Kufa Journal for Nursing Sciences
Open Access Full Text Article

Publisher
University of Kufa, Faculty of Nursing

Collision of Polycystic Ovarian Syndrome Scenarios on Specific Health Related-Quality of Life among a sample at Maternity and Children Teaching Hospital" in Diwaniyah city –Iraq

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الخلاصة:

خلفية البحث: دراسة لاكتشاف حالة التصادم من خلال دراسة خصائص الصحة الخاصة ذات الصلة بجودة نوعية الحياة لمريضات متلازمة تكيس المبايض وعلاقة جودة نوعية الحياة وكذلك لمعرفة العلاقة بين إعادة توزيع التقييم الشامل لمحتويات استبيان الخاص مع بعض المتغيرات الانثروبومترية ذات الصلة فيما يتعلق بالعينة المدروسة وكذلك الوضع الاجتماعي والاقتصادي للمريضات الخاضعات للدراسة.

الهدف: يهدف البحث لاكتشاف حالة التعارض من خلال دراسة معظم خصائص الصحة الخاصة ذات الصلة بجودة الحياة (SHR-QoL) لمرضى متلازمة تكيس المبايض (PCOS).

المنهجية: تم اعتماد استبيان متطور خاص بـ (PCOS) وقابل للتطبيق بعد قياس الصدق الظاهري لمجموعة من الخبراء. أجريت دراسة وصفية للمرضى الذين يعانون من متلازمة تكيس المبايض، وتم البدء بجمع البيانات من 6 ديسمبر 2020 حتى 10 مايو 2021 .

النتائج: أشارت نتائج الدراسة إلى أن (SHR-QoL) للمرضى الخاضعين للدراسة أن استجاباتهم الملاحظة كانت على مستوى متوسط بشكل عام، وتم تقدير محتويات المحاور الرئيسية للاستبيان المعتمد: (العواطف، شعر الجسم، الوزن، العقم، ومشكلات الحيض). بالإضافة إلى ذلك، تم حساب العلاقات بين (SHR-QoL) بإعادة توزيع الاستجابات من خلال (أدنى/أعلى) عتبة القطع فيما يتعلق بمتوسط القياس العام المئوي (PGMS) ومتغيرات القياسات الجسمية (BMI) و (WHR)، كذلك الوضع الاجتماعي- الاقتصادي للمرضى الخاضعين للدراسة.

الاستنتاجات: تُعد متلازمة تكيس المبايض (PCOS) من المشكلات الصحية الحقيقية المقترنة بالمحاور (العواطف، شعر الجسم، الوزن، العقم، ومشكلات الدورة الشهرية)، بحيث يتراجع موقف المرضى فيما يتعلق بـ (SHR-QoL)، حيث أن جميع المحاور التي تمت دراستها بخصوص مؤشر SHR-QoL قد حققت مستوياً متوسطًا يتقارب الى مستوى تقويم منخفض، حيث(PGMS = 51.47%)، بالإضافة إلى العلاقات الضعيفة غير المعنوية عند مستوى P> 0.05 ما بين (SHR-QoL) وبعض المتغيرات غير المباشرة، مثل: المتغيرات الأنثروبومترية والاجتماعية-الاقتصادية.

التوصيات: التأكيد على نتائج الدراسة الحالية فيما يتعلق بالآثار السلبية الناتجة عن عوامل الخطر المرتبطة بزيادة الوزن والسمنة، بسبب الآثار السلبية الواسعة للعامل المذكور في زيادة خطورة المرض وتقليل الصحة المرتبطة بجودة الحياة ضرورة إجراء دراسات أخرى مماثلة واسعة النطاق في البيئات الاجتماعية لمختلف مناطق العراق من أجل التعرف على جوانب التميز والانحدار التي تتقدم وتتباطأ في ضوء نتائج تقييم الحالة الصحية المتعلقة بالنوعية.

ABSTRACT

Objectives: Study objectives to discover collision scenarios status through studying the most properties of specific health related-quality of life (SHR-QoL) of polycystic ovarian syndrome (PCOS) patients, as well as to find out relationships among redistribution of overall evaluating the contents of specific questionnaire with some related anthropometric variables concerning studied patents, such as, (BMI, and WHR), as well as socio-economic status of the studied patients.

