Enhancing the Polycystic Ovary Syndrome Awareness Capabilities among Nursing Students through Advanced Computational Analysis

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Article Info	Abstract
	PCOS (Polycystic ovary syndrome) is also known as Polycystic Ovarian Disease (PCOD), a complex reproductive and psychological circumstance, especially in female individuals, who frequently lack proper awareness and knowledge to attain optimal healthcare and their wellbeing consequences. PCOS is a hormonal imbalance that results in swollen ovaries with tiny cysts on the periphery. *Objective: To assess and indicate the degree of understanding of PCOS to the nursing students in the University College of Farasan, Saudi Arabia.* *Methods: In 2020, a descriptive survey was conducted on PCOS awareness among nursing students at the University College of Farasan, using a 47-item study questionnaire for girls between 18 and 25 years. It is aware of PCOS clinical diagnosis, risk factors, complications, and steps to mitigate PCOS symptoms. The SPSS version 22 and the Chi-square test are used for analysis.* *Result:A sample of 200 were took part and observed that 45.5% of the students were in the age group of 19-21 years, had an underweight BMI and had a family history of menstrual disorders and diabetes. An average of 45.12 % wereaware of PCOS;11.9 % were PCOS patients, and 67.5% had learned PCOS throughsocial media,patients, books, and specialists,respectively. The majority of females were aware of the signs of endocrine conditions, contraceptive use, and a balanced diet.Many did not know the correlation between persisting disease, chronic illnesses, heart disease, inheritance, and early puberty. PCOS knowledge was significantly (P <0.02) associated with higher educational standards and prior knowledge. The results also observed that diabetes mellitus, living location, and marital status had no significant effects.* *Determination:Nursing students are well-aware of the existence of PCOS. The primary source was the Internet. Symptoms became more well-known than complications.*

Introduction

The ovaries are women's gonads with two primary tasks: regular disposal of mature ova and steroid hormone secretion. The Luteinization Hormone (LH) and hormones Folic Stimulation Hormone (FSH) in the inner pituitary regulatethe functions mentioned above[7]. For early treatment and to prevent more severe issues in the future, the knowledge of PCOS symptoms and complications is essential.

In 1935 the first reports by Stein and Leventhal[27]were provided of obesity, masculinizing, and amenorrhea symptoms now referredto as a (PCOS) Polycystic ovarian syndrome. The global preponderance of PCOS is between 6% to 26%. The fact that this disease is now realized as the most widespread endocrine irregularity in adolescent girls, there has been no general agreement on clinical guidelines for PCOS as well as its etiology is unknown.

The actual symptoms of the condition have still not been accurately described[2,13.]Thus, the signs vary remarkably from case to case, making it a genuine concern for healthcare professionals to diagnose.

Low or irregular menstrual cycles (indicating unpredictable menstruations at intervals of less than 21 days or over 35 days), high Periods, increase in weight, fatigue, voice shift,and energy deficiency are the more frequent PCOS symptoms[28]. Hirsutism, hair loss (or loss of hair observed in a specific head region), maternity trouble, eczema, and other skin conditions like black lines, menstrual pelvic pain, chronic and frequent headaches, and sound changes sleeping disorders[23,1].

Approximately 10 percent of women suffer from hirsutism characterized by excessive androgen-based male-muster hair growth. The most frequent cause of androgen excess is the hirsutism of polycystic ovarian syndrome (PCOS)[19].

Dyspnea in sleep includes sleep disorders. Women have rising sluggish behavior during sleep and variations in delta activity duration even in the proportion of sleep spindles. The incidence of obstructive women's sleep apnea with hyperandrogenic disease (PCOS) is higher, and apneic symptoms are positively linked with systemic testosterone levels. Progesterone, however, has been used to speed up breathing, and progestins were utilized in the past to cure sleep apnea[19].

The lack of proper menstrual cycles is referred to as amenorrhea. Amenorrhea is a significant reason; In the absence of hormone therapy, or secondary, menstrual bleeding has never happened if menstrual cycles stop for 3–6 months[19].

The cycle period greater than 35 days or less than ten cycles a year is known as Oligomenorrhea[19]. The menstrual disorder assessment relies on identifying the connections between the four critical elements of the vaginal canal: (i) the hypothalamus, (ii) the ovaries, (iii) the uterus tract, and (iv)the pituitary[19].The complication can be split between early and long-term disorders in the Polycystic Ovary syndrome[25].

