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Quality of life and marital sexual satisfaction in women with polycystic ovary syndrome

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Abstract: Polycystic ovary syndrome affects 5-10% of women in the developed world, making it the most common endocrine disorder among women of reproductive age. The symptoms typically associated with polycystic ovary syndrome: amenorrhea, oligomenorrhea, hirsutism, obesity, subfertility, anovulation and acne can lead to a significant reduction in female life quality. The aim of the study was to evaluate the effect of polycystic ovary syndrome on quality of life and marital sexual satisfaction. Fifty women with polycystic ovary syndrome were qualified to the study as the research group. The control group consisted of fourty healthy women. A specific questionnaire was used as a research tool in this study. It included the socio-demographic part, polycystic ovary syndrome's symptomatology and validated scales: Polish version of Short Form-36 Health Survey (SF-36) and Index of Sexual Satisfaction (ISS). The mean age of researched women was 28.9±5.6 years, and in the control group - 30.5±5.3 years ($p>0.05$). Quality of life parameters for women with polycystic ovary syndrome were lower than for the controls in the aspect of: general health ($p<0.01$), limitations due to physical health ($p<0.05$), limitations due to emotional problems ($p<0.001$), social functioning ($p<0.01$), energy/fatigue ($p<0.001$) and emotional well-being ($p<0.01$). Studied women showed worse marital sexual functioning ($p<0.05$). Marital sexual dysfunctions were diagnosed in 28.6% of women with polycystic ovary syndrome and in 10.5% of healthy women ($p<0.05$). Polycystic ovary syndrome decreases quality of life and marital sexual functioning among women. A negative effect of hirsutism severity on general well-being and marital sexual life is also observed.

Key words: Polycystic ovary syndrome - Quality of life - Marital adjustment - Sexual satisfaction

Introduction

Polycystic ovary syndrome (PCOS) is one of the most frequently diagnosed endocrinological disturbances and it affects a population of 5-10% of women in reproductive age; resulting in menstrual cycle disturbances and infertility, hirsutism, disturbed glucose tolerance, insulin resistance, obesity, arterial hypertension and other metabolic syndromes [1-3].

The diagnostic criteria for polycystic ovary syndrome according to the validated guidelines of the Polish Society of Endocrinology (PSE) [3] and European Society of Human Reproduction (ESHRE) [1] include: rare menstruations or amenorrhea, ultrasonographical picture of polycystic ovaries after eliminating other etiologies (presence of at least 12 vesicles of 2-9 mm diameter in each ovary or/and the ovary volume increased >10 ml) and clinical or/and biochemical symptoms of hyperandrogenism. 2 out of 3 above described criteria must be found to diagnose PCOS [1,3].

The symptoms typically associated with polycystic ovary syndrome: amenorrhea, oligomenorrhea, hirsutism, obesity, subfertility, anovulation and acne can lead to a significant reduction in female quality of life, cause mood disturbances, including symptoms of depression, marital and social maladjustment and impair sexual functioning [4]. The issue of the quality of life, and especially sexual life, of patients with PCOS is very often overlooked in the clinical practice, in the doctor-patient relationship [4].

The aim of the present study was to evaluate the effect of polycystic ovary syndrome on quality of life and marital sexual satisfaction among women with diagnosed PCOS and compared with a group of healthy controls.

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Table 1. General profile of study population.

Characteristic	PCOS Group			Control Group			U Mann-Whitney test
	Mean ±SD	Min	Max	Mean ±SD	Min	Max	
Age (years)	28.9±5.6	19.0	40.0	30.5±5.3	19.0	40.0	NS
BMI (kg/m^2)	24.6±3.8	19.5	35.1	22.1±2.9	18.6	29.7	NS
Ferriman-Gallwey score	12.7±6.1	5.0	29.0	2.7±2.1	0.0	7.0	p<0.001

BMI - Body Mass Index; SD - Standard Deviation

Table 2. Sociodemographic characteristics of study population.

