

The Effective Factors on The Sexual Function of Polycystic Ovary Syndrome Women: A Cross-Sectional Study

Bitra Fereidooni, Ph.D.¹, Ensiyeh Jenabi, Ph.D.^{2*}, Salman Khazaei, Ph.D.³, Sara Abdoli, MSc.⁴

1. Midwife in Social Security Organization, Hamadan Branch, Hamadan, Iran

2. Autism Spectrum Disorders Research Center, Hamadan University of Medical Sciences, Hamadan, Iran

3. Department of Epidemiology, Hamadan University of Medical Sciences, Hamadan, Iran

4. Department of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran

Abstract

Background: One of the most common endocrine disorders in women during reproductive age is polycystic ovary syndrome (PCOS). This study aimed to evaluate sexual functioning among women with PCOS in a sample of a region's population in the west of Iran.

Materials and Methods: This study was a cross-sectional study that was conducted on 130 women with PCOS who referred to three clinics of gynecology, infertility, and dermatology affiliated with Hamadan University of Medical Sciences, Iran, from September to November 2020. The measurement tools included demographic characteristics, hirsutism score, and sexual function was assessed using the female sexual function index (FSFI) questionnaire.

Results: In total, 60% of patients had reported sexual dysfunction related to lubrication, satisfaction, and pain as domains of sexual dysfunction. The number 109 (83.85%) of them had hirsutism and these patients had a lower score for lubrication (3.7 ± 1.47 vs. 4.47 ± 1.71 , $P=0.03$), orgasm (3.2 ± 1.34 vs. 3.95 ± 1.37 , $P=0.02$), satisfaction (3.4 ± 1.29 vs. 3.71 ± 1.33 , $P=0.03$), and FSFI score (22.56 ± 5.78 vs. 25.42 ± 5.51 , $P=0.04$). Women with higher education had reported higher scores of FSFI and its domains. Rural participants had a higher arousal score (3.93 ± 1.4 vs. 3.37 ± 1.28 , $P=0.04$). Moreover, housekeeper women had higher scores regarding desire, pain, and total FSFI score.

Conclusion: Our results showed that there was a significant association between hirsutism and FSFI scores, different domains, including lubrication, orgasm, and satisfaction.

Keywords: Hirsutism, Iran, Polycystic Ovary syndrome

Citation: Fereidooni B, Jenabi E, Khazaei S, Abdoli S. The effective factors on the sexual function of polycystic ovary syndrome women: a cross-sectional study. *Int J Fertil Steril.* 2022; 16(3): 220-223. doi: 10.22074/IJFS.2021.531195.1129.

This open-access article has been published under the terms of the Creative Commons Attribution Non-Commercial 3.0 (CC BY-NC 3.0).

Introduction

One of the most common endocrine disorders in women during reproductive age is polycystic ovary syndrome (PCOS) with a prevalence of between 5-24% in different countries (1). The PCOS phenotypic characteristics included enlarged ovaries, menstrual irregularities, and clinical and biochemical hyper androgens (2).

Different situations, as well as obesity, insulin resistance, lipid disorders, ovulatory infertility, and endometrial cancer, are associated with PCOS (3). Hirsutism, acne, alopecia, and infertility can lead and psychological problems (4).

Criteria for PCOS diagnosis are oligo/amenorrhea, clinical and/or biochemical hyperandrogenism, and polycystic ovaries (5). Patients with PCOS have various complications such as hirsutism, which can potentially affect their life quality and also, influence their self-body image, which can be considered challenging aspects of this disease.

Sexual dysfunction is defined as a problem during any phase of the sexual response cycle that prevents a person

or couple from being satisfied with sexual activity and can be caused by physical, social, and psychological factors (6). Some studies reported that changes in the physical appearance associated with PCOS may be led to decreased sexual satisfaction (7, 8). Dashti et al. (8) in Malaysia reported that Sexual dysfunction occurred in 62.5% of women with PCOS and was associated with arousal and lubrication with 93.8 and 87.5%, respectively. Eftekhar et al. (9) in Tehran, Iran reported the frequency of sexual dysfunction was 57.7% in PCOS women. The domains of desire and arousal were reported 99.2 and 98.5%, respectively.

According to the fact that the study hasn't been conducted in the west of Iran, therefore, in this study, we evaluated the sexual functioning among a population of these patients of the west of Iran.

