Assessment of Quality of Life among Women with Polycystic Ovary Syndrome

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Abstract: *Polycystic ovary syndrome (PCOS) is a common endocrine disorder characterized by chronic anovulation and hyperandrogenism.* ***Thepurpose of the study*** *was to assess quality of life among women with polycystic ovary syndrome.* ***Method****: A descriptive design (cross-sectional)was utilized.* ***Sample:*** *A purposive sample of 140 women that were medically diagnosed with polycystic ovary syndrome were selected.* ***Settings:*** *The study was carried out at the outpatient clinics of the gynecology and infertility of University and Teaching Hospitals at Shebin El-Kom in Menoufia Governorate, Egypt.* ***Instruments:*** *A structured interviewing questionnaire and a modified health-related quality of life questionnaire for women with polycystic ovary syndrome (PCOSQ) were used for data collection.* ***Results:****There was a highly statistical significant effect of PCOS on quality of life in terms of poor psychological, physiological and social QOL domains.* ***Conclusion:*** *Polycystic ovary syndrome has a negative impact on women's quality of life including emotional disturbance, hirsutism, weight difficulties, infertility, and menstrual difficulties.* ***Recommendations:****Improving the women'knowledge concerning PCOS toward stress management and lifestyle modifications with a periodic screening for early detection and management. Health promotion programs through different media to improve QOL for women with PCOS.*
Keywords: *Polycystic ovary syndrome, Quality of life,Nursing role toward women with polycystic ovary syndrome.*

I. Introduction

Polycystic ovary syndrome (PCOS) is one of the most common metabolic and reproductive disorders among women of reproductive age. Women suffering from PCOS present with a constellation of symptoms associated with the menstrual dysfunction and androgen excess, which significantly impact on the quality of life (Legro et al., 2018).Women of reproductive age may be at increased risk of multiple morbidities, including obesity, insulin resistance, type II diabetes mellitus, cardiovascular disease (CVD), infertility, cancer, and psychological disorders. Its pathophysiology most likely a combination of genetic disposition and environmental factors is not completely understood. Moreover, PCOS is diagnosed on the clinical picture, supported in some women by biochemical abnormalities and/or polycystic ovaries on ultrasonography (Hart, Hickey, and Franks, 2014).

According to Reyes-Muñoz et al., (2016) polycystic ovary syndrome (PCOS) is one of the leading causes of infertility. It is characterized by hirsutism, cystic acne, seborrhea, hair loss, and obesity. A significant proportion of patients with PCOS have been found to suffer from defective insulin secretion and insulin resistance, as documented in U.S. cohorts and German cohorts. Accordingly, the patients with PCOS may be expected to have a higher morbidity and mortality from the sequelae of the metabolic syndrome (type 2 diabetes mellitus, obesity, hypertension, lipid disorders and atherosclerosis).

Quality of life (QOL) is a multidimensional dynamic concept that encompasses physical, emotional, social and cognitive aspects associated with a specific disease or its treatment (Van Leeuwen et al., 2019). So, World Health Organization defines quality of life (QOL) as an individuals' perception of their position in life in the context of culture and value system in which they live and their relation to their goals, standers and concerns. This definition includes three broad domains: physical health, psychological status and social relationships (WHO, 2017).

There is currently no cure; the management of PCOS is directed towards improving the patient's QOL by means of symptomatic alleviation and prevention of long-term complications. The nurses can have a positive impact on women with PCOS through counseling and education. This can also provide support for women dealing with the negative self-image secondary to the physical manifestations of PCOS. This kind of education helps the women understand the syndrome and its associated risk factors to prevent the long-term health

problems. This encourages the women to make positive life-style changes and referral to local support groups to help the women build their coping skills (Ricci, 2017).

The nurses directly or indirectly play an important role in evaluating and improving the patients' QOL throughout the PCOS. In addition, the nurses represent abroad range of care settings and diverse specialty areas including clinical practice, education, administration and research. So, the nurses are key providers of PCOS care. Hence, their respective on quality of life for polycystic ovary syndrome patients are very important (King and Hinds, 2015).

