SEXUALHEALTH OF WOMEN WITH POLYCYSTIC OVARIAN SYNDROME

Fatma Mohamed El-Mahdy Mahowd[1], Samia I Hassan[1], Nahid Fekry[1],Rafik Ibrahim Barkat[2]

[1]Woman's Health & Midwifery, Nursing Department, Faculty of Nursing, Mansoura University, Egypt obstetric& Gynecology Department,Faculty of medicine / Mansoura university, Egypt

Abstract:

   *Aim: assess sexual health of women with polycystic ovarian syndrome. **Design:** Descriptive design. **Setting**: This study was conducted in Gynecologic Clinics of Gynecology and Obstetrics Hospital at MUH. **Subjects**: 114 women who attended to the Gynecologic Clinics of Gynecology and Obstetrics Hospital at MUH. **Sample type:** Purposivesampling. **Tools**: two tools (Structured Interviewing schedule, Female sexual function index (FSFI).**Results:**(63.2%) suffered from moderate anxiety followed by severe anxiety (32.5%). There was a highly significant between infertility and metabolic syndrome with total FSFI score (P) = < 0.001).There was highly statistical significant between presence of menstrual disturbances.**Conclusion:** It was concluded that about three quarters of them complained from menstrual disturbances, more than one half of them complained from infertility followed by less than one half of them complained from metabolic syndrome and high levels of masculinizing hormones respectively. Studied women suffered from sexual dysfunction. **Recommendation**: The study recommended that Increase awareness of the women about PCOS signs and symptoms and impact of PCOS on psychological and sexual status.*
Keywords:SexualHealth , Sexual Polycystic Ovarian Syndrome.

Introduction:

   Polycystic ovary syndrome [PCOS]is a hormonal condition that women can become during their childbearing years. It can affect the ability to have a child also, is a common but often undiagnosed condition in which certain hormones are out of balance. These disturbances typically show up as irregular menstrual cycles, a higher level of androgens in the body, & small cysts in the ovaries. [PCOS]can cause excess facial and body hair, acne, & mood changes. **(Saei et al., 2020)**

   Polycystic ovary syndrome [PCOS]is underdiagnosed and undertreated. This may be due to the fact that the symptoms may be mild or not seem to be related. But untreated [PCOS] can cause more serious health problems, & the symptoms of the disease can cause major distress. Un-managed [PCOS]is accompanying with type 2 diabetes, infertility, cardiovascular disease, obesity, apnea during sleeping, non-alcoholic fatty liver diseases& depression. Early diagnosis &treatment can supportin reducing these risks considerably. Health care providers can often make a diagnosis after a short assessment or simple tests.**(Joham et al, 2015)**

   No standardized for diagnostic criteria to identify [PCOS], while it can be diagnosed if 2 of the following 3 criteria are happened, provided all other causes of menstrual disturbance and hyperandrogenism are excluded. Infrequent or no menstruation, Hyperandrogenism;Polycystic ovarian morphology.commonly assessed during initial actions, checksphysical

appearance, bloodpressure, weight and blood tests which are commonly done in initial appointments to confirm if the woman can be referred for an US scan.(**Dewailly, 2016**)

Sexuality has an important impact on general well-being. Quality of sexual life includes all aspects which that lead to satisfying with sexuality. This means that the quality of sex life is more than the mere absence of a disease or disorder that could interfere with sexual functioning. It also involves the ability to fall in love, to initiate and maintain a sexual and loving relationship, and to feel sure about one's own sexuality.**(Mölleken, Richter-Appelt, &Stodieck,2010)** A disorder withsexuality can be anpointer of an altered quality of sexuality, but good - being sexual needs to be assessed in more detail. In addition, overall physical functioning, partnership and self-esteem have been identified as influencing the quality of sex life (**Schönbucher,& Zufriedenheit,2007**). In addition, attitude towards one's own body, more specifically the genitals and body image, have an effect on our sexuality.**(Zielinski, Miller, Low 2012 andFliegner, Richter-Appelt, Krupp, & Brunner,2019)**

Female sexual dysfunction [FSD] is a psychosexual disorders, that defined as disruptions in sexual desire and psychophysiological changes that describe the cycle of sexual response and cause significant interpersonal distress&difficulties Sexual function and socio sexual difficulties in women with [PCOS], **Zhao, Wang, Xie&LiuJintai,2019).** Dimension of Physical, physiological & psychological are changed in women with [PCOS], negatively affect their sexual function as a result of infertility (**Mendonca et al.,**

2017), **in addition** it was reported that women with [PCOS], showed significantly lower sexual satisfaction than controls **Stapinska-Syniec et al., 2018**

Significant:

During the reproductive stage the most common endocrinopathy (PCOS) is accompanying with dysfunction general quality of life &psychological well-being in exposed women. However, the quality of sex life of women with (PCOS)little is known about it. Most research focuses on sexual function, with most studies reporting only overall scores and specific sexual dysfunctions are only reported sporadically. So far, it seems that satisfaction with sex &self-esteem both are affected. Much research on the quality of sex life is needed due to a large number of women with PCOS affected and is associated with some symptoms, each of which on their own may mediate sexuality.**Fliegner, Richter-Appelt, Krupp,& Brunner, 2019)**

In addition (PCOS) is the most common endocrine disorder in women, the most common cause of female anovulatory infertility, and one of the most common human disorders. Women with PCOS are the largest group of women at risk for type 2 diabetes and cardiovascular disease. 50% of women with this disease will develop type 2 diabetes before the age of 40. They are four to seven times more likely to have a heart attack, three times the risk of endometrial cancer, and twice as likely to be hospitalized.**(Yin, 2020)**

Aim of the Study : aimed to assess sexual health of women with polycystic ovarian syndrome.

Research question: does the PCOS affect the sexual health of women?

Subjects &Method:.

Research Design: A descriptive study design was used.

Study Subjects: The study includes all women who will attend to the Gynecologic Clinics of Gynecology and Obstetrics Hospital at Mansoura University Hospital within three days per week for a period of six months according to the following inclusion criteria.

- Accept to participate in the study.
- Married woman .
- Free from mental & psychiatric illness.

Study Setting: This study was carried out in Gynecologic Clinics of Gynecology and Obstetrics Hospital at Mansoura University Hospital this hospital provides different health services to the women during their life time. Women admission to the outpatient clinic ranged between 50-75 case / day. It contain 2 outpatient clinic

Sample Type: purposivesample.

Sample Size: The study includes all women who attended to the Gynecologic Clinics of Gynecology and Obstetrics Hospital at Mansoura University Hospital within three days per week for a period of six months according to the following inclusion criteria, it reach to 114 woman.

Data Collection Tools :data were collected through

The tools of data collection in this study will include the following.

Tool I :A structured interviewing questionnaire schedule . It was designed by the researcher after reviewing the related literatures, it consisted of personal and general characteristics of women, (such as age, education, job, residence,), BMI, obstetrical & gynecological history, medical &

surgical history, family history and current and signs & symptoms of PCOS.