Materials and Methods

This study was a cross-sectional study among women with PCOS who referred to three clinics of gynecology, infertility, and dermatology affiliated with Hamadan

Received: 27/May/2021, Accepted: 08/September/2021

*Corresponding Address: P.O.Box: 6517838696, Autism Spectrum Disorders Research Center, Hamadan University of Medical Sciences, Hamadan, Iran
Email: en.jenabi@yahoo.com



Royan Institute
International Journal of Fertility and Sterility
Vol 16, No 3, July-September 2022, Pages: 220-223

University of Medical Sciences, Iran, from September to November 2020. The Ethical Committee of Hamadan University of Medical Sciences, Hamedan, Iran, confirmed this protocol (IR.UMSHA.REC.1399.614). After explaining the aims of the study, written informed consent was obtained from the volunteer participants.

Women with the diagnosis of PCOS according to the Rotterdam diagnostic criteria were invited to contribute to the present study. These criteria included, Oligo/amenorrhea, clinical and/or biochemical hyperandrogenism, and polycystic ovaries (having 12 follicles or more in one or both ovaries and/or increased ovarian volume i.e. > 10 ml) (5).

The inclusion criteria for women were: age 18-45 years and married, not having non-classic adrenal hyperplasia, thyroid or metabolic disease, hyperprolactinemia, and not having psychiatric disorders. Pregnant women, breastfeeding mothers, and patients who received oral contraceptive pills (OCPS) or other hormonal medications that affect the hypothalamic-pituitary-gonadal (HPG) axis 3 months ago were excluded.

For sample size calculation, we considered the parameter in Eftekhar et al. (9) study that reported the 57.7% prevalence of sexual dysfunction in women with PCOS. We reached a sample size of 130, although considering the margin of error (d)=15%, non-

response=5%, and alpha level=5%.

The measurement tools included some questionnaires and clinical evaluations. a. Background demographic questionnaire included age, location (urban and rural), job, education, height, weight, and infertility characteristics. This questionnaire was designed for this purpose. The face and content validity were performed. The tool validity was checked by 10 reproductive health experts. Also, the reliability of the questionnaire was approved by 15 women with PCOS. b. Hirsutism was evaluated based on the Ferriman-Gallwey scoring method by a trained interviewer under the supervision of a physician. The range of Ferriman-Gallwey scoring is from 0 to 36 and scores of 8 or higher are considered of having hirsutism (10). c. Using female sexual function index (FSFI) questionnaire, sexual function was assessed. FSFI self-report scale is a 19-item questionnaire for the dimensions of sexual functioning in women during the last month. This questionnaire contains six domains, including the desire (2 questions), subjective arousal (4 questions), lubrication (4 questions), orgasm (3 questions), satisfaction (3 questions), and pain (3 questions). The minimum total score is 2, and the maximum total score is 36. The higher scores show better function, while lower scores show no sexual activity during the past month (11, 12). This scale has been validated in Iran by Mohammadi et al. (13) that sexual dysfunction was defined as a total FSFI score of less than 28.

Table 1: The association between demographic characteristics with FSFI score and its domains

