamil Nadu, India. Study carried out for the period of three months with the sample size of 50 women (age 15 - 50 years) through Judgmental sampling method. Results of the present study clearly emphasises that the life style modification, BMI, food habit, diet, menstrual irregularity and familial history had very strong impact on development of PCOS. Further our study outcome clearly indicates that majority of the women has clear vision and hope towards siddha treatment for management of PCOS and it was also observed that the women under siddha treatment has regular menstrual cycle, marginal weight loss and normalised BMI. It was concluded from the analysis that siddha system of Medicine provided positive endpoint to all the women under siddha treatment when compare to conventional treatments.

**KEY WORDS:** *Polycystic ovary syndrome, Soothaga Vaayu, Siddha treatment, Metabolic syndrome, Menstrual irregularity, BMI.*

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## 1. Introduction

Polycystic ovary syndrome (PCOS) is a common and multifactorial disease associated with both endocrine and metabolic disorder. It affects approximately 4%–18% of all reproductive-aged women in the world [1,2]. PCOS is characterized by hyperandrogenism and ovarian abnormalities, resulting from a disruption in the hypothalamic–pituitary–ovarian axis [3,4]. Clinically, the main cause for reproductive and metabolic abnormalities in women with PCOS are hyperandrogenism and insulin resistance [5]. The etiology of PCOS is still unknown, although environmental, genetic, and hormonal factors are all thought to be important in its development [6].

PCOS is a common diagnosis in women presenting with anovulatory infertility and it affects 5–10% of women of reproductive age [7]. Symptoms of PCOS related to ovulation manifest as amenorrhea or oligomenorrhea [8]. Polycystic ovaries are enlarged and contain a large number of immature follicles. There are also metabolic disorder associated with PCOS such as insulin resistance and hyperinsulinemia in women [9,10].

Recently, herbal remedies for PCOS have received attention as a form of lifestyle management in traditional Medicine clinics, in which the menstrual cycle and normal serum hormones levels can be recovered [11]. Herbal remedies are known to be effective in reducing testosterone as well as increasing FSH and 17 $\beta$ -estradiol levels, [12,13] and they have been shown to reduce polycystic ovaries and ovarian volume, improve insulin sensitivity, and normalize reproductive cycles [14-16]. Additionally, clinical investigations have reported no adverse effects for herbal Medicines [17].

Siddha system of Medicine works behind the principle component on healing and rejuvenation. It was evident that occurrence of PCOS is due to several etiological factors. Siddha formulations normally possess multiple bioactive components which acts on inflammatory pathway, hormonal balancing, hypoglycemic factors etc. Further herbal medicine usage by women has increased over the past decade. Herbal remedies are known to contain active constituents with physiological effects on female endocrinology and have been shown to be

positively associated with reduced incidence of breast, bone, and cardiovascular diseases [18,19]. The main objective of the present investigation is to explore the level of awareness and belief on siddha treatment for Soothaga Vaayu (PCOS) among women attending outpatient department of Arignar Anna Government Hospital of Indian Medicine, Chennai, Tamil Nadu, India through sectional observational study.

## 2. Materials and Methods

### 2.1. Study design

Cross sectional observational study comprises of 50 volunteers subjected to survey on Soothaga Vaayu (PCOS) was chosen for the individualized in-depth evaluation. The entire study was conducted on Out-patient department of Arignar Anna Government Hospital of Indian Medicine, Chennai, Tamil Nadu, India. Institutional ethical committee clearance was obtained for this study [IEC approved no: GSMC-CH-ME-5/034/2018] with the total study period of 3 months. Method adopted for the present analysis is Judgmental sampling method. Women were comprehensively explained about the objectives of this study before requesting them for their voluntary participation in this study. Participants were also explained that completion and submission of the questionnaire would be taken as consent to participate in this study. Data were dealt with the high level of anonymity and confidentiality.

### 2.2. Questionnaire Pattern

The questionnaire was divided into four sections. The first section included demographic information such as gender, course of studying, religion, living status and their age. The second section included questions that measured their anthropometric details, menstrual history and symptoms related to PCOS. Obstetric history was recorded among married women along with this. The third section assessed the diet pattern, history of other systemic disorders and family history of PCOS. The fourth last part section of this evaluation highlighted the participants attitude towards Siddha Medicine, knowledge about Siddha medications, how often they use, reason for use, disease conditions for that they used Siddha drugs.

