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Research Article

Methods of Reducing Anxiety and Their Relationship with the Age of Patients with Polycystic Ovary Syndrome

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Abstract

Background: Polycystic ovary syndrome (PCOS) is a common endocrine disorder associated with clinical manifestations such ashirsutism, acne, reduced fertility, menstrual and obesity disorders, and psychological and mood problems. Anxiety is an unpleasant feeling that has been identified through several ways. We assessed the approaches to reducing anxiety and their association with the age of patients suffering from PCOS.
Methods: This is a descriptive cross-sectional study on the methods for reducing anxiety and the relationship between the type of method and patients'age. Through the use of a checklist, we examined 80 women of childbearing age with PCOS. Chi-square test was used to analyze the data, and 5% level was considered as the significant level.
Results: Based on the results obtained 45 subjects (56.2%) reduced their anxiety through prayer and religious deeds, 30 (37.50%) by crying, 27 (33.8%) by listening to music, 12 (15%) through fighting, and nine (11.25%) by sleeping. Seven participants (8.75%) did yoga and exercised, and 21 (26.25%) used other methods to reduce their anxiety. There was also a significant relationship between people's age and prayer (P=0.038). Also, people's age and listening to music (P=0.043) were observed to decrease anxiety and in other cases, no significant relationship was observed.
Conclusion: The most common strategy for reducing anxiety among patients was to pray and perform religious deedsalong with other methods. There was also a significant association between the participants' age and praying and listening to music as ways of lowering anxiety.

Keywords: Polycystic ovary syndrome, Anxiety, Religion, Music, Age

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1. Introduction

Polycystic ovary syndrome (PCOS) is the most prevalent endocrine disorder with an approximate prevalence of 5-10% in women of childbearing age. This condition is associated with infertility, hirsutism, acne, obesity, metabolic syndrome, diabetes, dyslipidemia, hypertension, and endometrial cancer. Numerous studies have shown that mental disorders such as depression and anxiety are significantly higher in women with PCOSthan in non-polycystic women (1-3). Menstrual disorders, acne, and hirsutism are the most common clinical symptoms in these patients. Almost 50% of women suffering fromthis disease are overweight or obese, and obesity is the cause of many stages of depression and dissatisfaction. Infertility can lead to family tensions as well as workplace problems. These patients have a low self-esteem, and they are not satisfied with their appearance (4-6).

Various studies have reported the prevalence of anxiety (28-39%) and depression (11-25%) in women with PCOS (7). Chaudhary conducted a study on 70 women of reproductive age (18-45 years) with this condition; he reported that the prevalence of anxiety and depression in these patients were 38.6% and 25.7%, respectively. Infertility and alopecia were associated with anxiety. Acne had a relationship with depression while hirsutism was associated with a lower quality of life (7). Anxiety is a vague and unpleasant feeling always accompanied by one or more physical symptoms such as palpitations, sweating, headache, and shortness of breath (8, 9). According to the World Health Organization, the rate of anxiety is 38.6% in developing countries and 83.2% in developed countries (10). The ratio of anxiety disorders in women has been reported to be twice that in men (9). Anxiety disorders can interfere with a person's thinking and learning process and have detrimental effects on the physical and mental wellbeing (11). Physical, mental, and social health are essential to human growth and development; thus, it is important to build and maintain a healthy mindset, develop the ability to deal with everyday problems, and build healthy relationships with others

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(9). Today, common treatments for anxiety disorders include pharmacological and psychological methods (10). Most studies have investigated the influencec of specific PCO therapies for the treatment of anxiety and depression; meanwhile, there is no research on the use of antidepressants or anti-anxiety drugs in these patients. Lifestyle interventions in these patients cause weight loss, total testosterone and Decreased Freeman score has been swallowed; therefore, it plays a potential role in improving the symptoms of anxiety and depression associated with these risk factors. There exist a limited number of studies that examine the effects of different types of diet, exercise, and complementary medicine, such as yoga and acupuncture, on the symptoms of anxiety and depression in women suffering from PCOS. In a pilot study, a significant improvement was observed in the depressive symptoms of over-weight PCOS women on a high-protein, low-carbohydrate diet with exercise. Daily yoga and acupuncture also improved anxiety and depression scores compared to regular exercise. Cognitive behavior therapy (CBT) was proposed by the American Psychological Association as the first treatment for depression (12). Besides, Cooney and colleagues. studied obese and overweight patients with PCOS; they found that cognitive-behavioral therapy sessions in these patients significantly reduced the weight and improved the depressive symptoms (13). Similarly, Kogure and colleagues. investigated 92 women with PCOS; their results showed that aerobic exercise enhanced the sexual function along with the indices related to depression and anxiety (14).