Tool II : Female sexual function index (FSFI) :

The Female Sexual Function Index (FSFI), a 19-item questionnaire, it was adopted from **wiegel et al, 2005**. It was 6 domains of sexual function (desire, arousal, lubrication, orgasm, satisfaction, and pain) Each item was assessed over the past 4 weeks as **desire**[5]= Almost always or always to [1]= Almost never or never), **arousal**[5]= Very high to[0] = No sexual activity, **lubrication**[5]= Very high confidence to[0]= No sexual activity, **orgasm**(1)= Extremely difficult or impossible to [0]= No sexual activity, **satisfaction**[5]= Very satisfied to [1]= Very dissatisfied) as well as a total score is A score[< 26.55] is classified as female sexual dysfunction .

Validity of the Tool:

By 3 jury experts & specialized professors in maternity nursing field thetools were reviewed to test the content validity &based on their comments, modifications were deliberated.

Reliability of the Tools:

Reliability of tools was tested for 14women during pilot study by using Cronbachα (alpha) are 0.764 for tool I, 0.74 for tool II.

Ethical Considerations:

[*]Firstly &Prior to data collection, obtain an ethical approval from the woman's health & midwifery department beside the research ethics committee[REC] of the faculty of the nursing Mansoura University.

[*]Obtainan officialpermission d from thedirector of director of Mansoura university hospitals and head of obstetrics and gynecology dpartment.

[*]Obtainwritten informed consent

from the women who participated in the study after clarifying the aim of the study.

[*]Theparticipated women were reassured about the confidentiality of the information. They were informed about their rights to refuse participation or withdraw at any time. The study maneuvers couldn't entail any harm to participants.

Pilot Study:

It was carried out for one month [August 2017] at Gynecologic clinic of gynecology & obstetrics at Mansoura University Hospital on 10% of the sample size [14 women] to test the applicability & relevance of the research tools & the clarity of the designed questionnaire and the required modification were made. The pilot sample was excluded from the study.

Field Work:

[1]The actual field work of the research occurred for six months period beginning on August 2017 & finished on January 2018 to gather the data required for assessing sexual health of women with PCOS.

[2]Then data were collected using a sample from Gynecologic Clinics of Gynecology and Obstetrics Hospital at Mansoura University Hospital after obtaining the written approval from research ethics committee of the Nursing Faculty, Mansoura University to head of obstetrics and gynecology Department at Mansoura University Hospital.

.

[3]At the beginning, the researcher introduced herself to head of obstetrics and gynecology Department at Mansoura University Hospital, took written permission to conduct study after clarification of the aim of study.

[4]Then the researcher reviewed follow-up cards of women who are attending Gynecologic Clinics of Gynecology and Obstetrics Hospital to select participants according to inclusion criteria.

[5]The researcher introduced herself to women, took written consent of them to be included within the study after clarification of study aim.

[6]The researcher interviewed each woman individually for 20-25 minutes.

[7]During the interview, the researcher read every item of the data collection sheet & clarified its meaning to the woman. Women were permitted to ask for any interpretation, elaboration or explanation.

[8]The data were collected three days per week from 9Am to 2 Pm

[9]The researcher asked the woman and recorded her answers in the data collection sheet.

[10]At the end of data collection & reached to the total study number.The collected data are coded then stored. Finally the results were then assessed and analyzed

Result:

Table 1. Frequency distribution of the studied women according to their socio-demographic characteristics

Items	(n=114)	%
Age (years)		
< 25	28	24.6
26 – 30	33	28.9
31 – 35	37	32.5
> 36	16	14.0
Residence		
Rural	47	41.2
Urban	67	58.8
Educational level		
Illiterate	20	17.5
Primary education	11	9.6
Preparatory education	11	9.6
Secondary education	30	26.3
Higher	42	36.8
Job		
No worked	67	58.8
Work	47	41.2
BMI		
Normal	36	31.6
Overweight	34	29.8
Obese	44	38.6
Special habits		
Alcohol intake	14	12.3
Passive smokers	49	43.0
Exercise	26	22.8

Table (1) shows the distribution of socio demographic characteristics of women with polycystic ovarian syndrome. It showed that about one third of studied women with PCOs(32.5%) aged 31-35years old. Also, more than half (58.8%), of studied PCOs women came from urban origin. Concerning educational level, the results revealed that more than one third of PCOs women had high education (36.8%). Also the majority of women were housewives (94.2%). In addition 38.6% were Obese and 43.0% were Passive smokers.

Table 2. Distribution of women with polycystic ovarian syndrome according to medical and family history

Items	n=114)	%
Medical history		
Hypertension	29	25.4
Cardiac	7	6.1
DM	3	2.6
Exposure to x-ray		
No	48	42.1
<3 times	30	26.3
3 – 5 times	21	18.4
>5 times	15	13.2
Family history		
DM	33	28.9
Cardiac	27	23.7
Hypertension	3	2.6

Table 2. Clarifies medical and family history of women with polycystic ovarian syndrome. Hypertension represent more than one quarter of studied sample, followed by cardiac. More than half of studied sample were expose to x ray. Concerning to family history more than quarter of studied sample had DM, about quarter of studied sample had cardiac disease.

Table 3. Distribution of studied women with polycystic ovarian syndromeaccording to their menstrual history

	N	%
Age at menarche		
<11	14	12.3
11 - 13	60	52.6
14 - 16	33	28.9
>16	7	6.1
Regularity of menstruation		
Irregular	83	72.8
Regular	31	27.2
Duration of bleeding		
<3	3	2.6
3 - 5	38	33.3
>5	73	64.0
Spotting between periods		
No	51	44.7
Yes	63	55.3
Spotting after intercourse		
No	62	54.4
Yes	52	45.6
Dysmenorrhea		
No	27	23.7
Yes	87	76.3

Table 3. Shows themenstrual history of women with polycystic ovarian syndrome. More than have of studied sample age at menarche from 11-13 years, around three quarter had regular menstruation, more than two third threehad bleeding >5 days and more than three quarter had dysmenorrheal.