Characteristic		PCOS Group		Control Group		Chi^2 test
		n	%	n	%	
Marital status	single	19	38.0	9	22.5	NS
	married	26	52.0	27	67.5	
	divorced	5	10.0	4	10.0	
Education	vocational	7	14.0	6	15.0	NS
	secondary	21	42.0	21	52.5	
	higher	22	44.0	13	32.5	
Number of pregnancies		12	24.0	33	82.5	p<0.05
Number of miscarriages		3	6.0	0	0.0	p<0.05
Women with infertility problem		25	50.0	0	0.0	p<0.01

Materials and methods

Patients. The research targeted 100 women aged between 19 and 40 who reported to the Obstetrics and Gynecology as well as the Gynecological Endocrinology Clinics of the Medical University of Silesia in Katowice, Poland with a view for them to have diagnosed polycystic ovary syndrome (according to PSE and ESHRE criteria) [1,3].

Patients who used drugs possibly impeding sexual function as well as patients with diagnosed organic causes of sexual disorders were excluded from the research.Excluded were 50 women as they did not meet all the inclusion criteria. The exclusion reasons were: lack of consent for participation in the study (n=27) (54%) and incomplete filling out of the questionnaire (n=23) (46%). For the final analysis 50 women with diagnosed polycystic ovary syndrome, fulfilling all the inclusion criteria were included - PCOS Group. The Control Group constituted 40 healthy women aged 19-40 who reported to Outpatient Gynecological Clinics for routine gynecological examination, cytological examination or continuation of oral hormonal contraception.

The research tool was a questionnaire voluntarily and anonymously filled in by the respondents of the research and control groups. The questionnaire was comprised of a general part concerning socio-demographic conditions (age, marital status, education, occupational activity, type of work, profession, physical activity), medical history, health problems, gynecological history, a part dedicated to PCOS symptoms (Ferriman-Gallwey score) and a detailed part in the form of self-evaluation inventories: Polish version of Short Form-36 Health Survey (SF-36) and Index of Sexual Satisfaction (ISS) evaluating general quality of life as well as marital sexual satisfaction.

Ferriman-Gallwey score. Ferriman-Gallwey score is the most popular scale evaluating and quantifying the hair growth in women in nine sites typical for men: the upper lip, chin, chest, upper back, lower back, upper abdomen, lower abdomen, upper arms, thighs [5].

The hair growth is rated from 1 to 4 points (negligible, slight, considerable, severe). No growth of hair is rated as "0". After summing up all the score, the normal results are considered to be 7 points or lower, while the total value of 8 points or higher means hirsutism [5]. In cases of the score from 8 to 14 points, a moderate hirsutism is diagnosed and from 15 to 36 points, a severe hirsutism [5].

Short Form-36 Health Survey (SF-36). SF-36 is a standard diagnostic tool evaluating various aspects of the quality of life connected with health over the previous 4 weeks [6,7]. Its usefulness in determining specific parameters has been approved based on a number of studies in over 130 different clinical conditions [7,8]. The validity, sensitivity, reliability, internal consistency and stability, as well as test-retest reliability have frequently been confirmed and documented by approximately 4000 publications [7,8].

SF-36 contains 36 questions grouped into 9 categories: general health, health change, physical functioning, limitations due to physical health, limitations due to emotional problems, social functioning, pain, energy/fatigue, emotional well-being. These categories are grouped into two collective domains: physical health and mental health [6,7,9].

]The score in each category may be from 0 to 100 points (mean value calculated on the basis of individual items encompassed within a given category), which results in a linear dependence - the higher the score the higher the evaluation of a given category of the quality of life [6,7,9].

Table 3. Short Form-36 Health Survey and Index of Sexual Satisfaction among PCOS and control group.

Short Form-36	PCOS Group (mean ±SD)	Control Group (mean ±SD)	U Mann-Whitney test
General Health	46.3±15.9	60.1±18.9	p<0.01
Health Change	56.5±20.1	56.2±19.4	NS
Physical Functioning	89.9±11.1	93.7±8.1	NS
Limitations due to Physical Health	73.5±30.8	87.5±22.6	p<0.05
Limitations due to Emotional Problems	67.7±28.6	95.8±11.4	p<0.001
Social Functioning	70.6±21.5	82.6±17.8	p<0.01
Pain	64.8±25.1	72.6±19.8	NS
Energy/Fatigue	57.3±16.4	71.2±17.7	p<0.001
Emotional Well-Being	57.5±17.9	69.9±15.1	p<0.01
Index of Sexual Satisfaction	20.7±18.5	13.8±10.4	p<0.05

SD - Standard Deviation

Index of Sexual Satisfaction (ISS). Index of Sexual Satisfaction (ISS) [10,11] is an ancillary survey consisting of 25 items presented on a 7-grade scale. ISS is used to evaluate marital sexual satisfaction of both men and women. It focuses not on the typical model of sexual reaction but on the functioning of sex life as a natural part of a relationship [10,11]. Based on the ISS scale it is possible to evaluate satisfaction as well as to identify anomalies in the intimate conjugal life. It shows how people feel satisfied with their sexual life, how to express sexual emotions towards their partner, evaluate the quality of sexual partnership (*e.g.* exciting, monotonous) and define motivations for sexual intercourse [10,11]. High scores in this dimension indicate low quality of sexual life and some problems in the sexual part of the marital relationship [10,11].

