

ORIGINAL ARTICLE

IMPACT OF POLYCYSTIC OVARIAN SYNDROME ON GENERAL HEALTH RELATED-QUALITY OF LIFE AMONG A SAMPLE AT "MATERNITY AND CHILDREN TEACHING HOSPITAL" IN DIWANIYAH CITY-IRAQ

DOI: 10.36740/WLek202204116

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ABSTRACT

The aim: This study aimed to identify and study the most properties of general health related-quality of life (GHR-QoL) of polycystic ovarian syndrome (PCOS) patients, and to find out relationships among redistribution of an overall evaluation quality of life using the general scale of WHO QoL-BERF questionnaire.

Materials and methods: A descriptive study of patients with PCOS conducted, and it was starting the data collection from 6th December 2020 up to 10th May 2021 from the "Maternity and Children Teaching Hospital" in Diwaniyah city –Iraq". Convenient sampling method of (100) patients who visited to that hospital during the data collection period had been selected.

Results: The findings of the study indicated that (GHR-QoL) for the studied patients are assigned that the observing responses were at moderate response generally, and they are accounted for the contents of studied questionnaire (Physical, Psychological, Social, and Environmental) main domains respectively. As well as, results shows that an overall of the (GHR-QoL) redistribution (under/upper) a cutoff point regarding percentile global mean of score (PGMS) that (SDCv.) has reported weak relationships with no significant at $P > 0.05$.

Conclusions: There were weak relationships between GHR-QoL and (SDCv.), and it could be concluded that studied questionnaire could be taken a broad view on studied population even though differences with their (SDCv.) indeed.

KEY WORDS: Polycystic Ovarian Syndrome, PCOSQ, General Health-Related Quality of Life (GHR-QoL), WHO QoL-BERF Questionnaire

Wiad Lek. 2022;75(4 p1):836-841

INTRODUCTION

Topic-quality of life with reference to polycystic ovarian syndrome (PCOS) unfolds two fundamental concepts: (PCOS) which has a standard definition and quality of life which must be properly conceptualized and defined after a proper understanding of the meaning of life itself, and (PCOS) is a hormonal confusion that is prevailing in females of reproductive age with signs, symptoms that significantly decreasing self-esteem and having impact on health related quality of life (HR-QoL), [1-4]. Consequently, several investigations conducted over the world have shown associations among HR-QoL and the presence of PCOS. Women with PCOS may be at a higher risk of low HR-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). Therefore, Interpretation of such studies presents a significant challenge due to the varying sample sizes and tools that assess HR-QoL, heterogeneity between study groups, and different variables that have a significant impact such as age, body mass index, educational level, occupational activity, and differences in geographic areas and different

places among women PCOS in HR-QoL [2]. This study are focused on how PCOS has a detrimental effect on GHR-QoL, using the general scale of WHO QoL-BERF questionnaire in compact form in order to show how this conditions affects general HR-QoL, and how the disease presents differently across studied patients among a sample at "General Women and Children Hospital" in Diwaniyah Governorate through evaluating relationships among general scales and some related variables of studied patients, such as: (Age Groups, Marital Status, Education, Education, Residency, and Socio-Economic Status).

THE AIM

1. To identify and study most properties of General Health-Related-Quality of Life (GHR-QoL) instruments of patient's women with (PCOS).
2. To find out the relationships among the general scales evaluation (GHR-QoL) in patients with (PCOS) and some related variables of patients: (Age Groups, Marital Status, Education, Education, Residency, and Socio-Economic Status).

MATERIALS AND METHODS

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 Diwanayah city, Iraq.

STEPS OF THE STUDY

For evaluate adults women's patients with (PCOS), appropriate instrument are selection for study of subjects, namely, (GHR-QoL), questionnaires format regarding "Health World Health Organization – WHO QoL-BERF", which consists 26 items formed four main domains, "Physical, Psychological, Social, and Environment", as well as two questions for rating and satisfying patients of QoL.

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 [3]

STATISTICAL METHODS

Statistical data analysis approaches were used in order to analyze and assess 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 that: "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 five ordinal scales of integer numbers of sampling zero, for the general HR-QoL. Reassessment scoring scales for tri dichotomous random variable, for scoring five ordinal scales are given by following intervals: [(20.00 – 46.66) for Low (L); (46.67 – 73.33) for Moderate (M); and (73.34 – 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 CC" test: are estimated for association tables to find out the cause's correlation ships.