Demographic characteristics		n (%)	Desire	Arousal	Lubrica- tion	Orgasm	Satisfaction	Pain	FSFI score
Location	Urban	101 (77.69)	3.69 ± 1.16	3.37 ± 1.28	3.75 ± 1.49	3.25 ± 1.37	3.77 ± 1.37	4.76 ± 1.04	22.59 ± 5.78
	Rural	29 (22.31)	3.72 ± 0.86	3.93 ± 1.4	4.07 ± 1.66	3.41 ± 1.35	4 ± 1.28	5.06 ± 1.1	24.19 ± 5.67
	P value		0.89	0.04	0.33	0.59	0.42	0.18	0.19
Age group (Y)	20-29	69 (53.08)	0.82 ± 1.17	3.7 ± 1.36	3.94 ± 1.58	3.23 ± 1.32	3.98 ± 1.37	4.79 ± 1.05	23.45 ± 5.83
	30-45	61 (46.92)	3.54 ± 0.99	3.26 ± 1.24	3.69 ± 1.48	3.37 ± 1.42	3.65 ± 1.31	4.87 ± 1.08	22.38 ± 5.7
	P value		0.15	0.06	0.34	0.55	0.18	0.68	0.29
Job	Housekeeper	105 (80.77)	3.8 ± 1.11	3.6 ± 1.38	3.93 ± 1.57	3.41 ± 1.41	3.9 ± 1.39	4.98 ± 1.02	23.91 ± 5.84
	Worker	25 (19.23)	3.24 ± 0.62	3.04 ± 0.93	3.8 ± 1.33	2.8 ± 1.02	3.5 ± 1.12	4.18 ± 1.06	20.14 ± 4.62
	P value		0.02	0.055	0.11	0.047	0.19	<0.001	0.006
Education	Primary	25 (19.23)	3.58 ± 1.28	3.46 ± 1.35	3.37 ± 1.63	3.04 ± 1.61	3.14 ± 1.02	4.94 ± 0.9	21.52 ± 5.66
	Guidance	45 (34.62)	3.52 ± 1.03	3.35 ± 1.3	3.48 ± 1.37	3.33 ± 1.45	3.88 ± 1.29	4.64 ± 1.12	22.2 ± 5.39
	High school	38 (29.23)	3.5 ± 1.06	3.13 ± 1.33	3.61 ± 1.4	2.8 ± 0.95	3.42 ± 1.31	4.51 ± 1.11	20.98 ± 5.39
	Diploma	13 (10.0)	4.68 ± 0.82	4.45 ± 0.74	5.63 ± 0.7	4.1 ± 0.73	5 ± 0.89	5.68 ± 0.5	29.55 ± 1.27
	Academic	9 (6.92)	4.24 ± 0.37	4.43 ± 1.09	5.07 ± 1.14	4.7 ± 0.99	5.41 ± 0.63	5.52 ± 0.49	29.38 ± 0.55
P value		0.003	0.004	<0.001	0.004	<0.001	0.001	<0.001	
BMI	Normal	31 (23.85)	3.72 ± 1.05	3.42 ± 1.07	4.1 ± 1.55	3.18 ± 1.48	4.05 ± 1.19	4.96 ± 0.87	23.46 ± 5.62
	Overweight	53 (40.77)	3.71 ± 1.13	3.61 ± 1.4	4.02 ± 1.64	3.32 ± 1.35	3.86 ± 1.53	4.77 ± 1.16	23.31 ± 6.07
	Obese	46 (35.38)	3.64 ± 1.1	3.4 ± 1.4	3.39 ± 1.32	3.33 ± 1.32	3.61 ± 1.19	4.79 ± 1.07	22.19 ± 5.67
	P value		0.94	0.69	0.06	0.87	0.35	0.22	0.54
Infertility	Yes	58 (44.62)	3.75 ± 1.17	3.34 ± 1.37	3.83 ± 1.56	0.38 ± 1.49	3.70 ± 1.43	4.92 ± 0.97	22.93 ± 5.59
	No	72 (55.38)	3.64 ± 1.03	3.61 ± 1.28	3.81 ± 1.52	3.22 ± 1.26	3.92 ± 1.27	4.75 ± 1.26	22.97 ± 5.72
	P value		0.57	0.25	0.94	0.50	0.34	0.37	0.97

Data are presented as mean ± SD or n (%). BMI; Body mass index and FSFI; Female sexual function index. Bold items are significant (P<0.05).

Statistical analysis

We used the independent t test and one-way ANOVA for comparison of background demographic characteristics with FSFI score (domains), and hirsutism. For data analysis, the Stata version 14 (StataCorp, College Station, TX) was used and $P \leq 0.05$ was considered significant.

Results

All 130 women with PCOS diagnosis answered the questionnaires. Of them, 101 (77.69%) were urban residents and 105 (80.77%) were housekeepers. Their mean age of them was 29.74 ± 5.3 (range: 20.44 years). Only 16.92% of them had a diploma or academic education and more than 75% had overweight or obese. The association between categorical variables with the FSFI score and its domains is shown in Table 1. Women with higher education had reported higher scores of FSFI and its domains ($P < 0.05$). Rural residents had a higher arousal score in comparison with urban residents (3.93 ± 1.4 vs. 3.37 ± 1.28 , $P = 0.04$). Moreover, housekeeper women had higher scores regarding desire, pain, and total FSFI score ($P < 0.05$). There was no significant association among body mass index (BMI) and age of our participants with FSFI score and its domains.

The mean (\pm SD) of domains of sexual dysfunction and frequency of sexual dysfunction is presented in Table 2. In total, 60% of patients had reported sexual dysfunction related to lubrication, satisfaction, and pain as domains of sexual dysfunction.

