

# Assessment of Presence of the Phenotypic Characteristics of Polycystic Ovarian Syndrome among Young Adult Girls in a Selected College, Kanchipuram District, Tamil Nadu, India

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## Abstract

Assessment of presence of the phenotypic characteristic of Polycystic Ovarian Syndrome among young adult girls in a selected college in Kanchipuram District, Tamil Nadu. The Objectives are to assess the phenotypic characteristics of polycystic ovarian syndrome among young adult girls. To determine the association between phenotypic characteristics with selected demographic variables. The convenience sampling technique was used to select 295 sampling. Validity and Reliability data collection tools were established. The data were collected by self-structured questionnaires. The collected data were tabulated and analyzed. The findings of the present study Shows that the presence of phenotypic characteristics of PCOS based on score of hirsutism was estimated to be (39.7%) and based on grading of acne was estimated to be (66.8%) of young adult girls have mild acne characteristics of PCOS, (13.5%) of young adult girls have moderate acne characteristics of PCOS.(11.9%) have severe acne characteristics of PCOS and (7.8%) have very severe acne characteristics of PCOS.

There is significant association between the demographic variables and the scoring of hirsutism of young adult girls in their age, residence, age of menarche, regulation of menstrual cycle, length of menstrual cycle, BMI at p value= <0.05 level of significant. And there is significant association between demographic variables and the grading of acne among young adult girls in their residence, menstrual cycle, length of menstrual cycle, family history of PCOS, co-morbidities, BMI at p value= <0.05% level of significant.

**Keywords:** Phenotypic characteristics of polycystic ovarian syndrome, Young adult girls.

## Introduction

Polycystic ovarian syndrome (PCOS) is the common endocrine disorder of women in reproductive age . PCOS was described by Ashtyn and Leventhal.

PCOS is a major public health concern in terms of a frustrating experience for women and a challenging complex syndrome for clinicians.<sup>(1-2)</sup>

Prevalence estimates highly variables on age group depending on difficulties in hormonal evaluation.<sup>(3)</sup> and ranging from 2.2% to 26%. The prevalence has been increasing in the adolescent population <sup>(4)</sup>, In more than 40% of cases, PCOS is associated with obesity, as well as impaired glucose tolerance, type 2 diabetes and the metabolic syndrome. <sup>(5)</sup> During this pubertal transition, several features may be in evolution and thus many findings may be transitory which stabilize later during diagnosis in order. PCOS is the important to make an early diagnosis in order to prevent early and late sequel of the syndrome.

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The characteristics of PCOS include increased secretion of androgen level (hyperandrogenesis) and gonadotropin releasing hormone (GnRH) that leads to menstrual irregularity, hirsutism and infertility<sup>(6)</sup>. It can be diagnosed at all the phases of life that girls having 8-9 year of age through post-menopausal females. Amenorrhea is the most common problem of PCOS in young girls.<sup>(7)</sup> obesity is also common features in women with PCOS and Family history of obesity, diabetes mellitus, thyroid disease, PCOS is strongly supports a genetic susceptibility to this disorder at present lifestyle, food habits, environmental exposures to toxins and stress have also contributed to the development of PCOS.

Insulin resistance is central to the pathogenesis of PCOS <sup>(8)</sup> Indians are known to have high prevalence of insulin resistance, so the prevalence of PCOS is expected to be high in the Indian population <sup>(9)</sup>. The short complications of polycystic ovarian disease include menstrual irregularities, hyperandrogenism, insulin resistance and hyperinsulinemia, obstructive sleep apnea, dyslipidemia, oligoovulation anovulation and the long-term complications includes endometrial hyperplasia, metabolic syndrome, cardiovascular disease and psychological disorders.

## Materials and Method

A Quantitative descriptive approach with a cross sectional design was used in the study . The study was carried out in a selected college, Kanchipuram District, Tamil Nadu, India. The study population included all young adults girls in the selected colleges. The young adult girls who fulfilled the sampling criteria were the samples for this study. The sample was selected by using a convenient sampling technique.

### Inclusion Criteria:

#### The Young Adults Who

- Are in the age group from 18-21years
- Young adult girls who are willing to participate in the study

### Exclusion Criteria:

#### The Young Adult Girls Who:

- are not available during the study period
- are all having congenital abnormalities

- Transgender are excluded from the study

**Sample size Estimation:** All young adult girls in selected colleges, Kanchipuram District, Tamil Nadu were the population.

Samples of 295 adult girls in selected college in Kanchipuram District

Young adult in age group between of 18-21 year.

### Sample Size:

Sample calculation formula =  $Z^2p(1-p)/d^2$

$$= 1.96^2(0.26)(1-0.26)/0.05^2$$

Sample Size = 295

Z-Level of confidence standard 95% value is 1.96

p-expected prevalence

d-precision value is 0.05

**Data Collection:** The data collection procedure will be carried out for period of 6 days. The study will be initiated after obtaining prior permission from to concerned authorities. The data will be collected from the adolescent girls in selected college.

The research tool consisted of two sections.

The structured interview format contains question of the following section.

