

# Anxiety, Depression and Ways of Coping Skills by Women with Polycystic Ovary Syndrome: A Controlled Study

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Received 11 March 2008; received in revised form 02 August 2008; accepted 03 August 2008;  
published online 28 August 2008

## Abstract

**Objective:** In this study, we compared healthy women with women having polycystic ovary syndrome (PCOS) for the levels of depression, anxiety, and ways of coping skills.

**Materials and Methods:** A cross-sectional study was designed. We examined 35 women with PCOS and 35 healthy women between January 2006 and January 2007. The Beck Depression Inventory (BDI), the Spielberger Trait Anxiety Inventory (STAI), and the Ways of Coping Inventory (WCI) were used for psychological assessment.

**Results:** Women with PCOS had significantly higher scores on the BDI and STAI. Among the subtests of WCI, both helplessness and self-blaming and accepting responsibility subscales of the PCOS patients were significantly higher than those of the control group.

**Discussion:** Our results indicated that there could be an association between psychosocial characters of the individual and PCOS. Further studies are needed to characterize this association.

**Keywords:** polycystic ovary syndrome, depression, anxiety, ways of coping skill

## Özet

### Polikistik Over Sendromlu Kadınlarda Anksiyete, Depresyon ve Başa Çıkma Yolları: Kontrollü Bir Çalışma

**Amaç:** Bu çalışmada depresyon, anksiyete ve başa çıkma yollarının seviyelerinin saptanması için polikistik over sendromlu (PCOS) kadınlarla sağlıklı kadınlar karşılaştırıldı.

**Materyal ve Metot:** Ocak 2006-Ocak 2007 tarihleri arasında 35 PCOS'lu kadın ile 35 sağlıklı kadın incelendi. Beck depresyon envanteri (BDI), Spielberger kaygı envanteri (STAI) ve başa çıkma yolları envanteri (WCI) psikolojik değerlendirme sürecinde kullanıldı.

**Sonuçlar:** PCOS'lu kadınlar BDI ve STAI değerlendirmesinde önemli derecede yüksek skorlar aldı. WCI alt testlerinde PCOS'lu hastalarda kontrol grubuna göre (sağlıklı kadınlar) çaresizlik, kendine bakım ve sorumluluk alma skalalarında anlamlı derecede yükseklik saptandı.

**Tartışma:** Çalışmanın sonucunda, PCOS ile bireylerin psikolojik karakterleri arasındaki ilişki belirlenmiştir. İlerleyen çalışmalarda bu ilişkinin tanımlanması gereklidir.

**Anahtar sözcükler:** polikistik over sendromu, depresyon, anksiyete, başa çıkma yolları

## Introduction

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder which is characterized by hyperandrogenism, chronic anovulation, hyperinsulinemia,

obesity, and hirsutism (1). Polycystic ovary syndrome (PCOS) is one the most common endocrine disorders which affects 5-7% in reproductive age group of women (1). The etiology of the disorder is still controversial. Women with PCOS have irregular menstruation and hirsutism and often obesity which lead to anxiety and self-blaming in comparison to normal appearing women. In some studies, it has been found that the diagnosis of PCOS is associated with depression, anxiety, somatization, and aggression (2,3).

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Problems where no organic disorder can be demonstrated are classified under somatoform disorders in the Diagnostic and Statistical Manual of Mental Disorders-4<sup>th</sup> Edition (DSM-IV) (4). In one study using the Minnesota Multiphasic Personality Inventory (MMPI), the psychosomatic profile of the dysfunctional group has been shown to be higher than that of the control counterparts (5). Therefore, it is not known whether the symptoms are developed secondary responses of the somatic diseases or the result of personality characteristics of the patients before the diseases. In one study investigating the prevalence of psychological stress and its possible relations with hormonal parameters, psychological stress as evaluated by major life events was significantly higher in the PCOS patients than in the control women. Also, physiological stress hormone levels were higher in the PCOS patients (6). Therefore, stress could play an important role in many disorders, and that failure to cope with or adapt to outer and inner stressors can produce a disease of adaptation, including ulcers, high blood pressure and PCOS could be occupy an important place among these diseases (7).

PCOS cases frequently present at gynecology clinics, and may be exposed to medical intervention without adequate psychiatric evaluation. In the present study, stress coping strategies, depression and anxiety levels of women diagnosed with PCOS are compared with those of healthy counterparts. We suggest that stress coping strategies of PCOS patients might be ineffective in stressful encounters in everyday living.

## Materials and Methods

### Participants

This cross-sectional study was performed at an outpatient gynecology clinic. The study was approved by the Ethical Committee of Başkent University. Each subject was informed about the study and those who gave a written consent were enrolled into the study. We investigated 35 women who had been diagnosed with PCOS. They were 17 years or older and were at least primary school graduates. The diagnosis of PCOS is based upon Rotterdam Criteria: All patients with oligomenorrhea (a cycle length irregular, >45 days or <6 periods per year) or amenorrhea who also had at least one of the following evidence of hyperandrogenism, a hirsutism score of more than 7 according to Ferriman and Gallway and/or an elevated serum testosterone level due to PCOS, after all the other causes of hyperandrogenism were excluded. Subjects treated with hormonal medications within 3 months were excluded from the study. Sonographic diagnosis of PCOS was confirmed if >10 subcapsular follicular cysts, 2-10 mm in diameter, arranged around a thickened ovarian stroma were observed (8). Infertile women with PCOS were not included in the study because infertility imputes depressive characters for these patients.