The final results of ISS are obtained through summing up item points and implementing a special ISS formula [11]. The range of possible total score is from 0 (maximal satisfaction) to 100 points (minimal satisfaction), which results in a linear dependence: the more points in ISS scale the lower sexual life satisfaction [11]. Clinically significant partnership sexual dysfunctions are diagnosed at 30 points and more (cut-off point), which should entail the provision of specialist psychiatric, psychological and sexological help to such patients [11].

Statistics. STATISTICA 6.0 for Windows was used in the statistical analysis. Differences among parameters were considered significant at the level of 0.05. The statistical analysis made use of: t-Student test, Mann-Whitney U test, Chi2 and Chi2 with Yates' continuity correction tests.

Ethical issues. The research program was approved by the Bioethical Commission of the Medical University of Silesia in Katowice, Poland.

Results

The mean age of PCOS women was 28.9±5.6 years, and in the control group - 30.5±5.3 years (p>0.05) (Table 1). The study and control groups were comparable in respect of: age, body mass index (BMI), education level and marital status (Table 1 and 2). Statistically significant differences concerned: number of pregnancies, miscarriages, infertility problems and Ferriman-Gallwey score (Table 1,2). With respect to pregnancies, higher percentage of women who were pregnant and delivered children was noted among healthy women (82.5%) in comparison to 24.0% of PCOS ones (p<0.05). 6.0% of PCOS women had miscarriages in their medical history and 50.0% of this group was diagnosed and treated for infertility (Table 2). No cases of miscarriages and infertility problems have been found in the control group (Table 2).

In the study group of PCOS women, the mean Ferriman-Gallwey score was statistically significantly higher (12.7±6.1) compared to the healthy women group (2.7±2.1) (p<0.001) (Table 1). In the control group no case of hirsutism was diagnosed. On the other hand, 38.0% of PCOS women suffered from moderate hirsutism and 32.0% of its severe form. 30.0% of the study women did not have any significant symptoms of hirsutism (p<0.001).

Quality of life

The research has shown that the quality of life parameters for PCOS women were generally lower than for the control group, and this concerns almost all categories: general health, physical functioning, limitations due to physical health, limitations due to emotional problems, social functioning, pain, energy/fatigue, emotional well-being. On performing a detailed analysis, statistically significant differences in six parameters of SF-36 scale (general health, limitations due to physical health, limitations due to emotional problems, social functioning, energy/fatigue, emotional well-being) were found (Table 3).

With respect to general health as well as limitations due to physical health and limitations due to emotional problems, PCOS women evaluated their current health state, mood as lower and life limitations as higher (46.3±15.9; 73.5±30.8 and 67.7±28.6, respectively) in relation to the control group (60.1±18.9; 87.5±22.6 and 95.8±11.4, respectively) (U Mann-Whitney test: p<0.01; p<0.05 and p<0.001) (Table 3).

PCOS women showed more significant disorders in social functioning than healthy women (p<0.01) (Table 3).

In the category: energy/fatigue, the global SF-36 score was significantly higher in the control group (71.2±17.7) in comparison to women with diagnosed PCOS (57.3±16.4; p<0.001). Moreover, the PCOS women manifested significantly higher disorders in the emotional and psychological sphere in comparison with controls (p<0.01) (Table 3).

Moderate and severe hirsutism negatively correlated with some quality of life parameters in the study group: general health (p<0.05), limitations due to emo-

tional problems ($p<0.01$), social functioning ($p<0.01$) and emotional well-being ($p<0.01$).

Marital sexual satisfaction

The conducted study showed a significantly better sexual relationship within marriage in the control group as compared with the PCOS women (ISS respectively: 13.8±10.4 and 20.7±18.5; $p<0.05$) (Table 3). Clinically significant marital sexual dysfunctions (cut-off point) were observed in 10.5% of the healthy women and in almost three times as many PCOS women (28.6%; $p<0.05$).

