



Original Article

An Exploratory Research to Undermine the Knowledge Related Attributes of Polycystic Ovary Syndrome Among Adult Females

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ABSTRACT

Polycystic Ovarian Syndrome (PCOS) is a worldwide common syndrome of reproductive women described as reproductive, endocrine and metabolic abnormalities. **Objective:** To assess the females who are at risk of PCOS and the relationship between PCOS and infertility in young females **Methods:** It is a cross-sectional study involving female students of University. The respondents were asked about some physical signs and symptoms such as, oily skin, gaining weight, darkened skin around their neck, excessive hair growth, and acne **Results:** About 20 percent of females out of 100 had PCOs and were unaware of their symptoms, 48% of respondents said they do not have PCOS but the symptoms that they answered according to the questionnaire showed that they had PCOS. The respondents were asked about their period's regularity, 53.9% of respondents had irregular periods, 33.3% had regular periods but sometimes sometimes they had irregular periods and 6.9% had never faced any irregularity in their periods. Results showed that 45% of participants faced weight gain while the 15% did not know that they have gained weight or not. Cravings percentage in PCOS patients increases from normal patients so the results showed that 39.2% of participants had an increased in cravings and 28.4% of participants showed no cravings and 30.4% didn't know about their cravings. **Conclusion:** The study concluded that adolescent girls were unaware of PCOS symptoms and their diet normally constitutes junk food and beverages that affect their menstrual cycles.

INTRODUCTION

Polycystic Ovarian Syndrome (PCOS), is a multifactorial pathology, which is determined by the association of genetic, endocrine and environmental factors. It usually indicates oligo-amenorrhea, anovulatory cycles, medical and biochemical hirsutism, polycystic ovaries, and significant percentage of insulin resistance [1]. PCOS is affecting 5-15% of women all around the world [2]. Clinically, different features of PCOS are infertility, hirsutism, anovulation, and abnormal menses. Typically, hyperandrogenism is related to impaired hypothalamus-pituitary feedback, hypersecretion of luteinizing hormone, immature luteinization of granulosa cell, premature death of primary follicles and aberrant oocyte maturation [3]. According to National Institute of Child Health and Human Development (NICHD) and NIH criteria, estimation of

prevalence indicates that PCOS is the common endocrine disorder influencing 4% - 8% of reproductive women. World Health Organization (WHO) reported that in 2012 PCOS has targeted 116 million women (3.4%) worldwide [4]. Ovary is the major site of hyperandrogenism and endocrine irregularities and it is indicated by the presence of enlarged ovary with multiple cysts. Moreover, hyperandrogenism, ovary with multiple cysts and impaired ovaries are the key features of PCOS [5]. As female come close to reproductive age, it becomes more likely to develop PCOS. There are many parameters in the physiology of PCOS [6]. Insulin resistance is another endocrine aberration in PCOS which describes the pathophysiology of PCOs. Insulin resistance is described as a poor function of insulin within the body. Reduced insulin sensitivity in PCOS is an intrinsic fault in

women which are genetically susceptible. Because it is not solely dependent on metabolic abnormalities, sex hormones and body fat. Insulin resistance is independent of BMI [7]. Women with android obesity are said to be more at risk for developing PCOS than gynaecoid obesity. Obesity is seen in 50-60% of PCOS. It is observed that obesity has an impact on increasing insulin resistance in PCOS patients [8]. Bariatric surgery (Roux-en-Y gastric bypass (RYGB)) has been proven to treat polycystic ovary syndrome and infertility without the use of hormonal treatment [9].