Table 4. Distribution of studied women with polycystic ovarian syndromeaccording to Obstetric and gynecological history

	N	%
Parity(n=60)		
1-2	47	78.3
3-4	9	15.0
>4	4	6.7
Abortions		
1-2	8	4.4
Duration of marriage		
≤5 years	37	32.5
6 – 10 years	50	43.9
11 – 15 years	20	17.5
> 15 years	7	6.1
Infertility		
No	73	64.0
Yes	41	36.0
Contraceptive method		
No	91	79.8
Hormonal	19	16.7
IUD	4	3.5
Gynecological disease		
Ovarian Cyst	58	50.9
Fibroid	3	2.6
Dyspareunia	52	45.6

Table 4. Clarify distribution of studied women with polycystic ovarian syndrome according to obstetric and gynecological history. More than three quarter 78.3% had para (1-2), also 4.4% had abortion, around half married since 6 – 10 years and about one third married since ≤5 years. Regardingcontraceptive method more than three quarter of studied women not use any contraceptive method(79.8%) , while 16.7% , 3.5% had use hormonal and IUD respectively. Concerning gynecological disease more than half(50.9%) of studied women complain from ovarian cyst followed by dyspareunia 45.6% then fibroid 2.6%.
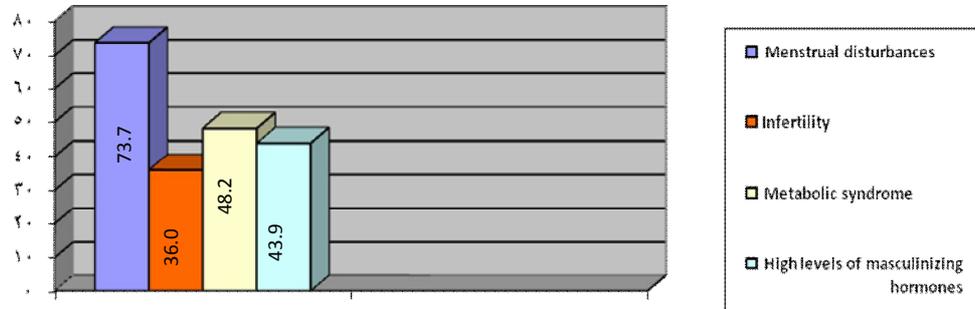
Figure1: Sign and symptoms of polycystic ovary of women with polycystic ovarian syndrome

Table 5. Distribution of FSGI of women with polycystic ovarian syndrome

Table 5 part(A)		No. 114	%
1. Over the past 4 weeks, how often did you feel sexual desire or interest?	Never	31	27.2
	A few times	38	33.3
	Sometimes	28	24.6
	Most times	14	12.3
	Always	3	2.6
2. Over the past 4 weeks, how would you rate your level (degree) of sexual desire or interest?	Very low	18	15.8
	Low	39	34.2
	Moderate	39	34.2
	High	17	14.9
	Very high	1	0.9
3. Over the past 4 weeks, how often did you feel sexually aroused ("turned on") during sexual activity or intercourse?	No sexual	14	12.3
	Never	22	19.3
	A few times	35	30.7
	Some times	25	21.9
	Most times	15	13.2
	Always	3	2.6
4. Over the past 4 weeks, how often did you feel sexually aroused ("turned on") during sexual activity or intercourse?	No sexual	20	17.5
	Very low	22	19.3
	Low	26	22.8
	Moderate	25	21.9
	High	17	14.9
	Very high	4	3.5
5. Over the past 4 weeks, how confident were you about becoming sexually aroused during sexual activity or intercourse?	No sexual	18	15.8
	Very low confidence	14	12.3
	Low confidence	16	14.0
	Moderate confidence	32	28.1
	High confidence	25	21.9
	Very high confidence	9	7.9

Table 5 part(A)		No. 114	%
6. Over the past 4 weeks, how often have you been satisfied with your arousal (excitement) during sexual activity or intercourse?	No sexual	18	15.8
	Never	13	11.4
	A few times	38	33.3
	Some times	30	26.3
	Most times	11	9.6
	Always	4	3.5
7. Over the past 4 weeks, how often did you become lubricated ("wet") during sexual activity or intercourse?	No sexual	17	14.9
	Never	16	14.0
	A few times	33	28.9
	Some times	25	21.9
	Most times	20	17.5
	Always	3	2.6
8. Over the past 4 weeks, how difficult was it to become lubricated ("wet") during sexual activity or intercourse?	No sexual	20	17.5
	Extremely difficult or impossible	18	15.8
	Very difficult	26	22.8
	Difficult	19	16.7
	Slightly difficult	25	21.9
	No difficult	6	5.3

Table 5 part (B)		No.114	%
9. Over the past 4 weeks, how often did you maintain your lubrication ("wetness") until completion ofm sexual activity or intercourse?	No sexual	15	13.2
	Never	16	14.0
	A few times	25	21.9
	Some times	33	28.9
	Most times	24	21.1
	Always	1	0.9
10. Over the past 4 weeks, how difficult was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?	No sexual	18	15.8
	Extremely difficult or impossible	21	18.4
	Very difficult	25	21.9
	Difficult	27	23.7
	Slightly difficult	20	17.5
	No difficult	3	2.6
11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how often did you reach orgasm (climax)?	No sexual	16	14.0
	Never	17	14.9
	A few times	26	22.8
	Some times	29	25.4
	Most times	20	17.5
	Always	6	5.3
12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how difficult	No sexual	23	20.2
	Extremely difficult or impossible	20	17.5
	Very difficult	26	22.8

Table 5 part (B)		No.114	%
was it for you to reach orgasm (climax)?	Difficult	17	14.9
	Slightly difficult	24	21.1
	No difficult	4	3.5
13. Over the past 4 weeks, how satisfied were you with your ability to reach orgasm (climax) during sexual activity or intercourse?	No sexual	20	17.5
	Not very satisfied	15	13.2
	Not moderately satisfied	21	18.4
	Satisfied and not satisfied	39	34.2
	Moderately satisfied	18	15.8
	Very satisfied	1	0.9
14. Over the past 4 weeks, how satisfied have you been with the amount of emotional closeness during sexual activity between you and your partner?	No sexual	15	13.2
	Not very satisfied	20	17.5
	Not moderately satisfied	23	20.2
	Satisfied and not satisfied	35	30.7
	Moderately satisfied	17	14.9
	Very satisfied	4	3.5
15. Over the past 4 weeks, how satisfied have you been with your sexual relationship with your partner?	Not very satisfied	19	16.7
	Not moderately satisfied	19	16.7
	Satisfied and not satisfied	30	26.3
	Moderately satisfied	38	33.3
	Very satisfied	8	7.0

Table 5 Part C		No. 114	%
16. Over the past 4 weeks, how satisfied have you been with your overall sexual life?	Not very satisfied	21	18.4
	Not moderately satisfied	26	22.8
	Satisfied and not satisfied	40	35.1
	Moderately satisfied	23	20.2
	Very satisfied	4	3.5
17. Over the past 4 weeks, how often did you experience discomfort or pain during vaginal penetration?	Did not attempt intercourse	12	10.5
	Always	11	9.6
	Most time	18	15.8
	Sometimes	36	31.6
	A few times	27	23.7
	Never	10	8.8
18. Over the past 4 weeks, how often did you experience discomfort or pain following vaginal penetration?	Did not attempt intercourse	11	9.6
	Always	16	14.0
	Most time	21	18.4
	Sometimes	31	27.2
	A few times	25	21.9
	Never	10	8.8
19. Over the past 4 weeks, how would you rate your level (degree) of discomfort or pain during or following vaginal penetration?	Did not attempt intercourse	18	15.8
	Very high	16	14.0
	High	16	14.0
	Moderate	35	30.7
	Low	21	18.4
	Very low	8	7.0

Table (5): shows that FSFI

A few times (33.3%) are showOver the past 4 weeksoften feel sexual desire or interest, low and moderate (43.2%) Over the past 4 weeks, how would you rate your level (degree) of sexual desire or interest?**.**Moderate satisfied (15.8%)Over the past 4 weeks, with the ability to reach orgasm (climax) during sexual activity or intercourse, most time (18.4%) often experience discomfort or pain following vaginal penetration.

