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A STUDY ON KNOWLEDGE, ATTITUDE AND PERCEPTION OF POLYCYSTIC OVARY SYNDROME (PCOS) AMONG YOUNG STUDENTS IN HIGHER EDUCATIONAL INSTITUTIONS, PERAK

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Abstract: *PCOS is a prevalent reproductive endocrine disorder in women and it is common endocrine disorder in women. Females suffer from PCOS complications (i.e., are infertile) and may have significant levels of androgen hormones. Globally, PCOS incidence is growing rapidly but most of young generations do not know this condition sufficiently. The goal of this study is to establish and interpret the prevalence of PCOS symptoms in female students, and to check whether these students has menstrual irregularities, obesity, hirsutism, extreme acne problems and whether they are aware of the syndrome or not. According to the finding of study the occurrence of signs and symptoms of PCOS are developing but females are not aware of PCOS even though its signs and symptoms were present in many of them. Most of students they might adequate information regarding PCOS, but they do not know whether they should act on that or not. Furthermore, there is a study indicates that majority of females don't meet gynecologist unless there is severe or life-threatening symptoms or disease that happen to them. In addition, the sign and symptoms of PCOS frequently misunderstand as sign of menstrual period.*

Keywords: Knowledge, perceptions, attitudes, polycystic ovary syndrome, young students.

1. Introduction

Polycystic ovary syndrome (PCOS) is a diversified and largely indefinable disorder. PCOS is a “syndrome,” or classified as symptoms that affects the ovaries and ovulation. It has three major features which are cysts in the ovaries, high levels of male hormones and uneven periods. The word “polycystic” indicate multiple cysts or many cysts that each one containing an immature egg. Regarding to that, ovulation cannot be triggered as the eggs never mature enough. The lack of ovulation alters levels of estrogen, progesterone, FSH, and LH. Androgen levels will be higher than usual, while estrogen and progesterone levels are lower than usual (Watson, 2019).

According to Womenshealth.gov, 2019 between 5% and 10% of women between range of ages of 15 to 44, or during the years they can have children, have PCOS. Most women which in their 20s and 30s can detect they have PCOS where at that time they have problems getting pregnant and see their doctor. However, PCOS can happen at any age especially after puberty. Risk of PCOS may be higher if women have obesity or if they have a relative with PCOS syndrome. Although the fixed aetiology of PCOS is still undecided, it is understood to be a multifactorial condition with a genetic element. Approximately 20–40% of first-degree female relatives of women with PCOS go on to evolve PCOS themselves, compared to an estimated 4–6% prevalence in the general population. Many women with PCOS have female relatives with PCOS, even if it was maybe never diagnosed. Any underlying genetic predisposition is likely complicated by epigenetic and environmental factors such as an unhealthy diet and lack of physical activity.

There are many clinical elements of polycystic ovary syndrome which are Oligomenorrhea/amenorrhea, Infertility/first trimester miscarriage, Obesity, Hirsutism, Acne, Acanthosisnigricans, Male pattern alopecia. The diagnosis is made on ultrasound as it is heterogeneous condition and combinations of signs and symptoms and management is determined by the symptoms. According to the studies before, approximately 7 million women in the U.S. have PCOS and less than half of them aware that they have the disorder. Public information, awareness of the symptoms and the untreatable nature of the disorder are critical to discover women who need medicaments. Awareness and acknowledgement of PCOS syndrome is very important to identify its advantages to healthy living, the impact on quality of life and longevity of women. (Haq, Khan, Riaz, Nasim, Razzaq & Tahir, 2017).

2. Literature Review

2.1 Review Related to Knowledge and Prevalence

Various studies were conducted to analyze the knowledge and perception of public especially women regarding Polycystic Ovary Syndrome (PCOS) around the world throughout the years. It is important to search for the significant studies regarding the prevalence of PCOS to identify how it have been developed throughout the community in this world. Pembe & Abeid (2009) conducted a study to determine prevalence of polycystic ovaries syndrome (PCOS) among women with infertility attending gynaecological outpatient's department (GOPD) at Muhimbili National Hospital at Tanzania. The study was managed for about 5 months where all the women with infertility about 102 women attending the GOPD were recruited. Two women were excluded due to diagnosis of pregnancy making only 100 available for the analysis. Based on the result, it reported that the characteristics of oligomenorrhoea (infrequent menstrual period) and acne were significantly higher in a group of women with PCO than among women with normal ovaries. The hirsutism also recorded quite higher value in women with PCOS compared with women of normal ovaries. By using the Rotterdam criteria 32% of women were diagnosed to have polycystic ovary syndrome (PCOS) and 68 women with no PCOS. Among these number 10.3% had polycystic ovaries, 22.1% had signs and oligoanovulation and 8.8% had hirsutism. Through this study, they concluded that polycystic ovaries are synonym among women with infertility but still are not necessarily associated with polycystic ovary syndrome.