Significance of the study:
Polycystic ovary syndrome (PCOS) is the most common endocrine disorder among women of reproductive age, affecting approximately 5-10% of women worldwide. PCOS is a heterogeneous endocrine disorder that affects one in 15 women during the childbearing period. Its prevalence is high in Egypt, 14% in the fertile women and 37.5% in the secondary infertile women (Amasha and Heeba, 2014 andSanad, 2014). Women with PCOS exhibit a wide range of medical, psychological and social problems that affect the quality of life, which are reflected negatively on the women's family. These include amenorrhea, oligomenorrhea, menorrhagia, anovulation, hirsutism, weight gain or obesity, acne vulgaris, androgenic alopecia, excess androgen production, and insulin resistance (Sirmans and Pate, 2014). Infertility is the most common cause of anovulatory, it affects 40% of women with PCOS (Hull, 2015, Hart, Hickey, and Franks, 2014).Based on reviewing literature; there is few studies were done aboutassessment of quality of life among women with polycystic ovary syndromein Menoufia governorate. So, the researcher tried to fill in such a gap of knowledge by conducting this study.

Purpose of the Study:
The present study was conducted to assessquality of life among women with polycystic ovary syndrome.

Research Question:
- What is the quality of life among women with polycystic ovary syndrome?

II. Method

Research design:A descriptive design (Cross-sectional) was utilized in this study.

Settings: The study was carried out atthe outpatient clinicsof the gynecology and infertility inMenoufia University Hospital and Shebin El-Kom Teaching Hospital in Menoufia Governorate, Egypt.These setting were selected becausethere is high flow rate of polycystic ovary women who attend these hospitals from the different surrounding cities and villages which are near to Shebin El-Kom city.

Sampling:

Sample Selection:
A purposive sample of 140 womenin the reproductive age (75 women from Shebin El-Kom Teaching hospital and 65 women from Menoufia University Hospital) who attended the outpatient clinicsof the gynecology and infertility in the above mentioned settings.

The inclusion criteria of the study participants were:
1) Women medically diagnosed with polycystic ovary syndrome.
2) Women are free from any other medical problems.
3) Married women at average reproductive age of 18-45 years oldwho agreed to participate.

Sample size calculation
The sample size was calculated at power 80%, confidence level 95% and margin of error 5%. It was 140 females of total women who admitted with PCOS at Menoufia University Hospital and Shebin El-Kom Teaching Hospital in 2018.The following equation was used:

- SS=Z^2*P* (1-P)/M^2
- SS= (z-score) ^{2}*P * (1-P)/ (margin of error) ^{2}
- SS= Sample size for infinite population.
- Z=Z- value= 1.96 for 95 % confidence level.
- P= Population proportion (expressed as decimal) (assumed to be 0.5(50%)
- M= Margin of error at 5% (0.05)
- SS adjusted = (SS)/(1+ (SS-1)/population)
- Sample Size (n) for 95% confidence levels was 140 women

(Cochran, (1977).sampling technique, 3rd ed., New York: John   Wiley & Sons.

Instruments:
Data of the present study were collected using the following instruments:

Instrument I: An interviewing questionnaire: the researcher developed the interview questions based on an extensive literature review. It consisted of three parts: the first part contained questions related to the socio-demographic characteristics, the second part contained data related to the obstetrics and gynecological history and the third part contained data related to the family history.

Instrument II: A modified health-related quality of life questionnaire for women with polycystic ovary syndrome (PCOSQ):

It was adapted from**Cronin et al., (1998)and Guyatt et al., (2004**) to assess the women's health related quality of life domains after affection by PCOS.It was modified by the researcher and translated to Arabic language and revised by a jury of qualified experts and then tested for validity and reliability. This scale consists of 40 statement, every woman had three responses for each statement to choose from sever problems /all of the time (always suffered from problems), some problems /some of the time (suffered sometimes from problems) andno problems /none of the time (not suffered from any problems)as described:**QOl domains (psychological, physiological, and social wellbeing) (questions 1-40).**

Scoring system ofinstrument II:

Each question on the health- related quality of life questionnaire for women with PCOS (PCOSQ) is associated with 3 points scale in which score (1) represents sever problem "poorest function ", score (2) represents some problems and score (3) represents no problems "optimal function ". The total score of health- related quality of life questionnaire for women with PCOS (PCOSQ) ranged from 1-120 and was categorized into three levels as follows according to **(WHO, 2017)**:

- Poor QOL was considered if the woman's total score represented (1-40).
- Average QOL was considered if the woman's total score represented (41-80).
- Good QOL was considered if the woman's total score represented (81-120).