Table 6. The association between the sociodemographic characteristics of women with polycystic ovarian syndrome with the total FSFI score

	Total FSFI score	Student's t test		ANOVA test	
	Mean ±SD	t	p	F	p
Age (years)					
< 25	16.3 ±6.4				
26 – 30	17.3 ±6.9				
31 – 35	17.9 ±7.0				
> 36	16.9 ±5.5			0.315	0.815
Residence					
Rural	17.1 ±7.0				
Urban	17.6 ±6.3	0.115	0.909		
Educational level					
Illiterate	16.5 ±6.0				
Primary education	15.4 ±8.9				
Preparatory education	15.0 ±7.1				
Secondary education	17.6 ±8.0				
Higher	18.3 ±4.6			0.888	0.473
Job					
No worked	15.5 ±7.5				
Work	19.7 ±3.9	3.558	<0.001		
BMI					
Normal	17.7 ±6.7				
Overweight	17.6 ±7.6				
Obese	16.5 ±5.6			0.421	0.657
Special habits					
Alcohol intake					
No	17.3 ±6.6				
Yes	16.3 ±6.1	0.576	0.566		

Table 6. Represents that there's no significant relation between sociodemographic characteristics of women with polycystic ovarian syndrome with the total FSFI score. While there's a highly significant between work and the total FSFI score

Table7 . The association between the menstrual history of women with polycystic ovarian syndrome with the total FSFI score

	Total FSFI score	Student's t test		ANOVA test	
	Mean ±SD	T	p	F	p
Age at menarche					
<11	14.8 ±5.1				
11 - 13	16.7 ±7.8				
14 - 16	18.5 ±4.5				
>16	20.3 ±1.7			1.764	0.158
Regularity of menstruation					
Irregular	17.0 ±6.8				
Regular	17.4 ±5.9	0.284	0.777		
Duration of bleeding					
<3	8.6 ±8.9				
3 - 5	16.8 ±5.7				
>5	17.8 ±6.7			3.071	0.051
Spotting between periods					
No	15.8 ±7.7				
Yes	18.3 ±5.3	2.008	0.047		
Spotting after intercourse					
No	15.8 ±7.2				
Yes	18.9 ±5.2	2.573	0.011		
Dysmenorrhea					
No	15.2 ±6.9				
Yes	17.8 ±6.4	1.789	0.076		

Table7. Illustrates that there's an association between the menstrual history of women with polycystic ovarian syndrome with the total FSFI score regarding Duration of bleeding, Spotting between periods, Spotting after intercourse(0.051, 0.047, and 0.011) respectively. While no significance Age at menarche, Regularity of menstruation and Dysmenorrhea.

Table 8. The association between the obstetrical and gynecological history of women with polycystic ovarian syndrome with the total FSFI score

	Total FSFI score	Student's t test		ANOVA test	
	Mean ±SD	T	p	F	p
Parity					
Nulli	15.6 ±7.6				
1-2	18.5 ±5.3				
3-4	20.1 ±2.7				
>4	19.6 ±1.3			2.955	0.036
Abortions					
None	16.0 ±7.5				
1-2	19.0 ±4.5				
3-4	17.3 ±6.6			2.632	0.076
IUFD					
None	16.3 ±7.2				
In 1st trimester	17.6 ±5.8				
In 2nd trimester	20.0 ±4.4				
In 3rd trimester	19.0 ±2.3			1.637	0.185
Duration of marriage					
≤ 5 years	15.5 ±7.7				
6 – 10 years	17.6 ±6.6				
11 – 15 years	19.0 ±4.1				
> 15 years	18.3 ±3.2			1.504	0.217
Infertility					
No	16.5 ±7.5				
Yes	18.4 ±4.3	1.451	0.112		
Contraceptive method					
No	16.5 ±6.7				
Hormonal	19.3 ±5.2				
IUD	23.0 ±3.5			3.108	0.049
Gynecological disease					
Ovarian Cyst					
No	15.0 ±7.2				
Yes	19.3 ±5.1	3.723	<0.001		
Tumor					
No	17.2 ±6.6				
Yes	18.1 ±2.9	0.250	0.803		
Dyspareunia					
No	15.8 ±6.8				
Yes	18.8 ±6.0	2.467	0.015		

Table (8): Shows that association between the obstetrical and gynecologicalhistory of women with polycystic ovarian syndrome with the total FSFI scoreregarding parity, contraceptive method, dyspareunia0.036,0.049 and 0.015 respectively. In addition there's highly statistical significant about Ovarian <0.001),

Table9. The association between the total FSFI score with sign and symptoms of polycystic ovary

	Total FSFI score	Student's t test	
	Mean ±SD	t	p
Menstrual disturbances			
No	15.8 ±7.2		
Yes	17.7 ±6.3	1.358	0.179
Infertility			
No	19.0 ±4.4		
Yes	14.8 ±8.0	3.605	<0.001
Metabolic syndrome			
No	15.4 ±8.1		
Yes	19.2 ±3.4	3.204	0.002
High levels of masculinizing hormones			
No	16.2 ±8.0		
Yes	18.4 ±3.7	1.795	0.075

Table (9): Shows that association between the total FSFI scoreand signs and symptoms of polycystic ovarian syndrome regarding infertility and metabolic syndrome<0.001, 0.002) respectively.

Discussion:

The current study was a descriptive study, which aimed to assess sexual health of women with polycystic ovarian syndrome (PCOS). The results of this study was significantly answered the study questions and revealed that PCOS affect sexualityof women health desire, arousal, lubrication, orgasm, satisfaction, pain.

As regard general characteristics of women with PCOS, the present study revealed that less than one quarter of women with PCOS aged more than 36 years old, less than one third of them aged between 31- 35 years old. In the same line with my present study, **RZońca et al,2018** who, reported that women aged 26-35 years old were the highest percentage and more than one third of studied women with PCOS. This is may be related to age play a role in occurring PCOS. In the contrast line with **Avery et al, 2019**, who; stated that all women had PCOS and aged between < 45 years- 45 years old. This is because it consider predisposing factor of PCOS Also, more than half of studied women not work and about two thirds had education no education & secondary level so they not aware of risk factors and signs & symptoms of PCOS.

The present study found that less than one half of studied women came from Rural area and about more than one half came from urban areas; less than one quarter of studied women with PCOS had primary education or preparatory education and more than one third of them had higher education; less than one half of them are worked and more than one half of them are no worked; less than one third of them were over weight and more than one third of them were obese. Also, in the same line with **Avery et al, 2019**, who state that more than one half of studied women were unemployed and Economically inactive more than one third of women were obese. This is in agreement with, **Shishehgar et al, 2016** who, stated that

less than one quarter of studied women had less than Diploma education and more than three quarter of studied women had diploma and higher education; more than one half of studied women were unemployed and less than one third of studied women were employed. This is appearing education play a role in woman awareness about PCOS.

