

# A comparison of physical anxiety levels in adolescent and young women with polycystic ovary syndrome and in other healthy adolescent and young women in a university hospital, Turkey

Physical anxiety levels:  
women with PCOS

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## Abstract

**Purpose** – This study was conducted to investigate the Social Physique Anxiety (SPA) level in adolescent and young women with polycystic ovarian syndrome (PCOS).

**Design/methodology/approach** – This is a descriptive study. It was conducted in Turkey. The study was conducted from January 1, 2017 to December 31, 2017. It was completed with a total of 150 young women – 75 of them had PCOS and 75 of them were healthy. Study data were collected using demographic information form and Social Physique Anxiety Scale (SPAS).

**Findings** – The study was found that the adolescent and young women with PCOS had higher subscales and total scores for total SPAS at a statistically significant level than healthy adolescent and young women ( $p < 0.05$ ).

**Practice implication** – The findings of this study may be used for planning and implementing interventions in health-care practice such as screening and early treatment of SPA of women with PCOS.

**Originality/value** – It was found that PCOS in adolescent and young women increased the SPA level. In line with these results, health professionals must be particularly aware of the potential psychosocial and health needs of adolescent and young women with PCOS.

**Keywords** Adolescent health, Polycystic ovary syndrome, Social physique anxiety, Young woman, Turkey

**Paper type** Research paper

## Introduction

Polycystic ovarian syndrome (PCOS) is the most frequently seen chronic endocrine disorder amongst women of reproductive age, affecting approximately 15-20% of women in this category [1–3]. PCOS indications include various clinical symptoms such as fertility problems, weight gain/obesity, cosmetic problems (male pattern alopecia, hirsutism, acne etc.) and mood swings [4,5]. These symptoms can make patients with PCOS feel different and less feminine [6].

Health problems caused by PCOS impact women not only physically but also psychosocially [7,8]. The literature showed that PCOS is associated with impaired

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mental health including anxiety and social phobia [9,10]. Mansson *et al.* [11] found that the ratio of women with PCOS experiencing social phobia was at 27%. Social Physique Anxiety (SPA), which is one of the social phobia types, is defined as the anxiety and nervousness felt by individuals when their physical appearances are evaluated by others [12].

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The earliest clinical symptoms of PCOS manifest themselves during adolescence, and SPA is very significant in this period [13]. The body is the focus of anxiety for the adolescent. Therefore, problems in connection with this disorder can cause more serious social problems particularly within this age group [13].

It is reported in the literature that SPA negatively impacts the individual's motivation and self-confidence in PCOS treatment and could prevent active participation in the treatment process [14–16]. Thus, SPA levels must be taken into consideration in the treatment and care of women with PCOS. Although studies investigating social anxiety among PCOS patients are available in the literature, no studies have been found regarding SPA in women with PCOS during adolescence and youth, a time when body image is most important. The aim of this study was to investigate SPA levels in adolescents and young women with PCOS.

## Materials and methods

### *Study design and participants*

This study was conducted as a descriptive study in the gynecology polyclinic of Dicle University hospital in Turkey. The study was conducted from January 1, 2017 to December 31, 2017.

The case group consisted of adolescent and young women of 15–24 years of age diagnosed with PCOS for the first time according to the Rotterdam criteria [17] following anamnesis and physical examination by the polyclinic physician during the study period. A total of 124 women were diagnosed with PCOS in the gynecology polyclinic during the study period. Inclusion criteria were subjects between 15 and 24 years of age, Turkish language literate, having no known medical condition other than PCOS that may affect the study, no chronic disease, no history of PCOS treatment, no psychiatric disorder, no use of antidepressants, no use of steroids, no use of oral contraceptives and no pregnancy or lactation. The control group consisted of adolescent and young women around the same age as those in the case group, who applied to the same polyclinic due to reasons not associated with PCOS (regular gynecological visits, in general). During the study period, approximately 700 adolescents and young women came to the gynecology polyclinic for regular gynecological visits. Inclusion criteria for both groups were the same, with additional criteria for the control group which were no irregular periods, no hormonal disorders or endocrine disorders.