Methodology: Specific development questionnaire of (PCOS) for women are applicable. A descriptive study of patients with PCOS are conducted, and it was starting data collection from the 6th December 2020 up to 10th May 2021from the "Maternity and Children Teaching Hospital" in Diwaniyah city–Iraq". Convenient sampling of (100) patients who were visiting to that hospital during the data are collected. In addition to that, (Alpha Cronbach-α) for the internal consistency are accounted high reliable (α = 0.8499), which indicating that (Specific) questionnaire could be applicable for the sampling population, and this confirms indirectly the sufficiency of the sample size that are selected to study the phenomenon. Pilot study has shown high reliabilities are accounted by inter and intra examiner (s).

Results: The findings of the study indicated that (SHR-QoL) for the studied patients are assigned that the observing responses were at a moderate response generally, and they are accounted for contents of studied questionnaire's main domains (Moderate, High, (Emotions, Body Hair, Weight, Infertility, and Menstrual Problems). In addition to that, relationships are accounted between an overall (SHR-QoL) redistributed by (under/upper) cutoff point regarding percentile global mean of score (PGMS) and anthropometric variables (BMI, and WHR), as well as socio-economic status of the studied patients.

Conclusion: A (PCOS) are formed a truly health problems associated with patients "Emotions, Body Hair, Weight, Infertility, and Menstrual Problems" aspects, so that patients having go down concerning (SHR-QoL), since all of studied items regarding SHR-QoL are accounted a moderate border to low evaluation, with (PGMS=51.47%), as well as weak relationships with no significant at P>0.05 are accounted between SHR-QoL and some unrelated variables, such as: anthropometric variables and socio-economic status, and according to that, it could be conclude that studied questionnaire could be take a broad view on studied target population even though differences with patients unrelated variables indeed.

Keyword: Polycystic Ovarian Syndrome, PCOSQ, (Specific) Health-Related Quality of Life (SHR-QoL) Questionnaire.

INTRODUCTION

The formulate use of the term quality of life (QoL) and health status preceded the use of HR-QoL. QoL was already discussed in medical literatures in the 1960s. QoL became more important in health care as medical treatment became able to extend length of life, sometimes at the expense of QoL or improve quality of life without extending length of life. The recent history of health status measurement can be traced back to the early 1970s. These health status measures were motivated by a desire to measure the output of health care systems. One of the first attempts to measure and value health was the health status index QoL has been defined as "An overall general well-being that comprises objective descriptors and subjective evaluations of specific properties going well-being together with the

extent of personal development and purposeful activity, all weighted by personal set of values [1]. PCOS is a metabolic, hormonal, and psychosocial disorder that impacts a patient's quality of life [2].

Consequently, several investigations conducted over the world have shown associations among specific health related-quality of life (SHR-QoL) and the presence of polycystic ovarian syndrome (PCOS) patients. Women with PCOS may be at a higher risk of low SHR-QoL. However, several of the previous studies have focused on series of women with PCOS or evaluated the effect of an intervention (life style or medical treatments) [3].

By reviewing many of the literature related to the negative effects of PCOS on the quality of healthy life, they agreed to diagnose these problems, which are: [Emotions, Body Hair, Weight, Infertility, Menstrual problems], not to mention the social, psychological, environmental, spiritual and belief effects.

In this study we focusing on how the PCOS collision syndrome on the SHR-QoL, with reference on direct quality of healthy life through using specific scale questionnaire in compact form in order to show how this conditions affects SHR-QoL, and how the disease presents differently across studied patients among a sample at "Women and Children Hospital in Diwaniyah Governorate" through evaluating relationships among specific scale with reference to some related variables of studied patients, such as: "Anthropometric variables and Socio-Economic Status".

AIMS OF THE STUDY

1. To identify and study the most properties of (Specific) Scales Health-Related–Quality of Life (SHR-QoL) instruments of patient's women with (PCOS).
2. To find out the relationships among evaluate (SHR-QoL) in patients with (PCOS) and some related variables of patients: "Anthropometric variables and Socio-Economic Status".

