

## **Awareness of Polycystic Ovarian Syndrome among Young Female Adults in Nigeria**

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### **Abstract**

Polycystic ovaries and the associated syndrome are recognized as the most common cause of reproductive and metabolic disorders in adult women, but not much research has been performed especially in Nigeria to examine how polycystic ovary syndrome (PCOS) presents in young and old women alike. Polycystic ovaries have been demonstrated in childhood, and there is evidence to show that even very young women may show symptoms and signs of the associated syndrome. This study aims to assess the level of the awareness of PCOS among young female adults. The descriptive study comprised of One hundred and fifty undergraduate female students (15 - 35 years) from randomly selected Universities in Nigeria were included in the study, of the this, only one hundred and one responses were considered valid. A Google form was created which included a well-structured questionnaire. The questionnaire consisted of three parts with a total of 32 questions in all, formulated to determine sociodemographic status, reproductive indices and knowledge or awareness of PCOS. It was observed that 35% had no idea what PCOS was or how it develops. There is a high need for awareness of PCOS among female adults. Early onset of accurate diagnosis is the key to its management and treatment.

**Keywords:** *Women; Nigeria; PCOS; Infertility; Diabetes; Hereditary*

### **Introduction**

Polycystic ovaries are usually defined as ovaries that contains (on a single radiographic plane) at least 10 follicles measuring between 2 - 8 mm in diameter, arranged peripherally around a dense core of ovarian stroma [1].

Polycystic ovarian syndrome (PCOS) is termed to be one of the most common female endocrine disorders occurring among young and adult women. It is fast becoming the leading cause of endocrine imbalance affecting women of reproductive age globally [2-5].

There is not yet a globally accepted definition for PCOS. This is in part due to varied clinical presentation/manifestations of the disorder which mostly depends on the overriding contributory factors. Symptoms could be clinical or biochemical [4]. Clinical symptoms include menstrual cycle disturbance, hirsutism, obesity and hyperandrogenism. Biochemical symptoms may include increase in luteinizing hormone, testosterone, androstenedione, insulin level [6-9]. In North America, evidence of hyperandrogenism and ovulation dysfunction without the evidence of ultrasonography determined polycystic ovaries is usually enough to diagnose PCOS [10].

While the above could be a good definition for PCOS or a diagnostic inclusion, the Rotterdam Criteria is the most widely accepted across Europe, Asia and Australia. The Rotterdam criteria requires the presence of two of the following: oligo/anovulation, hyperandrogenism or polycystic ovaries in ultrasound [11].

Different treatment options are available for the treatment of PCOS. Some of these treatment options includes but not limited to, use of family planning pills, insulin regulation, hirsutism treatment, weight control and adopting a healthy eating and lifestyle to improve overall

body health [12-14]. Irrespective of the treatment option used, it is agreed that being able to recognize or diagnose the syndrome early can give high positive outcomes for treatment of PCOS. It is therefore important to assess the level of awareness of the syndrome among young adult females.

**Aim of the Study**

The aim of this study therefore, was to access the level of awareness of PCOS among female undergraduate students in some select Universities in Nigeria.

**Materials and Methods**

This was a descriptive study. One hundred and fifty undergraduate female students (15 - 35 years) from randomly selected Universities in Nigeria were included in the study. A Google form was created which included a well-structured questionnaire. The questionnaire consisted of three parts with a total of 32 questions in all. The questions were formulated to determine sociodemographic status, reproductive indices and knowledge or awareness of PCOS. The form was distributed to their emails and responses were assessed and processed using charts and tables. Of the 150 responses received, only 101 was considered valid, these were the ones included for descriptive and inferential statistical analysis.

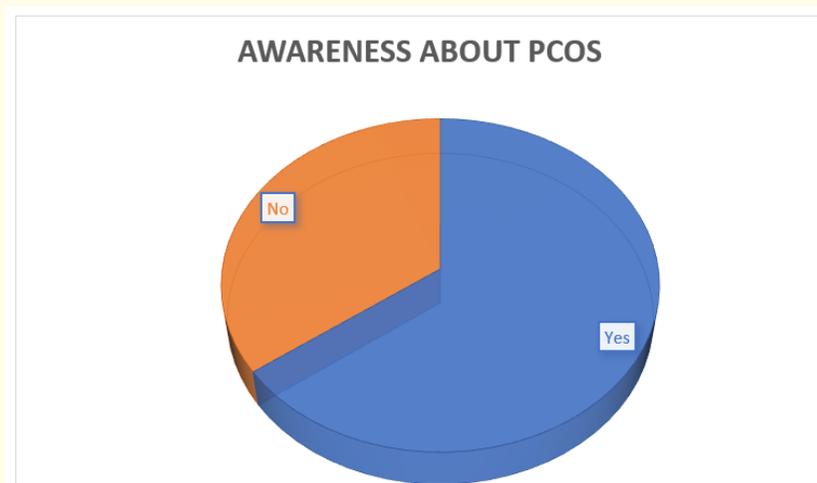
**Results and Discussion**

In this study, we set out to find out how much is known about PCOS among young female Nigerian undergraduate students using a structured questionnaire. The age range of those who responded is shown in table 1.