PCOS is a multi-systemic and multifaceted hereditary disease with an elevated chance of developing breast cancer, ovarian, and endometrial, for the long-term Oncology Risk22. Cardiovascular risk; the incidence of traditional cardiovascular disease (CVDs) risk factors including hypertension, asthma, dyslipidemia, and diabetes is raised in women affected with PCOS22,30. Compared to healthier women, PCOS-affected women have more psychological issues and decreased quality of life (QoL). The prevalence of depression in polycystic ovary syndrome is 14 to 67 percent, four times higher than the age-matched reference female for depressive symptoms[28]. Usually, patients showed slight edema and nodules of the vocal fold in the PCOS community.

Research[15] undertaken at the Al Madinah Al-Munawara Medical Center at Taibah University on PCOS prevalence in young un-wedded Saudi women aged 18 to 28. The findings were diagnosed with PCO age of averaging 21.3 ± 2.1 years of age from the 201 participants' cohort, out of which 108 (53.7 percent) PCOS instances are recorded with demographic data, menstrual abnormalities, and dermatological evidence. This research aimed to evaluate the awareness of students on PCOS at the University of Qassim, to examine the prevalent signs, the PCOS awareness, and the significance of early detection and treatment.

Therapeutic implications of PCOS range beyond reproduction and infertility in the reproductive aspects. Insulin tolerance is thought to be fundamental to syndrome etiology[11], and most of the PCOS effects on wellness are depicted in figure 1.1. The chance of hyperlipidemia, hypertension, heart artery ailment, type-2 diabetes, cerebral vascular disease, and Mellitus increases for women suffering from PCOS.

A substantial proportion of PCOS women are overweight. Estimates differ, but about 30 to 70 percent of all PCOS (BMI: ~ (greater than 30 kg/m2) patients are clinically obese. Obesity is not the cause of syndrome development, but excess adiposity may worsen potential reproductive and metabolic abnormalities. Specifically, insulin resistance, hyperandrogenemia, Dyslipidemias, and glucose intolerance are correlated with increasing adiposity.

The risk factor for cardiovascular disease and type-2 diabetes mellitus is identified by glucose deficiency. With age-controlled results, PCOS women are more often intolerant to glucose or diabetes than non-PCOS women20.For women with PCOS, the annual conversion rate from average resistance to reduced glucose is 16 percent[20]. Around 33% to 40% of the females with PCOS will suffer from decreased glucose tolerance in their fourth decade of life, and 10% will still have type-2 variant Mellitus. In the western world, 1% of women have diabetes while 7.8% of women aged between 20 to 44 have imbalance glucose tolerance[20].

Young girls with PCOS tend to be more impaired by endothelial regulation than it can be described through obesity itself[6]. Furthermore, women and young girls with PCOS are usually distinguished by atherogenic lipid profile, which consists of low-density lipoproteins, minimized high-density lipoproteins and minimal lipoproteins elevated triglycerides. The prevalence of sub-clinic carotid atherosclerotic is increased for PCOS affected women suffering from Coronary-computed Tomography (CT) compared to same-aged control subjective[8], and the incidence of sub-clinical carotid atherosclerosis is higher in premenopausal years[29]. This elevated atherosclerosis increases the risk of artery problems like myocardial infarction[9].

Given that most of the health effects of PCOS are linked to diabetes, PCOS is not surprisingly associated with an insulin resistance disease that is often referred to as central pathogenicity. It is sometimes addressed with different distinctive names like "insulin resistance syndrome," or "metabolic syndrome," or "syndrome X." The definition of this syndrome is that it presents at least a combination of three out of five listed considerations. They are

- Abdominal obesity (> 35 inches in mass index),
- The level of Serum triglyceride at 150mg/dL or higher serum lipoprotein serum cholesterol of below 50 mg/dL,
- Blood pressure 130/85 mm or higher and
- Serum glucose quicking at or above 100 mg/dL[14].

Unless cardiovascular and diabetes are absent, the chance of heart-associated coronary disease and all-time death is significantly greater in patients with metabolic syndrome[17]. It has been found that there is a steep rise in the risk of metabolic syndrome almost 11 times for those women who have PCOS in comparison to

matched-aged controls. Also, there is a 24 percent higher increase in metabolic syndromes for young women (<30 years) with PCOS.