METHODOLOGY

Setting of the study: A cross sectional design (descriptive study) for patients with (PCOS), which were conducted starting data collection from 6th of December 2020 and 10th May 2021).

The sample of the study: This study was conducted on a convenient sample of 100 adults patients with (PCOS), who have been diagnosed and treated by "Maternity and Children teaching Hospital" in Diwaniyah city-Iraq.

Steps of the Study: For evaluate adults women's patients with (PCOS), appropriate instrument are selection for study of subjects, namely, (SHR-QoL), questionnaires format regarding "Development of a Health-Related Quality-of-Life Questionnaire (PCOSQ) for Women with (PCOS)" [3], which consists of (26) items formed five main domains, such as " Emotions, Body Hair, Weight, Infertility, and Menstrual Problems".

Pilot Study: Reliability coefficients of the pilot study, shows that intra examiner (test & retest) equal to [0.92 (22:260)], and inter examiners recorded highly and adequate outcomes equal to[0.88 (31:260)], through using Al-Naqeeb Formula [4].

$$\text{Relibility value} = \left(1 - \frac{no.\ of noncoincidences items}{no.\ of all items * sample size of pilot study}\right) * 100\%$$

Statistical Methods: Statistical data analysis approaches are used in order to analyze and assesses the results of the study under application of the statistical package (SPSS), ver. (22.0): it has included on (Frequencies, and Percentages) and descriptive statistical methods such as: "mean of score (MS), standard deviation (SD), relative sufficiency (RS%), percentile grand/or global mean of score (PGMS), and pooled standard deviation (PSD%)". In addition to that, scoring scales concerning seven ordinal scales of integer numbers of sampling zero, for the SHR-QoL questionnaire's items.

Reassessment scoring scales for tri dichotomous random variable of scoring seven ordinal scales are given by following intervals: [(14.28 – 42.85) for Low (L); (42.86–71.42) for Moderate (M); and (71.43– 100) for High (H)], as well as score of percentile mean of score are given by following intervals: [(00.00 – 33.33) for Low (L); (33.34–66.66) for Moderate (M); and (66.67– 100) for High (H)].

"Contingency Coefficients C.C." test: are estimated for association tables to find out the cause's correlation ships.

RESULTS

Table (1): Distribution of the studied sample according to (SES) with comparisons significant

SES	Groups	No.	Cum. %	C.S. (*) P-value
Socio-Economic Status	**< 60 (Low)**	55	55	χ^2= 30.500 P=0.000 (HS)
	60 - 80 (Moderate)	35	90	
	> 80 (High)	10	100	
	Total	100	-	

(*) HS: Highly Sig. at P<0.01; Testing based on One-Sample Chi-Square test.

Table (1) shows an observed frequencies, and cumulative percent's of "Socio-Economic Status- SES" with comparison significant, and they are accounted through applying of WHO instrument, and [Abdulkhaleq A Ali Ghalib] correction, appendix (A), which consists of several components such as, occupation, education levels, crowding index (no. of households, and no. of rooms), and a particular properties (house ownership, possession of a car, available of specific requisite materiel). Three social and economic levels represented for the preceding contents (Low, Moderate, and High). Result show that vast majority of the studied sample had at a low, and moderate levels, and they are accounted (cum 90.0%), and highly significant different are accounted between observed and expected frequencies at P<0.01.

Table (2): Distribution of the studied sample according to (BMI) with comparisons significant

Parameter	Groups	No.	Cum. %	C.S. (*) / P-value
BMI	**Under weight**	3	3	χ^2= 30.000 P=0.000 (HS)
	Normal weight	24	27	
	Overweight	36	63	
	Obese	37	100	
	Total	100	-	
	Mean ± SD	28.58 ± 5.86		

(*) HS: Highly Sig. at P<0.01; Testing based on One-Sample Chi-Square test

Table (2) shows observed frequencies, and Cumulative percents of "Body mass index " with comparison significant. Vast majority of the studied sample had registering at overweight and obesity outcomes, and they are accounted (73.0%), and highly significant different are accounted between observed and expected frequencies at P<0.01.