Section 1:Standardized Questions related to demographic variables

### Section 2:

- A. Selected standardized variables
- B. Standardized scales for Hirsutism.
- C. Global Acne scale.

In this study standardized questionnaire was used to elicit demographic variables and standardized scales for hirsutism and global acne scale was used to assess the presence of phenotypic characteristics of PCOS among young adult girls and the score for hirsutism was interpreted as follows below 6 is absent, above 6 is present hirsutism.

**Categorization of global acne score:**

<b>The Global Acne Grading System<sup>(12)</sup></b>	
<b>Location</b>	<b>Factor</b>
Forehead	2
Right cheek	2
Left cheek	2
Nose	1
Chin	1
Chest and upper back	3

**Note:** Each type of lesion is given a value depending on severity: no lesions = 0, comedones = 1, papules = 2, pustules = 3 and nodules = 4. The score for each area (Local score) is calculated using the formula: Local score = Factor x Grade (0-4). The global score is the sum of local scores and acne severity was graded using the global score. A score of 1-8 is considered mild: 19-30, moderate; 31-38, severe; and >39, very severe.

**Analysis:** Descriptive and Inferential statistics was used to analyze and interpret the data. Descriptive analysis was used to analyze the demographic data. Chi square test was used to determine the association between phenotypic characteristics of PCOS with selected demographic variables.

**Study Findings:** Distribution of demographic variables among young adult girls.

The demographic characteristics were included in this study was age, residence, age of menarche, menstrual cycle, regulation of menstrual cycle, length of menstrual cycle, family history of PCOS, co-morbidities, BMI.

This study found that the age (60.3%) belongs to the age group of 18-19 years and (39.7%) belongs to the age group of 20-21 years. This study also found the age (73.2%) were adolescents (15-19 years) which is similar to the findings of **Beena Joshi, Srabani Mukherjee**, "et al" showed that.

In regard (65.8%) of young adult girls have menarche between age group of 12-14 years, (8.1%) have menarche between 19-11 years, (26.1%) have menarche at age >14 years. In regard (73.5%) have 3-5 days menstrual cycle, (24.1%) have 5-7 days menstrual cycle, (2.4%) have above 7 days menstrual cycle. (72.5%) have regular menstrual cycle and (27.5%) have irregular menstrual cycle. (67.8%) have 28 days length of menstrual cycle, (23.7%) have 1-2 days length of menstrual cycle, (7.5%) have 3-4 days length of menstrual cycle, (1%) of young adult girls have more than 4 months length of menstrual cycle. (3.4%) of young adult girls have history of PCOS in their family while (96.6%) young adult girls show no

history of PCOS. (1%) of young adult girls have diabetes mellitus, (3.4%) have hypertension, (1.4%) have thyroid problem, (94.2%) of young adult girls shows no problem in their medical condition. (61%) of the young adult girls were having normal BMI, (25.1%) of young adult girls were of underweight, (13.9%) of young adult girls comes under obese.

- **The first objective of the study was** To Assess presence of phenotypic characteristics of Poly Cystic Ovarian Syndrome Among young adult girls. In this study was observed the presence of phenotypic characteristics of Poly cystic ovarian syndrome based on the score of hirsutism it was estimated to be (39.7%) and based on grading of acne it was estimated to be (66.8%) of young adult girls have mild acne characteristics of PCOS, (13.5%) of young adult girls have moderate acne characteristics of PCOS. (11.9%) have severe acne characteristics of PCOS and (7.8%) have very severe acne characteristics of PCOS.
- **The second objective of the study was** Determine the association between phenotypic characteristics with selected demographic variables. There was statistically significant association between the demographic variables and the scoring of hirsutism of young adult girls in their age, residence, age of menarche, regulation of menstrual cycle, length of menstrual cycle, BMI at p value= <0.05 level of significant. There is no significant association between the other demographic and the scoring of hirsutism of young adult girls in their menstrual cycle, family history of PCOS, co-morbidities.

**Conclusion**

The findings of the present study Shows that the presence of phenotypic characteristics of PCOS based on score of hirsutism was estimated to be (39.7%) and based on grading of acne was estimated to be (66.8%) of young adult girls have mild acne characteristics of PCOS, (13.5%) of young adult girls have moderate acne characteristics of PCOS. (11.9%) have severe acne characteristics of PCOS and (7.8%) have very severe acne characteristics of PCOS. There is significant association between the demographic variables and the scoring of hirsutism of young adult girls in their age, residence, age of menarche, regulation of menstrual cycle, length of menstrual cycle, BMI at p value= <0.05 level of significant. And there is significant association between demographic variables and the grading of acne

among young adult girls in their residence, menstrual cycle, length of menstrual cycle, family history of PCOS, co-morbidities, BMI at p value= <0.05% level of significant.

**Acknowledgement:** The Authors are grateful to all the adolescent girls who participated in the study and special gratitude to our institution for the endeavour support.

**Conflicts of Interest:** The Authors declared that there is no conflict of Interest.

**Source of Funding:** Self

**Ethical Clearance:** The Study was done with the approval of the institutional Ethics Committee Chettinad Academy of Research and Education.

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