Validity of the instrument:

For validity purposes, the researchers conducted an extensive literature review and developed the questionnaire from the previously used instruments and reviewing the pertinent studies. Instrument 1 was designed by the researchers and validated by five qualified (three professors in Maternal and Newborn Health Nursing department at the Faculty of Nursing and two professors from the Obstetrics and Gynecology department at the Faculty of Medicine)who reviewed the instrument for content accuracy and internal validity. They were also asked to judge the items for completeness and clarity (content validity). Suggestions were incorporated into the instrument. While instruments II was adapted from the previous studies. The interviewing questionnaire underwent some modifications according to the panel of judgment regarding the clarity of sentences and appropriateness of the content.

Reliability of the instrument:

The reliability of the instrument was done by the researchers for testing the internal consistency of the instrument, using test retest reliability. It was done through the administration of the same instrument to the same subjects under similar conditions on one or more occasions. Scores from repeated testing were compared to test the consistency of the results over the time. Its reliability was assessed by piloting & measuring the relatedCronbach's alpha value (Alpha = 0.88).

Administrative Approvals: An official letter was taken from the Dean of the faculty of Nursing, Menoufia University and submitted to the directors of the study settings to carry out the study. An official permission was obtained to carry out the study from the directors of the above mentioned settings for data collection. Also, the approval of the Ethical Committee of the Faculty of Nursing, Menoufia University was obtained.

Ethical Considerations:

An approval from the Committee of Hearing and Ethics was obtained from Faculty of Nursing, Menoufia University on 21/3/2018. Approaches to ensuring the ethics were taken into the researcher's consideration during all phases of the study regarding confidentiality and informed consent. Confidentiality was achieved by the use of closed sheets with the names of the participants replaced by numbers. All women were informed that the information they provided during the study would be kept confidential and used only for statistical purpose and after finishing the study, the findings would be presented as a group data with no personal participant's information remained. The researcher maintained the anonymity/confidentiality of the subjects. The researcher introduced herself to the women and explained the nature of the study to every woman and asked the questions in Arabic language for all women. Women were enrolled voluntarily after their oral consent.

Pilot study

A pilot study was conducted on10% of the total number (14 women with PCOS) according to the selection criteria to test the feasibility, applicability and understandability of the instruments, and to estimate the

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time needed for data collection. The necessary modification/omission/addition was followed as needed according to the results of the conducted pilot study.All women who participated in the pilot study were excluded from the study sample because the researcher made some modification of the instruments.

Study procedure:
• An extensive review related to the study area was done including the electronic dissertations, available books, articles and periodicals.
• A review of literature to formulate a knowledge base relevant to the incidence of the problem and guided the researcher to prepare the data collection instruments.
• A written permission from the institutional authority of the two hospitals was obtained before carrying out the study.
• The data collected started on10 November 2018 till the end of January 2019 (25 January).
• The researcher introduced herself to the convenient participants and provided verbal explanation of the study. Verbal agreement was obtained from all participants (Appendix II). Each participant was informed that participation in the study was voluntary and she can withdraw at any time.
• The researcher went to the outpatient clinics of the gynecology and infertility of Menoufia University Hospital 2 days weekly (Sunday and Wednesday) and Shebin El-Kom Teaching Hospital for the other 2 days in the same week (Saturday, and Thursday) during the morning shift including all women with PCOS with the previous inclusion criteria through using the study instruments by the researcher. That known to have high flow rate in these days weekly for each of the above mentioned settings.The researcher interviewed 6-8 women a day. Sampling was started and expected to be completed until reach predetermined size.
• The researcher used the instruments to assess the effect of polycystic ovary syndrome on the women's quality of life. Each woman was handed the questionnaire and answered it under observation of the researcher. While illiterate women the researcher wrote their answers.The researcher completed the questionnaire by interviewing each woman individually for 15 - 20 minutes. The 1[st]instrument "an interviewing questionnaire" was filled in 5 minutes and the 2[nd]instrument "a modified health-related quality of life questionnaire for women with polycystic ovary syndrome (PCOSQ)" was filled in 10- 15 minutes.