RELEVANT STUDIES

However, early diagnosis is particularly vital to avoid potential complications of the disease[11]. Some concerning signs are suspicious of PCOS diagnosis, and amenorrhea has a 90% risk of PCOS[3,20].Menstrual abnormality is a strong indicator of hyperandrogenemia in puberty and a leading cause of PCOS production[6]. Such signs are central obesity, acne, hirsutism, and under-fertility[8,9,20&29]. Women are not diagnosed until they begin to conceive in several cases[4]. PCOS sub-fertility is illustrated by the impact on the oocyte quality and endometrial receptivity of obesity, endocrine irregularities on ovulatory regulations, inflammatory, and metabolic[3]. Compared with several other sub-fertile patients, women with PCOS had a higher chance of miscarriage. Resistance to insulin and obesity are the causes for such effects[3,20].

Women with Polycystic Syndrome have 25 to 30 percent possibilities of prevailing glucose-impaired resistance issues at an approximate age of 30, and around 8 percent of them are diabetic with Type-2 variant[12]. Obesity is usually attributed to a high testosterone level since PCOS is a significant indicator of hyperandrogenemia[4,29]. A 24-hour survey showed that both systolic and mean blood pressure was increased among young women. Besides, postmenopausal women with PCOS face hypertension three times higher than normal women[17].

The link between gynecological cancers and PCOS has been illustrated in many reports. A meta-analysis indicated: PCOS women pose three times higher risk of endometrial cancer than others10,21. As a result of hormonal imbalance and extended ovulatory condition, cancer risk rises in PCOS-affected women10. Besides, PCOS is linked to significant stress, primarily due to infertility and obesity due to psychological and physical problems[27]. Indeed, delayed PCOS diagnosis also involves anxiety and depression in many women[5,12].

The conscientiousness of PCOS signs and complications[16]for early rehabilitation is essential to avoid further severe complications. Our analysis can measure the effect of awareness of PCOS, the clinical appearance of the students, their symptoms and risk factors, identify vulnerable factors, improve healthcare, and minimize therapy costs.

OBJECTIVES

➢ To assess the awareness and level of sensitivity of female nursing students' regarding PCOS at University College of Farasan, Jazan University.
➢ To assess the preponderance of PCOS symptoms, risk factors, clinical presentation, and complications among nursing students of University College of Farasan.
➢ To identify factors that affect understanding, improve patient care, and reduce healthcare costs.
➢ To educate students about PCOS syndrome and the need for early diagnosis and care.

MATERIALS AND METHODS

The quantitative Research (QR) approach was obtained using a Descriptive Survey Design.The populationis the Nursing students studying at University College of Farasan, Jazan University KSA.Samples are Nursing students studying from level 4th – 8th, Volunteer nursing students studying in University College of Farasan, Jazan University was chosen according to holistic parameters using samples&students in the age group between 18 to 25 years. A non-Probability Purposive sampling technique was obtained to select the samples, andthe total sample size was 200.

For the questionnaire assessment, the personal characteristics of the study population include two sub-categories, namely,Personal Details&Assess the Knowledge about PCOS. Further to create full-scale awareness, the second sub-category,"Assess the knowledge about PCOS,"comprises four sub-sections. They areSensitivity to PCOS symptoms, Sensitivity to PCOS complications, Sensibilization to PCOS symptom control steps&Susceptibility to PCOS disease data. Sub-category1: Demographics of nursing students towards PCOS that includes 16 questions on many causes, such as menstrual abnormalities, diabetes, thyroid problems, and their influencing factors like age, height, weight, and family background.Sub-category2: 33 Concerns are selected to assess whether students have all the signs, risk factors, PCOS knowledge, complication sensitivity awareness, and PCOS reduction measures. In conclusion, open questions are provided to the student community to measure their attitudes about awareness and prevalence.The responses to awareness questions will be selected from thethree choices: "Yes," or "No," or "I do not know."