S/N	Age range (years)	Percentage	Number
1	15 - 20	41.6	42
2	21 - 25	47.5	48
3	26 - 30	6.9	7
4	31 - 35	4.0	4

**Table 1:** Showing age range distribution of the population studied.

When asked if they had ever heard about the condition, 65% of respondents affirmed to have heard about PCOS while 35% had no prior awareness of PCOS (Figure 1).



**Figure 1:** Showing percentage of population who have heard about PCOS.

In figure 2, respondents were asked to indicate what they know are the symptoms of PCOS, 77.5%, 52.5% and 42.5% indicated infertility, childlessness and depression as the leading symptoms of PCOS respectively.

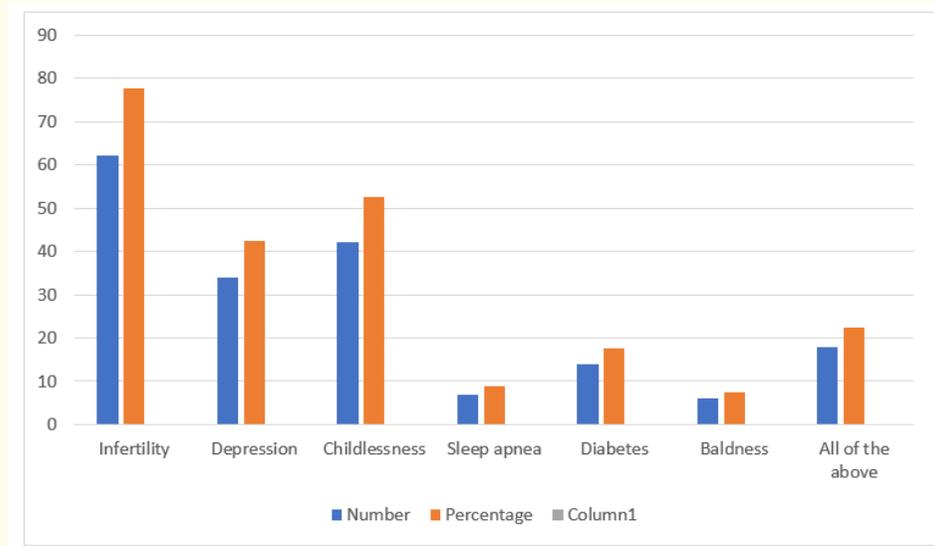


Figure 2: Showing the symptoms of PCOS.

In figure 3, was the response to the question about what causes PCOS, hereditary and the use of contraceptives where rated highest at 66.8% and 48.7% respectively.