RESULTS

Table (I) shows distribution of studied "Socio-Demographical Characteristics variables-SDCv", and "Body mass index -BMI", included the observed frequencies, and cumulative percents.

Table I. Distribution of the studied sample according to (SDCv) Observed Frequencies and Cumulative Percent's

| SDCv. | Classes | No. | Cum. % |
|-----------------------|----------------------------------------------|--------------|--------|
| Age Groups (yrs.) | < 20 | 33 | 33 |
| | 20 _ 24 | 19 | 52 |
| | 25 _ 29 | 22 | 74 |
| | 30 _ 34 | 14 | 88 |
| | > 35 | 12 | 100 |
| | Mean ± SD | 24.67 ± 7.63 | |
| Marital State | Single | 38 | 38 |
| | Married | 59 | 97 |
| | Divorced | 3 | 100 |
| Education levels | Illiterate | 6 | 6 |
| | Read & Write | 16 | 22 |
| | Primary | 34 | 56 |
| | Intermediate | 9 | 65 |
| | Secondary | 16 | 81 |
| Job of patients | College & More | 19 | 100 |
| | High professional & managerial jobs | 3 | 3 |
| | Lower professionals, skilled and semiskilled | 13 | 16 |
| | Unskilled workers | 84 | 100 |
| Residency | Urban | 88 | 88 |
| | Rural | 12 | 100 |
| Socio-Economic Status | < 60 (Low) | 55 | 55 |
| | 60 - 80 (Moderate) | 35 | 90 |
| | > 80 (High) | 10 | 100 |
| BMI | Under weight | 3 | 3 |
| | Normal weight | 24 | 27 |
| | Overweight | 36 | 63 |
| | Obese | 37 | 100 |
| | Total | 100 | - |
| | Mean ± SD | 28.58 ± 5.86 | |

Age groups shows that three quarters of less than 30 yrs. old of the studied sample are recorded at the 1st, 2nd, and 3rd age groups, and were accounted 74%, as well as mean value and standard deviation are estimated by 24.67 yrs., and 7.63 yrs. respectively, as well as 59% of studied sample were married. More than half of studied sample were recorded their educational levels at primary school or less, and were accounted 56%, and most of them has unskilled worker, and were accounted (84%), urban residency are accounted 88% among studied sample, vast majority of "Socio-Economic Status" had recorded at low, and moderate levels, and they are accounted 90.0%. Finally, results shows observed frequencies, and cumulative percents of "Body mass index -BMI", observed vast majority of studied sample had registering overweight and obesity outcome,

Table II. Distribution of the studied sample according to some related General Information with comparisons significant (N=100)

| Risk Factors | Response | No. | Cum. % | C.S. (*) P-value |
|---------------------------------------------|--------------------|-----|--------|------------------------------------|
| Family History of PCOS | No | 51 | 51 | P=0.920 NS |
| | Yes | 49 | 100 | |
| Thinning Hair | No | 19 | 19 | P=0.000 HS |
| | Yes | 81 | 100 | |
| Hair loss from the head | No | 100 | 100 | P=0.000 HS |
| | Yes | 0 | 100 | |
| Are you under treatment now? | No | 68 | 68 | P=0.000 HS |
| | Yes | 32 | 100 | |
| Weight Gain after Menarche | No | 36 | 36 | P=0.000 HS |
| | Yes | 64 | 100 | |
| Age at Menarche | 9-10 | 21 | 21 | $\chi^2= 29.76$ P=0.000 (HS) |
| | 11-12 | 27 | 48 | |
| | 13-14 | 45 | 93 | |
| | 15-16 | 7 | 100 | |
| Menstrual cycle | Regular | 17 | 17 | P=0.000 HS |
| | Irregular | 83 | 100 | |
| Duration of menstrual cycle Per Days | No Menstrual cycle | 6 | 6 | $\chi^2= 41.44$ P=0.000 HS |
| | < 5 | 26 | 32 | |
| | 5-7 | 50 | 82 | |
| | > 7 | 18 | 100 | |
| Increasing of (Androgen Hormone) | No | 64 | 64 | P=0.000 HS |
| | Yes | 36 | 100 | |
| Regular Exercise | No | 75 | 75 | P=0.000 HS |
| | Yes | 25 | 100 | |
| Are you Diabetic | No | 98 | 98 | P=0.000 HS |
| | Yes | 2 | 100 | |
| Abnormal uterine bleeding | No | 68 | 68 | P=0.000 HS |
| | Yes | 32 | 100 | |
| Eating Disorders | No | 51 | 51 | P=0.920 HS |
| | Yes | 49 | 100 | |
| Sleep Apnea | No | 27 | 27 | P=0.000 HS |
| | Yes | 73 | 100 | |
| High Blood Pressure | No | 33 | 33 | P=0.000 HS |
| | Yes | 67 | 100 | |
| Abnormal cholesterol or triglyceride levels | No | 83 | 83 | P=0.000 HS |
| | Yes | 17 | 100 | |