Another research conducted by Haq, Khan, Riaz, Nasim, Razzaq & Tahir (2017) to 451 female students of age range between 18 to 26 revealed that there were about 72.5% of participants were not aware about this syndrome and gain knowledge thorough the brochure given. While from all the respondents collected, 90.2% of subjects were having enough knowledge about PCOS after doing some educational intervention. About the prevalence, it can be divided into three categories where 17.5% of respondents were suspected to develop PCOS and 3.5% of respondents were diagnosed with PCOS based on sign and symptoms and 5.5% of them were already developed and diagnosed with PCOS. From the data collected, it is stated 7.8% of participants were overweight and 2.9% of respondents were obese. As for the conclusion, the researcher figured out that the prevalence of signs and symptoms of PCOS are increasing but many females are still unconcerned about PCOS even though most of them have experienced its sign and symptom. In addition, these studies indicate that most of females do not meet gynaecologist and ask for consultation unless there is a life-threatening problem coming.

Next, Upadhye & Shembekar (2017) have been conducted a research to assess the awareness of medical students regrading PCOS where the results have shown that from 200 respondents, half from the girls had normal BMI, few of them were overweight and obese while only small portion were underweighted. Besides that, the respondents also experienced symptom like had acne, had irregularity of menses, had hirsutism and infertility. In term of knowledge of PCOS, they are few media they use to get the information of PCOS like from teacher, from friend, from a doctor, from newspaper, from internet while about 28 from the adolescent and young girls were unaware of PCOS. Through this, they have made the conclusion that in order to provide awareness about this disorder, knowledge and counselling to adolescent are a crucial effort that can be done towards them. They also mentioned that key of this is an accurate diagnosis at an early age.

Besides that, Nanjaiah & Roopadevi (2018) also have carried out a study to analyse the prevalence of PCOS among young college girls and numerous factors associated with it. From their result, it was reported that PCOS associated more with girls of menorrhagia or oligo-menorrhea than girls with normal menstrual cycle for two to four days which was statistically significant. PCOS prevalence was higher in the group of subjects who did not bodily active compared to those who active with the activities like walking or jogging for minimum 30 minutes a day, at least five days a week. As for the conclusion, PCOS is one of the no transmissible disorder that only affect the women, which needs attention. In order to diagnose the probable case of PCOS, presence of oligomenorrhea, irregular cycles, hirsutism among young girls, two years post menarche, can be a good screening indicator.

Dashti, et al (2018) recently have been conducted a study to a total of 675 females with the mean age of 26.01 ± 7.14 years in Universiti Putra Malaysia. From the data collected, prevalence rate of PCOS was gathered as 12.6% which about 85 women. All PCOS respondents were detected with characteristics of hyperandrogenism and polycystic ovary, while only one subject has an anovulation (1.2%). Increased body mass index, higher waist circumference, hirsutism and amenorrhea have a significant relation with the odds of PCOS. At the end of study, they concluded that this research had revealed a high prevalence of PCOS and a specific phenotype of PCOS among the Malaysian employees.

2.2 Review Related to Risk Factor, Complication and Treatment

Generally, Polycystic ovary syndrome (PCOS) which is one of the common reproductive disorder always linked with metabolic impairment and other several factor like obesity, insulin resistance and diabetes mellitus. Alves et al. (2017) have been investigated on metabolic profile of PCOS women whether they are driven by possibilities of obesity or are specific features of PCOS related to increased testosterone levels. From the result, it is reported that women associated with PCOS when compare with controls show more adverse metabolite profile. It also stated that there are four lipid fractions in different subclasses of very low-density lipoprotein (VLDL) were correlated with PCOS, after some adjustment were made on waist circumference and correction of multiple testing. In stratified study the high-density lipoprotein (HDL) levels, Apo A1 and albumin values when compared with the controls it was significantly lower in the PCOS subjects with the larger WC strata (≥ 98 cm). Besides, in PCOS cases with large WC, testosterone levels were significantly associated with VLDL and serum lipids, but it is not same as control. That is mean that higher testosterone levels, adjusting with WC, associated adversely with insulin levels and HOMA IR in cases but not in the controls. From this study, they concluded that abdominal density and hyperandrogenism play a part in dyslipidaemia and other metabolic traits of PCOS which all may negatively contribute to the long-term health of women with PCOS.