**2.3. Assessment Scale**

Menstrual irregularity was assessed as a usual cycle length of less than 21 days or more than 35 days. Clinical hyperandrogenism was assessed on the basis of the self-reported degree of hirsutism by using self-assessment method. Results were kept confidential. The selected participants likely to have PCOS asked to go for further clinical and ovarian ultrasound examination. A positive finding of polycystic ovaries was defined by the detection of 12 or more follicles measuring 2–9 mm in diameter and/or increased ovarian volume of above 10 cubic cm in at least one of the ovaries.

**3. Results**

**3.1 Influence of Age and Menstrual type**

Present analysis stated that nearly 40% of women experienced irregular periods under the age 21-25 and the age group between 31-35 and 36-40 experienced very less percentage of irregular periods that accounted about 8%. As shown in figure 1.

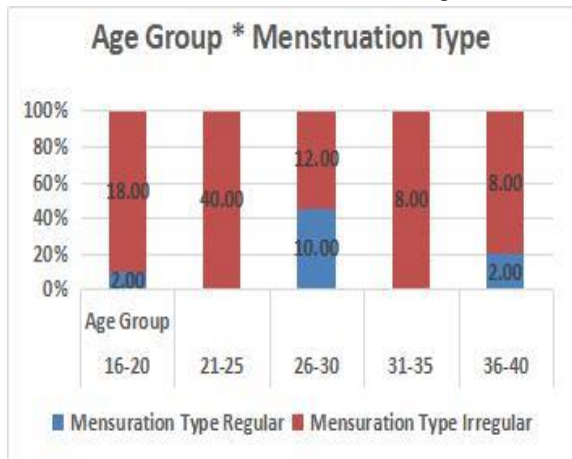


Figure 1: Influence of Age and Menstrual type

**3.2. Result Analysis on Type of Irregular Menstruation**

Most of the women had missed periods of about 2.33% and in 21-25 age group 44.19% of the women had irregular periods which shows that the prevalence of irregular menstruation is very high in this age group and also 36-40 age group women had experienced long bleeding duration. As shown in Table 1

Table 1: Analysis on Type of Irregular Menstruation

	Age	Type of Irregular Menstruation				Total
		Bleeding long duration	Irregular Periods	Missed Periods	Very Scanty Periods	
Age Group	16-20	-	18.60	2.33	-	21
	21-25	-	44.19	-	2.33	47
	26-30	-	11.63	2.33	-	14
	31-35	-	6.98	2.33	-	9
	36-40	2.33	4.65	2.33	-	9
Total		2	86	9	2	100

**3.3. Result Analysis on Menarche Age**

Result Analysis on Menarche Age shown that 40% of women with PCOS attained Menarche at the age of 13 years and the lowest is 2% with Menarche age of 11 years. At the age of 14 years, about 34% of them attained menarche which is the second highest percentage. This develops an hypothesis to find the diet and behavioral pattern of women who attained menarche at 13 and 14 years which held the most women. As shown in figure 2.

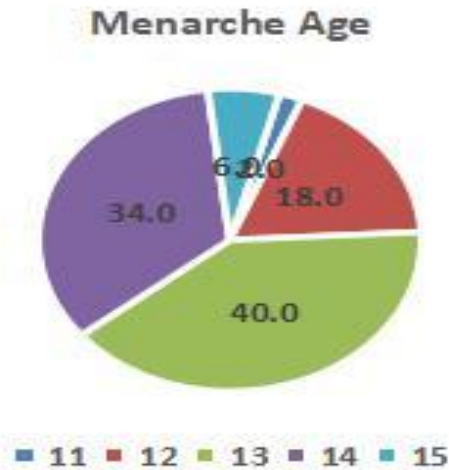


Figure 2: Analysis on Menarche Age

**3.4. Result Analysis on Duration of Menstruation**

Result Analysis on duration of menstruation has shown that about 42% of the women with PCOS had menstruation cycle for about 5 days and 18% of them had periods for about three and four days.. As shown in figure 3.

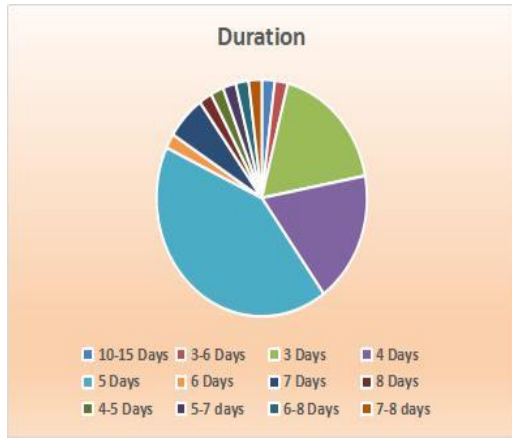


Figure 3: Analysis on Duration of Menstruation

**3.5. Result Analysis on Marital Status /Age Group / Children/ Abortion**

It was observed that almost 36% of the women were unmarried who were between the age group of 21-25. Totally, about 64% of them with PCOS were unmarried and between the age group of 16 and 30. Only 36% of them were married. As shown in Table 2. Further 75% of the women got aborted under 31-35 age group and 25% of them got abortion under 36-40 age group. This shows that the highest proportion of abortion have occurred between 31 and 40 age group.