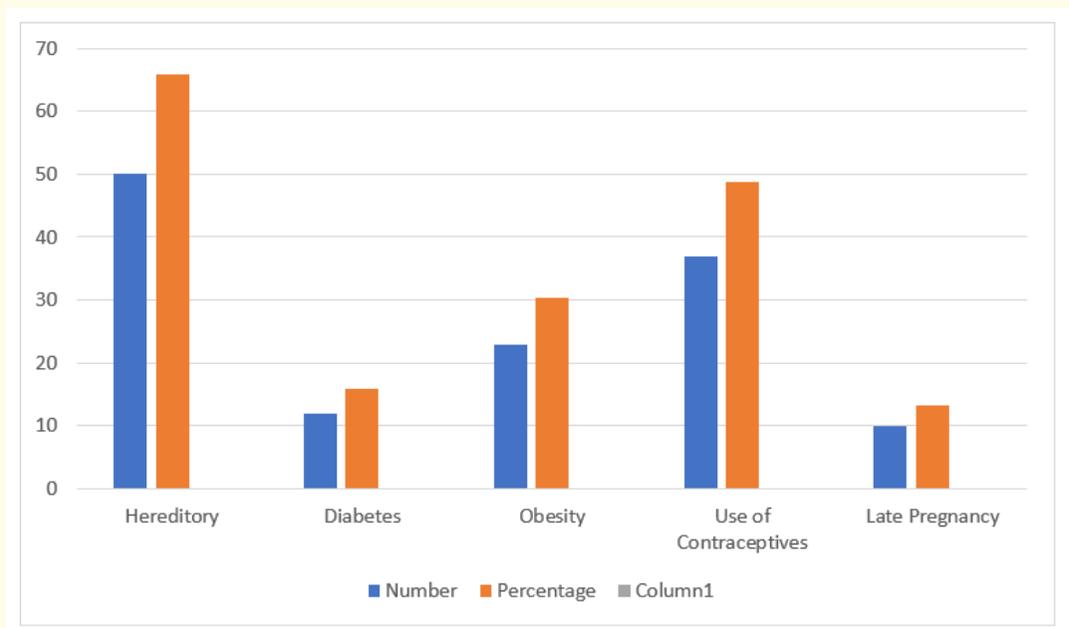


Figure 3: Causes of PCOS.

One of the best ways to deal with a disease or treat it is to be able to have an early diagnosis and commence treatment as soon as possible. The consequence of neglecting treatment or putting it off out of negligence or ignorance include complication in getting pregnant, uterine and ovarian cancers [7]. Infertility and obesity are some of the major reasons women seek medical attention [15,16]. Though 65% (Figure 1) of the students who participated in this study claimed to have heard about PCOS at some point or the other, it is obvious that they do not have a proper understanding of the disease, this finding agrees with [12] findings among nursing students in Mangalore and [14] findings among dental students of Chennai population in 2020.

In [17], the major concern of study participants was irregular period and weight gain, this is because of the emotional status and physical appearance particularly among the students in the age group between 17 - 25 years, this is in contrast with this study which showed infertility, as the major concern. This may be due to that fact that women in the southern region of Nigeria where this awareness study was carried out have a high priority to show their possibility of fertility especially if they are to get married and/or keep a home.

In this study, some of the symptoms of PCOS listed included infertility, childlessness and depression as the most frequent, this is in line with studies of [18] which concluded that due to hirsutism, women with PCOS are prone to emotional problems which has been associated with hirsutism been found to be associated with PCOS due to hirsutism. The infertility rate with polycystic ovary is very high, sufferers usually have remarkable difficulty in getting pregnant and will mostly need treatments to increase their chances of getting pregnant [19].

Genetic factors have been associated with the onset of PCOS. Once genetic factors are implicated, its effect tends to be responsible for a lot of other symptoms observed in women with PCOS. Studies by [20-22] confirm that PCOS can be inherited, even though there is no single gene for PCOS, a wide variety of mechanisms are in play which explains the range of symptoms experienced by women and at the different ages. In a study on women conducted at the University of Alabama at Birmingham, it was found that 24% of women with pcos had a mother with PCOS and 32% of the women had a sister with the condition [23]. Also, family members of women who are known to have PCOS have a higher risk for developing the same metabolic abnormalities. 66.8% of women who responded in this study said hereditary and genetic factors are part of the causes of PCOS.

Approximately 50% of women with PCOS have been found to be either overweight or obese, this is because there is a greater risk at becoming obese when suffering from PCOS or becoming affected with PCOS when a woman is obese [24].

The history of obesity has also been saddled with the onset of oligomenorrhea and hyperandrogenism, which is suggestive of pathogenicity especially since weight loss has been found to improve oligomenorrhea, ovulation and fertility rates, and with a reduction of hyperandrogenism [19]. Therefore, this is in line with this study as 30% of women who participated in the study labelled obesity as one of the causes of PCOS.

Diabetes is not left out in the list of causes of PCOS, 14% of women in this study listed it as one of the causes. This is because in sufferers of PCOS, insulin resistance is developed, and this is a red flag and a potential risk factor for type 2 diabetes (T2D). In fact, the risk for T2D is four times higher in women who have polycystic ovary syndrome. And, at least half of all women with PCOS develop prediabetes or diabetes before reaching 40 years old [20].

Insulin resistance is when your body is not able to process enough glucose for the cells of the body this in turn causes the pancreas to produces more insulin in other it make the uptake of glucose possible. This results in the over population of the blood stream with excess insulin which has negative impacts on ovaries thereby increasing the once reduced amounts of male hormones [25].

### Conclusion

Efforts need to intensify in creating awareness on the general public about PCOS since more than 30% of the participants reported as not aware. Infertility, childlessness and depression where the major symptoms and hereditary and contraceptive use were the major causes of PCOS listed by our study participants. It is obvious that sensitization needs to be carried out for the entire population as this will help in the early determination and accurate diagnosis of sufferers and thereby help in management.

### Conflict of Interest

The authors declare no financial interest or any conflict of interest.

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