Stress in PCOS can be of various types like psychological distress, mental disorders, anxiety, emotional disarray, depression and metabolic distress [8]. Women with PCOS experienced behavioural impairments dependent on religion, ethnic, economic and sociocultural factors vary throughout populations [10]. PCOs has a wide range of clinical symptoms in which infertility affects 40% of women and other pregnancy-related issues. PCOs affect 80% of women who face ovulatory infertility [11]. Pinar Angin et al, in 2019 conducted research on 238 infertile PCOS patients to elucidate quality of life through a questionnaire. Patients were requested to complete both surveys and complete all questions. About 49 PCOS females were infertile, 47 non-PCOS patients and 62 PCOS females fertile completed all the questionnaires. Infertile PCOS female suffers have the lowest PCOSQ and SF-36 scores. The non-PCOS infertile female total PCOSQ score was higher than non-fertile PCOS female, there was a tendency towards fewer scores when the infertile female was added to PCOS status. Infertile PCOS women have the lowest quality of life [12]. A study conducted by Shital Sawant and Priya Bhide, in 2019, to find out options for fertility treatment amongst PCOS women. Five of the eight studies included in this evaluation focused on fertility outcomes following lifestyle modifications with a total of 256 individuals aggregated 141 of whom got the exercise program. Menstrual rhythm and fertility were both improved considerably in three experiments. During a thirty weeks fitness program, it was observed those menstrual performance findings in 59 out of 94 women. Fertility and menstrual cycle were found to be better in 49% these women [13]. Mariya Khmil et al in 2020, reported that women with PCOS had higher levels of LH and anti-mullerian hormone, estrogen and testosterone when compared to participants of the control group. And the level of FSH was lowered by 35.9%. In patients with PCOS, the LH and FSH were 1.5 times greater than in participants of the control group. This increased reproductive reserve is linked to fertility hyperstimulation syndrome [14]. A study conducted by G. Morgante et al, in 2018 about a therapeutic approach to combat infertility in women with PCOS associated with metabolic disorders. The result of the study demonstrates that, reduction in body weight 5-10%

and lifestyle modifications aid in improving reproductive function among overweight PCOS women [15]. Alchami et al, in 2015, carried out research to find out the association of infertility with PCOS. The findings of study stated that elevated levels of hyperinsulinemia and hyperandrogenemia are related to an increase risk of miscarriage among females [16]. A study by Amulya Konero et al., in 2019 targeted that sexual dysfunction are more prevalent in women with Polycystic Ovary Syndrome [17]. Chada et al., conducted research to assess the quality of life among known cases of PCOS. For this purpose, young adult females 25-35 years were assessed through a questionnaire on five domains comprising of 26 questions based on emotions, weight, hirsutism, infertility and menstrual problems. The results concluded that females were likely to be affected by all 5 domains of quality of life [18]. Barbosa et al., in 2016 concluded in his study that amenorrhoea and oligomenorrhoea is affecting the majority (80%) of females. PCOS must be recognized and handled early in childhood because of reproductive, metabolic and oncological headaches which can be related to it. Women with PCOS have an extra danger of anovulation and infertility [19]. Costello MF et al., carried out research in 2019 to find out the best treatment of infertility in polycystic ovary syndrome. Results showed that lifestyle change is a first-line remedy for the control of infertile anovulatory PCOS ladies who're overweight or obese [20].

METHODS

A cross-sectional study was conducted among students of the university of Lahore. Students (100) were selected randomly to be part of study. A convenient sampling technique was used in this study. Adolescent girls ranging from 18 to 35 years of age were recruited to be part of survey. The respondents were asked about some physical signs and symptoms such as, oily skin, weight gain pattern, darkened skin around their neck, excessive hair growth, and acne. Later the results were tabulated by latest version of SPSS. Inferential Statistics was used to record frequencies.

RESULTS

According to study result, 100 university students with minimum age of 18 and maximum age of 35 years while mean age of participants is 21 years old (Figure 1).

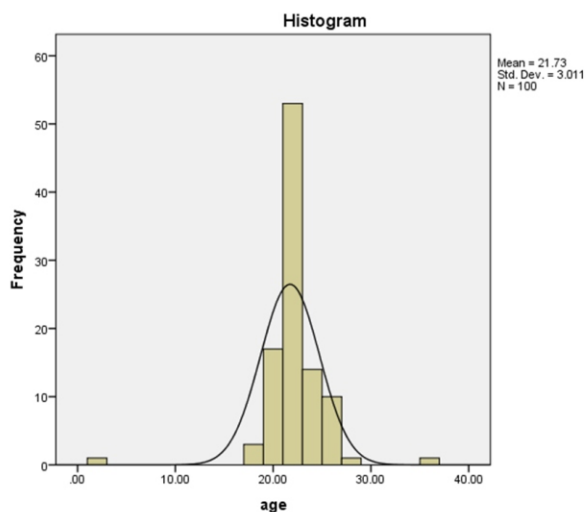


Figure 1: Histogram showing age of participants
Participants were asked about their irregular periods then the results showed that 55% have irregular periods, 33.3% have regular periods and only 22% have their periods on monthly basis. Out of 100 participants, only 6% were aware of what is PCOS (Table 1).