Next, the research was conducted with the rationality to clarify the prepubertal risk factors associated with the development of Polycystic Ovary Syndrome (PCOS) and recognized the special clinical manifestations of the syndrome. Tsikouras et al., (2015) had done a structured review of literature through several well-known electronic database searches like Pubmed, Medline and Embase. It also included the studies published in English-language, peer-reviewed journals from 1996 to the next seventh years. The focus of this study was based on the risk factors, the unique features and treatment choices of the PCOS in puberty. The manner of PCOS development was hypothesized to be based on connection between genetic and several environmental components. Generally, it was difficult to make the diagnosis in the young generation specified to girls. The syndrome was correlate to a higher risk of infertility, cardiovascular disease, type II diabetes mellitus and the metabolic disorder. Through this study, they pointed out that early recognition of sign symptoms and early treatment was important in order to avoid the long-term complications of the syndrome, especially infertility and cardiovascular disease which can cause other threatening life disease.

Escobar-Morreale et al. (2012) had been organized a study with focused to distinguish the intermediate metabolism phenotypes associated with PCOS and obesity. As the results of the study, subjects associated with PCOS were having hyperinsulinemia and insulin resistant compared with the controls. Increased of lipolysis, possibly secondary to impaired insulin action at adipose tissue indicated that the obese patients of PCOS were having increase in plasma long-chain fatty acids. Conversely, the suppression of lipolysis and increased glucose usage (increased lactic acid concentrations) in peripheral tissues, and PCOS patients as a whole showed decreased 2-ketoisocaproic and alanine concentrations indicated the nonobese patients with PCOS suggesting utilization of branched-chain amino acids for protein synthesis and not for gluconeogenesis. These metabolic processes required an efficient insulin signalling; therefore, insulin resistance was not common in the women's tissue, and there may be a different mechanism contributed to their hyperinsulinemia. In the end of the study, they deduced that the metabolic heterogeneity associated with obesity, underlies PCOS. The possibility that hyperinsulinemia may occur in nonobese women with PCOS with the absence of universal insulin resistance should be considered when constructing diagnostic and therapeutic strategies for disorder management.

Nybacka, Hellstrowithin & Hirschberg (2017) recently also had done a research on some issue of metabolic biomarkers in overweight/obese PCOS women with the interventional outcome of dietary components related to metabolic consequences. It is revealed that in diet and diet-exercise group, they were significant reduction of BMI, waist circumference, total cholesterol as well as low-density lipoprotein and Homeostasis Model of Assessment index in the D group. In the Exercise group, exercise was increased along with a reduction in BMI and waist circumference. Besides, higher fibre intake was the strongest predictor of reduced BMI while a lower in trans fatty acid consumption predicted reduced insulinogenic index. It was concluded that the effective way to enhance metabolic disturbances in PCOS women of overweight/obese is nutritional counselling with dieting. In addition, the primary predictor of weight control and metabolic enhancement are increasing intake of fibre and reducing intake of trans fatty acid.

Furthermore, the Dietary Approaches to Stop Hypertension diet, aka the DASH has been seen to be beneficial for weight loss and lower the insulin and androgen levels PCOS women. It included the low-GI, high-fiber, and low-calorie meals rich in fruits, vegetables, whole grains, and low-fat dairy. Presently, one research study was conducted in by Azadi, Karimi, Salehi, Fallahzadeh, & Nadjarzadeh (2017) to discover the impacts of DASH diet on reproductive hormones, plasma total antioxidant status and anthropometric indices in overweight and obese PCOS women. Their results reported that the utilization of DASH diet show a significant reduction in weight, BMI, fat mass and serum androstenedione. Apart from that, concentration of sex hormone binding globulin (SHBG), free androgen index and 2,2'-diphenyl-1-picrylhydrazyl (DPPH) scavenging activity are found increase in DASH group. Due to that, they have concluded that by consumption of DASH diet could help in weight loss as well reduced the BMI, fat mass and androgen level.

Legro et al. (2015) conduct a study with the purposed to discover the relative efficacy of preconceived intervention on reproductive and metabolic abnormalities in overweight/obese women with PCOS. They have consented 216 and randomly assigned 149 women to receive of continuous oral contraceptive pills (OCP), lifestyle modification including of caloric restriction and meal replacements, weight loss medication and increased physical activity to promote a 7% weight loss (Lifestyle) or combined treatment with both OCP and lifestyle modification (Combined) for about 16 weeks. It was reported that with both lifestyle and combined, they achieved significant weight loss compared with baseline and OCP. At the end of preconception treatment, significant increase in the prevalence of metabolic syndrome occurred compared with baseline within either in the Lifestyle or Combined groups there were no change of metabolic syndrome. Lastly, the concluded that the preconception weight loss intervention terminate the adverse metabolic oral contraceptive effects and leads to greater ovulation rates when compared with oral contraceptive pretreatment