A questionnaire collection was designed for data collection in Arabic. Farasan nursing students have been explained the purpose of the research. The students voluntarily participated by completing the prescribed hard copy questionnaire, and essential data were collected. In October 2020, all data were gathered. SPSS edition version 22 and the Chi-square (χ2) test were used to interpret predictive data and correlate variables. Section 4.3.1 and 4.3.2 delineate a short introductory regarding SPSS version 22 and Chi-square (χ2) test for better understanding purpose.Statistics descriptive: This includes frequency, cross-table and statistical descriptive ratio methodologies.Statistics bivariate: Uses methods such as variance analysis, mean, correlation,

and nonparametric testing.Numeral outcome prediction: Prediction of predictive results such as linear regression& the χ2 assumes that the sample data are selected automatically, i.e., randomly from the population

RESULTS ANALYSIS

Socio-demographic Sample Population Characteristics

The research was accessed through 200 nursing student participants, aged between 18 and 25 years, from University College of Farasan at Jazan University in this majority (45.5%) of students were in the age group of 19-21 years. In addition to the below 5000 Riyal wages, the economic condition of the surveyed population was somewhat equally distributed.

The vast majority of the population surveyed was urban, with 67.5 percent and 32.5 percent was rural. The nursing students' marital status was 82.5% unmarried, while 17.5% were married. The study includes those attributes since weight and height play a vital role in the BMI index. Sometimes, those BMI indexing influence the possible occurrence of PCOS, which were observed as 61.5%, 16%, 10.5%, and 12% for underweight, normal, overweight, and obese. The other most common sign for those diagnosed with PCOS was an abnormal menstrual cycle and voice alteration, the slightest common symptom.

Table 1: Demographic Attributes of the Students

S.No	Attribute/Variables		Numbers	Percentage (%)
1	Age in years	18-19	55	27.5
		19-21	91	45.5
		21-23	16	8
		23-25	38	19
2	Residence	Urban	135	67.5
		Rural	68	32.5
3	Education Level	5th Level	19	9.5
		6th Level	71	35.5
		7th Level	71	35.5
		8th Level	39	19.5
4	Marital Status	Married	35	17.5
		Unmarried	165	82.5
5	Monthly Income in Riyal	< 5000	155	77.5
		5000 – 10000	23	11.5
		> 10000	22	11
6	Food Habits	Vegetarian	44	22
		Non-Vegetarian	156	78
7	Weight	> 40	116	58
		41 – 55	41	20.5
		56 – 70	27	13.5
		71 – 85	12	6
		> 85	4	2
8	Height	> 145	52	26
		145 – 155	61	30.5
		156 – 170	80	40
		> 171	7	3.5
9	Body Mass Index (BMI) (kg/m^2)	Underweight: < 18.5	123	61.5
		Normal: 18.5 – 24.9	32	16
		Overweight: 25 – 29.9	21	10.5
		Obese: > 30	24	12
10	Daily Physical Exercise	Yes	53	26.5

		No	147	73.5

Table No. 2 depicts the data collection concerning the essential information to analyze the PCOS. It has been observed that much of the students, 55.5% (n=200), learned about PCOS. Around 48% of students cited that they heard about PCOS from external sources (read through health magazines, neighbors, etc.), whereas 11.5% of students were diagnosed with the syndrome.

Table 2:Awareness on Essential Information about PCOS

S.No	Attribute/Variables		Numbers	Percentage (%)
1	**Previous Knowledge about PolyCystic Ovarian Syndrome**	Yes	111	55.5
		No	89	44.5
2	**Methods of Knowledge about PolyCystic Ovarian Syndrome**	Somehow, I know	9	4.5
		Read about it	87	43.5
		Do not Know	81	40.5
		Diagnosed with PCOS	23	11.5
3	**Trying to learn about PolyCystic Ovarian Syndrome**	Reading books or Magazine	3	1.5
		Internet	135	67.5
		Asking someone has PCOS	5	2.5
		Asking doctor or Specialist	17	8.5
		Other	19	9.5
		I did not try to learn	21	10.5
7	**Family History of Menstrual Irregularities**	Yes	117	58.5
		No	83	41.5
8	**Family history of Diabetes**	Yes	135	67.5
		No	65	32.5
9	**Family history of Thyroid Disease**	Yes	131	65.5
		No	69	34.5

From Table No.2, it has been observed that a maximum of the students (67.5%) mentioned the Internet as their primary source to learn about PCOS. To make the students aware of the syndrome, the study also focused on knowing the family history concerning valid attributes like Menstrual Irregularities, Diabetes, and Thyroid Disease. The recorded statistics prove that around 58.5% of students had a family history of menstrual irregularities, 67.5% had a family history of diabetes, and 65.5% had a thyroid history.