III. Statistical Analysis

Data analysis
The collected data were scored, tabulated and analyzed using (SPSS) version 22. Descriptive as well as nonparametric statistics were utilized to analyze the data pertinent to the study. The level of significance was set at $p < 0.05$. Chi square test and independent t-test were used to analyze the data.

IV. Results

Table (1): Socio-demographic Characteristics of the Study Participants

Variables	The study participants (N=140)	
	No.	%
Age / years:		
- 15-20	11	7.9
- 21-30	73	52.1
- 31-40	49	35.0
- 41-45	7	5.0
Age/ years:		
• *Mean ± SD*	28.9±5.3	
Level of education:		
- Illiterate	5	3.6
- Read and write	24	17.1
- Secondary level of education	61	43.6
- University	46	32.9
- Others	4	2.9
Occupation:		
- Working	54	38.6
- House wife	86	61.4

Table (1) representsthe socio-demographic characteristics of the study participants. About 52.1% of the study participants aged from 21 – 30 years with mean ± SD of age 28.9±5.3 years old. Regarding the level of education, about 43.6 % of the study participants had secondary level of education. It is noticed that 61.4 % of the study participants were housewives.

Table (2): Psychological Domain Regarding Polycystic Ovary Syndrome for the Study Participants

Variables	The Study Participants (N=140)					
	All of the Time=1/ Poor		Some of the Time=2/ Average		None of the Time=3/ Good	
	No.	%	No.	%	No.	%
Emotional disturbances assessment:						
• Low self-esteem due to PCOS	73	52.1	35	25.0	32	22.9
• Had undesired change in appearance due to PCOS	42	30.0	68	48.6	30	21.4
• Fluctuating mood as a result of having PCOS	76	54.3	37	26.4	27	19.3
• Easily tired	74	52.9	42	30.0	24	17.1
• Worried as a result of having PCOS	72	51.4	45	32.1	23	16.4
• Depressed mood due to PCOS	73	52.1	43	30.7	24	17.1
• Was the situation nervous on the initial diagnosis with PCOS	60	42.9	59	42.1	21	15.0
Infertility consequences assessment						
• Worried or afraid of not being able to have children	82	58.6	30	21.4	28	20.0
• Sadness due to infertility threat	80	57.1	35	25.0	25	17.9
• Frustration being misunderstood by others	79	56.4	35	25.0	26	18.6
• Concerned with infertility problems	80	57.1	34	24.3	26	18.6
• Change in sexual activity	44	31.4	66	47.1	30	21.4

Table (2)shows the psychological domain regarding polycystic ovary syndrome for the study participants. This table reveals that there were highpercentages in poor psychological QOL due to the emotional disturbances in terms of low self-esteem, change in appearance, fluctuating mood, easily tired, worried, depressed mood and the nervous situation on the initial diagnosis with PCOS represented 52.1%, 30.0%, 54.3%, 52.9%, 51.4%, 52.1% &42.9% respectively. Finally, there were high percentages in poor psychological QOL due toinfertility consequences in terms of worry of not being able to have children, frustration being misunderstood by others, change in sexual activity represented 58.6%, 56.4% and 31.4% respectively.

Table (3a): Hirsutism in the Physiological Domain Regarding Polycystic Ovary Syndrome of thestudy participants.

Variables	The Study Participants (N=140)					
	Severe problem= Poor		Some problem=Average		None problem= Good	
	No.	%	No.	%	No.	%
• **Growth of visible body hair**	60	42.9	62	44.3	18	12.9
• **Growth of visible hair on the upper lip**	60	42.9	62	44.3	18	12.9
• **Growth of visible hair on the face**	60	42.9	62	44.3	18	12.9
• **Growth of visible hair on the chin**	58	41.4	65	46.4	17	12.1
• **Embarrassment about excessive body hair**	57	40.7	59	42.1	24	17.1
• **Reflection of abnormal hair growth on women sexual activity**	50	35.7	62	44.3	28	20.0
• **Reflection of abnormal hair growth on women appearance**	53	37.9	59	42.1	28	20.0
• **Head hair loss**	81	57.9	34	24.3	25	17.9

Table (3a) shows the hirsutism in the physiological domain regarding polycystic ovary syndrome of the study participants. This table reveals that there were high percentages in poor physiological QOL due to hirsutism in terms of reflection of abnormal hair growth on women sexual activity, reflection of abnormal hair growth on women appearance & growth of visible body hair represented 35.7%, 37.9% & 42.9% respectively.

