

## Assessment of female nursing student's knowledge regarding polycystic ovarian syndrome at South Valley University

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### Abstract:

**Background:** Polycystic ovarian syndrome (PCOs) is a common endocrine disorder that is associated with negative metabolic, reproductive, endocrine, and psychological consequences among women in reproductive age. Many girls with chronic menstrual irregularities could have PCOs. **This study aimed to** assess the levels of knowledge for female nursing students regarding polycystic ovarian syndrome, at south valley university. **Subjects and Methods:** A descriptive cross sectional design was used to achieve the objective of this study. **Setting:** The study was conducted at faculty of nursing, south valley university. **Sample:** convenient sample on 260 female students at different grades. **Tool:** Data was gathered using a structured interview questionnaire developed by investigator. **Results:** The results showed that 1.2%, 45.4%, 53.45% of the female students had poor, moderate, and good knowledge respectively. **There were a high significant relation between total score of female students knowledge and their Grade** ( $P= 0.001$ ) and pre-university qualifications.

Also, there is highly statistical significant difference between total score of female students and those who had studied maternity course. **Conclusion:** more than half of the female students had good knowledge regarding Polycystic Ovary Syndrome (PCOs). **Recommendation:** promotion of health regarding PCOs and modifications of lifestyle. – Educational program for adolescent girls about PCOs and encourage modifications of their lifestyle.

**Key words:** *Assessment, Endocrine, Polycystic ovarian syndrome & Reproductive.*

### Introduction

PCOs is defined as a constellation of connected reproductive disorders, including persistent anovulation, elevated androgen production, disrupted gonadotrophin secretion, and polycystic ovarian morphology. It frequently associated with both obesity and insulin resistance. Major morbidities across the lifespan can result from these metabolic and reproductive abnormalities, such as type 2 diabetes (T2D) and anovulatory infertility (Dapas, & Dunaif, 2022).

Adolescence is a stage of physical and mental development that typically occurs between puberty and adulthood. Functional variations in the hypothalamic-pituitary-ovarian axis during typical puberty cause changes in reproductive hormones and menstrual patterns that mimic some of the symptoms of PCOs, making the diagnosis of the condition more challenging in adolescent female populations (El Sayed et al., 2020).

Menstrual cycles are typically less frequent in females with PCOs. Their levels of extra male hormones lead to the development of various small collections of fluid in the ovary known as follicles, and they may also have ovulation failure.

Hyperinsulinemia and insulin resistance are frequently linked (Sehar, 2020).

Teenagers with PCOs are more likely to experience mental and subclinical eating problems as well as sadness and anxiety. If treated in the early adolescent stage, it is easily healed (Adullhameed et al., 2022).

Since controlling monthly irregularity cycles and hirsutism is the primary clinical concern in PCO patients, oral contraceptives (OCs) may be utilised in the ideal situation while carefully weighing the common administration-related contraindications. Teenagers who are obese should make lifestyle changes; in some cases, metformin may also be administered, especially if glucose intolerance is present. If hormonal treatment does not improve hirsutism, antiandrogen therapies should be suggested (Tehrani, & Amiri, 2019).

Nurses are uniquely positioned to raise awareness of this issue. In addition to basic tasks, they can inform women, particularly young women, about PCOs (Sehar, 2020).

### Significance of the study

PCOS affects 6.6% of Egyptian teenage girls, and 12.6% of teenage girls are at high risk (Adullhameed et al., 2022).

Prevalence of PCOs in Young Adult Unmarried Females Attending Zagazig University hospital (outpatient clinics of gynecology and dermatology) was 55.6% among all presented females, oligomenorrhea, acne, and hirsutism were the most common complaint (Siam et al., 2020).

There are gaps in the understanding of the several facts of PCOs in teenagers. This refers to a lack of longitudinal studies among adolescents, a lack of specific diagnostic standards to identify PCOs during this period, a lack of normative values for a number of biochemical markers, and a lack of clarity regarding whether the severity of symptoms at this stage accurately predicts the degree of disruption in later life (El Sayed et al., 2020).

Unfortunately, the prevalence of PCOs in adolescents is underdiagnosed and under-examined. The main cause of this occurrence is thought to be a lack of understanding of the condition and its symptoms. Teenagers need to be made more aware of the issue in order to prevent serious occurrences of fertility issues in the future (Abu-Taha et al., 2020).