Awareness of Symptoms of PCOS

Table No.3: Data Collection on Sensitivity to PCOS Symptoms

S.No	Symptoms	Yes (n)	No (n)	I don't Know
1	Irregular Menstrual Cycle	**59.5 (119)**	**29.5 (59)**	**11 (22)**
2	Facial Acne	**70.5 (141)**	**25.5 (51)**	**4 (8)**
3	Hirsutism	**43.5 (87)**	**41.5 (83)**	**15 (30)**
4	Reduce Fertility	**31.5 (63)**	**49.5 (99)**	**19 (38)**
5	Weight gain	**52.5 (105)**	**26.5 (53)**	**21 (42)**

6	Frontal Hair loss	40 (80)	29.5 (59)	30.5 (61)
7	Pelvic Pain	67.5 (135)	14.5 (29)	18 (36)
8	Abortion (n=35)	34.3 (12)	48.6 (17)	17.1 (6)
9	Early Puberty	32.5 (65)	38.5 (77)	29 (58)
10	Diabetes	33 (66)	47.5 (95)	19.5 (39)
11	Hypertension	30 (60)	47.5 (95)	22.5 (45)
12	Thyroid diseases	35 (70)	43 (86)	22 (44)
13	Psychological disturbance	46.5 (93)	36 (72)	17.5 (35)

The level of awareness of PCOS among students at Farasan College was recorded for various symptoms that include irregular menstrual, facial acne, hirsutism, and reduction in fertility rate, abnormal weight gain, frontal hair loss, frequent pelvic pain, hypertension, and psychological disturbance. From the collected datasets which have been analyzed about all awareness factors, and it has been observed that the average of 45.12% of students iswell aware of the syndrome, butan average of 54.88% of nursing students are not conscious or have not aware of PCOS beforehand, which are depicted in the table no 2. Among married students (n=35) who had not learned about the disease, 34.3% identified PCOS patients with miscarriage experience. Table No.3 represents the PCOS awareness level among students through various aspects.

Awareness of Complications of PCOS

Few of the long-term health implications of PCOS are listed out and gathered the corresponding data from the students (n=200) for optimal assessments [18, 24, and 25] of PCOS complication awareness. All the complication factors are listed out in table 5.4. The observation found that the average of 35.33% of students are well-aware of critical complications like diabetes, CVS disease, sleep apnea, fertility issues, uterus and breast cancer, anxiety, androgen spike, and some psychological disturbances.

Voice and acoustic parameters were comparable across classes, relative to 2.5 percent of students reporting slightly higher serum androgens. Out of 35 married students, 37.14% of them had fertility issues, while 34.29% have given the"I do not know" answer, which shows the incognizant condition of the syndrome. This assessment has been elaborately depicted in figure 5.3.

Table No.4: Data Collection on Sensitivity to PCOS Complications

| S.No	Complications	Yes (n)	No (n)	I don't Know
1	Severe Diabetes	30 (60)	47.5 (95)	22.5 (45)
2	CVS disease	20.5 (41)	36 (72)	43.5 (87)
3	Sleep Apnea	23.5 (47)	45 (90)	31.5 (63)
4	Fertility Issues (n=35)	37.14 (13)	28.57 (10)	34.29 (12)
5	Breast and Uterus Cancer	25.5 (51)	47.5 (95)	27 (54)
6	Androgen Increase	30 (60)	34.5 (69)	35.5 (71)
7	Anxiety	59.5 (119)	23 (46)	17.5 (35)
8	Psychological Disturbance	46.5 (93)	30 (60)	23.5 (47)
9	Voice Alteration	2.5 (5)	47.5 (95)	50 (100)