Table (3b): Body Weight Problem in the Physiological Domain Regarding Polycystic Ovary Syndrome of the Study Participants

Variables	The Study Participants (N=140)					
	Severe problem= Poor		Some problem= Average		None problem= Good	
	No.	%	No.	%	No.	%
• **Problem in controlling the weight**	62	44.3	53	37.9	25	17.9
• **Frustration in trying lose weight**	63	45.0	52	37.1	25	17.9
• **Difficulties of staying at ideal weight**	61	43.6	52	37.1	27	19.3
• **Reflection of over weight on sexuality**	61	43.6	48	34.3	31	22.1
• **Increasing appetite**	73	52.1	43	30.7	24	17.1
• **Suffering from abdominal obesity**	75	53.6	42	30.0	23	16.4

Table (3b) shows the body weight problem in the physiological domain regarding polycystic ovary syndrome of the study participants.This table reveals that there were high percentages in poor physiological QOL due to body weight problem in terms of reflection of over weight on sexuality, frustration in trying to lose weight & increase appetite represented 43.6%, 45.0% & 52.1% respectively.

Table (3c): Menstrual Problems in the Physiological Domain Regarding Polycystic Ovary Syndrome of the Study Participants

Variables	The Study Participants (N=140)					
	Severe problem=1/ Poor		Some problem=2/ Average		None problem=3/ Good	
	No.	%	No.	%	No.	%
• **Menstrual cramps**	99	70.7	31	22.1	10	7.1
• **Having skin changes (peeling or fatty or skin pills)**	57	40.7	71	50.7	12	8.6
• **Irregular menstrual cycle**	74	52.9	54	38.6	12	8.6
• **Late menstrual period**	71	50.7	56	40.0	13	9.3
• **Body pain (Head, back & leg pain)**	67	47.9	63	45.0	10	7.1
• **Heavy menstrual flow**	50	35.7	74	52.9	16	11.4
• **Blood clots during menstruation**	49	35.0	76	54.3	15	10.7

Table (3c) shows the distribution of the study participants according to the menstrual problems in the physiological domain regarding polycystic ovary syndrome.This table reveals that there were high percentages in poor physiological QOL due tothe menstrual problems in terms of menstrual cramps, skin changes (peeling or fatty or skin pills), irregular menstrual cycle, late menstrual period, heavy menstrual flow & blood clots during the menstruation represented 70.7%, 40.7%, 52.9%, 50.7%, 35.7% & 35.0% respectively.

Table (4): Social Domain Regarding Polycystic Ovary Syndrome of the Study Participants

Variables	The Study Participants (N=140)					
	All of the Time=1/ Poor		Some of the Time=2/ Average		None of the Time=3/ Good	
	No	%	No	%	No	%
• **Increasing financial burden**	97	69.3	27	19.3	16	11.4
• **Lack of sufficient husband support**	45	32.1	67	47.9	28	20.0
• **Lack of sufficient support from the family members**	60	42.9	53	37.9	27	19.3
• **Illness interferes with the friends' relationship**	62	44.3	40	28.6	38	27.1
• **Illness interferes with the home activities**	68	48.6	42	30.0	30	21.4
• **Illness interferes with the job**	49	35.0	39	27.9	52	37.1
• **Illness interferes with the husband relationship**	60	42.9	42	30.0	38	27.1

Table (4)shows the social domain regarding polycystic ovary syndrome of the study participants. This table reveals that there were high percentages in poor social domain in terms of increased financial burden, lack of sufficient husband support, lack of sufficient support from the family members, illness interferes with the job, illness interferes with the friends' relationship, illness interferes with the home activities & illness interferes with the husband relationship represented 69.3%, 32.1%, 42.9%, 35.0%, 44.3%, 48.6% & 42.9% respectively.