*HS: Highly Sig. at P<0.01; NS: Non Sig. at P>0.05; Testing based on One-Sample Chi-Square test, and Binomial test

and they are accounted 73.0%. Table (II) shows observed frequencies, and cumulative percents of “Risk Factors”, with comparisons significant.

Regarding to subject “Family History of PCOS”, half of studied respondents having a family history, and they are accounted 49%, most of studied patients has a “Thinning Hair”, and they are accounted 81%, no one of studied patients having hair loss from head, 32% of studied patients are under treatment, two third of studied patients has a “Weight Gain after Menarche”, and they are accounted 64%, about half of studied respondents 52% had a menarche age between (13–16) yrs, and 83% had irregular menstrual cycle, and only 6% among studied patients has no menstrual cycle, and half of them duration of menstrual cycle taken (5–7) days, and 18% of the leftover taken more than 7 days, 36% of studied patients are recorded increasing of (Androgen Hormone), 75% of studied patients hadn’t regular exercise. Only 2% among studied patients has a diabetic disease, 32% among them has abnormal uterine bleeding, 49% among them has eating disorder, 73% among them has sleep apnea, 67% among them has high blood pressure, and 17% among them has abnormal cholesterol or triglyceride levels.

GENERAL HEALTH RELATED QOL

Regarding subjects GHR-QoL, table (III) shows summary statistics of initial evaluation, such as, mean of score, standard deviation, and relative sufficiency’s, as well as different responses levels of evaluating GHR-QoL through transform scoring scales by three differentiate categories, such that (Low, Moderate, and High). General quality of life for the studied patients assigned observed responses are moderate mostly, and they are accounted 24 (92.31%).

DISTRIBUTION OF QUESTIONNAIRE’S DOMAINS (GENERAL HR-QOL)

Regarding subjects of main domains, table (IV) shows summary statistics, such that, percentile score, and standard deviation, as well as different responding levels of evaluating of main domains for general HR-QoL through percentile transforming scoring scales by three differentiated categories’ levels, such that (Low, Moderate, and High) of WHO QoL – BERF questionnaire, which consists of (Physical, Psychological, Social, and Environment) main domains.

PGMS: PERCENTILE GRAND MEAN OF SCORE; PSD: PERCENTILE STANDARD DEVIATION

To find out relationships amongst redistribution of overall evaluation through (under/upper) cutoff point of percentile grand mean of score concerning of [General, and Specific–HRQoL] of PCOS’s patients and their [Socio-Demographical Characteristics] variables, such that: (Age Groups, Marital State, Education, Occupation, Residency, and Socio-Economic Status), as illustrated in table (V) which consists a contingency coefficients and test hypotheses, which says that meaningless relationships are accounted between redistribution of preceding variables.

Results shows that weak relationships were accounted amongst redistribution of overall general HR-QoL of

Table III. Summary Statistics of patients responding concerning General Quality of Life's items (N=100)