Jeans YM et al (2009) conducted a study to explore the dietary and lifestyle plans that followed by PCOS women and the contribution of nutritionists to its management. The result showed that basically the dietitians provide some advice on a reduction in energy intake, dietary glycaemic index often in combination. Regimes for women with poly cystic ovarian syndrome who were following a diet specifically for their disease included a low glycaemic index, weight loss diets or a combination. Of interest, the percent of overweight women who were not following a diet was quite high and only small portion of women consult the dietitians. There were high percent of self-reported on symptoms improvement associated with women of PCOS who had increased physical activity. They concluded that women with poly cystic ovarian syndrome recognize the beneficial effect of diet, but only few received dietary advice from a registered dietitian. A consensus statement of evidence-based dietary advice for women with poly cystic ovarian syndrome is needed and would be a useful resource for dietitians as they can improve the advice contents.

2.3 Problem Statement

The subject of this study is chosen based on the issue circulated regarding the awareness and knowledge of Polycystic Ovary Syndrome among young students especially in higher educational institutions since this topic is important as many women with this disease does not aware that they have this disorder. In fact, from previous research women with PCOS experience issues getting to be pregnant (i.e. are infertile) and may have large amounts of androgen hormones. The prevalence of PCOS is increasing rapidly worldwide but the females don't have adequate knowledge about this syndrome.

This quantitative study will explore about the knowledge and perception of young generation towards Polycystic Ovary Syndrome and also will analyse the attitude of youth from higher educational institutions about this topic by which it is very important for them to acknowledge it at early stage in order to avoid any further complications from this syndrome. A mixed methodology approach was conducted in different higher educational institutions of Perak, which focuses on questionnaire based on assessment as well as providing education.

3. Method

3.1 Materials

For this research, questionnaire was used as a main research instrument and divided into several parts. The first part consists of the demographic information of the respondent such gender, marital status and institution. The second part will be separated to three components which is the Knowledge of respondents on Polycystic Ovary Syndrome (PCOS), Awareness of the respondents on Polycystic Ovary Syndrome and Perspective of the respondent regarding Polycystic Ovary Syndrome. The questionnaire was distributed through online platform for easier access to all of the young students from the selected higher educational institutions, Perak.

3.1.1 Samples

Subject Criteria

The criteria for the respondents of this study are primarily the young students in the higher educational institutions, Perak. The participating universities are selected from the public and private institutions in Perak including:

- I. Universiti Teknologi MARA (UITM) Seri Iskandar
- II. Universiti Teknologi MARA (UITM) Tapah
- III. Universiti Pendidikan Sultan Idris (UPSI)
- IV. Universiti Teknologi Petronas (UTP)
- V. QUEST International University Perak (QIUP)
- VI. Universiti Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP)
- VII. Politeknik Ungku Omar (PUO)

3.1.2 Site

The study was conducted in different higher educational institutions of Perak among the students. Four public universities and three private universities were selected to collect data. For public universities it will include Uitm Tapah, Uitm Seri Iskandar, UPSI and Politeknik Ungku Omar. Meanwhile for private universities, it will be included UniKL RCMP, UTP and Quest International University Perak. These institutional were selected in order to cover most of young students as the study subjects.

3.1.3 Procedures

Study Design

A mixed methodology approach by using structured survey questionnaire and online google form was conducted which focuses on questionnaire based on assessment as well as providing education.

Sample Size Determination

The sample size calculation was determined by using Rao Soft online sample size calculator with a confidence level of 95% and margin of error 5%.

$$n = p \times q \times (z/e)^2$$

p = percentage positive (0.5)

q = percentage negative (1-p=0.5)

z = value in normal distribution (Level of Confidence: 95%, z-value: 1.96)

e = margin of error (0.05)

Therefore, recommended sample size for this study is

$$n = 0.5 \times 0.5 \times (1.96/0.05)^2$$

$$= 377 \text{ respondents}$$

The total number of respondents obtained is 219 respondents which exceeded the minimum numbers of respondents for the data to be valid.

3.2 Measurement

The data were quantitatively calculated by frequency and percentage.

3.3 Data Analysis

The data can also be sorted out by the online survey platform and then transferred to Microsoft Excel. The level of Knowledge and Awareness of the respondent will be determined after reviewing the questionnaire. The level of Knowledge can be classified as Adequate and Poor Level. The statistical analysis was conducted using Statistical Package for the Social Science version 21 (SPSS).

3.3.1 Validity and Reliability

Pilot Study

Before the questionnaire can be distributed to the targeted respondents, a pilot study will be conducted among 27 young students of higher educational institutions, Perak including students from UITM Seri Iskandar, UITM Tapah, UPSI, UTP, UniKL RCMP, Quest International University Perak and Politeknik Ungku Omar. The significance of the pilot study is to ensure that the questionnaire is valid and to have an insight on the level of understanding towards the components of the questionnaire and the topic of the research.