Awareness on Initiatives to Dilute PCOS Symptoms

There is still no solution, but there are several ways in which PCOS effects can be reduced or eliminated and relieve stress. There are *ways* to address polycystic ovary syndrome symptoms, or PCOS, through lifestyle changes and dietary supplements. Maximum of the students (77.5%) take the initiative to consumea protein-rich diet. 73% of students have initiative that eating fruits and vegetables, and a similar percentage (67%) of them are unaware of consuming a fat-rich diet. Nearly half of the percentage (50%) of the students have the initiative to reduce weight and do exercise to minimize PCOS symptoms. A meager percentage (28.5%) of the students know that contraceptives will minimize PCOS symptoms.
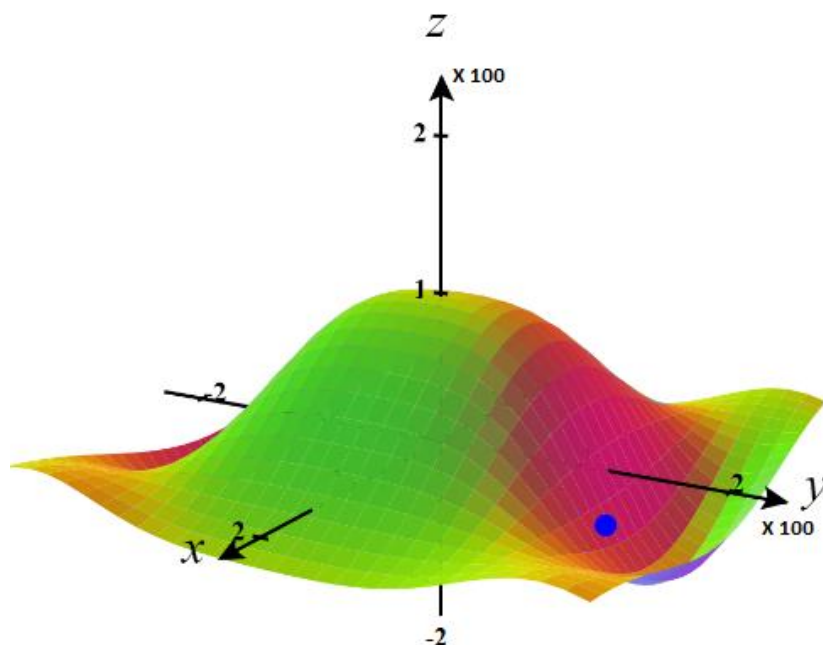
Figure No.1: Evaluations of Countermeasures of Nursing Students against PCOS

All the vital standards (measures) are represented in table 5.5 with collected data. From figure 5.3, the blue dotted line points out the lack of awareness of students regarding PCOS, which is observed to be more than 40%. Although after knowing about PCOS and realizing its symptoms, some students take proper countermeasures, whereas most of the students given either 'No' or 'I don't know' responses.
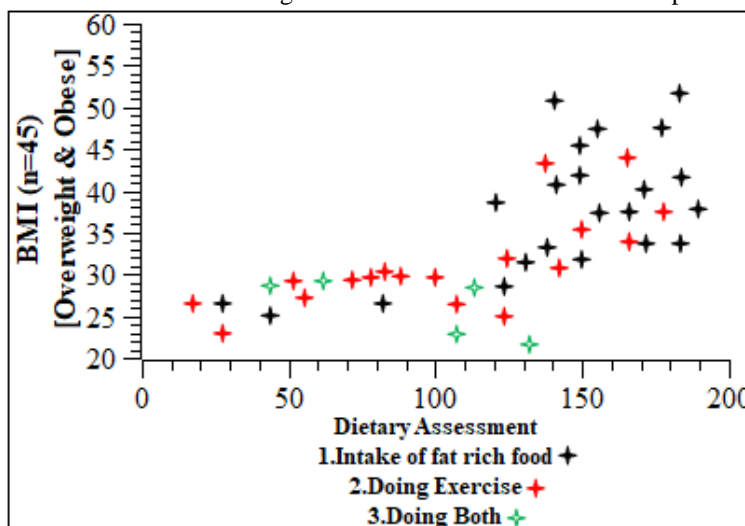
Figure No.2: Correlation Analysis of Dietary Assessment against BMI (n=45)

When analyzed for the correlation of vital dietary measures like intake of fat-rich food and practicing exercise, overweight and obese students affected with PCOS are positively correlated for both parameters. This observation shows that the increase in obesity and fat-rich food intake directly increases the higher possibility of PCOS prevalence.