So, the current study will be carried out to assess the knowledge about PCOs among female students in faculty of nursing South Valley University.

## Subjects and Methods

**Aim of the study:** The study aims to assess the levels of knowledge of female nursing students regarding polycystic ovarian syndrome, at south valley university.

**Research question:** What is the levels of knowledge of female nursing students regarding polycystic ovarian syndrome at South Valley University?

**Research design:** A descriptive cross sectional design was used to conducted this study.

**Setting of the study:** This Study was implemented at Faculty of Nursing (Faculty Labs & Classes), South Valley University; it is governmental educational institution which offer bachelor degree in nursing science.

**Sample:** Current study was conducted on 260 female students (among 665 female students) in different grades (the four years students) at faculty of nursing, south valley university. The sample was calculated according to the following equation:

$$n = \frac{DEFF \cdot Np(1-p)}{[d^2/Z^2(1-\alpha/2^2)(N-1) + p^*(1-P)]}$$

DEFF (Design effect) = 1

N (population) = 665

p (Hypothesized %) = 50% +/-5

d (tolerated margin of error) = 0.05

Z (level of confidence) = 1.96

$\alpha$  (Alpha) = 0.05

$$n = \frac{[1 \cdot 665 \cdot 50\% \pm 5 \cdot (1-50\% \pm 5)]}{[(0.05)^2 / (1.96)^2 - 0.05 \cdot (665-1) + 50\% \pm 5 \cdot (1-50\% \pm 5)]}$$

**n= 242 that increased to 260 student** (65 students from each grade).

## Tools of the study

Data was collected using a **structured interview questionnaire**.

The tool was developed by the investigator by keeping in mind the objective of the study based upon relevant international studies. The tool was divided into two sections:

**Section I:** Demographic profile consisted of the following; age, grade, pre-university qualification, residence, and religion.

**Section II:** It consists of twenty two (22) structured multiple choice questions developed by investigator to assess the knowledge regarding Polycystic Ovarian syndrome (description of the syndrome, risk factors, signs and symptoms, diagnosis, preventive measures, complications and management).

## Scoring system

The total questions included 22 items, each correct answer took two marks and the incorrect answer took one mark. The total scores from 1 to 68 (many questions has more than one answer; each answer of those had two marks) related to presence of multiple answer questions will be graded as follow;

1. Scores less than 50 % (< 34 marks) indicates poor knowledge.
2. Scores from 50% to 75% (34-51 marks) indicates moderate knowledge.
3. Scores more than 75% (> 51 marks) indicates good knowledge.

## Validity & reliability of the tools

Validity of the tool was done, before actual study work through a jury panel of five experts in the field of maternity and psychiatric nursing, whilst the reliability was assessed by measuring its internal consistency using, Alpha Cronbach's test for the tool.

## Pilot study:

The pilot study was done on ten percent (about 26 female students) from the 4 grades. Those female nursing students were excluded from the study. The necessary modifications were done according & included in the study.

## Procedures

- An official approval was obtained from the dean of the Faculty of Nursing, South Valley University (November 2021).
- Data collection was started from the period of the beginning of December 2021 to March 2022.
- All female students accepted to participate during the study period from December 2021 to March 2022 were included in the study. The investigator attended at the end of student's clinical/theoretical classes to start the study just after ending their

classes after co-ordination with the teaching staff. The investigator greet the students and introduce the self. The investigator provided an explanation of the study including its purpose, use of results and anonymity of the questionnaire, (Confidentiality). Students informed that completion of the study will be voluntary. The questionnaire distributed to the students (65 questionnaire for each grade) to obtain the necessary data. The investigator assisted the students by translation and illustration of the questions, especially the 1<sup>st</sup> and 2<sup>nd</sup> grades students as they unfamiliar with obstetrics and gynecological terms, the tool was completed in duration about 45 minutes for those grades. While tool answer completion took about 25 minutes for the other two grades. The investigator provided the students with sufficient time to fill the questionnaire, asked students to report any problem or questions. The investigator was able to collect about 25 answered tool in each clinical class, and 50 one in the theoretical one. The investigator was attended 5 clinical classes and 3 theoretical classes (one class per week).