Limitations of the Study

This study was conducted to observe the population of young students in higher educational institutions which spread throughout Perak state among the 7 recognized public and private institutions. The result from this study might not be able to represent the whole population as not all institute have participated in this survey.

4. Results and Discussion

Demographic Profile

The total number of respondents completed the questionnaire is 219 respondents coming from various background. Table 1 shows the demographic profile of the respondents. Majority of the respondents are among the female students with the percentage of 74.4% (1). The respondents from each institution contribute a quite high number of participants for both Public Institution and Private Institutions with the greatest number of respondents comes from UniKL RCMP recorded 63 respondents which are at 28.8%. Figure 1 shows the participated Institution and the number of respondents.

Table 4.1: Demographic Profile of Respondents

Characteristics	Demographic Characteristics	Frequency	Percentage (%)
N=219			
Gender	Male	56	25.6
	Female	163	74.4
Marital Status	Single	216	98.6
	Married	3	1.4
Institution	UITM Seri Iskandar	16	7.3
	UITM Tapah	24	11.0
	UniKL RCMP	63	28.8
	UPSI	29	13.2
	UTP	20	9.1
	QUIP	18	8.2
	PUO	49	22.4

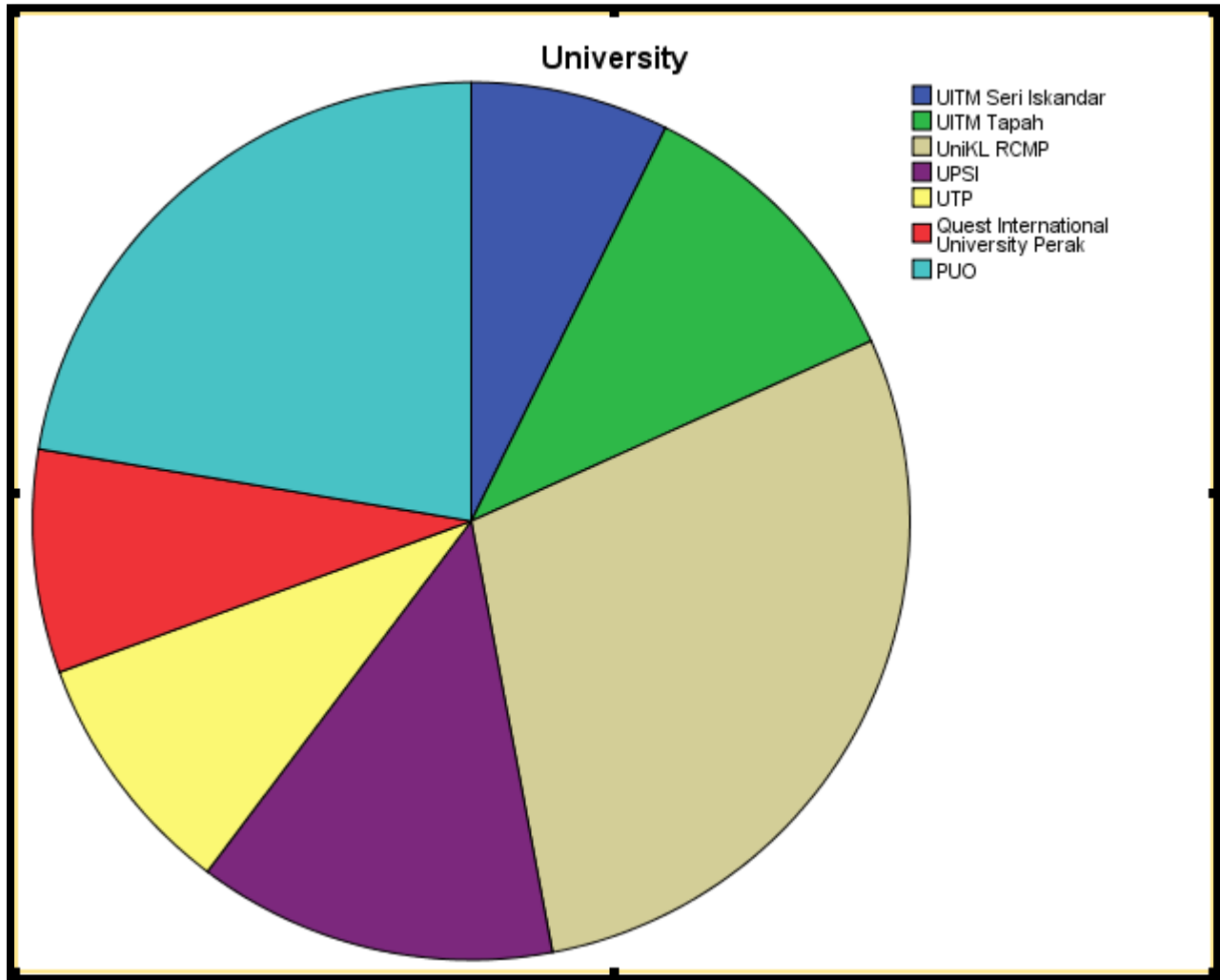


Figure 4.1.1: The Participating Institution (Public & Private)