As of the correlation analysis, it has been found that the overweight and obese (n=45) categorized students who intake fat-rich food are highly affected by PCOS, which is evident through figure 5.4. From the analysis of the observations, there is no surprise that those who have the habit of taking fat-rich food and doing regular exercise are also affected (n=5) with PCOS. So, from the facts, it has been clear that fat-rich food content and exercise play a vital role in preventing or reducing PCOS complications.

Multi-variate Regression Analysis

Table No.5: Awareness on PCOS associated Diseases

S.No	Variables	α	Lower	Upper
1	Inheritance	0.153	-0.630	1.171
2	BMI	1.183	0.551	2.653
3	Menstrual Cycle Irregularities	2.092	0.187	4.082
P-value of 0.03 was presumed to be significant (*).				

Multiple regression was done to show that menstrual cycle abnormalities and inheritance are associated with age distribution, multiple regression was done, and the data are shown in Table 5.7 Nearly one-fortieth (28.9%) of the total variance was clarified by this method. Based on data analysis, genetic factors and abnormal menstrual cycles were significant contributors to PCOS at a young age. Many symptoms of PCOS were examined by multi-linear regression analysis.

Data presented in Table 5.6 proves that the many PCOS symptoms are estimated to happen by the primary variable specified. To further elucidate the consequences of inheritance, menstrual cycle abnormalities and age profiles were used as possible confounders throughout the study. PCOS symptoms persisted as an independent predictor of the preferential factors after adjusting to the earlier variables.

Awareness of Disease Information of PCOS

Though the disease is prevalent among many young girls, it is known that only very few students are well aware of the associated conditions or impacts of PCOS. Table 5.6 represents the survey details of selected nursing students (n=200) on PCOS-associated diseases' awareness status. The observed responses state that the students are well aware of the menstrual cycle regulation (69%); further, they also know that the irregularity in cycles leads to several complications such as Inherited (31.5%), treating PCOS reduce the chance of getting cancer (49%). More or less similar percentage around 40 in the ovaries shape and ovulation effect due to PCOS.

DISCUSSION

PCOS in young girls is a common endocrine condition, especially in their reproductive years. PCOS may lead to multiple women's complications, including reproductive (miscarriage, embryo, and infertility) metabolism (insulin resistance, obesity, T2DM type-2 diabetes, and pre-diabetes).Recent research did not consider the complications involved and steps needed to pre-educate the student to efficient management of PCOS. Over 60% of the inspired participant population lacked a report on PCOS's knowledge of symptoms, signs, and self-management approaches.

Students with PCOS require knowledge to monitor their lifestyle and health to reduce their impacts. Knowledge sources may provide medical advice, books; help network for PCOS; and online access to information. Different tests show that PCOS-affected students had no good contact with their physicians with initial knowledge about the symptoms and consequences.Many students were not fulfilled with the physician's information and felt more aware of PCOS than the physician's suggestions. The Internet is an effective form of study about this issue because it guarantees confidentiality, up-to-date knowledge, and control. However, the main drawback is that the accuracy and accuracy of online information are not monitored.

A total of 200 students in the age group of 18 to 25 took part in this examination. While PCOS may be present in the entire reproduction age, this age group's knowledge level is considered at Farasan College of Jazan University. In many research, it has been observed that the supposed age group is a perfect selection to make them aware of the syndrome. Around 55.5 percent (n=111) of total participated students (n=200) knew of polycystic ovary syndrome.

Just 4.5% of the students (n=9) reported that other people (neighbors) were the source of knowledge regarding PCOS. Followed by 67.5 percent (n=135) of studentswho referred Internet to learn about PCOS found it to be the primary source. The other category segment (friends, well-wishers, neighbors, etc.) was identified as the second information source, which was about 9.5% (n=19), and Specialist/Doctors was the fourth source were selected by 8.5% of students (n=17). PCOS-affected people (n=5) are the next source of learning opportunities by students who accounted for 2.5% (n=5). In addition to these services, books/magazines also provided a smaller percent to learn about the syndrome, which is 1.5% (n=3). Surprisingly, 10.5% of students (n=21) opted to the 'did not try to learn' category found to be the genuine concern of this study.

The questionnaire showed that the students who participated in the study were 40 percent (n=80) with frontal hair loss, 70.5 percent (n=141) with face acne, 33 percent (n=66) with diabetes. Besides, there was early puberty in 32.5% (n=65) of students. In Polycystic Ovary Syndrome, all these symptoms are usual.