Table (5): Relation between Total Score of Quality of Life Domains and the Obstetrical History of the Study Participants (N=140)

Variables	Total QOL Domains						χ²	P- Value
	Poor		Average		Good			
	No	%	No	%	No	%		
Number of gravidity:								
• Nulligravida	49	45.4%	12	52.2%	0	0.0%		
• Gravida1	54	50.0%	7	30.4%	3	33.3%	38.196	0.001**
• Gravida2	4	3.7%	3	13.0%	4	44.4%		
• Gravida3	1	0.9%	1	4.3%	2	22.2%		
Number of parity:								
• Nullipara	46	42.6%	12	52.2%	1	11.1%		
• Para1	59	54.6%	8	34.8%	5	55.6%	26.735	0.001**
• Para2	3	2.8%	3	13.0%	2	22.2%		
• Para3	0	0.0%	0	0.0%	1	11.1%		
Complications during the previous pregnancy:								
• Yes	25	23.1%	4	17.4%	4	44.4%	2.67	0.263
• No	83	76.9%	19	82.6	5	55.6%		
Complications during the previous delivery:								
• Yes	8	7.4%	2	8.7%	2	22.2%	2.32	0.031*
• No	100	92.6%	21	91.3%	7	77.8%		
Number of living children:								
• No children	98	90.7%	11	47.8%	2	22.2%		
• One child	10	9.3%	7	30.4%	4	44.4%	70.648	0.001**
• Two children	0	0.0%	5	21.7%	1	11.1%		
• More than two children	0	0.0%	0	0.0%	2	22.2%		

* p<0.05 S   ** p <0.01 HS

Table (5) shows the relation between total score of quality of life domains and the obstetrical history of the study participants. This table reveals that there were no statistically significant differences between previous pregnancy complications & total quality of life domains (P>0.05). Also, there were high statistically significant differences between the number of gravidity, number of parity, number of living children & total QOL domains (P=0.001).Thus the higher number of gravidity, number of parity andnumber of living children had, the better QOL a woman had. Finally, there were statistically significant differences between the previous delivery complications & total quality of life domains (P=0.031) that the higher complications during the previous delivery had, the poorer QOL a woman had.

Figure (1)
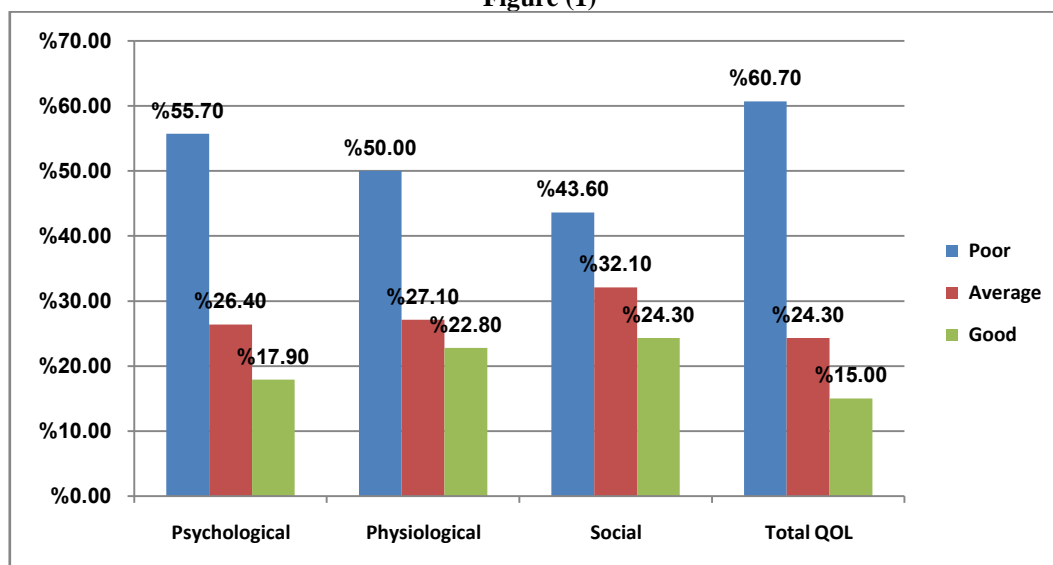
Total Score of Quality of Life Domains Regarding Polycystic Ovary Syndrome of the Study Participants
Figure (1) shows the total score of quality of life domains regarding polycystic ovary syndrome of the study participants. This figure illustrates that the women with higher percentage in poor score for psychological QOL domain (55.7 %) & physiological QOL domain (50.0 %) & social QOL domain(43.6 %). Concerning women' total QOL score with good, poor and average QOL represented 15.0%, 60.7 % & 24.3% respectively.
Figure(1) answered the research question that what is the quality of life among women with polycystic ovary syndrome? So,polycystic ovary syndrome has a negative impact on the women's quality of life.