Knowledge On Polycystic Ovary Syndrome Among Young Students In Higher Educational Institutions Perak

The knowledge of the respondents regarding the Polycystic Ovary Syndrome (PCOS) was analyzed and the result can be observed at the following table:

Table 4.2: Knowledge on Separation of Prescribing & Dispensing

Question Characteristics	Knowledge Characteristics	Frequency	Percentage (%)
N=219			
Are you familiar with the term called polycystic ovary syndrome (PCOS)?	Yes	95	43.4
	No	124	56.6
Do you know about androgen (male) hormone (e.g. testosterone and androstenedione)	Yes	186	84.9
	No	33	15.1
PCOS is due to increased level of male hormone known as androgen hormone	Yes	123	56.2
	No	96	43.8
Patient suffering PCOS have the abnormal ovaries (multiple cysts in the ovaries)	Yes	185	87.2
	No	34	15.5
Are they the symptom(s) of PCOS: [Abnormal or absence of menstrual (period) cycle]	Yes	191	87.2
	No	28	12.8
Are they the symptom(s) of PCOS [Severe acne problem during menstrual (periods)]	Yes	136	62.1
	No	83	37.9
Are they the symptom(s) of PCOS [Hair loss from scalp more than normal]	Yes	105	47.9
	No	114	52.1

Are they the symptom(s) of PCOS [Abnormality of menstrual (period) cycle]?	Yes		
	No	190	86.8
PCOS can be diagnosed by	Vaginal Ultrasound		
	Blood test	158	72.1
	X-ray		
PCOS can be treated by taking the metformin (medication for diabetes)	Yes	50	22.8
	No	11	5.0
		130	59.4
Cyst in the ovaries can be removed by the surgery	Yes	203	92.7
	No	16	7.3
PCOS may cause inability to have children (infertility)	Yes	200	91.3
	No	19	8.7
PCOS may cause diabetes (high blood sugar level)	Yes	105	47.9
	No	114	52.1

Based on the result obtained through the study, it can be stated that the majority of the young students in higher educational institutions, Perak have the knowledge regarding the Polycystic Ovary Syndrome. However, all the questions asked in this questionnaire regarding the knowledge is the basic question on PCOS by which most of students may be familiar as they come from the educated background.

For the first question most of the respondents answered No with the frequency of 124 (56.6%) out of 219 respondents which stated that they are not familiar with the term of Polycystic Ovary Syndrome. It is about only 95 (43.4) respondents out of 219 respondents that familiar with this term as I am sure this is because most of respondents have the medical background. As for students that have no medical background this term is rarely mention.

However, for the second question, most of respondents seem familiar with the androgen hormone which are testosterone and androstenedione. 186 (84.9%) out of 219 respondents answers Yes for this question as this is basic knowledge in science regarding male hormone. It just about 15.1% of respondents who answers No for this question. Similar with the fourth question, majority of the respondents answer this question correctly with 185(87.2%) answer Yes. That show that the respondents can relate the topic to cyst in the ovaries and they may get the overall picture on how the PCOS is.

For the third question regarding correlation between PCOS and increased level of male hormone, there is a balance in percentage for both answers. 123 (56.2%) respondents can answer this question correctly due to most of the respondents are from medical background and 96 (43.8%) of respondents' answer No.

Next, for the question on symptoms of PCOS most of the respondents can give the correct answer for all the four question. That is mean most of them know that abnormal or absence of menstrual (period) cycle, severe acne problem during menstrual (periods), hair loss from scalp more than normal and abnormality of menstrual (period) cycle are symptoms of PCOS. For the medical and female students most of them are aware on this symptom of PCOS as it is related to women's common problem. In addition to this, obesity and hirsutism are also the PCOS's symptom.

As for the diagnosis of PCOS, it is about 158 (72.1%) respondents know that the vaginal ultrasound and blood test can be the diagnostic parameter. This is to confirm the PCOS diagnosis by look for the presence of abnormal follicles and cyst in the ovaries. However, PCOS cannot be ruled out by doing the X-ray.