The control group of 35 healthy volunteer individuals who did not have any complaints of a mental or other illness were selected from amongst the friends and relatives of the gynecology staffs. Their ages and other sociodemographic features matched the study group. Women with PCOS and the controls were evaluated by a psychiatrist according to the DSM-IV diagnostic criteria (4).

### Instruments

All participants completed a socio-demographic questionnaire form including questions on age, education, marital status, number of children, residence, socioeconomic status, and history of physical and mental status.

The Beck Depression Inventory (BDI) is a self-report measure containing 21 items designed to assess the affective, motivational, cognitive, and somatic symptoms of depression. Each item of the inventory score 0-3 points with the high total scores showing severe depression (9). Studies have demonstrated that BDI is reliable and valid for Turkish population samples (10).

The Spielberger Trait Inventory (STAI) contains 20 items and measures the subjective level of anxiety in general. Subjects rate each item on a 1-4 scale. High scores indicate high levels of anxiety (11). The STAI was standardized for a Turkish population by Oner and Le Comte in 1985.

Ways of Coping Inventory (WCI) of Folkman and Lazarus is used to assess coping process that individuals use to cope with stressful encounters of everyday living. It consists of 30 questions which has four choices and five subtests which are on self-controlling (7 items), positive reappraisal (5 items), self-blaming and helplessness (8 items), accepting responsibility (6 items), and seeking social support (4 items). Factor structure and reliability of WCI has been studied in a Turkish population sample and it was standardized by Şahin and Durak in 1995 (12).

### Statistics

Statistical analysis was performed using the Statistical Package for Social Science (SPSS) version 13.0. After checking the assumptions for parametric tests, non parametric tests were performed. Mann-Whitney U and  $\chi^2$  test were used for comparing the differences between control and patients group. The correlations between variables between and within the groups were performed by using Spearman's correlation test. A *p* value less than 0.05 was considered statistically significant.

### Results

The study group included 35 patient with a mean age of 27.58±7.66 years. The control group included 35 healthy individuals with a mean age of 26.54±5.16 years. There was no significant difference in age, marital status, education and socioeconomic status between the groups (Table 1).

Women with PCOS had significantly higher scores on the BDI. The mean STAI score also was significantly different between the study and the control groups (Table 2).

**Table 1.** The sociodemographic features of the groups

Variables	PCOS (n=35)		Control (n=35)		Analysis
	Mean	±SD	Mean	±SD	
Age (years)	27.58	7.66	26.54	5.16	<i>p</i> =0.98
BMI	25.43	5.58	24.76	5.37	<i>p</i> =0.87
Education	n		n		<i>p</i> =0.46
≤8 year	13		16		
>8 year	22		19		
Residence					<i>p</i> =0.85
City	24		25		
Village/Small town	11		10		
Marital Status					<i>p</i> =0.47
Married	19		16		
Single	16		19		
Number of children					<i>p</i> =0.057
No child	18		24		
1 child	6		8		
≥2 child	11		3		
Socioeconomic status					<i>p</i> =1
Low income	4		6		
Medium income	27		23		
High income	4		6		

BMI: Body Mass Index.

The WCI total scores were significantly different between the two groups. When we examined the subscales, there was no significant difference between the groups for ‘self-controlling’, ‘positive reappraisal’, and ‘seeking social support’ subscales. The PCOS group had a higher rate of ‘self-blaming’ subscale. They also had higher rates of ‘helplessness and accepting responsibility’ subscale. These subscales were significantly different in PCOS group (Table 3).

All sociodemographic variables were evaluated with each psychometric variable using the Spearman’s correlation test. There was no significant association among these variables.

### Discussion

PCOS is a frequently encountered endocrine disorder with long term gynecological symptoms which cause psychopathological disorders that adversely affect the quality of life. Yet, despite its being the source of many physical and psychiatric problems, the etiology of the disorder is still unknown. Furthermore, it is not understood whether both the psychological and the gynecological problems are related to endocrinological hormonal changes or result from the structural characteristics of the individual. The original aim of this study is to assess coping styles of patients with stress which reflect the fundamental personality characteristics.

Hyperandrogenism seems to be the most important endocrine pathology of PCOS (13). It is known that androgen has different effects on the brain and behavior depending on the time of exposure during development. In prenatal and early postnatal period, androgen is responsible for organization of brain and behavioral responses. In

**Table 2.** Comparison of the groups according to anxiety and depression levels

	PCOS (n=35)		Control (n=35)		U	<i>p</i>
	Mean	±SD	Mean	±SD		
BDI*	14.71	7.67	10.50	5.26	413.500	0.019
STAI**	47.80	8.13	42.50	5.47	368.000	0.004

\*BDI: Beck Depression Inventory.  
\*\*STAI: State Trait Anxiety Inventory.