| General HRQoL | MS | SD | RS | Ev. |
|--------------------------------------------------------------------------------------------|------|------|------|-----|
| How would you rate your QoL? | 2.90 | 0.97 | 58.0 | M |
| How satisfied are you with your health? | 2.86 | 1.04 | 57.2 | M |
| To what extent do you feel that physical pain prevents you from doing what you need to do? | 2.92 | 1.07 | 58.4 | M |
| How much you need any medical treatment to function in your daily life? | 2.58 | 1.32 | 51.6 | M |
| How much do you enjoy life? | 2.91 | 1.12 | 58.2 | M |
| To what extent do you feel your life to be meaningful? | 3.00 | 1.09 | 60.0 | M |
| How well are you able to concentrate? | 3.21 | 1.08 | 64.2 | M |
| How safe do you feel in your daily life? | 3.12 | 1.14 | 62.4 | M |
| Ho healthy is your physical environment? | 3.37 | 0.91 | 67.4 | M |
| Do you have enough energy for everyday life? | 3.02 | 1.09 | 60.4 | M |
| Are you able to accept your bodily appearance? | 3.38 | 1.33 | 67.6 | M |
| Have you enough money to meet your needs? | 3.07 | 0.86 | 61.4 | M |
| How available to you is the information that you need in your day to day life? | 3.61 | 1.19 | 72.2 | M |
| To what extent do you have opportunity for leisure activities | 3.32 | 1.27 | 66.4 | M |
| How well are you able to get around? | 3.37 | 1.32 | 67.4 | M |
| How satisfied are you with your sleep? | 3.39 | 1.05 | 67.8 | M |
| How satisfied are you with your ability to perform your daily living activities? | 3.27 | 1.02 | 65.4 | M |
| How satisfied are you with your capacity for work? | 3.51 | 0.87 | 70.2 | M |
| How satisfied are you with yourself? | 3.60 | 0.98 | 72.0 | M |
| How satisfied are you with your personal relationships? | 3.67 | 0.91 | 73.4 | H |
| How satisfied are you with your sex life? | 2.61 | 1.54 | 52.2 | M |
| How satisfied are you with support you get from your friends? | 3.42 | 1.07 | 68.4 | M |
| How satisfied are you with the conditions of your living place? | 3.32 | 1.01 | 66.4 | M |
| How satisfied are you with your access to health services? | 3.21 | 0.99 | 64.2 | M |
| How satisfied are you with your transport? | 3.32 | 1.01 | 66.4 | M |
| How often do you have negative feeling such as blue mood, despair, anxiety, depression? | 3.72 | 1.24 | 74.4 | L |

MS: Mean of Score; SD: Standard deviation according to MS.

RS%: Relative Sufficiency Assess by (L: Low; M: Moderate; H: High)

PCOS's patients and their (SDCv) at $P > 0.05$, and according to that it could be conclude that studied of WHO QoL-BERF questionnaire can be amend for studied phenomena on the target population rather than differences among those who had PCOS's patient's socio-demographical characteristics variables.

DISCUSSION

To best of our knowledge, this study is the first attempt to investigate evaluation of GHR-QoL regarding patients with PCOS in Iraq, since it came with comprehensive coverage to include all areas of study subjects, regarding general components. By reviewing the results of the preliminary data, specifically the SDCv. of patients, it has been noticed that most of them are focusing at differentiated levels, such as age below (30) yrs., two third were married, more than half of studied sample were recorded their educational levels at the primary school or less, most of them has unskilled worker, and finally urban

residency, and that are registered an agreement with the finding of the others studies, such as carried out in India titled Impact of PCOS on quality of life concerning women in correlation to age, basal metabolic index, education and marriage, which stated that majority of the PCOS age patients are recorded 78% [4], as well as 59% of subjects were married, and this finding agreed with another study in Iran [5], concerning the level of education, most of the studied sample having primary school or less, this result in agreement with [6] in Iran. Relative to employment, the results indicating that more than half of the study sample is unskilled worker and housewives, this finding was similar to study done by [7], in addition, its agreement with the study done by [8]. Regarding residency highest percentage of the current study sample are living in urban area, and that findings is similar and in agreement with [9] study. Finally, Socio-Economic Status-SES with comparison significant, and they are accounted through applying WHO instrument, and Al-Naqeeb correction, which consists of several components such that, occupation, education levels, crowding index (no.

Table IV. Summary Statistics of Percentile Score General QoL main domains for the studied patients

| Main Domains | No. | PGMS | PSD | Evaluated |
|----------------------|-----|-------|-------|-----------|
| Physical Domain | 100 | 57.36 | 13.44 | Moderate |
| Psychological Domain | 100 | 51.58 | 15.66 | Moderate |
| Social Domain | 100 | 55.83 | 18.93 | Moderate |
| Environment Domain | 100 | 57.31 | 11.77 | Moderate |
| General HR-QoL | 100 | 55.52 | 9.82 | Moderate |

Table V. Relationships among General HR-QoL concerning PCOS Patients in light of Socio-Demographical Characteristics variables

| SDCv. | General - QoL | |
|-----------------------|---------------|------------------------|
| | C.C. | P-value ^(*) |
| Age Groups | 0.109 | 0.879 (NS) |
| Marital State | 0.088 | 0.675 (NS) |
| Education | 0.114 | 0.934 (NS) |
| Occupation | 0.189 | 0.157 (NS) |
| Residency | 0.017 | 0.868 (NS) |
| Socio-Economic Status | 0.172 | 0.217 (NS) |