Furthermore, when questioned about "Are you likely to get a gynecologist consultant if you suffered from two or more of these symptoms?" 8.5% replied 'yes' while 91.5% answered 'no,' due to their families' weak-mindedness and some other explanations for 'no' insensible on significant symptoms. 61.5% (n=123) were possessing very low weight due to under-nourish; 16% (n=32) seemed to be average weight; 10.5% (n=21) seemed to be overweight; 12% (n=24) were obese; this indicates that in PCOS obesity is a typical find. The symptom of an irregular menstrual cycle is 59.5 percent among those diagnosed with PCOS (n=119), and the least frequent is voice shift was indeed 2.5 percent (n=5).

The awareness regarding the complications due to PCOS is significant since such realization plays a vital role in taking measurable steps against the symptoms. Study on some common and associated complications of PCOS are CVS disease 20.5% (n=41), Sleep Apnea 23.5% (n=47), breast and uterus cancer 25.5% (n=51), androgen increase 30% (n=60), anxiety 59.5% (n=119), and Psychological Disturbance 46.5% (n=93). Apart from the frequent complication, this study focused on married students based on fertility issues,

and the reports show that out of 35 students, 37.41% of them have fertility complications. Overall, around five of them experience a miscarriage.

It has been observed that 63.84% of their mothers or grandmothers also had similar symptoms through information gathered from PCOS students and have also been examined and diagnosed. Also, 67.5% (n=135) of PCOS students have a family history of diabetes, 58.5 (n=117) of them have a family history of menstrual irregularities, and 65.5 (n=131) have a family history of thyroid disorder. All these fact checks imply that PCOS is of hereditary (genetic) significance.

In this empirical investigation on PCOS prevalence and awareness among the students, we observed that 18.5 percent of respondents were formally diagnosed with PCOS.However, this prevalence could be underestimated since almost more than half of the students are not officially identified with PCOS symptoms based on the diagnostic criteria of the Rotterdam standard. Conversely, attributed to preference distortion, our prevalence may be overestimated.

Participants involved are most likely to answer whether they have or hear of the signs of the disorder. Though a health professional provides PCOS for most students, variations in source choices have affected race and education. The big difference between information sources shows that education content focusing on a specific source of PCOS information cannot be uniformly accurate. Hence the needfulness to create information for the students can be disseminated to people, health workers, friends, and family journals in some way that is readily accessible. This information has to be connected to public health facilities. Overall, all the students have rated their PCOS knowledge to lower cumulative.

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Overall, all the students have rated their PCOS information to "know something" or lower cumulatively. The magnanimous difference between information sources shows that education content focusing on a specific PCOS information source cannot be uniformly accurate. Hence the needfulness to create data for the students can be disseminated to people, health workers, friends, and family journals in some way that is readily accessible. This information has to be connected to public health facilities.

CONCLUSION

Among nursing students of Farasan College, there is a high degree of PCOS understanding, where 45.12% of them are well aware of the syndrome. From the analysis, it has been observed that the Internet was the primary source of information. The irregular menstrual period's family track was the most typical cause recorded, 58.5%, and voice shift was the least frequent cause, under 2.5%.Several traditional Practices have exposed misunderstandings and a need for knowledge of PCOS. To diagnose syndromes among female adolescents, we suggest early assessment programs for all students studyingatFarasan College.

LIMITATION OF THE STUDY

In this study, the questionnaires were evolved based on the selective information mentioned on the electronic media interface portal of the ministry of health, Saudi Arabia. The study materials' optimal evaluation is conducted through predictive data interpretation (through SPSS), correlative test (Chi-square test), and multi-variate regressions, which elevates the reliableness and trustworthiness of the outcome. Besides emphasizing various aspects of knowledge and awareness about PCOS among nursing students of Farasan College, the significant limitations of the analysis are limited sample scales and conventional sample strategies. Another limitation of this analysis was the homogeneity of tools utilized to evaluate (Chi-Square and multi-variateregression). Even the reliability has been tested but not verified. Also, the sample sets' transversal complexity did not enable us to demonstrate the relation between cause and effect of PCOS in a broadened manner.

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DECLARATION OF COMPETING INTEREST

The authors declare that they have no conflict of interest.

ETHICAL CLEARANCE:
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