Table 2: Analysis on Marital Status

Age Group	Marital status		Total
	Yes	No	
16-20	-	20.00	20.00
21-25	4.00	36.00	40.00
26-30	14.00	8.00	22.00
31-35	8.00	-	8.00
36-40	10.00	-	10.00
Total	36.00	64.00	100.00

**3.6. Result Analysis on Dietary habitat**

It was observed that about 42% of the women with PCOS had diet that was different only sometimes during a week and for about 30%, the diet was different from everyday. Hence, from this data we have to find out the relationship between the foods habits of this two groups. As shown in Table 3.

Table 3: Analysis on Dietary Habit

Is your Diet	Percent
Different from every day	30.0
Different only sometimes during a week	42.0
Different only during the weekends	14.0
Very monotonous	14.0
Total	100.0

**3.7. Result Analysis on BMI Index**

Nearly 16% of them who were overweight from the survey took different foods every day. Similarly, 26% of the women who were overweight had their diet habit as different only sometimes during a week. From this data a confusion develops as women who were overweight filled the four types of diet patterns and it contributes very high proportion of about 60%. women with BMI more than 25 and less than 29.9 were considered as over weight in this survey. As shown in figure 4.

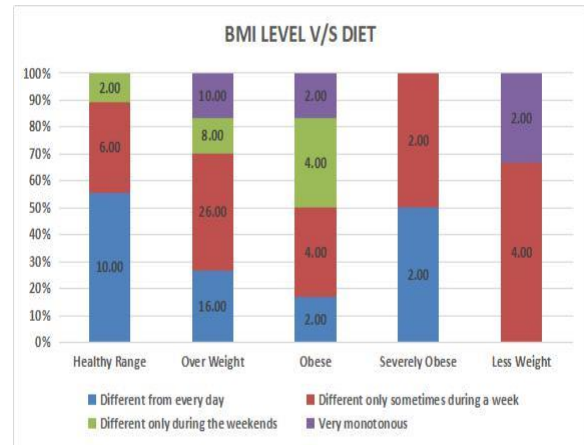


Figure 4: Analysis on BMI Index

**3.8. Result Analysis on Family History of PCOS**

About 14% of the participants presented with the history of PCOS for their elder sister and 72% did not show any previous history. About 4% had previous history of PCOS for their cousin sister and 2% of them had previous history with younger sister. 8% of the women with PCOS had the family history of PCOS in their mother. So totally 28% of them had family history of PCOS. As shown in Table 4.

Table 4: Analysis on Family History

Family History	Frequency	Percent
Mother	4	8.0
Elder sister	7	14.0
Younger sister	1	2.0
Cousin sister	2	4.0
None	36	72.0
Total	50	100.0

**3.9. Result Analysis on Referral to Siddha**

From my study, 34% of them were aware of Siddha from Patient referral. Very important to know that about 44% of them was aware about Siddha system on their own. Reference to Siddha from medical professionals contributed about 18%. Only 4% were contributed from social media. As shown in Table 5.

Table 5: Analysis on Scope of Siddha

Referred Siddha	Frequency	Percent
Patient	17	34.0
Medical Professional	9	18.0
Own	22	44.0
Social Media	2	4.0
Total	50	100.0

**3.10. Prior Treatment for PCOS**

From my study it shows that 72% of the women were already under Allopathy treatment for PCOS. Very important to notice that only 4% of them chose Siddha as their prior treatment for PCOS. Homoeopathy and Ayurveda contributed about 2% each among them. 20% of them had not undergone any prior treatment for PCOS. As shown in Table 6.

Table 6: Analysis on Prior Treatment for PCOS

Prior Treatment for PCOS	Frequency	Percent
Allopathy	36	72.0
Homoeopathy	1	2.0
Ayurveda	1	2.0
Others (Siddha)	2	4.0
No Prior Treatment	10	20.0
Total	50	100.0

**3.11. Preference towards Siddha treatment**

About 80% of the women with PCOS predominantly showed their belief on Siddha treatment which was very essential for my study and 4% of them were not satisfied with other treatments. As shown in Table 7.