We analyzed the prevalence of anxiety-reducing methods and the relationship between the type of methods and the age of women in reproductive age with polycystic ovary syndrome referred to Shiraz medical clinics.

2. Methods

We performed this descriptive cross-sectional study on 80 women of reproductive age with polycystic ovary syndrome referred to the selected medical clinics in Shiraz (from June 2014 to February 2015). The sample size with statistical consultation was 80 based on multiple regression analysis, and for each variable, 10 samples were selected (15, 16). Based on chemical and clinical criteria and sonography, the women's disease was confirmed by their endocrinologist. The inclusion criteria were no history of liver, gastrointestinal, and renal diseases, seizures, asthma, allergies, and cancer, and no use of hormonal drugs during the last month. For data collection, the researcher used a checklist of demographic characteristics and methods (checklist) to reduce the anxiety . The checklist contained 17 questions, 13 of which were related to demographic characteristics, and the rest pertained to mental health. The content validity of the checklist was confirmed by the research team and several professors of the midwifery group.

The Research Council and Research Ethics Committee of Shiraz University of Medical Sciencesapproved and supervised the study with Grant number: 93-6989. Subjects were assured about information confidentiality, and data were collected via interviews and questionnaires.

Statistical Method

SPSS software version 16 (SPSS Inc., Chicago IL, USA) was used for data analysis. Fisher's exact test were used to analyze the data, and 5% level was considered as significant.

3. Results

The mean age of our patients was 23.30 (5.73); other demographic information is shown in Table 1. The study of anxiety reduction methods in these patients showed that 45 individuals (56.2%) prayed and performed religious deeds along with other methods;16 subjects (20%) only prayed and performed religious

Table 1: Demographic information of the women of reproductive age with PCOS*

Demographic characteristics		Frequency (%)
Marital status	Single	43 (53.8%)
	Married	37 (46.3%)
Education level	Secondary school	31(38.8%)
	Diploma	26 (32.5%)
	Bachelor of science	21 (26.3%)
	Master of science	2 (2.5%)
Employment status	Housekeeper	34 (45%)
	Having a business	44 (55%)

*PCOS: Polycystic ovary syndrome

Table 2: Frequency and percentage of anxiety reduction methods in women of reproductive age with PCOS*

Type of activity	Alone Frequency (%)	With other method (mixed) Frequency (%)
Prayers and religious issues	16(20%)	45(56.2%)
Crying	2 (2.50%)	30(37.50%)
Listen to music	3 (3.75%)	27 (33.8%)
Fighting	2 (2.50%)	12 (15%)
Sleeping	4 (5%)	9 (11.25%)
Yoga and exercise	2 (2.50%)	7 (8.75%)
Other methods	-	21 (26.25%)

*PCOS: Polycystic ovary syndrome

Table 3: Relationship between age and anxiety reduction methods in women of reproductive age with PCOS*

Age	15-20	21-25	26-30	31≥	Total	P value**
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	
Prayers and religious issues	10 (22.2%)	18 (40.0%)	9 (20.0%)	8 (17.8%)	45(100%)	0.038
Crying	9 (30.0%)	12 (40.0%)	4)13.3%)	5 (16.7%)	30 (100%)	0.697
Listen to music	11 (40.7%)	14 (51.9%)	2 (7%).4	0(0.%)	27 (100%)	0.043
Fighting	4 (33.3%)	4 (33.3%)	3 (25.0%)	1 (8.3%)	12 (100%)	0.718
Sleeping	3 (33.3%)	5 (55.6%)	1 (11.1.%)	0 (0.%)	9 (100%)	0.645
Yoga and exercise	1 (14.3%)	5 (71.4%)	1 (14.3%)	0 (0%)	7 (100%)	0.379
Other methods	10 (47.6%)	7 (33.3%)	3(14.3%)	1 (4.8%)	21 (100%)	0.253

*PCOS: Polycystic ovary syndrome; **Chi-square and fisher exact test

deeds; 30 patients (37.50%) cried along with other methods; two people (2.50%) only went for crying while 27 individuals (33.8%) listened to music along with other methods; three participants (3.75%) only listened to music whereas 12 individuals (15%) chose fighting alongside other methods; 2 subjects (2.50%) considered only fighting, and nine individuals (11.25%) went for sleeping as well as other methods; four patients (5%) only considered sleeping, seven (8.75%) did yoga and exercises among other methods; finally, two individuals (2.50%) only did yoga and exercises, and 21 participants (26.25%) used approachessuch as reading, silence and solitude, talking to a friend, wall nail drawing , keeping themselves busy with household chores, and playing with a cell phone (Table 2). Also, a significant relationship was observed between age and prayer (P=0.038) as well as age and listening to music (P=0.043). In other cases, there was no significant association between age and the type of method used to reduce anxiety (Table 3).