- A pilot study was carried out on 10 % of the students. The sample of the pilot study was excluded from the total sample and modifications were done on the tool as recommended.

#### Ethical consideration

Research proposal was approved from ethical committee in the Faculty of Nursing. Informed consent was obtained from students who were agreed to participate in the study, after explaining the nature and purpose of the study. There was no any risk for the students during conduction of the study. The study was followed common ethical principles in clinical research. Confidentiality and anonymity would be assured and the participating students had the right to refuse participation or withdraw from the study at any time without any rational.

#### Statistical analysis

Data entry and data analysis were done using statistical package for the social science (SPSS) version 20. Data were presented as number, percentage means and standard deviation. Chi-square test was used to show relation between variables. P-value considered statistically significant when  $p < 0.05$ .

## Results

**Table (1): Distribution of female students according to their socio-demographic characteristics:**

Socio demographic characteristics:	N (260)	%
Age mean± SD	19.96± 1.33	
<b>Grade</b>		
• 1 <sup>st</sup> year	65	25.0
• 2 <sup>nd</sup> year	65	25.0
• 3 <sup>rd</sup> year	65	25.0
• 4 <sup>th</sup> year	65	25.0
<b>Marital status</b>		
• Single	254	97.7
• Married	6	2.3
<b>Religion:</b>		
• Muslim	241	92.7
• Christian	19	7.3
<b>Residence</b>		
• Urban	190	73.1
• Rural	70	26.9
<b>Pre-university qualification</b>		
• Secondary school	211	81.2
• Technical institute of health/nursing	49	18.8

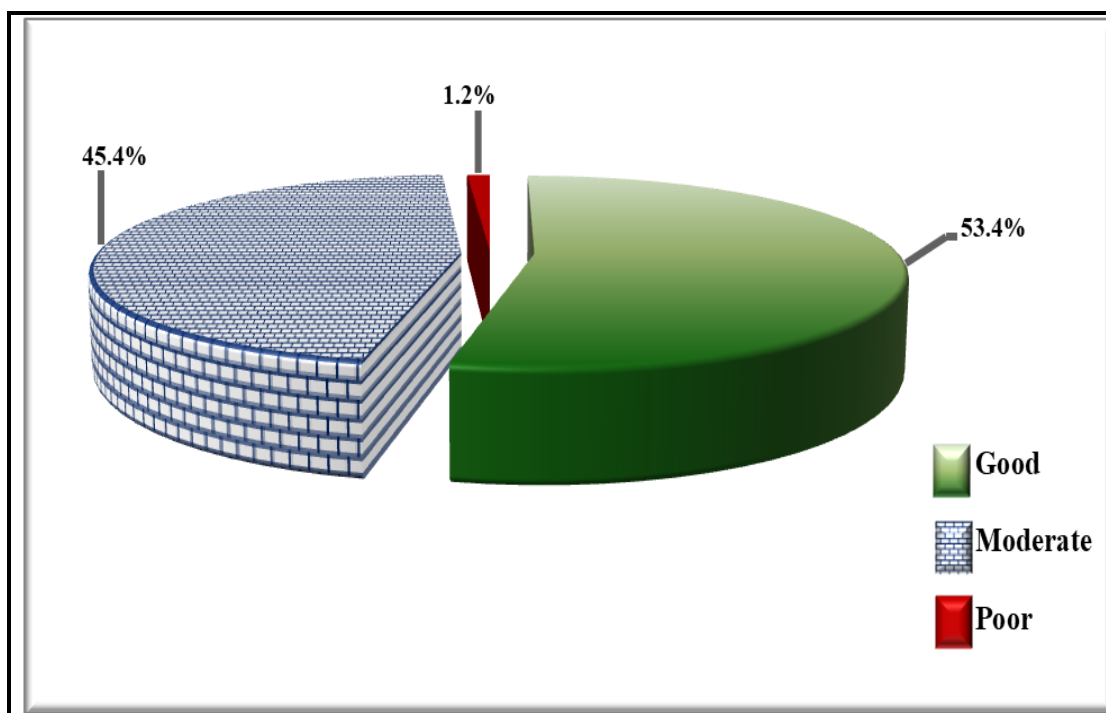


Figure (1): Distribution of female students according to total knowledge about PCO syndrome