Menstrual Cycle History		Frequency
Menarche	10yr	9
	12yr	44
	14yr	38
	16yr	9
Irregular periods	Yes	55
	No	34
	Sometimes	4
	Never	7
Menstrual Cycle Days	20	16
	28	44
	30	39
	15	1
Periods in a year	Monthly	22
	4-6 per year	68
	6-8 per year	4
	8-11 per year	6
Blood Flow	Heavy	14
	Low	8
	Medium	77
	No flow	1
Periods Days	6-7	32
	4-5	50
	3	14
	Less than 3	4
PCOS	Yes	6
	No	49
	May be	9
	What's PCOS	17
	Not sure	19

Table 1: Frequency Distribution of Menstrual Cycle History of

Adolescents Girls

Participants were asked about some physical signs and symptoms such as oily skin, weight gain pattern, darkened skin around their neck, excessive hair growth, and acne. 45% of participants faced weight gain in the last 6 months, 69% of participants have oily skin, 17% have darkened area around their neck and 20% have hirsutism (Table 2).

Physical Sign and Symptoms Attributes Related to PCOS		Frequency
Weight Gain	Yes	41
	No	46
	May be	7
	Don't know	6
Oily Skin	Yes	40
	No	29
	Sometimes	31
Hair Fall	Light	29
	Heavy	40
	No	8
	Sometimes	23
Hirsutism	Yes	20
	No	66
	May be	14
Acne	Yes	20
	No	43
	Sometimes	18
	During period	19
Darkened Skin Around Neck	Yes	17
	No	83
Feel Stressed	Yes	36
	No	16
	Sometimes	27
	Never	4

Table 2: Physical Sign and Symptoms Attributes Related to PCOS
The food frequency questionnaire conducted by participants showed that 34% were taking milk on daily basis, 20% eat vegetables and 32% consumes fruits on daily basis. 23% were consuming meat once in a week. (Table 3)

Dietary Intake		Frequency
Dairy	1 glass	34
	2 glasses	31
	Once in a week	11
	Once in a month	24
Fruits	3 days in a week	28
	Once a week	23
	Twice week	17
	Every day in week	32
Vegetables	Daily	20
	2 days in a week	32
	Once in a week	32
	5 days in a week	16

Meat Serving	3 days in a week	31
	2 days in a week	29
	Once in a week	23
	Once in a month	13
	2 weeks in a month	4
Food preferences	Home cooked food	86
	Restaurant	14
Food cravings	Yes	40
	No	29
	May be	31

Table 3: Dietary Intake of Participants

DISCUSSION

Exploratory research was carried out on a hundred adolescent women to decide the ratio of PCOS. According to the result, mean age of participants is 21 years old. 48% of respondents said they do not have PCOS but the symptoms that they answered according to the questionnaire show that they have PCOS. 55% students have irregular periods and 20% have hirsutism whereas study conducted by Amulya Konero in 2019 targeted that sexual dysfunction; manifests as irregular periods and hirsutism are more prevalent in women with PCOS [17]. Another study conducted by Chada et al., conducted research to assess the quality of life among known cases of PCOS. For this purpose, young adult females 25-35 years were assessed through a questionnaire on five domains comprising of 26 questions based on emotions, weight, hirsutism, infertility and menstrual problems. The results concluded that females were likely to be affected by all 5 domains of quality of life [18]. Whereas, in current study majority of participants 55% faced menstrual irregularity, 45% of participants faced increased weight gain patterns in the last 6 months, while a study conducted by G. Morgante et al., in 2018 confirmed that five-10% weight reduction and adjustments in way of life can normalize reproductive feature and hyperandrogenism in obese girls with PCOS [15].

CONCLUSIONS

The common cause of infertility among women is PCOS. Hyperandrogenism, endocrine irregularities, ovary with multiple cysts and impaired ovaries are the key features of PCOS. It is further concluded from the current study that dietary habits, stress, hormonal imbalance are some factors that affect the menstrual cycle of females. While the awareness of problems related to menstruation is low and it is not cured in time causing negative effects on the fertility of women. In the end of the research, it is concluded that 20 percent of females out of 100 have PCOS and are unaware of their symptoms.

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