Table (3): Distribution of the studied sample according to (Waist to Hip ratio) with comparisons significant

Parameter	Groups	No.	Cum. %	C.S. (*) / P-value
WHR	Normal (< 0.85)	63	63	χ^2= 42.980
	Over (0.85 - 1.0)	26	89	P=0.000
	At risk (> 1.0)	11	100	(HS)
	Total	100	-	
	Mean ± SD	86.11 ± 15.87		

(*) HS: Highly Sig. at P<0.01; Testing based on One-Sample Chi-Square test

Table (3) shows observed frequencies, and cumulative percent's of "Waist to Hip ratio-WHR", with comparison significant. Vast majority of the studied sample had registering at over and at risk outcomes, and they are accounted (37.0%), and there is highly significant different between the observed and expected frequencies at P<0.01.

Table (4): Summary Statistics of patients responding concerning (Specific) Scales Health Related Quality of Life's items (N=100)

No.	(Specific) Scales HRQoL	MS	SD	RS%	Ev.
1.	Growth of visible hair on chin	4.27	2.47	61.00	M
2.	Depressed as result of having PCOS ?	3.49	2.03	49.86	M
3.	Concerned about being overweight?	3.96	2.15	56.57	M
4.	Easily tired ?	3.19	1.77	45.57	M
5.	Concerned with infertility problem ?	4.34	2.45	62.00	M
6.	Moody as a result of having PCOS	3.60	2.10	51.43	M
7.	Headaches ?	3.93	2.46	56.14	M
8.	Irregular menstrual periods ?	2.70	1.93	38.57	L
9.	Growth of visible hair on upper lip ?	4.23	2.46	60.43	M
10.	Had trouble dealing with your weight	5.07	2.20	72.43	H
11.	Had Low self -esteem as a result of having your PCOS ?	5.55	1.97	79.29	H
12.	Felt frustration in trying to lose weight	5.33	2.13	76.14	H
13.	Felt afraid of not being able to have children ?	4.47	2.43	63.86	M
14.	Felt frightened of getting cancer ?	5.54	2.22	79.14	H
15.	Growth of visible hair on your face ?	4.43	2.49	63.29	M
16.	Embarrassment about excessive body hair ?	4.14	2.50	59.14	M
17.	Worried about having PCOS ?	3.17	2.00	45.29	M
18.	Self - Conscious as a result of having PCOS ?	5.13	2.14	73.29	H
19.	Abdominal Blotting ?	3.46	2.29	49.43	M
20.	Late menstrual period ?	3.02	2.01	43.14	M
21.	Menstrual cramp ?	2.87	1.88	41.00	L
22.	Feel like you are sexy because of being overweight ?	3.83	1.91	54.71	M
23.	Feel a lack of control over the situation with PCOS ?	4.02	1.95	57.43	M
24.	Have difficulties staying at your ideal weight ?	4.25	2.11	60.71	M

25.	Feel sad because of infertility problems?	4.38	2.36	62.57	M
26.	Growth of visible body hair ?	4.14	2.45	59.14	M

MS: Mean of Score; SD: Standard deviation according to MS.
RS%: Relative Sufficiency Assess by (L: Low; M: Moderate; H: High)

(Specific) Scales Health Related QoL:

Regarding subjects of SHR-QoL items, table (4) shows a summary statistics of initial evaluation, such as, mean of score, standard deviation, and relative sufficiency's, as well as different responses levels of evaluating grades through three differentiate of an ordinal categories scales, such as (Low, Moderate, and High), with reference to (0.00 – 33.33, 33.34 – 66.6, and 66.67 – 100) respectively. And according to that, evaluation of (SHR-QoL) for studied patients are assigned moderate responses, and they are accounted 19 (73.08%), while the leftover items are reported low and high evaluation, with 2(7.69%), and 5(19.23%) respectively.