In the same line with the present study agree with, **Moghadam et al, 2018** stated that women who had PCOS aged with mean $\pm$ SD 27.9 $\pm$ 5.88, nearly half of studied women were higher educated, more than one three quarters of women were house wife. The current study contrast with, **Mangalath et al, 2018** who reported that more than one third had PCOS aged 24-27 years old. These finding means that age may vary to occur of PCOS also the nature of educated may be play a role as female depends on junky fast foods which may be a predisposing factor.

Regarding smoking and PCOS **Zhang et al.,(2020)**reported that smoking is a factor indicated that lifestyle and environmental endocrine disruptors may associated with the pathophysiology of PCOS. This is agree with current study finding around half of study sample had passive smoking. In addition**Valgeirsdottir H, et al. (2018**): reported that maternal smoking has not previously been associated with a risk of PCOS, but it has been associated with decreased levels of reproductive hormones and decreased fertility in adult female offspring, which affect woman and future life of her fetus health. Based on evidence suggests that both heritable and environmental factors play a role in the pathogenesis of PCOS. This is disagreement with my study, **Roos et al , 2011** who, stated that more than more

one third had underweight plus Normal weight in BMI categorization, more than one half were educated for $\leq$ 11 years old, more the in three quarter of studied women weren't consuming any cigarettes and little proportion are consuming cigarettes ranges from 1- $\geq$ 10 cigarettes.

Concerning medical and family history of women with polycystic ovarian syndrome, the present study findings revealed that about medical history, nearly one quarter of studied women had hypertension, little proportion of women had Diabetes mellitus (DM), less than two third of them were exposed to X-ray for <3 - >5 times; about family history, more than one quarter of women had DM and nearly one quarter had cardiac disease and hypertension.

About tenth of studied women had cardiac this result congruent with(**Behboudi-Gandevani*et al.*, 2016**, **Zhao *et al.*, 2016**) who reported women with PCOS have an increased risk of concurrent cardiovascular risk factors and comorbidities such as insulin resistance (IR), dyslipidemia and diabetes.

In the same line, **Akram and Roohi, 2015** who stated that in Medical history of hypertension, women with PCOS had hypertension were little proportion; more than one third of studied women had family history of hypertension. In addition, **Artani, Iftikhar& khan, 2018** who, stated that more than one third of studied women had positive family history for PCOS and more than one half of women had negative family history for PCOS. While, **lone et al, 2020** who stated that more than three quarter of studied women hadn't family history of PCOS and less than one quarter of studied women had family history of them.

As regard of menstrual history of women with polycystic ovarian syndrome, the present study findings revealed that nearly one half of studied women aged at menarche at 11-13 years old, nearly three quarters of studied women had irregular menstruation, more than one half of studied women were bleed for a period of > 5 days, more than one half of them had spotting between periods, more than one half of studied women hadn't any spotting after intercourse.

In the same direction current study finding agree with, **Defrène et al, 2015** who stated that more than three quarters of studied woman had irregular menstrual cycle. Also, **NaJem, El mehdawi&Swalem, 2016** who stated that more than three quarters of studied women had irregular menstruation.

The current study is consistent with what the scholars **Israel &shamdeem, 2020** said in their studies the Relation between polycystic ovary syndrome and vitamin D deficiency which revealed that more than three quarter of studied women had irregular menstruation.

Concerning to dysmenorrhea, more than three quarters of studied women had dysmenorrhea. In the same line with current study, **Jeong et al, 2019** stated the majority of women had dysmenorhea and concluded that heavy menstrual flow may positively correlate with the severity of pain in young women with primary dysmenorrheal.

On the other hand the current study in disagreement with the study, **Gul, Zahid& Ansari, 2014** who stated that less than one quarter of studied women had oligo-menorrhoea plus amenorrhea and more than three quarters of women had satisfactorily regular cycles. Also, **Silva, frank &Aranha, 2019** who showed that more than one half of studied women had regular cycle and the rest is like amenorrhea, plus oligo-menorrhea and polymenorrhea informs nearly one third of studied women. This may be lifestyle pattern which influences the hormonal level in the body.

The present study is compatible with **Eslami et al, 2019** who stated that PCOS woman aged at menarche were less than one quarter of studied woman and a full proportion of studied women had regular menstruation and concluded that the low breast density in PCOS samples of this study may relate to hormonal disorders and an ovulation cycles, cigarette smoke, BMI, vitamin D intake, and physical activity.

As regard obstetric and gynecological history of women with polycystic ovarian syndrome, nearly one half of studied women had gravidity ranges from 1-2 times, nearly three quarters of those women had parity ranges from 1-2 times, little proportions of them had history of a abortions, more than one third of those women had married from 6-10 years, more than three quarters of those women hadn't used any contraceptive method and nearly one half of them had gynecological disease such as ovarian cyst and the rest had dyspareunia and fibroid.

These result in disagreement with the study of **Hanem et al ., 2018** who stated that more than one half of studied women were nuliparous in case of taking metformin or nearly one half of studied women were nulliparous in case of placebo.

Regarding talking about signs and symptoms of polyolstic ovary of women with polycystic ovarian syndrome, the present study revealed that nearly three quarter of them had

menstrual disturbances and nearly one half of them had infertility and nearly one half of them had metabolic syndrome and finally more than one third had high levels of masculinizing hormones respectively. These finding in agreement with the study, **Baqai, Khanam&Parveen, 2010** who stated that more than three quarters of studied women had menstrual disturbance, then nearly three quarter of them had hirsutism and little proportion were very obese while the prevalence of PCO was found to be two fifth among infertile which is significantly high.

Moreover in agreement with, **Artani, Iftikhar, Khan, 2018** stated that the majority percentage of women had menstrual irregularities, more than three quarters of them had acne &hirsutism, more than three quarters of them had weight gain, and more than one third of them had problems in ability to conceive.

In the same line, with the study of **kumari et al., 2018&Copp et al., 2019** stated that around half of them had infertility, more than three quarters of them had menstrual disturbances and more than three quarters had features of hyperandrogenism.

According to **Hester Pastoor et al., 2018** .They conclude that a satisfying sex life is important for women with PCOS; however, sexual function and feelings of sexual attractiveness are impaired This result agree with a study result about one quarter feel sometimes of sexual desire , more than one tenth feel most times feel sexually aroused during sexual activity, about one third feel moderate confidence about becoming sexually aroused during sexual activity, more than one quarter feel some times excitement during sexual activity, about one quarter feel very difficult to become lubricate during

sexually activity and reach to orgasm. Also, more than one third moderate satisfied with sexual relation with their partner. Theses result influenced by endocrine, mental and social factors, which are often compromised in women with PCOS so sexual function. In the same line **Aneesa et al., 2020** who reported decreased sexual satisfaction.