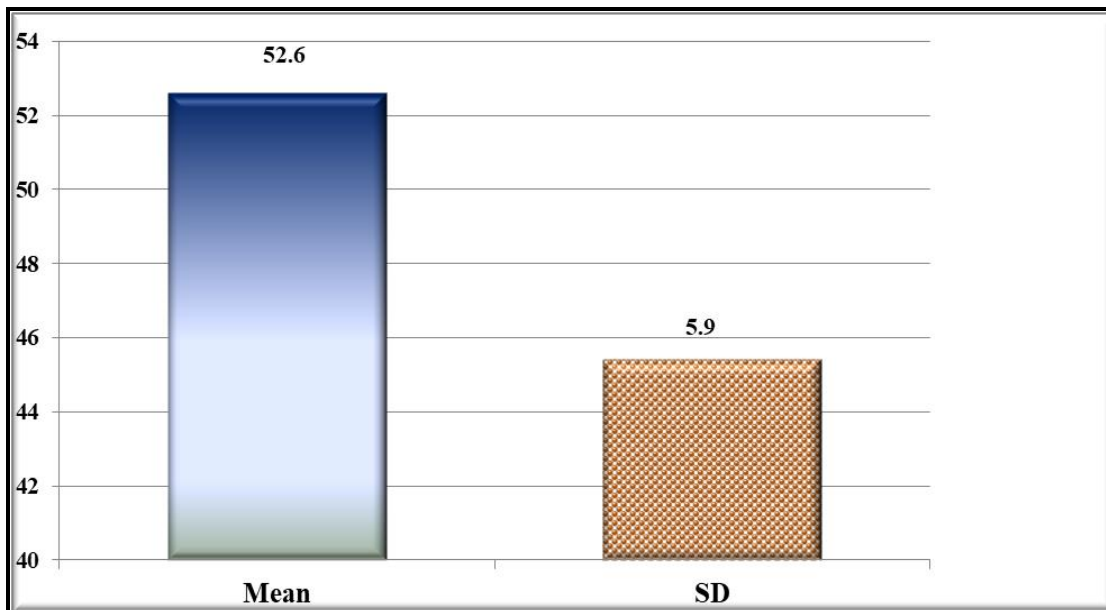


Figure (2): Distribution of female students according mean and SD of total knowledge regarding PCO syndrome.

**Table (2): Relation between socio-demographic characteristics and total score of female students knowledge:**

Socio-demographic characteristics:	Total knowledge			p-value
	Good	Moderate	poor	
	N (%)	N (%)	N (%)	
<b>Grade</b>				<b>0.001**</b>
• 1 <sup>st</sup> year	10(15.4)	54(83.1)	1(1.5)	
• 2 <sup>nd</sup> year	23(35.4)	40(61.4)	2(3.1)	
• 3 <sup>rd</sup> year	65(100.0)	0(0.0)	0(0.0)	
• 4 <sup>th</sup> year	41(63.1)	24(36.9)	0(0.0)	
<b>Marital status</b>				<b>0.563</b>
• Single	137 (53.9)	114 (44.9)	0 (0.0)	
• Married	2(33.3)	4 (66.7)	3 (1.2)	
<b>Religion:</b>				<b>0.879</b>
• Muslim	129 (53.5)	109 (45.3)	3 (1.2)	
• Christian	10 (52.6)	9 (47.4)	0 (0.0)	
<b>Residence</b>				<b>0.075</b>
• Urban	94 (49.5)	93 (48.9)	3 (1.6)	
• Rural	45 (64.3)	25 (35.7)	0 (0.0)	
<b>Pre-university qualification</b>				<b>0.038*</b>
• Secondary school	118 (55.9)	92 (43.6)	1 (0.5)	
• Technical institute of health/nursing	21 (42.8)	26 (53.1)	2 (4.1)	

(\*\*) highly statistical significant difference

(\*) Statistical significant difference

**Table (3): Relation between total score of female students knowledge and previous studied obstetric & Gynecological course**

Grade	Total knowledge			p-value
	Good	Moderate	Poor	
	N (%)	N (%)	N (%)	
• Studied the course	106 (81.5)	24 (18.5)	0 (0.0)	<b>0.001**</b>
• Not studied the course	33 (25.4)	94 (72.3)	3 (2.3)	

(\*\*) highly statistical significant difference

**Table (1):** Show that the mean age was  $19.96 \pm 1.33$  years old with range about 25% of the female students in each grade. With regard to marital status, majority of female students (97.7%) were single. Regarding religion, majority of female students (92.7%) were Muslim. Regarding residence, nearly three quarter of them (73.1%) were urban. Regarding pre-university qualification, it was found that majority of female students (81.2%) were secondary school.