Besides, in term of PCOS treatment metformin can be used for improving the condition of insulin resistance and lowering insulin level. This is because in patient with PCOS, they may have an issue on insulin production. From 219 respondents, 89 (40.6%) respondents pick the Yes answer, and 130 (59.6%) respondents choose the No answer. Most of respondents still did not enough knowledge on treatment of PCOS. In addition to this question, PCOS can be treated by using birth control pills and progestin therapy for regulate the menstrual cycle and few other medications to treat some of the symptoms that occur.

Next, regarding the cyst in the ovaries that may cause symptoms basically need to be removed surgically. 2 types of surgery can be done on the patients which are the laparoscopy and laparotomy. As for this research, most of the respondents which is 203 (92.7%) say yes for the surgery on the ovarian cysts and only 16 (7.3%) say no for the question.

Last question on the complications of PCOS, most of respondents aware that PCOS can cause infertility with 200 (91.3%) students say Yes for this question. However, in there is some of respondents not aware that PCOS can cause diabetes as it will disrupt on the insulin production. From the result, there is a balance in the answer given with 105 (47.9%) say Yes and the rest with 114 (52.1%) say No.

Attitude on Polycystic Ovary Syndrome Among Young Students in Higher Educational Institutions, Perak

The following table displays the frequencies and the percentage of the attitude of the young students in higher educational institutions Perak regarding Polycystic Ovary Syndrome.

Table 4.3: Attitude on Polycystic Ovary Syndrome

Question Characteristics	Attitude Characteristics	Frequency	Percentage (%)
N=219			
Did you/your mother/your sister experience?			
Periods that is very heavy (>2 pads per day)	Yes	83	37.9
	No	82	37.4
	Unsure	54	24.7
Periods that more than 7 days	Yes	112	51.1
	No	69	31.5
	Unsure	38	17.4
Absence of periods completely or partial absence of periods (1 month)	Yes	91	41.6
	No	79	36.1
	Unsure	49	22.4
Chronic acne problem during period	Yes	39	17.8
	No	129	58.9
	Unsure	51	23.3

Hirsutism which is excessive amount of body hair that is normally minimal or absent (upper lip, chin, abdomen, breast, thighs etc.)	Yes	35	16.0
	No	119	54.3
	Unsure	65	29.7
Abnormal weight gain that is continuously happen]	Yes	39	17.8
	No	135	61.6
	Unsure	45	20.5
Family histories diagnose with PCOS	Yes	19	8.7
	No	146	66.7
	Unsure	54	24.7

Based on the result in this section, attitude of respondents regarding PCOS according to clinical evaluation is given in table 3. Most of respondents answered negative to all clinical parameters for. While 83 (37.9%), 112 (51.1%), 91 (41.6%), 39 (17.8%), 35 (16.0%), 39 (17.8%), 127 (28.2%), 19 (18.7%) have periods that is very heavy (>2 pads per day), periods that more than 7 days, absence of periods completely or partial absence of periods (1 month), chronic acne problem during period, hirsutism which is excessive amount of body hair that is normally minimal or absent (upper lip, chin, abdomen, breast, thighs etc.), abnormal weight gain that is continuously happen] and family histories diagnose with PCOS respectively.

Symptoms of PCOS firstly synonym with the abnormal of menstrual cycle, there may be an absence of period in 2 months or even up to one year without menstrual. Basically, if there is an irregularity of menstrual, then it may lead to inability to get children. Next in physical condition people with PCOS may be an obese where they tend to gain weight easily but difficult to lose weight. As for the hirsutism, patient with PCOS may experience hair growth on their face and body including belly and chest.

Apart from this PCOS may be associated with male pattern baldness where hair on the scalp fall out easily. There is also the incidence of skin darkening where dark patches form in body creases like those on the neck, in the groin and under the breast. Basically, different individual with PCOS they may have different spectrum of symptoms. Every person will not be having the same symptoms.

Sign and symptoms of PCOS vary in every patient. Generally, when doctor initially diagnose the PCOS, they may look on at least two of these important signs:

Irregularity of period	Infrequent or maybe prolonged menstrual cycle
Excess of androgen	There is a high level of male hormone which may result to the symptoms mention in the research including hirsutism, chronic acne and may be baldness
Polycystic ovaries	The ovaries might be enlarged twice than normal ovaries which may contain few follicles surrounding the eggs

PCOS is also genetically inherited. If we have family histories that have been diagnosed with PCOS whether our mother, aunties, or sisters then we will have a high chance to get the PCOS. For the result, there is about 19 (8.7%) respondents may have a chance to develop PCOS as their families have the histories diagnose with PCOS.