Regarding to relationship between menstrual history and FSFI the study finding stated that there are significant differences between FSFI and duration of menstruation, spotting between periods and spotting after intercourse this agree with **CamilCastelo-Branco&IuliiaNaumova (2019):** Who found PCOS is a polysimptomatic disease, the leading manifestations of which are hyperandrogenicdermopathy,menstrual dysfunction, as a result of these disturbances affect the marital life and put women under improper quality of life.

In addition, female sexual function index – domain scores and full scale score of women with PCOS, the present study revealed that the highest score was satisfaction domain score with mean $\pm$ SD 3.3 $\pm$ 0.9, followed orgasm domain score with mean $\pm$ SD 2.65 $\pm$ 1.4, then, lubrication domain score with mean $\pm$ SD 2.69 $\pm$ 1.3, Arousal domain score with mean $\pm$ SD 2.68 $\pm$ 1.3, desire domain score with mean $\pm$ SD 2.88 $\pm$ 1.1, and finally pain domain score with mean $\pm$ SD 2.2 $\pm$ 1.1, respectively and total score with mean $\pm$ SD 16.5 $\pm$ 6.1, and is classified as female sexual dysfunction.

The study finding in disagreement, **Shafti&Shahbazi, 2016** who stated that the highest score of sexual function in studied women was found in lubrication domain with mean $\pm$

SD 13.72 $\pm$ 4.13 followed arousal domain with mean $\pm$ SD 12.74 $\pm$ 3.92; total score is classified as female sexual function not dysfunction and concluded that women with PCOS. This result may be due to differences in sociocultural and nature of study sample.

Also the present study finding, in contrast with, **Ercan et al., 2013** who stated that pain, desire, arousal were the most reported female sexual problems in studied women. Total FSFI score of women with PCOS with meant SD 28, 6 $\pm$ 3.0 and concluded that women with PCOS didn't exhibit impaired sexuality anymore than age – matched controls according to their FSFI scores our results indicated that high testosterone levels didn't produce beneficial effects on sexual function in PCOS patients. In addition **Fliegner et al., 2019** who stated that full – scale score of female sexual function index with mean $\pm$ SD 27.5 $\pm$ 5.33.

In disagreement with my study, **De frène et al., 2015**, who stated that women with PCOS had sexual satisfaction with meant SD 9.85 $\pm$ 8.01, Relational satisfaction with mean $\pm$ SD 10.59 $\pm$ 8.13 and their partners had sexual satisfaction with mean $\pm$ SD 7.63 $\pm$ 6.05 and had Relational satisfaction 8.13 $\pm$ 5.74 .

In disagreement with my study, **Benetti- pinto et al., 2015** who stated that total FSFI score with mean $\pm$ SD 25.0 $\pm$ 3.3 in studied women with PCOS in which pain domain was estimated the highest score followed by lubrication domain and concluding that women with PCOS had a worse sexual function and self – assessment of health condition in comparison to controls the bodyweight as isolated symptom was correlated to the worsening in quality of life, but not with the worsening of sexual function.

Moreover, **Amiri et al.., 2018** who stated that more than one half of studied women had under high school literacy had highest sexual function and who concluded that there is no evidence of associations between low scores for any of the sexual domains evaluated and low serum total and free testosterone levels. In contrast, they observed significant associations between low sexual function of PCOS women is mainly disrupted by infertility, alopecia, and low literacy. As a result, the burden of PCOS and sexual dysfunction, suggests the need for further attention to this patient population, especially PCOS women affected by infertility.

The current study is compatible with what was said by **Eftekhar et al., 2014** stated that FSFI in Mean age of PCOS women with mean $\pm$ SD 25.93 $\pm$3.92 and women who had lower than high school had high female sexual function index who concluded that PCOS patients markedly suffer from sexual dysfunction as co morbidity.

In disagreement with current study, **Amiri et al., 2018** stated that more than one half of studied women were aged < 30 years old had highest sexual function more than one half of them were house wife and who concluded that they found no evidence of associations between low scores for any of the sexual domains evaluated and low serum total and free testosterone levels. In contrast, we observed significant associations between low sexual function of PCOS women is mainly disrupted by infertility, alopecia, and low literacy.

As regard the association between the menstrual history of women with polycystic ovarian syndrome with the total FSFI score; the present study revealed that there's a significant relation regarding duration of bleeding , spotting

between periods; spotting after intercourse this finding agree with, **Bazarganipour et al, 2014** who stated that menstrual history of PCOS women had a highly significant associated with FSFI

Concerning the association between the gynecological and obstetric history of women with PCOS with the total FSFI score, the present study revealed that a significant relation about parity, used contraceptive method such as IUD, gynecological disease, ovarian cyst, and dyspareunia. The current study result In agreement with, **Eftekhar et al., 2014** who stated that studied women had given birth had FSFI score with mean + SD 25.45 + 0.53 and who concluded that PCOS patients markedly suffer from sexual dysfunction as comorbidity.

Regarding the association between the total FSFI score with sign and symptoms of polycystic ovary, the present study revealed that women who had menstrual disturbances had highest FSFI score; studied women who hadn't infertility had highest total FSFI score; studied women who had metabolic syndrome had highest total FSFI score; studied women who had high levels of masculinzing hormones had highest total FSFI score.

In agreement with current study, **Eftekhar et al.., 2014** stated that women with PCOS hirsutism related with FSFI score with meant SD 25.50 + 0.69 and women with PCOS who hadn't hirsutism which was related with FSFI score with mean + SD 27.0 + 0.81. in conclusion, PCOS patients markedly suffer from sexual dysfunction as camorbidity.

In disagreement with present study, **De Niet et al., 2010** who stated that menstrual irregularities might be related to sexarche. In conclusion, their results suggest that menstrual

irregularities might be related to sexarche. Moreover, this study stresses that the treatment of women with PCOS should notably focus on physical but also on psychological and sexual characteristics.

In contrast, with current study, **Dashti et al., 2016** who stated that women with PCOS who had hirsutism had highest FSFI total score with mean + SD 27.38 + 190 and women with PCOS who hadn't hirsutism had lowest FSFI total of score with mean + SD 25.14 + 2.94 and who concluded that PCOS patients markedly suffer from sexual dysfunction and there fore it seems appropriate to be screened for intervention. Poor mental health conditions that maybe the result of infertility or other complications of PCOS should also be considered as curable causes of sexual dysfunction in the patients**.**

Conclusion

Over all the findings of the present study highlighted that, about one third of PCOS women aged 31 – 35 years; more than one half of them came from urban areas, more than one third of them were higher educated, more than one half of them were not worked; more than one third of them were obese, also, more than one quarter of them had hypertension in medical history, about three quarters of them complained from menstrual disturbances, more than one half of them complained from infertility followed by less than one half of them complained from metabolic syndrome and high levels of masculinizing hormones respectively. Studied women suffered from sexual dysfunction.

Recommendation:

- Increase awareness of the women about PCOS signs and symptoms

and impact of PCOS on psychological and sexual status.