4. Discussion

PCOS is associated with a wide range of cardiovascular and metabolic problems that play major roles in stress (6). The increase in androgen in the form of hirsutism and acne is clinically manifested; the absence of ovulation occurs in the form of reduced fertility and menstrual disorders. In addition, polycystic ovary syndrome is associated with obesity; as a result, the risk of psychological and mood problems is far more expected in women with PCOS (17). Mental disorders, including depression, anxiety, bipolarism, and eating disorders are more prevalent in women with this condition (18).

In a recent meta-analysis study, the prevalence of anxiety in patients with PCOS(41.9%) was compared to that of the control group (8.5%). Also, a study conducted in Australia (2015) reported that the prevalence of anxiety disorders in patients with PCOS (14%) was significantly higher than the controls (5.9%) (19). Religion has been considered as an effective approach to controlling anxiety, withscientists such as Jung, Frankel, Angel, and Allport having commented on it. They believe that religious control, which includes all aspects of human life and relationship with the transcendent and superior being, creates great values in life, motivation, and hope for life (11).

According to the research conducted in different countries, religious beliefs have a positive influence on the physical and mental health of individuals and the treatment of many diseases such as cancer, cardiovascular diseases, and rheumatoid arthritis (8, 19, 20, 21). Ekman and Dalai from California Medical Center showed that prayer shut down the activity of a part of the brain called amygdala which is responsible

for the feelings of fear and anxiety (8).

Achour and colleagues studied 335 nurses aged 21-60 years in Malaya Medical Center; they showed that work stress had a negative impact on life satisfaction while prayer in Muslim nurses significantly reduced stress and improved satisfaction with life. Their results are similar to the present study in terms of the effect of prayer on anxiety reduction (22). Additionally, Ali Ahmad and colleagues reported that the Islamic teachings of the components related to psychological peace (prayer and patience) decreased anxiety and increased the students' resilience (23, 24). As mentioned, prayers and religious beliefs played an important role in calming and reducing the level of anxiety in older women. The findings of the present research are consistent with those of the above-mentioned studies which can be considered in the necessary trainings for the patients.

Since ancient times, music has existed in all cultures as an art to cure diseases. Studies on music therapy have shown its positive effect in reducing the patients' psychological stress in many diseases (25). The results of a study by Rubia Ortí JE (2018) on 25 Alzheimer's patients showed that music significantly reduced stress, depression, and anxiety (26). Cimen and colleagues. (2020) studied the effect of music on anxiety and pain relief in 41 patients undergoing arthrosis fistula surgery; they reported that music significantly decreased anxiety in this group compared to the controls. Pain relief, improved hemodynamic parameters during surgery, and increased treatment satisfaction were further observed in the music therapy group (27). Their findings regarding the effect of music are consistent with the results of the present study. Yoga and physical activity were associated with reduced symptoms of depression and anxiety (28). Exercise has been also suggested as a possible treatment alternative for anxiety symptoms and disorders. A study by Fathizadeh and colleagues (2019) on the effect of aerobic exercise on depression and stress in 41 women with hypothyroidism showed that eight weeks of aerobic exercise in these patients effectively improved depression, anxiety, and stress. Exercise reduces depression by increasing serotonin (a hormone that affects mood) and norepinephrine; this affects the human psyche through releasing endorphins and lowering cortisol B levels (10). In the current study, exercise was also used as a method for reducing anxiety in patients. Our patients did not cooperate in answering the questions and there was a small number of patients, increasing the length of sampling.

5. Conclusion

In this study, the most widely used strategy for reducing anxiety among patients with PCOS was the use of prayer and religious deeds along with other methods. There was a significant relationship between age and prayer and listening to music as a means to lowering anxiety. The age and effectiveness of different methods of pain relief can be considered in the care and training provided to these women.