Perception on Polycystic Ovary Syndrome Among Young Students in Higher Educational Institutions, Perak

The following table displays the frequencies and the percentage of the perception of young generation in higher educational institutions regarding the Polycystic Ovary Syndrome (PCOS).

Table 4.4: Perception on Polycystic Ovary Syndrome (PCOS)

Question Characteristics	Attitude Characteristics	Frequency	Percentage (%)
N= 219			
PCOS problem can be cured	Yes	146	66.7
	No	11	5.0
	Unsure	62	28.3
PCOS is not a big health issue and not a serious problem	Yes	18	8.2
	No	151	68.9
	Unsure	50	22.8
PCOS is a rare disease of reproductive system in female	Yes	76	34.7
	No	76	34.7
	Unsure	67	30.6
PCOS patients need to eat a healthy diet and exercise regularly for weight loss	Yes	157	71.7
	No	14	6.4
	Unsure	48	21.9
PCOS only happen to marry woman	Yes	12	5.5
	No	149	68.0
	Unsure	58	26.5

Overall, it can be said that the level of perceptions on Polycystic Ovary Syndrome among young students in higher educational institutions is in the moderate to high level. PCOS problem cannot be cured but it can be managed or treated by using some medication for overcoming the symptoms. 146 (66.7%) of respondents give the Yes answer for this question and about 73 (33.3%) respondents say No and Unsure for this statement.

Next, according to the respondents most of them give the negative feedback for this question. Its only 18 (8.2%) of respondents agrees that PCOS is not a big health issue and not serious problem while 151 (68.9%) does not agree as from their perspective, PCOS is a big and serious health issue as it is can lead to infertility and can be inherited. 50 (22.8%) respondents still Unsure with this question.

PCOS basically is not rare and it is a common disease of reproductive system in female. According to studies, about 1 over 10 women may develop the PCOS while it presents in 12-21% of women of reproductive age. As for this question, there is a balance statistic for Yes and No answer with 76 (34.7%) respectively. However, 67 (30.6%) respondents are still unsure with this statement.

PCOS patients need to eat a healthy diet and exercise regularly for weight loss. According to the studies, intervention to the lifestyle can be the first line treatment in PCOS patients. A mixture of food ingredients in the correct dietary routine may have greater effects on disease prevention or regulation. Several methods for evaluating dietary patterns, like the healthy eating index (HEI), have been proposed. HEI was developed to determine the overall consistency of diets, adaptation, and compliance with the nutritional and food pyramid recommendations in 1995. In various dietary societies, this index was designed to assess the quality of the diet. 157 (71.7%) respondents agree with this statement which give a very good feedback in term of their perspective. 14 (6.4%) and 48 (21.9%) respondents give No and Unsure answer, respectively.

Last question, PCOS basically will not develop in only marry women but most of female with reproductive age can develop the PCOS. The feedback for this question also positive as most of respondents choose the No answer with 149 (68.0%) respondents.

Knowledge Level of Respondents

The following table displays the frequencies and the percentage of the knowledge level of young students in higher educational institutions on the Polycystic Ovary Syndrome (PCOS).

Table 4.5: Knowledge level of respondents on Polycystic Ovary Syndrome (PCOS)

Characteristics	Frequency	Percentage (%)
Adequate Knowledge	202	92.2
Poor Knowledge	17	7.8

Overall, it can be said that the level of knowledge regarding Polycystic Ovary Syndrome among the respondents are high level. Most of the answers for question in this section are Yes answer which indicate the correct answer for each of knowledge question. That is show that most of students in Perak theoretically have a well knowledge on PCOS but may be practically it is difficult to identified it as PCOS as they may think it as normal menstrual problem.

5. Conclusion

To conclude, the young students in higher educational institutions have adequate level of knowledge regarding the polycystic ovary syndrome (PCOS). They also showcased a good level of attitude and perceptions which indicate the positive responses regarding the Polycystic Ovary Syndrome (PCOS). However, for the attitude the prevalence of sign and symptoms show a positive result as there is a student whether herself of their family members may have been diagnosed with the PCOS.

The finding of study revealed that prevalence of signs and symptoms of PCOS are increasing but students were not aware of PCOS although its signs and symptoms were present in many of them. They may have good knowledge on Polycystic Ovary Syndrome but practically they still may not aware what is the PCOS look like as this syndrome still does not have an adequate educational intervention yet especially in Malaysia. So different education programs and more research should be done to provide knowledge about such diseases especially to the community, especially females. Furthermore, there is a study indicates that majority of females don't seek some advice from gynaecologist unless there is life-threatening problem or disease. So, females and their family members should consult gynaecologist if they detect any of the signs and symptoms happy to themselves or their family member at least once in a year for their better health status.

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