- Programs about PCOS education are suited and tailored to the culture of the Egyptian women at the beginning of the disease to understand the nature of the disease for preparing women to assume an active role in fighting the disease.
- Designing and applying educational classes for the women about giving psychological support and reassurance for the women regarding signs & symptoms, with PCOS to promote its effect on physical & psychological status.

Further studies are recommended to:-
- Applying this study on different care setting and larger sample size.

References

Akram.M α Roohi.N, (2015).endocrine correlates of polycystic ovary syndrome in Pakistan women. Journal of the college of physicians and surgeons Pakistan.Vol (25), (1): 22-26.

Amiri.F.F, Tehrani.F.R, Esmailzadeh.S, Tohidi.M, Azizi.F, et al, 2018.sexual function in women with polycystic ovary syndrome and their hormonal and clinical correlations. International Journal of impotence Research; 30 : 54 – 61.

Aneesa T, Claire B , Mouaz A , Allison MF Z, Asma JCC,(2020). , Eating, sleeping and sexual function disorders in women with polycystic ovary syndrome (PCOS): A systematic review and meta-analysis, Clinical Endocrinology. ;92:338–349

Artani.M, Iftikhar.M.F α Khan.S, (2018): Effects of metformin on symptoms of polycystic ovarian syndrome Among women of

Reproductive Age. Cureus 10 (8) : 1-8.

Avery, J. C., Moran, L. J., Moore, V., Fernandez, R. C., Whitrow, M., Stocks, N..Rumbold, A. (2019). Prevalence of Self-reported Polycystic Ovary Syndrome and Profiles of Health Among Women of Different Generations: A Cross Sectional Study. *Fertility & Reproduction, 01*(03), 141-147. https://doi.org/10.1142/S266 1318219500154

Baqai.Z.,Khanam.M α parveen.S, (2010):. Prevalence of PCOS in infertile patients.Medical channel.Reproductive Health.Vol (16) No (3) : 437 – 440.

Bazarganipour.F, Ziaei.S, Montazeri.A, Foroozanfard.F, Kazemnejad.A, et al, 2014.sexual functioning among married Iranian women with polycystic ovary syndrome; international Journal of fertility and sterility; volume 8, No 3, pages : 273 – 280.

Behboudi-Gandevani S, Ramezani F T , Rostami MD , Maryam Farahmand M, Bahri MK, Noroozzadeh M, Kabir A, Azizi F (2016). Insulin **Copp.T, Hersch.J, Muscat.D.M, McCaffery.K.J, Doust.J, et al, 2019**.the Benefits and harms of receiving a polycystic ovary syndrome diagnosis : a qualitative study of women's experiences. Human Reproduction open.doi : 10. 1093 / hr open/ hozo26. P:P 1 – 12.

Benetti – pinto.C.L, Ferreira.S.R, Jr.A.A, Yela.D.A, 2015. The influence of body weight on sexual function and quality of life

in women with polycystic ovary syndrome. Arch Gynecolobstet; 291 : P:P: 451 – 455.

CamilCastelo-Branco,IuliiaNaumova, (2019). Quality of life and sexual function in women with polycystic ovary syndrome: a comprehensive review. Gynecological Endocrinology (IF 1.571) Pub Date : 2019-09-27 , DOI: 10.1080/09513590.2019.1670788 resistance in obesity and polycystic ovary syndrome: systematic review and meta-analysis of observational studies, GynecolEndocrinol,
2016;32(5):343-53.
doi:
10.3109/09513590.2015.1117069. Epub 2016 Jan 6.
he relationship between clinical and biochemical characteristics and quality of life in patients with polycystic ovary syndrome he relationship between clinical and biochemical characteristics and quality of life in patients with polycystic ovary syndrome

Copp.T, Hersch.J, Muscat.D.M, McCaffery.K.J, Doust.J, et al, 2019 . the Benefits and harms of receiving a polycystic ovary syndrome diagnosis : a qualitative study of women's experiences. Human Reproduction open. Doi : 10. 1093 / hr open / hozo26. P:P 1 – 12.

Dashti.S, A Latiff.L, Hamid.H.A, Sani.S.M, Akhtari-Zavare.M, et al, 2016.sexual dysfunction in patients with patients with polycystic ovary syndrome in Malaysia. Asian pacific Journal of cancer prevention; vol. 17, (8), P:P 3747 – 3751.

Defrène.V, Verhofstadt.L, Loeys.T, Stuyver.I, Buysse.A, et al, 2015.sexual and relational satisfaction in couples where the woman has polycystic ovary syndrome : adyadic analysis. Human Reproduction, vol (30) No (3) : P.P : 625 – 631.

De Niet.J.E, Koning.C.M, Pastoor.H, Duivenvoorden.H.J, Valkenburg.O, et al, 2010.psychological well-being and sexarche in women with polycystic ovary syndrome.; Human Reproduction; vol. 25, No. 6:P:P 1497 – 1503.

DewaillyD (2016). Diagnostic criteria for PCOS: Is there a need for a rethink? Best Practice & Research Clinical Obstetrics &Gynaecology, Volume 37, November 2016, Pages 5-11

Eftekhar.T, Sohrabvand.F, Zabandan.N, Shariar.M, Haghollahi.F, et al, 2014. sexual dysfunction inpatients with polycystic ovary syndrome and its affected domains. Iranian Journal of Reproductive Medicine vol 12 No (8) P:P 539 – 546.

Ercan.CM, Coksuer.H, Aydogan.U, Alanbay.I, Keskin.U, et al, 2013 sexual dysfunction assessment and hormonal correlations in patients with polycystic ovary syndrome. International Journal of impotence research, 25 P:P 127 – 132.

Eslami.B, Alipour.S, Hosseini.R, Fattah.B, Moini.A, (2019). Breast density in polycystic ovarian syndrome patients : A case – control study. International Jourral of Reproductive BioMedicine. Volume (17), issue no (8), P.P: 577 – 584.

Fliegner.M, Richter-Appelt.H, Krupp.K, Brunner.F, 2019.sexual function and social –

sexual difficulties in women with polycystic ovary syndrome Geburtshfrauenheilk; 79 : P:P: 498 – 509.

Gul.S, Zahid.S.A α Ansari.A, (2014).PCOS : symptoms and a wareness in urban Pakistani women. International Journal of pharma Research and health sciences. Volume 2 (5) page – 356 – 360.

Hanem.L.G.E, Stridsklev.S, Júrĺiusson.P.B, Salvesen.Q, Roelants.M, et al, (2018). Met forming use in PCOS pregnancies increases the risk of offspring over weight at 4 years of age : follow-up of two Rcts (randomized controlled trials). J clinEndocrinolMetab, 103 (4): 1612 – 1621.

Hester P , Reinier T, Cora K, Wichor M B , Ellen TM , Joop SE (2018). Sexual function in women with polycystic ovary syndrome: a systematic review and meta-analysis, RBMO VOLUME 00 ISSUE 0 2018

Israel.N.B, shamdeen.M.Y , 2020. The relation between polycystic ovary syndrome and vitamin D deficiency. Med J Babylon, 16: 234 – 237.