Table 7: Analysis Preference towards Siddha treatment

Why do you prefer Siddha	Frequency	Percent
Belief in Siddha Medicine Treatment	40	80.0
On trial and error basis	8	16.0
Not satisfied with other treatment	2	4.0
Total	50	100.0

**3.12. Betterment after Siddha treatment**

About 44% of the women with PCOS who visited AAGHIM, have got their menstrual cycle regularized after undergoing Siddha treatment and 22% of them came for weight loss and showed positive result. As shown in Table 8.

Table 8: Analysis Betterment after Siddha treatment

Betterment after Siddha Treatment	Frequency	Percent
Periods Regularized	22	44
Weight Loss	11	22
NA	4	8
Weight Gain	4	8
Body pain Reduced	2	4
Knee Pain Reduced	1	2
No side effects	1	2
Normal Hair Growth	1	2
Periods Regularized, Weight Loss	1	2
Pimples Reduced	1	2
Relief from Pain	1	2
Weight Loss, Relieved from tiredness	1	2
Total	50	100

**4. Discussion**

Since PCOS has clinically heterogeneous characteristics, its treatment is complex and elicits variable responses among PCOS patients [20]. One of the most widely used Medicines for PCOS treatment is metformin, an insulin-sensitizing drug [21], which can increase the insulin sensitivity of ovaries to enhance glucose uptake [22]. Upon long term usage patients under metformin treatment had some serious adverse effects such as hypoglycemia, lactic acidosis, RTI, muscle weakness and diarrhea.

The awareness of siddha treatment for PCOS among females of reproductive age group was



taken as core objective of the present study and it was found that 44% of the patients were interested in siddha on their own interest, which clearly shows the awareness on siddha among the people. 34% of the women were influenced by patients undergone siddha treatment previously. Same way other medical professionals also referred siddha which contributes upto 18%. Finally social media contributed only 4% which play the least role in creating awareness among PCOS women. Irregular periods were the major problem for women in 21 to 25 years, predominantly Unmarried girls and few recent married girls were advised to take treatment with Siddha.

Weight gain is usually associated with an exacerbation of symptoms, while weight loss usually improves the symptoms and endocrine and metabolic disturbances [20]. Many of the PCOS patients were identified by increased serum level of luteinizing hormone (LH) and normal or decreased serum level of follicle stimulating hormone (FSH) [21]. This is explained by an increased pulse frequency of the hypothalamic gonadotropin-releasing hormone

Nearly 60% of women were overweight and 12% were obese at the time of diagnosis. 4% were severely obese. Only six percent women belonged to lean PCOS category. Weight reduction and life style modification were advised to all women having abnormal BMI values. About 44% of women suffering from PCOS were in between the age group of 21 to 25 years and 18% were below 20 years of age. This was also proved in our study. 64% of women were unmarried and only 36% were married at the time of investigation. During investigation complaints of menstrual abnormalities like Menorrhagia presented in unmarried girls and using more than 2 pads per day. Other cases had been isolated under various categories.

Few studies have been conducted on lifestyle and nutritional habits of people with PCOS [22]. In the present study various lifestyle modifications, including regular exercise half an hour daily or one hour on alternate days and dietary modifications in the form of small frequent meals will be required to achieve weight reduction. Proper evaluation and early diagnosis should be done in adolescents presenting with features of PCOS. In married women, especially in the presence of other

risk factors for infertility, early conception is advised. Out of 18 women 56% got married and delivered children and 28% of them were under Allopathy treatment for infertility.

Ovulation disorders account for about 30-40% of all infertility cases in women [23]. Metabolic disorders including increased serum levels of Luteinizing hormone (LH), testosterone and prolactin is very common in women with PCOS and could influence women health in long-term [24,25]. Among married women during their pregnancy, none of them have undergone siddha treatment which should be noted for further research to find out the reason behind their negligence towards siddha treatment during pregnancy and create awareness on it. 4% of the women were already under siddha treatment for PCOS which showed their strong confidence and belief. About 92% of the women felt better on taking siddha treatment. 80% of the respondents reacted positively to the belief on siddha Medicine

#### 4. Conclusion

Traditional systems of Medicine are becoming more common in complementing the established medications for the treatment of PCOS. Considering our study outcome clearly indicates that majority of the woman has clear vision and hope towards siddha treatment for management of PCOS and it was also observed that the women under siddha treatment has regular menstrual cycle, marginal weight loss and normalised BMI. It was concluded from the analysis that siddha system of Medicine provided positive endpoint to all the women under siddha treatment when compare to conventional treatments.

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