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References

1. Veltman-Verhulst SM, Boivin J, Eijkemans MJ, Fauser BJ. Emotional distress is a common risk in women with polycystic ovary syndrome: a systematic review and meta-analysis of 28 studies. Hum Reprod Update. 2012;18(6):638-51. doi: 10.1093/humupd/dms029. PubMed PMID: 22824735.
2. Akbarzadeh M, Morshed Behbahani B, Naderi N, Dabbaghmaneh MH, Zare N. The survey of central obesity and BMI associated with different phenotypes of polycystic ovary syndrome in adolescents. International Journal of Africa Nursing Sciences. 2015;(3) 82–85. doi:10.1016/j.ijans.2015.09.001.
3. Heidary M, Yazdanpanahi Z, Dabbaghmanesh MH, Parsanezhad ME, Emamghoreishi M, Akbarzadeh M. Effect of chamomile capsule on lipid- and hormonal-related parameters among women of reproductive age with polycystic ovary

syndrome. J Res Med Sci. 2018;23:33. doi: 10.4103/jrms.JRMS_90_17. PubMed PMID: 29887901; PubMed Central PMCID: PMC5961291.
4. Naz MS, Tehrani FR, Lak TB, Mohammadzadeh F, Nasiri M, Badr FK, Ozgoli G. Quality of Life and Emotional States of Depression, Anxiety and Stress in Adolescents with Polycystic Ovary Syndrome: A Cross-Sectional Study. Psychol Res Behav Manag . 2020; 13:203. doi: 10.2147/PRBM.S241192. PubMed PMID: 32184681; PubMed Central PMCID: PMC7053650.
5. Akbarzadeh M, Moradi F, Dabbaghmanesh MH ,.Zareh N, Parsanezhad ME . Insulin resistance in the first degree relatives (father, mother, and siblings) of the patients with polycystic ovarian syndrome. Iranian Journal of Diabetes and Obesity.2013;5(4):163-170.
6. Panico A, Messina G, Lupoli GA, Lupoli R, Cacciapuoti M, Moscatelli F, Esposito T, Villano I, Valenzano A, Monda V, Messina A. Quality of life in overweight (obese) and normal-weight women with polycystic ovary syndrome. Patient preference and adherence. 2017; 11:423. doi: 10.2147/PPA.S119180. PubMed PMID: 28280314; PubMed Central PMCID: PMC5338969.
7. Chaudhari AP, Mazumdar K, Mehta PD. Anxiety, depression, and quality of life in women with polycystic ovarian syndrome. Indian journal of psychological medicine. 2018 Jun;40(3):239-46. doi: 10.4103/IJPSYM.IJPSYM_561_17. PubMed PMID: 29875531; PubMed Central PMCID: PMC5968645.
8. Mirbagher Ajorpaz N, Khaleghi M. Effect of Prayer on the anxiety level in the family members of patients undergoing general surgery in Shahid Beheshti Hospital of Kashan. Community Health Journal 2017; 8 (1):1-8.
9. Azizi S, Pelarak F, Mohagheghi J. Effectiveness of religious teachings in reducing anxiety in pregnant women. Religion and Health. 2017;4(2):46-55.
10. Fathi Zadeh M, alimoradi S. THE EFFECT OF AEROBICS EXERCISE ON DEPRESSION, ANXIETY, AND STRESS IN WOMEN WITH SUBCLINICAL HYPOTHYROIDISM. Nurs Midwifery J. 2019; 17 (9) :749-757.
11. Khazaei H, Rezaei M, Ghadami MR, Tahmasian M, Mobarra AG, Shiri E. Relationship between religious values and anxiety among Kermanshah University of Medical Sciences students. Journal of Kermanshah University of Medical Sciences. 2010;14(1).
12. Cooney LG, Dokras A. Depression and anxiety in polycystic ovary syndrome: etiology and treatment. Current psychiatry reports. 2017;19(11):83. doi: 10.1007/s11920-017-0834-2. PubMed PMID: 28929349.
13. Cooney LG, Milman LW, Hantsoo L, Kornfield S, Sammel MD, Allison KC, Epperson CN, Dokras A. Cognitive-behavioral therapy improves weight loss and quality of life in women with polycystic ovary syndrome: a pilot randomized clinical trial Fertil Steril. 2018;110(1):161-71. doi: 10.1016/j.fertnstert.2018.03.028. PubMed PMID: 29908771; PubMed Central PMCID: PMC6443091.
14. Kogure GS, Ribeiro VB, Lopes IP, Furtado CL, Kodato S, de Sá MF, Ferriani RA, da Silva Lara LA, dos Reis RM. Body image and its relationships with sexual functioning, anxiety, and depression in women with polycystic ovary syndrome J Affect Disord. 2019; 253:385-93. doi: 10.1016/j.jad.2019.05.006. PubMed PMID: 31082731.
15. Austin PC, Steyerberg EW. The number of subjects per variable required in linear regression analyses. J Clin Epidemiol. 2015;68(6):627-36. doi: 10.1016/j.jclinepi.2014.12.014. PubMed PMID: 25704724.
16. Harrell, Frank E. Regression Modeling Strategies: With Applications to Linear Models, Logistic Regression, and Survival Analysis.springer-verlag,New York,NY.2001
17. Barry JA, Kuczmierczyk AR, Hardiman PJ. Anxiety and depression in polycystic ovary syndrome: a systematic review and meta-analysis. Hum Reprod. 2011;26(9):2442-51. doi: 10.1093/humrep/der197. PubMed PMID: 21725075.
18. Sirmans SM, Pate KA. Epidemiology, diagnosis, and management of polycystic ovary syndrome. Clin Epidemiol. 2014; 6:1. doi: 10.2147/CLEP.S37559. PubMed PMID: 24379699; PubMed Central PMCID: PMC3872139.
19. MokhtaryanT, Yazdanpanahi Z, Akbarzadeh M, Amooee S, Najaf Zare. The impact of Islamic religious education on anxiety level in primipara mothers. J Family Med Prim Care 2016;5:331-7. doi: 10.4103/2249-4863.192314. PubMed PMID: 27843837; PubMed Central PMCID: PMC5084557.
20. Gilani TM, Ghodrati F, Yazdanpanahi Z, Amooee S, Akbarzadeh M. The effect of teaching religious principles on the infants' growth and development. J Educ Health Promot. 2019;8:135. Published 2019 Jul 29. doi:10.4103/jehp.jehp_81_19. PubMed PMID: 31463320; PubMed Central PMCID: PMC6691610.
21. Dokras A, Stener-Victorin E, Yildiz BO, Li R, Ottey S, Shah D, Epperson N, Teede H. Androgen Excess-Polycystic Ovary Syndrome Society: position statement on depression, anxiety, quality of life, and eating disorders in polycystic ovary syndrome. Fertil Steril. 2018;109(5):888-99. doi: 10.1016/j.

