



بِسْمِ الرَّحْمَنِ الرَّحِيمِ

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University Of Alshaikh Abdullah Albadri

Faculty of health science

Department of nursing

**Research About:**

**Prevalence And Risk Factors Of Poly Cystic Ovarian Syndrome  
Among Female In Private Obstetric Clinic In River Nile State**

(2019-2018)

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## ***Dedication***

***All our thank firstly and lastly to our great (Allah) from blessing and kindness flow through all our life.***

***The essence of like meaning of humanity***

***Our Mothers***

***To: all whom we love and respect the one who though how to be available member in the community***

***Our Fathers***

***Dear: Brothers and sisters who gave us the sense of everlasting worth***

***To our Teachers***

## ***Acknowledgement***

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***Wethanksalsoextendtoourcollege,teachers,frie  
ndes,sistersandbrothers.***

## الآية

قوله عز و جل:

(وَمَنْ أَحْيَاهَا فَكَأَنَّمَا أَحْيَا النَّاسَ جَمِيعًا). صدق الله العظيم

سورة المائدة الآية (32)

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# **Chapter(1)**

## **Introduction**

Polycystic Ovary Syndrome (PCOS) is the endocrine disorder affecting women of reproductive age group(1).In 1935 Irving. stein and Michael L. leventhal described a symptom complex associated with an ovulation)

The world health organization estimates that PCOS has affected 116 million women worldwide as of 2010 (3.4%)(2). (PCOS)is so prevalent as to be a variation of normal-the polycystic appearance has been report in 20-25% of ultrasound scans in a random.

Population .The classically enlarged ovaries are due to numerous unruptured follicles which surround a stroma that appears dense and gives a pearl necklace scan picture. and biochemical abnormalities- raised luteinizing hormone(LH)levels and low normal follicle stimulating hormone (FSH)giving a reversal of the LH:FSH ratio.) (2))

Polycystic ovaries are commonly detected by ultrasound or other forms of pelviimaging(3)

The exact cause of PCOS is not unknown but thought to be related with abnormal hormonal).(4)

### **Smptoms**

Acne, Hirsutism , Infertility ,oligomenorrhoea, pelvic pain, anxiety, weight gain. )

### **complication**

infertility, endometrial carcinoma. and women with (PCOS) are at an increased risk of develop type 2 diabetes, dyslipidemia, heart diseases

### **Justification**

Increase prevalence and lack awareness of complication about women married or un married can be made to control risk factor .

### **General objective;**

Prevalence and risk factors of polycystic ovary syndrome (PCOS) in River Nile state.

### **Specific Objective**

-to assess the incidence of (PCOS) among woman in the sample population .

-Identify of risk factors (PCOS) .

-create awareness about disease

-prevent development and future complication .



# **Chapter(2)**

## **LITERATURE REVIEWS**

## What is polycystic ovary syndrome?

Polycystic ovaries are commonly detected by ultrasound or other forms of pelvic imaging, with an estimated 20–33% prevalence in the general population. However, not all women with polycystic ovaries demonstrate the clinical and biochemical features that define polycystic ovary syndrome. The biochemical disturbance includes elevated serum concentrations of luteinizing hormone (LH), testosterone, androstenedione, and insulin. Defining the syndrome .

While it is now clear that ultrasound provides an excellent technique for the detection of polycystic ovarian morphology, identification of polycystic ovaries by ultrasound does not automatically confer a diagnosis of PCOS. Controversy still exists over a precise definition of the ‘syndrome’ and whether or not the diagnosis requires confirmation of polycystic ovarian morphology. The generally accepted view in Europe is that a spectrum exists, ranging from women with polycystic ovarian morphology and no overt abnormality at one end(5).

definition of PCOS was agreed, which, for the first time, includes a description of the morphology of the polycystic ovary. The new definition requires the presence of two out of the following three criteria:

- (1) Oligo- and/or anovulation;
- (2) Hyperandrogenism (clinical and/or biochemical);
- (3) Polycystic ovaries, with the exclusion of other etiologies.(6)

### Pathophysiology :

PCOS is characterized by ovarian, hypothalamic–pituitary, peripheral and adrenal dysfunction. The phenotype develops through chronic anovulation of any a etiology and a clear sequence of events is therefore not identifiable.