V. Discussion

Polycystic ovary syndrome is a heterogeneous endocrinal-disorder of uncertain etiology. It is complex and a diverse female endocrine and metabolic disorder that affect the women throughout their lifetime, leading to several health complications including menstrual irregularity/disorder, infertility, hirsutism, acne, obesity, and metabolic syndrome (Zhao et al., 2016). The adverse impact of this heterogeneous condition on the psychological features (worsenQOL, depression, and anxiety) has become an important indicator of research in the recent last decade (Livadas and Diamanti-Kandarakis, 2013). However, data on women's experience of common PCOS problems and their impact on QOL in Menoufia is scanty.Therefore, the purpose of the study was to assess quality of life among women with polycystic ovary syndrome.

Regarding the health-related quality of life questionnaire for women with polycystic ovary syndrome (PCOSQ). It assessed all QOL domains (psychological, physiological, and social wellbeing). The present study findings showed that the women' total QOL are as follow; more than one half of the study participants suffered from poor QOL. This finding is in accordance withCoffey, Bano and Mason, (2017) in London who conducted a study entitled "health-related quality of life in women with polycystic ovary syndrome: a comparison with the general population using the polycystic ovary syndrome questionnaire (PCOSQ) and the short form-36 (SF-36)".On the other hand, this finding is contradicted with Dey, (2018) in England who conducted a study entitled quality of life of women with polycystic ovarian syndrome and Aliasghari et al., (2017) in Iran who conducted a study entitledthe predictors of quality of life in women with polycystic ovarian syndrome. Both studies found that women with PCOS were suffered from average quality of life. The difference between the present study findings and the previous studies might be related to the difference in the age group among the study participants as the present study participants were younger.

Investigating QOLdomains, the present study findings showed that about one half of the study participants had poor QOL regarding the psychological domain. This corresponds with the findings ofAditi, Mazumdar& Mehta, (2018) in India who found that the psychological domain was mostly affected by PCOS in their study entitled "Anxiety, Depression, and Quality of Life in Women with Polycystic Ovarian Syndrome ". Furthermore, it showed a reduction in the health -related quality of life (HRQOL).

Supporting the same point, Jones et al., (2018) in the United States who conducted a study entitled "Health-related quality of life measurement among women with polycystic ovary syndrome" and found that the sum score of psychological domain indicated poorer psychological –related HRQOL in women with PCOS than women with any of the other conditions analyzed. These results are also assured by a study conducted by Hadjiconstantinou et al., (2018) in the United Kingdom who study"Understanding and supporting women with polycystic ovary syndrome: a qualitative study in an ethnically diverse UK sample". They revealed that women with PCOS experienced high psychological distress and difficulties with coping with their condition. Hence, this similarity assured that the psychological aspect as one of QOL domains has a great effect on the issues related to health mainly QOL.

Regarding the main items of physiological domain and its impact on the women' quality of life, the present study findings revealed that there was poor physiological QOL in women with hirsutism as it is reflected on the women's sexual activity and the women's appearance. This finding is in agreement with Drosdzol et al., (2017) in Poland who study "Quality of life and marital sexual satisfaction in women with polycystic ovary syndrome" and found that the marital sexual disorders increased along with hirsutism severity. Bedsides a study with Khomami et al., (2015) in Iran who study" Hirsutism Has the Most Significant Impact on the Quality of Life of Iranian Women". The results of this study showed that hirsutism had the strongest impact on the health-related quality of life measures in Iranian women are diagnosed with polycystic ovary syndrome.

Concerning the social QOL domain, these study findings revealed that about one-third of the study participants had poor level of social quality of life. Moreover, this finding is in agreement withKumarapeli, Seneviratne, and Wijeyaratne, (2016) in Sri Lanka who conducted a study " Health-related quality of life and psychological distress in polycystic ovary syndrome: a hidden facet in South Asian women", and found that the significant predictors of poor social QOL domain among women with PCOS.