fertnstert.2018.01.038. PubMed PMID: 29778388.
22. Achour M, Muhamad A, Syihab AH, Nor MR, Yusoff MY. Prayer Moderating Job Stress Among Muslim Nursing Staff at the University of Malaya Medical Centre (UMMC). J Relig Health. 2019 ;11:1-9. doi: 10.1007/s10943-019-00834-6. PubMed PMID: 31079348.
23. Ali-Ahmad M, Jenaabadi H. The Effectiveness of Teaching the Components of Psychological Relaxation Based on the Islamic Viewpoint (Patience and Prayer) on Test Anxiety and the Resilience of First-Grade High School Students in Zahedan. Journal of Educational Psychology Studies. 2018;15(32):185-202.
24. Dehestani H, moshfeghy Z, Ghodrati F, Akbarzadeh M. the Relationship between Spiritual Health and Mother's Forgiveness with her Anxiety in the Labor of the Pregnant Women Referring to Maternity Hospital Affiliated to Shiraz University of Medical Sciences . International Journal of Women's Health and Reproduction Sciences.2018;7(2):174-9.
25. Fleury EA, Approbato MS, Silva TM, Maia MC. Music therapy in stress: proposal of extension to Assisted Reproduction. Journal of Brezilian Assisted Reproduction. 2014;18(2):55-61.
26. de la Rubia Ortí JE, García-Pardo MP, Iranzo CC, Madrigal JJ, Castillo SS, Rochina MJ, Gascó VJ. Does Music Therapy Improve Anxiety and Depression in Alzheimer's Patients? J Altern Complement Med. 2018 Jan;24(1):33-36. doi: 10.1089/acm.2016.0346. PubMed PMID:28714736.
27. Cimen SG, Oğuz E, Gundogmus AG, Cimen S, Sandikci F, Ayli MD. Listening to music during arteriovenous fistula surgery alleviates anxiety: A randomized single-blind clinical trial. World J Transplant. 2020;10(4):79. doi: 10.5500/wjt.v10. i4.79. PubMed PMID: 32405474; PubMed Central PMCID: PMC7205904.
28. James-Palmer A, Anderson E, Zucker L, Kofman Y, Daneault JF. Yoga as an intervention for the reduction of symptoms of anxiety and depression in children and adolescents: A systematic review. Frontiers in Pediatrics. 2020;8:78.doi: 10.3389/ fped.2020.00078. PubMed PMID: 32232017; PubMed Central PMCID: PMC7082809.