**Table 3.** Comparison of the groups according to WCI\* scores

	PCOS (n=35)		Control (n=35)		U	<i>p</i>
	Mean	±SD	Mean	±SD		
Self-controlling	13.00	8.13	14.50	3.23	511.500	0.27
Positive reappraisal	8.48	3.31	9.40	3.01	548.000	0.39
Self-blaming and helplessness	13.17	5.36	7.53	3.54	254.500	0.001
Accepting responsibility	7.80	4.18	4.80	2.51	365.000	0.002
Seeking social support	8.11	2.11	7.13	1.50	516.000	0.24

\*WCI: Ways of Coping Inventory.

puberty and later, reproductive years of the women, androgen produces prolonged physiological effects that influence behavior. That hormonal change in women causing psychiatric disorders has been reported in many studies (13-16). However, the number of the investigations related to the existence of the psychopathology before the PCOS diagnosis is limited. In one study, it was found that personality features of the patients (tested by MMPI) with hormonal dysfunctions were more psychosomatic in nature in comparison to the control group (5). Furthermore, it was found that both the psychopathology underlying PCOS and infertility, menstrual dysfunction, hirsutism and obesity related to PCOS were known to cause of profound psychological distress (17).

In this study, the ways of coping strategies reflecting psychosocial characteristics of individuals were investigated. Among the subtests of WCI, both helplessness and self-blaming and accepting responsibility responses of the PCOS patients were statistically significant and were higher than those of the control group. In psychology, coping with stress takes two major forms. One is direct which focuses on the problem: The individual evaluates the stressful situation and does something to change or avoid it. The other is indirect which focused on the emotional response to the problem: The individual tries to reduce anxiety without dealing directly with the anxiety-producing situation. The former is considered as a problem-focused coping and the latter as emotion-focused coping. Helplessness and self-blaming subtests are emotion-focused coping strategies. Although these subtests are considered as effective coping strategies, they also carry some risks. Accepting responsibility subtest indicates an unwilling acceptance of the situation (18). It is known that it is not the major life events but the minor frustrations in our daily lives produce the greatest stress.

In this study, as compared to control group, the answers of the PCOS patients in response to daily problems were in the form of helplessness and self-blaming attitudes. These women have difficulty using emotion-focused coping strategies in long-term relations which expose them to long-term stressful situations which could be the source of irreversible physical and psychological damage. Among the PCOS patients the scores for the subtests on seeking social support were higher than those of the control group, but this difference were not statistically significant. Self-controlling and positive reappraisal attitude scores of both groups were comparable to each other.

In many studies with the PCOS patients, symptoms of anxiety, hostility and irritability have been reported (19). However, whether these symptoms lead to psychiatric disorder or not are not known. In this study, any psychiatric diagnosis in Axis I according to DSM-IV criteria in the PCOS and the control groups was not found. In both the BDI and STAI, in term of these scales, there were statistical differences between the PCOS and the control groups. These

results thus indicated that some psychological symptoms did exist in the PCOS patients, but these were not in the pathological level.

There are some limitations to this study. Firstly, the number of subjects investigated is small and secondarily, illiterate patients have not been included in the study. In all the studies done so far the psychopathology in PCOS has been explained by endocrinological changes or symptoms like obesity, hirsutism, infertility etc. In this study, the ways of coping strategies with stress reflecting basic personality characteristics were examined and it was found that helplessness and self-blaming and accepting responsibility subscales of the PCOS patients were higher than those of the control patients.

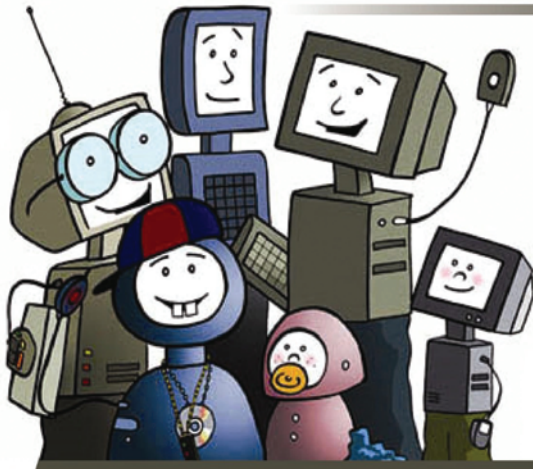
In PCOS, as in psychosomatic disorders, psychotherapy and medical treatment of patients are important in addition to the organic treatment. Therefore, in the treatment of psychic and somatic symptoms of PCOS patients, a multidisciplinary approach should be emphasized. Our results indicated that coping strategies of PCOS women with stress were more emotion-focused. That is, they were more likely to use helplessness self-blaming and accepting responsibility (but unwillingly) approaches in their daily lives than problem-focused coping.

Emotion focused coping strategies could be considered as passive methods. These passive behavioral patterns of the PCOS women in response to stressful situations may play a primary role in the development of psychosomatic disorders. Further studies are needed to characterise this situation.

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