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

of households, and no. of rooms), and a particular property (house ownership, possession of a car, available of represented by the preceding contents (Low, Moderate, and High). The current study has recorded high percent 90.0% concerning on the low, and moderate levels, and that is in agreement with a study done in Wuhan University [10], 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. 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 [11]. By reviewing the results of "General Information", specifically the (Risk Factors) associated with the PCOS patients, it has been noticed that most of them are focusing at differentiated levels, such as Family History which are accounted 49%, most of patients having Thinning Hair and they are accounted 81%, no one of studied patients having hair loss from head, 32% of studied patients are under treatment, two third of studied patients has a "Weight Gain after Menarche", and they are accounted 64%, about half of studied respondents 52% had a menarche age between (13–16) yrs and 83% had irregular menstrual cycle, and only 6% among studied patients has no menstrual cycle, and half of them duration of menstrual cycle taken (5–7) days, and 18% of the leftover taken more than 7 days, 36% of studied patients are recorded increasing of (Androgen Hormone), 75% of studied patients hadn't regular exercise. Studied patients were diagnosed with irregular menstrual cycle 83%, which represent second highest percentage of

other included and non-convergence done by Ghodsi in Iran 38.5% [12], also sleep apnea, which is similar by Kahal done in UK, 60% [13], high blood pressure which is similar by Joham in Australia 55.5%, study a cross-sectional analysis [14], followed by family history agreed done by Jungari in India 50% [15], Androgen hormone approach done by Ghodi in Bangladeshi 33.6% [12]. Main domains concerning (General HR-QoL), Physical Domain" as mentioned by PGMS, and PSD 57.36 and 13.44, respectively was evaluated on moderate. Domain: 1 (Physical Domain), which is content the activities of daily living, dependency on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, work capacity as this field shows individual's ability to engage in general physical activities with PCOS, and studies confirmed the importance of this area, as Rzońca in Poland 2018, agreed with the current study with PGMS, and PSD 53.88 and 11.87, respectively. Psychological domain on PCOS patients, where the current study showed a moderate response with PGMS, and PSD 51.56 and 15.66, respectively; domain: 2 (Psychological Domain) was maximally affected domain which involves a self-esteem, negative and positive feelings, bodily image and appearance, spirituality, religion, personal beliefs, thinking, learning, memory and concentration agreed the current study with Prathap in India with PGMS, and PSD 68.80 and 12.87, respectively, [16]. With reference to social main domain General HR-QoL contains three items concerned with personal relationships, sexual life and getting support from relative persons, the present study estimated moderate responses with PGMS, and PSD 55.83 and 18.93, respectively, which means that PCOS patients have problems regarding social issues in moderate level, this finding in similar with a study done in India by Prathap, which is a cross-sectional design study. The health quality of life regarding preceding domain conducted in Portugal was not alike of this study, since it recorded high evaluated of PGMS, and PSD 80.93 and 18.14, respectively, [17]. Regarding environmental main domain General HR-QoL where the current study showed moderate evaluation by PGMS, and PSD (57.31 and 11.77) respectively, and that is agreed with study done by Aduloju in Nigerian with PGMS 58.27 [18]. Relationships related to General HR-QoL of PCOS patients and their SDCv, such that (Age Groups, Marital State, Education, Occupation, Residency, and Socio-Economic Status), results shows weak relationships.

CONCLUSIONS

This study showed that patients with (PCOS) having go down concerning general HR-QoL, since most of studied items regarding WHO QoL-BERF questionnaire, since are accounted moderate evaluation, and this was achieved to a similar degree across all domains of the questionnaire. In light of this, the importance of studying health status evaluation for quality of life of patients with the 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 general HR-QoL independently for the studied patients with PCOS and

their differentiated SDCv and according to that, it could be concluded that studied of WHO QoL-BERF questionnaire for general HR-QoL, for women with (PCOS) could be amending for studied phenomena on the sampling population rather than differences among their SDCv.

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This work was carried out in collaboration among authors: Abdulkhaleq A Ali Ghalib Al-Naqeeb find idea of the research, Design the study with the objectives, design questionnaire, finding results, discussion of results, and approved the final manuscript. The second and third authors Muna A Zedian, and Anaam Mohammad wrote the introduction and carried out the discussion (in collaboration with the first author) regarding data collection.

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Conflict of interest:

The Authors declare no conflict of interest.

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Received: 21.10.2021

Accepted: 08.03.2022

A – Work concept and design, **B** – Data collection and analysis, **C** – Responsibility for statistical analysis, **D** – Writing the article, **E** – Critical review, **F** – Final approval of the article