**Figure (1):** Cleared that the female students (1.2%, 45.4%, 53.45%) had poor, moderate and good knowledge, respectively.

**Figure (2):** Illustrate that the mean total knowledge was  $52.6\% \pm 5.9$ .

**Table (2):** This table reveals that there is a highly statistically significant difference between female students knowledge and their grades ( $P=0.001$ ), while it was statistically significant difference between levels of knowledge and pre-university qualification 0.038\*.

**Table (3):** Reveals that there is highly statistical significant difference between total score of female students and previous studied course.

### Discussion

Polycystic ovarian syndrome is a complex endocrine disorder affecting women across all the stages of their life. Adolescent girls often present with menstrual irregularities, acne, hirsutism, and obesity which can further lead to body image disorders, low self-esteem, anxiety, and depression in them. Women with PCOs may have difficulty in spontaneous conception and often need fertility treatment. These women can also experience repeated pregnancy losses. Later in life, they are at increased risk of diabetes, hypertension, and cardiovascular disorders (Kaundal et al., 2022). The study aimed to assess the knowledge of female nursing students regarding polycystic ovarian syndrome, in south valley university.

The finding of the present study showed that more than half of the female students had good knowledge.



This finding agree with **Sasikala et al., (2021)** who assessed the knowledge and awareness on polycystic ovarian syndrome among nursing students in a tertiary centre in South India, they found that majority of nursing students were aware of PCOs and its symptoms. Also the finding of current study consistent with **Alessa et al., (2017)** who assessed awareness of polycystic ovarian syndrome among Saudi females, which showed that the level of awareness of PCOs was 56.7%. On the same line **Goh et al., (2022)** who assessed the prevalence, knowledge of polycystic ovarian syndrome and health-related practices among women in Klang valley, Malaysia, their study showed that more than half of the respondents had good knowledge of PCOs with a percentage of 52.7%. Also this finding nearly consistent with **Al Bassam et al., (2018)** who assessed PCOs awareness among female students, Qassim university, Saudi Arabia, who found that 71% of students were aware about the polycystic ovarian syndrome.

The study finding disagree with the finding of **Pramodh, (2020)** who conducted a study about Exploration of lifestyle choices, reproductive health knowledge, and polycystic ovarian syndrome (PCOs) awareness among female Emirati University students, he found that Students displayed low reproductive health knowledge and poor awareness of PCOs. On the same line **Karkar et al., (2019)** who assessed the knowledge regarding polycystic ovarian syndrome among undergraduate students in selected colleges of Pune city, India, their finding classified as follows; 3% of undergraduate students are having good knowledge regarding the syndrome 73% of undergraduate students are having average knowledge and 24% of undergraduate students having poor knowledge regarding it. It also disagree with **Salama et al., (2019)** Who assessed information about PCOs among Nursing students, Benha University, Egypt, they found that the majority of adolescent students (89.7%) had no information about PCOs. The explanation of these differences may be due to differences in communities and cultures, lack of discussions regarding reproductive health in families and the absence of easy access to resources.

The current study showed a high significant relation between total score of female students knowledge and their grades. This finding agreed with **Kutbi et al., (2021)**, they illustrated a considerable variation between nursing students as regard to academic year ( $P < 0.001$ ). Also consistent with **Alshdaifat et al., (2021)** who assessed awareness of polycystic ovary syndrome: A university students' perspective, female students, residing in Jordan. They found that The participants' scores at different academic levels were significantly different ( $p < 0.001$ ). Also agree with

**Sasikala et al., (2021)** who found third year nursing students had more knowledge on risk factors and complications compared to first year students which was statistically significant ( $p < 0.001$ ). On the other hand This finding disagree with **Karkar et al., (2019)** they found that there is not variation in the knowledge between different grades among students. These variations may be due to there is differences in academic learning curriculums, cultures and communities.