## **Ovaries**

- High luteinizing hormone (LH) levels drive ovarian androgen production.
- High intraovarian androgen concentrations inhibit follicular maturation and lead to inactive granulosa cells with minimal aromatase activity.
- The large number of ovarian follicles produces a high inhibin B, which inhibits follicle-stimulating hormone (FSH).

## **Hypothalamus–pituitary**

- Hypothalamic dysfunction is associated with increased gonadotropin-releasing hormone agonist (GnRH) frequency and tonic (i.e. non-cyclic) LH release, elevating the LH/FSH ratio. The increase in LH is more pronounced in lean patients.
- The large number of ovarian follicles produces a high inhibin B, which inhibits FSH, but as FSH is not fully suppressed, continuous follicular recruitment and stimulation proceeds, but not to the level of full maturation and ovulation.
- Increased oestrogen production stimulates an increase in prolactin.

## **Peripheral compartment**

- Reduced sex hormone-binding globulin (SHBG) concentrations perpetuate hyperandrogenaemia:
- hyperinsulinaemia
- obesity
- hepatic dysfunction
- Peripheral alteration in insulin-like growth factor (IGF-1), androgen and oestrogen levels perpetuate hypothalamic dysfunction.

- Obesity reduces SHBG and increases peripheral aromatisation of androgens (androstenedione), which produces a chronic hyperoestrogenic state with reversal of the oestrone: oestradiol ratio.

### **Adrenal compartment**

- dysregulation of cytochrome p-450c17 (as in the ovaries), but dehydroepiandrosterone sulfate (DHEAS) (of adrenal origin) is only increased in 50% of PCOS.
- exaggerated adrenarchal response(6)

### **Symptoms**

- Acne - found in patients whose sebaceous glands respond to the higher free-circulating testosterone
- Hirsutism - in these patients the response to the higher free testosterone is production of terminal hair in a male pattern
- Obesity - the reason for this is unclear but it is responsible for the suppression of SHBG production by the liver, giving higher free levels of the liver, giving higher free levels of testosteronej
- Oligomenorrhoea – ovarian dysfunction with irregular ovulation leads to menstrual upset leads to menstrual upset; there isalso excessive production of androgens from the ovarian stroma
- Infertility - due to irregular ovulation(7)

## **1\_ Incidence and risk factors of polycystic ovary syndrome among women in reproductive age**

### **aim of this study was:**

**A\_** to find the incidence and risk factors of PCOS among women in reproductive age group ,so as to encourage young women to seek timely treatment and prevent its long term complication .

**B\_**it is seen that there is a need to educate women at an early stage to prevent the development of this syndrome and its early detection by them .

**Results;** it was found that the incidence of PCOS among the study population was 21%. Risk factors include lack of physical activity , irregular menstrual cycle , body mass index more than 25 and waist hip ratio above 0.86.

## **2\_ Prevalence of polycystic ovary syndrome in community sample assessed under contrasting diagnostic criteria :**

### **the objective of this study was:**

to create a representative prevalence estimate of PCOS in the community under the national institutes of health(NIH) .

### **RESULTS:**

The estimated prevalence of PCOS in this birth cohort using the NIH criteria was 8.7 $\pm$ 2.0% (with no need for imputation).under the Rotterdam criteria ,the prevalence was 11.9 $\pm$  2.4% which increased to 17.8 $\pm$ 2.8% when imputed data were included. Under the AES recommendation, PCOS prevalence was 10.2 $\pm$ 2.2% and 12.0 $\pm$ 2.4% with the imputed data .of the women with pcos,68-69% did not have a pre existing diagnosis.

## **3\_ Epidemiology of polycystic ovary syndrome: a cross sectional study of university students at**

### **An- Najah national university**

#### **Abstract**

#### **Background**

Polycystic ovary syndrome(PCOS) is the most common gynecological endocrinopathy in women of reproductive age . Despite its heavy burden on female reproductive and general health, there is no study regarding PCOS prevalence in Palestine. This study aims to establish prevalence of PCOS

among female university student at An-National university- Palestine and to explore its possible risk factor.