The present study showed another important finding concerning social QOL domain.It revealed that PCOS had a negative impact on the social QOL domain among women as the illness interferes with the friends' relationship, job as well as the home activities. This finding is supported by a study conducted by Kumarapeli,

Seneviratne,and Wijeyaratne, (2016)in Sri Lanka who conducted a studyentitled " Health-related quality of life and psychological distress in polycystic ovary syndrome: a hidden facet in South Asian women", and found that the social relationships domain of women with PCOS was significantly affected the severity of physical changes of PCOS and the women' perception of these problems that can be determined by the sociocultural issues. Women with PCOS failed to confirm the societal norms for external appearance and thus feel stigmatized.

Concerning the women' obstetric history and total QOL domains, the present study findings showed that there was a highly statistical significant difference between the previous delivery complications and the total QOL domains (P=0.031) and also there was a negative correlation between them. This result is in agreement with McCook et al., (2015)in the United Statesabout"Healthrelated quality of life issues in women with polycystic ovary syndrome" and reported that the previous delivery complications as a risk factor that affects the women QOL and the reproductive history that more especially the delivery of a viable fetus were shown to predict scores on the HRQOL.

On the other hand, the present study findings showed a statistically significant differences & positive correlation between the number of gravidity/parity and total QOL domains. This result is in agreement with McCook et al., (2015))in the United States about"Health-related quality of life issues in women with polycystic ovary syndrome" and concluded that the women with PCOS who got pregnant but experienced spontaneous abortion, reported the lowest scores of HRQOL. On the other hand,Sulaiman et al., (2017) in Oman conducted a study entitled "Psychological burden among women with polycystic ovarian syndrome in Oman: a case–control study ".This may be due to the large sample size in this study.

The present study findings showed a highly statistical significant difference & positive correlation between the number of children and total QOL domains. These findings are in agreement with Hahn et al., (2015) in Germany who conducted a studyentitled"Clinical and psychological correlates of quality-of-life in polycystic ovary syndrome" and found that the study participants with one or more children significantly had higher score in HRQOL. This result is disagreed with Aliasghari et al., (2017) in Iran who conducted a studyentitled"The predictors of quality of life in women with polycystic ovarian syndrome". This may be due to the difference in the age group in this study.

These findings are in opposite with Cronin et al., (1998) in the United States who conducted a studyentitled "Development of a health-related quality-of-life questionnaire (PCOSQ) for women with polycystic ovary syndrome (PCOS)" and reported that the duration of PCOS symptoms had significant negative effect on QOL. This difference may be due to the different factors that may be affected the different groups under study.

To sum up, the present study revealed some important results about PCOS that has a great impact on women's quality of life. Furthermore, this effect can be seen in different aspects that differ in degrees but agree in privilege. Therefore, polycystic ovary syndrome has a negative impact on women's quality of life.Based on the findings of the present study, the study research question was answered that what is the quality of life among women with polycystic ovary syndrome?

VI. Conclusion

Based onthe results of the present study that assessed quality of life among women with polycystic ovary syndrome, it could be concluded that:more than half of the study participants experienced poor quality of life (psychological, physiological and social QOL domains). Also, more than half of the study participants experienced poor QOL regarding psychological domain andnearly half of the study participants experienced poor QOL regarding physiological domain. Finally, less than half of the study participants experienced poor QOL regarding social domain.Therefore, the present study could answer the research question that what is the quality of life among women with polycystic ovary syndrome? So,polycystic ovary syndrome has a negative impact on the women's quality of life.

VII.   Recommendations

In light of the study findings, the following recommendations are proposed:

- Improvingthe women's knowledge concerning PCOS toward stress management and lifestyle modifications.
- The nurses in in theclinics of the gynecology and obstetrics should organize an educational sessions for the females regarding PCOS concerning the causes, symptoms and signs and the management, with the development of teaching materials in the form of posters and booklets in the future.
- The need for a hospital based support group as psychologists and consultants for the women with PCOS to improve their psychological indexes such as quality of life.

Suggestions for future studies:-
- Further research should be recommended to further setting using a larger sample.
- Health promotion programs and workshops and provide training packages by the health system and specialists in this domain to increase the public knowledge on this syndrome and get a broader perspective of the women's quality of life.

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