Jeong.J.Y, Kim.M.K, Lee.I, Yun.J, Won.Y.B, et al, (2019). Polycystic ovarian morphology is associated with primary dysmenorrhea in young Korean women. Obstetrics α Gynecology science ; 62 (5): 329-334.
he Author(s) 2019. Published by Oxford University Press on behalf of the European Society of Human Reproduction and Embryology.
This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://creativecommons.org/licen ses/by-nc/4.0/), which per-mits non-commercial re-use, distribution, and reproduction in any medium, providedthe original work is properly cited. For commercial re-use, please contact journals.permission

A.E. Joham, H.J. Teede, S. Ranasinha, S. Zoungas, and J. Boyle, "Prevalence of infertility and use of fertility treatment in women with polycystic ovary syndrome : data from a large community-based cohort study," Journal of women's Health, vol. 24, no. 4, pp. 299-307, 2015.

Kumari.A, Mitra.S, Tiwari.H.C, Srivastav.R, 2018.comparative Evaluation of Diagnostic Efficacy of serum Anti-Mullerian Hormone and ultrasound in polycystic ovarian syndrome Journal of south Asian federation of obstetrics and Gynecology; 10 (2): 98 – 109.

Lone, NM; Riaz, S; Eusaph, AZ; Mein, CA; Wozniak, EL; et al, (2020). Genotype-independent association between vitamin D defciency and polycystic ovarian syndrome in Lahore, Pakistan

Moghadam ZB, Fereidooni B, Saffari M, Montazeri, A(2018). Measures of health-related quality of life in PCOS women: a systematic review. Int J Womens Health. 2018;10:397–408. doi:10.2147/IJWH.S165794

Mangalath AAM, Alias A, Sajith M, Nimbargi V, KumdaleS (2018). Sociodemographic Characteristics and Clinical Presentation of Infertile Women with Polycystic

Ovary Syndrome in a Tertiary Care Hospital.Int J Infertil Fetal Med;9(1&2):14-18**.**

Mölleken D, Richter-Appelt H, Stodieck S(2010). Influence of personality on sexual quality of life in epilepsy. Epileptic Disord. 2010;12:125–132. [PubMed] [Google Scholar]

Mendonca C.R. ArrudaJ.T.NollM.CampoliP.Amaral W.(2017). Sexual dysfunction in infertile women: A systematic review and meta-analysis. Eur. J. Obstet. Gynecol. Reprod. Biol. 2017; : 153-163

NaJem.F.I, ElMehdawi.R.R α swalem.A.M, 2016.clinical and Biochemical characteristics of polycystic ovary syndrome in Benghazi- libya; Aretrospective study Libyan Journal of Medicine, 3 : 2, : 71-74.

Roos N, Kieler.H , Sahlin L , Ekman-Ordeberg .G , Falconer. H, (2011). Risk of adverse pregnancy outcomes in women with polycystic ovary syndrome: population based cohort study, BMJ 2011*;* 343. doi: https://doi.org/10.1136/bmj.d6309 (Published 13 October 2011)Cite this as: BMJ 2011;343:d6309

Rzonca.E ,Iwanowicz-Palus.G, Bien A, Wdowiak .A , Szyma´nski . R and Chołubek G (2018). Generalized Self-Efficacy, Dispositional Optimism, and Illness Acceptance in Women with Polycystic Ovary Syndrome, Int. J. Environ. Res. Public Health 2018, 15, 2484

Saei MG, Ramezani FT,Behroozi TL,Mohammadzadeh F,Nasiri M, Kholosi FB**&Ozgoli** G(2020).Quality of Life and Emotional States of Depression, Anxiety and Stress in Adolescents with Polycystic Ovary Syndrome: A Cross-Sectional Study**,** Psychol Res BehavManag. 2020; 13: 203–209.

Schönbucher V. SexuelleZufriedenheit von Frauen(2007). PsychosozialeFaktoren. ZeitschriftfürSexualforschung, 20:21–41. [Google Scholar]

Shafti.V, α shahbazi.S, (2016).comparing sexual function and quality of life in polycystic ovary syndrome and Healthy women. Journal of family and Reproductive Health. Vol. 10, No 2 P:P: 92 – 98.

Shishehgar F, RamezaniTehrani F, Mirmiran P, Hajian S, Baghestani AR (2016). Comparison of the Association of Excess Weight on Health Related Quality of Life of Women with Polycystic Ovary Syndrome: An Age- and BMI-Matched Case Control Study. PLoS ONE 11(10): e0162911. https://doi.org/10.1371/journal.pone.0162911

Silva.P.D, frank.R α Aranha.D, (2019).Acorelational study between polycystic ovarian symptoms among adults in a selected setting at Mangaluru.Symbiosis. Palliative Medicine α care: open Access 6 (1) P:P: 1-4.

Stapinska-SyniecA.GrabowskaK.Szpotanska-SikorskaM.Pietrzak B.(2018). Depression, sexual satisfaction, and other psychological issues in women with polycystic ovary

syndrome.Gynecol.Endocrinol. ; 7 : 597-600

Valgeirsdottir H, Vanky E, Sundstrom-Poromaa I, Roos N, Løvvik TS, Stephansson O, Wikstr € om A-K(2018).. Prenatal exposures and birth € indices, and subsequent risk of polycystic ovary syndrome: a national registry-based cohort study. BJOG ;126:244–251

Wiegel M, Meston C, &Rosen R(2005). The Female Sexual Function Index (FSFI): CrossValidation and Development of Clinical Cutoff ScoresJournal of Sex & Marital Therapy, 31:1–20, 2005

Yin X, „Ji Y, Lai CWC & Hoi CYC (2020). The mental health of women with polycystic ovary syndrome: a systematic review and meta-analysis, Archives of Women's Mental Health ..https://link.springer.com/article/10.1007/s00737-020-01043-x.

Zhang, B., Zhou, W., Shi, Y. et al. (2020). Lifestyle and environmental contributions to ovulatory dysfunction in women of polycystic ovary syndrome. BMC EndocrDisord 20, 19 (2020). https://doi.org/10.1186/s12902-020-0497-6

Zhao L, Zhu Z, Lou H, Zhu G, Huang W, Zhang S, Liu F(2016). Polycystic ovary syndrome (PCOS) and the risk of coronary heart disease (CHD): a meta-analysis, Oncotarget , 2016 Jun 7;7(23):33715-21. doi: 10.18632/oncotarget.9553.

Zhao Sh, Wang J, Xie Q, LiuJintai Y LuoZhigang(2019).is polycystic ovary syndrome associated with risk of female sexual dysfunction? A systematic review and meta-analysis, 38,(6) P979-989, JUNE 01,

Zielinski R, Miller J, Low K L(2012). The relationship between pelvic organ prolapse, genital body image, and sexual health. NeurolUrodynam. 2012;31 :1145–1148.