### **Results :**

The estimated prevalence of PCOS was 7.3% , acne was the only studied risk factor among others to be statistically related to PCOS patients (OR=8.430, p-value= 0.015). Clinical hirsutism was found in 27% of whom had idiopathic hirsutism.

Prevalence of PCOS in Palestine seems to be relatively high but similar to other Mediterranean statistics .

### **4\_ Prevalence and characteristic of polycystic ovary syndrome in Brazilian women :**

#### **the study aims:**

**A\_** at describing how this characteristics are distributed across PCOS phenotyp.

**B\_** and detecting associations with regional demographic and lifestyle aspects , genetic variants .

#### **RUSULT :**

Calculated assuming prevalence of 60% of the classic PCOS Phenotype in Latin American woman in Brazil and comparison with other Latin American population in 2019 .the case control ratio was defined 2:1 the sample size with estimated as 800 PCOS case and 400 control .

### **5\_The prevalence of polycystic ovary syndrome in reproductive aged woman of different ethnicity**

#### **Aims of study:**

**A\_** identify anthropometric thresholds and phenotypic expression for better screening and diagnosis in high-risk ethnic groups .

**B\_** to collect relevant studies and establish the prevalence of PCOS in different ethnic groups by using suitable statistical modelling.

**RESULT:**

The current study suggested that the prevalence of PCOS reported in the database studies are generally lower compared with that reported in the community studies, underlying .

# **Chapter(3)**



## **Methodology**

### **Study design:**

This study is descriptive sectional study in Atbara locality amount to determine prevalence and risk factors poly ovarian syndrome .

### **Study area:**

This study conducted in at bra city ,rive Nile state, sudan,which location the north of Khartoum about 310 km .it is population about 177 ,3gg person ,(who 2010),of obstetric clinic privacy ,proves health care.

### **Study setting :**

This study was conducted Atbara locality in obstetric privacy clinical .

### **Study period :**

The study was conducted from (December 2019 march 2020)

### **Study population .**

Woman in Atbara locality age from (20-45) years .

### **Sample size:**

Total coverage .

### **Inclusion criteria**

Woman With (PCOS) age between (20-45) .

### **Exclusion Criteria**

Woman Who did not full fill the inclusion Criteria .

### **Data Collection Teaching**

Interview questionnaire .

Data processing .

## **Through statistical of package of social science (spss)**

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### **Data analysis:**

The statistical methods of that were used for the data analysis will be as follows:

-descriptive measures of central tendency including: frequency, percent, mean, standard deviation for quantitative data measurement .

- Pearson ,correlation will be used to measure the relationship between the study variable and the demographic data .

### **Data Presentation:**

Data was presented in from of tables and figures.

### **Ethical consideration;**

- An official letters from the faculty of nursing will be taken to the directors of the assigned obstetric clinic privacy .
- The aim of the present study will be explained to the director of the study setting to take his\her permission for conduction of study.
- After explanation of the purpose of the study ,an agreement by a written consent will be take form the women to participate in the study voluntary.
- After obtaining their consent for participation in the study they will be informed that all collected information will be kept confidentially and will be used only for the purpose of the study
- There is no monetary benefit will be given .
- Women have the right to withdraw from the study any they wish.

# **Chapter(4)**

Table(1) Demographic data:

variable	class	Frequency	
Age	15-19years	12	30.0
	20-25years	15	37.5
	26-35years	10	25.0
	36-45years	3	7.5
Resident	Rural	16	40.0
	Urban	24	60.0
Marital status	Married	19	47.5
	UN married	21	52.5
Education	Primary	4	10.0
	Secondary	19	47.5
	Graduate	17	42.5

The most age of this study in mild age .  
 and the most of them was living in urban .  
 and un married .  
 the most group was secondary level of education .