Table (5): Summary Statistics of Percentile Score Specific QoL main domains for the studied patients (N=100)

Main Domains	No.	PGMS	PSD	Evaluated
Emotions Domain	100	53.52	18.72	Moderate
Body Hair Domain	100	54.03	32.95	Moderate
Weight Domain	100	58.13	23.87	Moderate
Infertility Domain	100	55.04	29.65	Moderate
Menstrual Problems Domain	100	36.60	24.10	Moderate
Specific Health-Related Quality of life	**100**	**51.47**	**16.93**	**Moderate**

PGMS: Percentile Grand/Global Mean of Score; PSD: Percentile Pooled Standard Deviation, Distribution of Questionnaire's Domains (SHR-QoL):

Regarding subjects of main domains, table (5) shows summary statistics, such as, percentile mean of score, and pooled standard deviation, as well as different responding levels of evaluating of main domains concerning "SHR-QoL", through percentile transforming scoring scales by the three differentiated categories' levels, such that (Low, Moderate, and High), which consists of (Emotions, Body Hair, Weight, Infertility, and Menstrual Problems) main domains.

Table (6): Relationships among SHR-QoL concerning PCOS Patients in light of Anthropometrics variables and Socio-Economic Status

Anthropometrics variables and Socio-Economic Status	(Specific) Scales – QoL	
	C.C.	P-value (*)
Socio-Economic Status	0.081	0.718 (NS)
BMI	0.155	0.485 (NS)
WHR	0.205	0.112 (NS)

(*) NS: No Sig. at P>0.05; Statistical hypothesis based on Contingency's Coefficient test.

To find out relationships amongst redistribution of overall evaluation through (under/upper) cutoff point of percentile grand mean of score concerning of [SHR-QoL] of PCOS's patients and their [Anthropometrics and Socio-Economic Status] variables, such as: (BMI, and WHR), as illustrated in table (6), which consists of a contingency coefficients and the their testing hypotheses' P-values. Results shows that weak relationships were accounted amongst redistribution of overall SHR-QoL of PCOS's patients and their (Anthropometric and Socio-Economic Status) variables at P>0.05, and according to that, it could be conclude that studied of specific questionnaire can be amending for the studied phenomena on the target population rather than differences among their (Anthropometric and Socio-Economic Status) variables.

DISCUSSION

To our knowledge, this study is the first trial to investigate the evaluation of SHR-QoL in relative to PCOS women patients in Iraq, since it came with comprehensive coverage to include all surface of study subjects, regarding (Specific) components, which was based on one of the best questionnaires that were prepared through many previous and subsequent attempts to prepare it.

And by reviewing the results of the preliminary data, specifically the socio-economic status of patients, it has been noticed that most of them are focusing at low and moderate levels, and they are accounted (90.0%), and that is in agreement with study done in "Wuhan University" [5], since it was accounted high percent of studied subjects in low, and moderate levels, and they are accounted (90.3%), and it is too highly corresponding to the current study indeed. Body mass index-BMI for the current study equal to three quarters of the studied sample reported an overweight, and obesity levels, and they are accounted (73.0%), with mean and standard deviation (28.58 and 5,86) respectively, and that is in agreement with the study done by "Dogan" in Turkey, which reported mean and standard deviation (30.7 and 4.88) respectively [6]. "Waist to Hip Ratio-WHR" indicator, and regarding normal degree it was recorded (37%) among studied patients, with mean and standard deviation (86.1, and 15.9) respectively, which meaning that more than one third of the studied patients women are exposed to the risks of metabolic syndrome, which is associated with PCOS and considered a one of the associated diseases causes of cardiovascular.

There are many studies that confirm the existence of relationship between WHR indicator to be risk factor, as in Iran, titles "Autonomic dysfunction in women with polycystic ovary syndrome" by [Zainab H Hashim and et al., 2015] [7], which was consistent with the current study since are gives compared to the control group, obese PCOS patients demonstrated higher BMI and WHR, reduced Palmar SSR latency and higher amplitude, altered HRV, higher plasma epinephrine level, and rapid pulse rate.

Regarding SHR-QoL main domains for the studied patients results are assigned a moderate responses, and for summarizing preceding results it could be conclude that patients with PCOS having go down concerning SHR-QoL, since most of Self-Administrated questionnaire's items are accounted moderate and that are in agreement with the parent source of the approved questionnaire titled "Development of a Health-Related Quality-of-Life Questionnaire (PCOSQ) for Women with Polycystic Ovary Syndrome (PCOS)" done in USA, by [Cronin, G. Guyatt, and et al., 1998], [3].