Table 2: The mean (SD) and frequency (%) of domains of sexual dysfunction among women with PCOS

Domain	Mean \pm SD	Minimum	Maximum	Frequency (%)
Desire	3.69 ± 1.09	1.2	6	48 (36.92)
Arousal	3.49 ± 1.32	0.9	6	103 (79.23)
Lubrication	3.82 ± 1.53	1.2	6	130 (100)
Orgasm	2.93 ± 1.36	0.9	6	112 (86.15)
Satisfaction	3.82 ± 1.35	1.2	6	130 (100)
Pain	4.83 ± 1.06	1.6	6	130 (100)
FSFI score	22.95 ± 5.77	12.3	31.9	78 (60)

FSFI; Female sexual function index, PCOS; Polycystic Ovary Syndrome, and SD: Standard Deviation.

The relation between women’s hirsutism based on Ferriman-Gallwey scoring with FSFI and its domains has reorted in the Table 3.

Discussion

Khademi et al. (14) in Iran reported that only 7 women of

100 infertile women reported normal sexual functioning. The most prevalent sexual problem among women was arousal with 80%. Another study in India showed that female sexual dysfunction among women in the domains of desire, arousal, lubrication, orgasm, satisfaction, and the pain was 44.0, 49.0, 37.0, 32.0, 37.0, and 34.6%, respectively (15). In our study, the frequency of sexual dysfunction was 60.0% in the PCOS affected. Therefore, the frequency of sexual dysfunction in our study is approximately similar to Eftekhar’s (57.7%) and Dashti’s (62.5%) studies. The difference in the frequency of sexual dysfunction might be due to the different evaluation tools and demographic characteristics of the women such as age and BMI.

Eftekhar et al. in Iran reported that BMI levels higher than normal had decreased desire and satisfaction among women with PCOS in their study (9). Kogure et al. (16) reported that desired and BMI were risk factors for sexual dysfunction, and overweight and obesity were risk factors for the degree of dissatisfaction. Ferraresi et al. (17) reported that the obese women had a higher risk for sexual dysfunction and lower FSFI scores. However, our findings showed that there was not a significant association between BMI and FSFI scores. The probable reason for this difference could be due to the self-report of weight and height by the women in the present study. Also, Eftekhar et al. (9) showed that the effect of hirsutism was significant in all domains of the FSFI except for dyspareunia. Dashti et al. (8) in Malaysia showed that there was no significant association with any of the FSFI score domains between women with and without hirsutism, while in the present study, we observed a significant association between hirsutism and some of FSFI scores, including the domains of lubrication, orgasm, and satisfaction. In our study, the effect of hirsutism was not significant on dyspareunia, which is in line with Eftekhar’s results. In addition, a systematic review has been performed in 2019 with 19 studies (18). There was no sexual dysfunction between women with PCOS and control subjects (18), which was the same as our results. Limitations: We did not determine stress, depression, and psychological aspects in these women. Also, our study was a cross-sectional study that clinical/biochemical parameters were not evaluated. In addition, we had not defined a control group. Also, we have some suggestions such as an examination of the psychological aspects of women with PCOS. In addition, prospective cohort studies with a large sample are recommended to evaluate therapies performed to restore normal sexual function in women with PCOS history.

Table 3: The relation between women’s hirsutism based on Ferriman-Gallwey scoring with FSFI and its domains

Hirsutism based on Ferriman-Gallwey scoring	n (%)	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain	FSFI score
No	21 (16.15)	3.67 ± 0.82	3.57 ± 1.36	4.47 ± 1.71	3.95 ± 1.37	3.4 ± 1.29	5.02 ± 1.04	25.42 ± 5.51
Yes	109 (83.85)	3.7 ± 1.14	3.48 ± 1.32	3.7 ± 1.47	3.2 ± 1.34	3.71 ± 1.33	4.79 ± 1.06	22.56 ± 5.78
P value		0.91	0.76	0.03	0.02	0.03	0.36	0.04

FSFI; Female sexual function index. Bold items are significant ($P < 0.05$). Data are presented as mean \pm SD or n (%).

Conclusion

Our results showed that there was a significant association between hirsutism and FSFI scores, different domains, including lubrication, orgasm, and satisfaction. Therefore, proper intervention for women with PCO is essential.

Acknowledgments

The study protocol has been approved by Hamadan University of Medical Sciences, Hamedan, Iran (9908065474). The authors thank all the volunteers who participated in this study. This study was financially supported by Hamadan University of Medical Sciences. The authors declare that they have no conflict of interest.

Authors' Contributions

E.J., B.F.; Study design, data analysis, interpretation, and manuscript writing. S.K., S.A.; Participated in the study implementation and content analysis, and revised drafts. All authors read and approved the final manuscript.