Table(2):Menstrual of History

Age of menarche	12-14year	2	8	7 0 . 0
	15-18year	1	2	3 0 . 0
Regulatory	Regular	1	0	2 5 . 0
	irregular	3	0	7 5 . 0
Duration of menstrual period	2 - 5	1	6	4 0 . 0
	6 - 10	1	8	4 5 . 0
	More than 10 day	6		1 5 . 0
Frequent of menstrual period	18 - 24	9		2 2 . 5
	25 - 32	1	3	3 2 . 5
	33 - 40	1	4	3 5 . 0
	More than	4		1 0 . 0

Majority early age of menarche.

The most common study irregular menstrual cycle in woman

Majority duration of menstrual period than normal

Most of length period more than normal .

Table(3)risk factor

No	Normal	

B M I	Normal	1 1	4 0 . 0
	Over weight	6	2 5 . 0
	O b e s e	1 1	3 5 . 0
	Under weight	0	0
Physical activity	m i l d	1 1	8 5 . 0
	moderate	6	1 5 . 0
Nutrition style	Vegetarian	3	7 . 5
	non vegetarian	4	1 0 . 0
	M i x e d	1 1	8 2 . 5
Family history of similar condition	First degree	7	1 7 . 5
	Second degree	9	2 2 . 5
	No history	2 4	6 0 . 0

Comment obese body index

Most of this mild physical activity.

.comment of mixed nutrition of women

This study comment no relationship with family history

Table(4)

You are complain dysmenorrheal	Y E S	1	8	45.0
	N O	2	2	55.0
IF yes are you used analgesic relive to pain	Y e s	1	4	35.0
	N o	2	6	65.0
are used contraceptive pill to regulate menstrual cycle	Y e s	2		5.0
	N o	3	8	95.0
Do you take medication	Y e s	8		20.0
	N o	3	2	80.0
		4	0	100.0

Majority no dysmenorrheal

The most rate of woman no used analgesic

The most rate of woman not used contraceptive pill to regular menstrual cycle

The most comment rate of woman not take medication

s i n g s					
A c n e	Y	E	S	N	O
	Frequency	Percent	Frequency	Percent	

	22	55.0	18	45.0
Hirsutism	YES		NO	
	Frequency	Percent	Frequency	Percent
	10	25.0	30.0	75.0
Pelvic pain	YES		NO	
	Frequency	Percent	Frequency	Percent
	27	67.0	13	32.0
Problem menstrual	YES		NO	
	Frequency	Percent	Frequency	Percent
	32	80.0	8	20.0
Primary infertility	YES		NO	



	Frequency	Percent	Frequency	Percent
	5	12.0	35	87.0

**discussion:**

In this study

The most stage of this study in mild age (20\_25)=(37.5%).

and the most of them was living in urban including (24)=(60.0%).

and the unmarried woman they are about (21)=(52.5%)

the most group was secondary level of education they are about (19)=(47.5%).

Majority early age of menarch.

The most comment study irregular menstrual cycle in woman about (30)=75.0%.

Majority duration of menstrual period than normal from (6\_10)=45.0%.

Most of length period more than normal from (33\_40)=35%

Comment obese body index about (18)=35.0%

Most of this mild physical activity about (34)=85.0%

.comment of mixed nutrition of women about (33)=82.0%

Majority no dysmenorrhea about (22)=55%

The most rate of woman no used analgesic is about (26)=65.0%

The most rate of woman not used contraceptive pill to regular menstrual cycle (38)=95%

The most comment rate of woman not take medication about (32)=80%

There are a signs like  
Acne and the most number have it about (22)=55.0%  
And Hirsutism is low number about (30)=75%  
And pelvic pain most woman have this problem about  
(27)=67%

**Conclusion :**

The study concluded Pcos common social espilist urban (60%),high risk factor obesity (40%),Pcos no relation of family history,the most of sing pcos problem menstrual cycle (80%)and one of complication primary infirtlity.

**Recommendations:**

Healthy weight by calculating your body mass index (BMI)

Your diet should include plenty of fruit and vegetables .

There are medications working by blocking the effects of male hormones.

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