Regarding to subjects of "Menstrual Problems", evaluation may indicate the worst level, and has a moderate degree that converge to low level, then

followed with moderate evaluating for the leftover domains, and as follows:

Regarding "Emotions Domain" which represented by agitation, fatigue, mood changes and awareness of the disease, and it's complications, it is the emotional field where the total response was moderate in the current study, agreed with a study conducted by "Alghadeer" in 2020 in Saudi Arabia which gives GMS and PSD (3.70 and 1.28) respectively,[Alghadeer and et al., 2020] [8]. As well as, the current study agreed with study done by "Jones", which represented moderate evaluation,[Jones and et al., 2004] [9].

With regard to (Hair Growth in the face and other areas of the body domain), results of the current study are evaluated moderate degree with PGMS, and PSD (54.03 and 32.95) respectively, this result agreement with study done by "Malik" in Pakistan, since are accounted PGMS, and PSD(47.70 and 22.507) respectively, [Malik, and et al.,2020] [10].

Regarding "Weight Domain", results of the current study are evaluated moderate degree with PGMS, and PSD (58.13 and 23.87) respectively, this study is in agreement with GMS and SD (4,32 and 1.80)respectively, and the findings of study conducted in Iran, [Moghadam and et al.,2018][11].

Another study is agreed with current study was conducted by "Cinar, and et al.," [12] in Turkey which recorded GMS and SD (4.8 and 1.8) respectively [12].

Regarding of "Infertility Domain" results show that all items had a moderate level in the current study with PGMS, and PSD(55.04 and 29.65) respectively, and that are agreement with a study conducted by "Naumova" in Spain, [Naumova, and et al., 2020][13], with a significant decrease in the level of infertility found and that impaired health-related QoL concerning PCOS patients.

Regarding "Menstrual Problems Domain", present study may indicate the worst evaluated, and has a moderate degree that converge to low level of HRQoL, with PGMS, and PSD (36.60 and 24.10) respectively, and that are agrees with a studies conducted by Jones in University of ShefÆeld, in with GMS, and PSD(3.99 and 1.88), [Gabrielle M Turner-Mc Grievy et al., 2015][14], and [Jones et al., 2010][9].

In addition to that, weak relationships are accounted amongst redistribution of an overall SHR-QoL of studied patients and some related variables, such as [Anthropometrics: BMI, WHR, and Socio-Economic Status], and that is in agreement with the study done by "Fatemeh Bazarganipour and et al., 2013"[15] in Iran, which reported no significant relationships among preceding indicators.

CONCLUSION

This study showed that patients with (PCOS) having go down concerning SHR-QoL, since most of studied items regarding specific questionnaire are accounted moderate evaluation, and this was achieved to similar degree across all questionnaire's main domains. In light of this, the importance of studying health status evaluation for quality of life of patients with the studied syndrome is confirmed, according to the aforementioned questionnaire, due to its high ability to detect the reservoirs of the effects caused by the (PCOS). As well as, weak relationships has been accounted by redistribution of overall evaluations concerning SHR-QoL independently for the studied patients with PCOS and their differentiated (Anthropometric and Socio-Economic Status) variables, and according to that, it could be concludes that studied of specific questionnaire for SHR-QoL for women with (PCOS) could be amending for studying phenomena on target population rather than differences among their (Anthropometric and Socio-Economic Status) variables.

RECOMMENDATIONS

1. Emphasis on the findings of the current study as well with regard to the negative effects resulting from the risk factors associated with overweight and obesity, because of the wide negative effects of the

aforementioned factor in increasing the severity of the disease and reducing health related quality of life.

2. The necessity of carrying out a similar further large-scale studies in social environments of different Iraqi's regions in order to identify aspects of excellence and regression that progress and slow in the light of which the results of evaluating the health status related to the quality of life for PCOS women.
3. The necessity of changing the life style to the better raising the of quality of life.

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