References

- Williamson K, Gunn AJ, Johnson N, Milsom SR. The impact of ethnicity on the presentation of polycystic ovarian syndrome. *Aust N Z J Obstet Gynaecol.* 2001; 41(2): 202-206.
- Bani Mohammad M, Majdi Seghinsara A. Polycystic ovary syndrome (PCOS), diagnostic criteria, and AMH. *Asian Pac J Cancer Prev.* 2017; 18(1): 17-21.
- Faghfoori Z, Fazelian S, Shadnough M, Goodarzi R. Nutritional management in women with polycystic ovary syndrome: a review study. *Diabetes Metab Syndr.* 2017; 11 Suppl 1: S429-S432.
- Amiri M, Bidhendi Yarandi R, Nahidi F, Tohidi M, Ramezani Tehrani F. The relationship between clinical and biochemical characteristics and quality of life in patients with polycystic ovary syndrome. *Clin Endocrinol (Oxf).* 2019; 90(1): 129-137.
- Rotterdam ESHRE/ASRM-Sponsored PCOS Consensus Workshop Group. Revised 2003 consensus on diagnostic criteria and long-term health risks related to polycystic ovary syndrome. *Fertil Steril.* 2004; 81(1): 19-25.
- Gombert M, Ballester P, Segura A, Peiró AM. Introducing sexual dysfunction in mental care. *Expert Opin Drug Saf.* 2021; 20(1): 69-79.
- Nasiri Amiri F, Ramezani Tehrani F, Esmailzadeh S, Tohidi M, Azizi F, Basirat Z. Sexual function in women with polycystic ovary syndrome and their hormonal and clinical correlations. *Int J Impot Res.* 2018; 30(2): 54-61.
- Dashti S, Latiff LA, Hamid HA, Sani SM, Akhtari-Zavare M, Abu Bakar AS, et al. Sexual dysfunction in patients with polycystic ovary syndrome in malaysia. *Asian Pac J Cancer Prev.* 2016; 17(8): 3747-3751.
- Eftekhari T, Sohrabvand F, Zabandan N, Shariat M, Haghollahi F, Ghahghaei-Nezamabadi A. Sexual dysfunction in patients with polycystic ovary syndrome and its affected domains. *Iran J Reprod Med.* 2014; 12(8): 539-546.
- Lumezi BG, Berisha VL, Pupovci HL, Goçi A, Hajrushu AB. Grading of hirsutism based on the Ferriman-Gallwey scoring system in Kosovar women. *Postepy Dermatol Alergol.* 2018; 35(6): 631-635.
- Atis G, Dalkilinc A, Altuntas Y, Atis A, Gurbuz C, Ofluoglu Y, et al. Hyperthyroidism: a risk factor for female sexual dysfunction. *J Sex Med.* 2011; 8(8): 2327-2333.
- Lombardi G, Celso M, Bartelli M, Cilotti A, Del Popolo G. Female sexual dysfunction and hormonal status in multiple sclerosis patients. *J Sex Med.* 2011; 8(4): 1138-1146.
- Mohammadi KH, Heidari M, Faghihzadeh S. The female sexual function index (FSFI): validation of the Iranian version. *Payesh.* 2008; 7(3): 269-278.
- Khademi A, Alleyassin A, Amini M, Ghaemi M. Evaluation of sexual dysfunction prevalence in infertile couples. *J Sex Med.* 2008; 5(6): 1402-1410.
- Singh JC, Tharyan P, Kekre NS, Singh G, Gopalakrishnan G. Prevalence and risk factors for female sexual dysfunction in women attending a medical clinic in south India. *J Postgrad Med.* 2009; 55(2): 113-120.
- Kogure GS, Ribeiro VB, Lopes IP, Furtado CLM, Kodato S, Silva de Sá MF, et al. Body image and its relationships with sexual functioning, anxiety, and depression in women with polycystic ovary syndrome. *J Affect Disord.* 2019; 253: 385-393.
- Ferraresi SR, Lara LA, Reis RM, Rosa e Silva AC. Changes in sexual function among women with polycystic ovary syndrome: a pilot study. *J Sex Med.* 2013; 10(2): 467-473.
- Firmino Murgel AC, Santos Simões R, Maciel GAR, Soares JM -Jr, Baracat EC. Sexual dysfunction in women with polycystic ovary syndrome: systematic review and meta-analysis. *J Sex Med.* 2019; 16(4): 542-550.