Also, the present study found a significant relation between total score of female students knowledge and pre-university qualifications, which refer to that the students from secondary school have good total score than students from the technical institute of health or nursing. This result seems different from expected. And by revision of the literature review, the investigator did not find studies discussed this issue.

The finding of the present study revealed that the mean age of female students was  $19.9 \pm 1.33$  years, which in harmony with the **Sasikala et al., (2021)** they found that their study group belonged to age group of 18-22 years, on the same line **Kutbi et al., (2021)** who conducted a study about The level of awareness of nursing students regarding polycystic ovarian syndrome in King Abdulaziz University, their participants were in the age group range from 19 to less than 21 years. The finding was similar to **Devi, (2017)** who conducted a study to assess the Effectiveness of Information Education Communication on Knowledge regarding Polycystic Ovarian Syndrome among Adolescent Girls in a selected college at Theni, who reveals that their study group belonged to age group of 18-21 years.

This current study finding disagree with the finding of **Çoban et al., (2019)** who assessed Psychiatric disorders, self-esteem, and quality of life in adolescents with polycystic ovary syndrome, University School of Medicine, Turkey. Who found female adolescents aged 13-18 years.

It also disagree with **Memon et al., (2020)** who conducted a study on Polycystic ovary syndrome: risk factors and associated features among university students in Pakistan, They found that their participants were in the age group range from 19 to 25years. Also **Adullhameed et al., (2022)** who assessed the Effect of lifestyle changes intervention on quality of life and self-esteem of adolescent female with polycystic ovarian syndrome at ant natal clinic unit women health hospital, Assiut University, Egypt. They found that two-thirds of the subjects were between the ages of 20 and 30 years.

Concerning to marital status of female students, the vast majority of nursing students were single. This results were in accordance with the finding of **Al Bassam et al., (2018)** who reported that 100% of the

sample were unmarried Saudi female. On the same line another study conducted by **Omagbemi et al., (2020)** who assessed Current Knowledge and perceptions of women about polycystic ovarian syndrome in Nigeria, who found Most of the respondents (86.8%) were single. Also these findings agree with the study conducted by **Pramodh, (2020)** who found the majority (92%) of students were unmarried.

That result disagree with **Adullhameed et al., (2022)** they found that (60%) of students were single. Also **El Sayed et al., (2020)** who found that (75%) of the participants were single.

These differences may be due to differences in the aims and samples of the studies.

Regarding to family residency, nearly three quarters of the nursing students were from urban areas, This disagree with the result of **El Sayed et al., (2020)** who found that (61.1%) of them were from rural areas. On the same line **Memon et al., (2020)** who found that (64.3%) of the sample were from rural areas. Also **Salama et al., (2019)** who found that (74.3%) of their sample were from rural area.

This results agree with **Shrivastava et al., (2019)** who assessed the Effectiveness of self-Instructional module on Knowledge regarding polycystic ovarian syndrome among B. Sc. Nursing students of Selected nursing college in India, they found that (61.7%) of their sample were from Urban area. Also **Ibrahim et al., (2017)** Screening of polycystic ovarian syndrome among adolescent girls at Cairo university. They found that the more than two thirds of the adolescents girls (69.7%) resided in urban areas.

#### Merits and limitations:

- Merit of the study is being assessment the levels of female nursing students's knowledge about PCOs thus will be benefit for increasing awareness about the syndrome also being included in nursing curriculum.
- The limitation of this study is being a cross sectional study with a convenience sampling technique using a newly developed questionnaire and scoring system. So; Score validation and nationwide longitudinal studies are required.

#### Conclusion

Results of the present study concluded that more than half of the female students had good knowledge.

#### Recommendations

**Based on the findings of the present study, the following recommendations are suggested:**

- Conducting an educational program for young girls in different setting to increase levels of awareness

concerning polycystic ovarian syndrome thus encourage modifications of their lifestyle.

- Nursing curriculum should be updated to include comprehensive information about PCOs to improve the awareness of the students.
- Further studies should be carried out on a large number of adolescents to generalize the study findings.

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