Marital sexual disorders increased along with hirsutism severity. They were diagnosed among PCOS women in 14.3% in case of lack of hirsutism, 23.5% in moderate hirsutism and 54.6% in its severe form ($p<0.01$).

Discussion

Assessment of the quality of life and marital sexual satisfaction performed in the above study revealed that women with polycystic ovary syndrome have lower quality of life parameters (general health, limitations due to physical health, limitations due to emotional problems, social functioning, energy/fatigue, emotional well-being) compared with healthy women. PCOS women also displayed worse sexual relationship within marriage. Clinical marital sexual dysfunctions prevailed in PCOS women (28.6% vs. 10.5%; $p<0.05$). Moreover, both quality of life and marital sexual functioning decreased along with hirsutism severity. The obtained results allow to state that in the study group of PCOS women, the disease affects both the general quality of life and marital sexual satisfaction.

Reviewing available literature, one can find many studies that confirm polycystic ovary syndrome's negative effect on patients' quality of life and sexuality [4,12-18].

Hahn *et al.* [4], assessing the quality of life, psychological well-being and sexual satisfaction of 120 patients with the diagnosed polycystic ovary syndrome, showed a subjective deterioration of general well-being, increase of psychological disturbances and sexual problems in women with PCOS. Moreover, the authors defined the risk factors for the above mentioned disturbances in women with PCOS, which included hirsutism and obesity [4].

Ching *et al.* [12], analyzing the life quality parameters of 203 patients with PCOS at the age of 15-65 years in the cross-sectional study (Short Form-36 -SH-36, Polycystic Ovary Syndrome Questionnaire - PCOSQ, General Health Questionnaire-28 - GHQ-28), showed a significant reduction of life quality in women with PCOS in comparison with the healthy women population. Psychological morbidity was diagnosed in 62.4% of PCOS group and in 26.4% of healthy population ($p<0.0001$). Both hirsutism intensification, BMI and irregular menstrual cycles negatively correlated with the quality of life parameters [12].

The reports of the foregoing authors were confirmed with our own study results. Our results showed a deterioration of life quality and sexual life of the women under the study and a significant negative influence of hirsutism severity on the study parameters. However, the influence of obesity and BMI of the studied women on their life quality was not significant.

The Elsenbruch *et al.*'s study [13] including a group of 50 women with PCOS and 50 healthy women showed that the major disturbances of life quality in PCOS (SF-36, Symptom Checklist, Life Satisfaction Questionnaire) were related to limitations due to physical health, limitations caused by emotional problems, social functioning, pain, energy/fatigue and emotional well-being. The women with the diagnosed polycystic ovary syndrome more often reported mental problems (anxiety, depressive and obsessive-compulsive disorders) and lower life and sexual satisfaction. Additionally, hirsutism and infertility disturbed normal functioning and general well-being of the patients [13].

Another study by Coffey *et al.* [14] included women with PCOS, who in comparison to the patients with bronchial asthma, epilepsy, diabetes, arthritis and coronary heart disease, showed a comparable level of physical activity but significantly lower quality of mental health.

Our own study confirmed a negative influence of PCOS on some quality of life parameters (general health, limitations due to physical health, limitations due to emotional problems, social functioning, energy/fatigue, emotional well-being) and marital sexual satisfaction.

Other studies [15-18] also show that some parameters directly connected with PCOS are related negatively with quality of life and sexuality of the concerned persons. The Coffey and Mason's study [15] showed that the hirsutism intensification score and body mass limited life quality most intensely in women with PCOS. According to Elsenbruch *et al.* [16], BMI and emotional disturbances caused a deterioration of general life quality in PCOS. On the other hand, high BMI and low education impaired physical activity but age and fertility problems - mental life in the patients with PCOS [16]. Mc Cook *et al.* [17] confirmed a significant negative influence and the resulting changeable sequence of negative relations among the factors related to PCOS, *i.e.* body mass, menstruation disturbances, fertility disorders, emotional problems, hirsutism and life quality of the women.

Polycystic ovary syndrome decreases quality of life with respect to: general health, limitations due to physical health and emotional problems, social functioning, energy/fatigue, as well as in the emotional and psychological sphere among women. PCOS increases the risk of marital sexual dysfunctions. A negative effect of hirsutism severity on quality of life and marital sexual functioning is also observed in PCOS women.

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