Adolescents who were interested in participating were given a demographic information form and a scale and consent form to take home. Adolescents who signed the consent form were included in the study.

In this study, power analyses were performed using G-Power software, version 3.1 [18] for the t-test analysis with an effect size = 0.5, 80% power and  $p = 0.05$ , resulting

in a sample size of 102 (healthy adolescent and young women = 51 and adolescent and young women with PCOS = 51). To increase the power of the study, a total of 75 patients were reached for each group. At the end of the study, the effect size was 0.5 ( $p = 0.05$ ), and according to the post-hoc independent groups, student *t*-test analysis conducted for 75 participants in each group, the power of the study was calculated at 0.91.

Of those that were excluded, twenty-two adolescent and young women with PCOS declined to participate in the study, 5 used antidepressants, 21 of them had a chronic disorder or medical condition other than PCOS and 1 of them was lactating.

#### *Data collection tools*

The data of the study were collected using the demographic information form and Social Physique Anxiety Scale (SPAS).

*Demographic information form.* The demographic information form was created by the researchers following literature reviews [19–21]. The form consisted of a total of 7 questions pertaining to the person's age, employment status, marital status, educational level, residential area, income status and age of menarche. Clinical findings of women, i.e. height and weight values, were obtained from patient files.

*Social Physique Anxiety Scale (SPAS).* The original SPAS was developed by Hart *et al.* [22] to investigate overconcern or anxiety while presenting the physique in evaluative contexts. Turkish validity and reliability of SPAS were made by Ballı and Aşçı [12]. This was a 12-item scale with two subscales, namely the negative evaluation expectation (NEE) and physical appearance relaxation (PAR). Items were presented on a 5-point Likert-type scale [12]. The scale's reliability coefficient was 0.88 for the Turkish sample [12]. The alpha coefficient for this study was .76.

#### *Data collection*

Surveys were completed independently by the patients. During the preparation stage, a preliminary survey was conducted with five patients by the research coordinator prior to the actual survey. Forms took an average of 5 minutes to complete.

#### *Data analysis*

At the end of the study, during the assessment of obtained data, 16.0 for Windows was used for statistical analyses. Among the descriptive statistics for descriptive information, number, percent, mean and standard deviation were used. Kolmogorov–Smirnov normality tests were utilized to investigate whether missing values were present in the dataset for the research group and whether data showed normal distribution. Mann–Whitney *U* test, independent-samples *t*-test, chi-square analysis and linear regression were used with independent groups of women with PCOS to consider normal distribution and sample numbers in determining the factors that affected their SPA. Results were assessed based on the criteria of  $p < 0.05$  significance.

#### *Ethical statement*

Parents and clinicians provided written informed consent on the participation of children under 18. The necessary permissions were obtained from the institution where the study was conducted, and ethical approval was received from the Non-Interventional Clinical Studies Ethics Committee of the University's Faculty of Medicine located in Southeastern Turkey (No:2016/258). After the individuals fulfilling the inclusion

criteria were determined, they were informed about the study by the researchers, and an informed consent form was collected from those who agreed to participate in the study.

**Results**

The characteristics of participation in the study are detailed in Table I. Comparisons of adolescent and young women with and without PCOS in terms of sociodemographic and clinical characteristics showed that they had no similarities in body mass index (BMI) variable ( $p < 0.05$ ) but were similar in terms of age, employment status, marital status, educational level, residential area, income status and age of menarche ( $p > 0.05$ ).

A comparison of subscales and total mean scores on the SPAS of adolescent and young women with PCOS and those of healthy adolescent and young women is presented in Table II. It was found that the adolescent and young women with PCOS had higher total scores for SPAS than healthy adolescent and young women at a statistically significant level ( $p < 0.05$ ) (Table II). In addition, the PAR mean score of the adolescent and young women with PCOS was significantly higher than that of the healthy

**Table I.**  
Characteristics of adolescent and young women with and without PCOS

Characteristics	Women with PCOS ( <i>n</i> : 75)	Healthy women ( <i>n</i> : 75)	<i>p</i>
Age, (median)	21	21	0.414*
<i>Employment status, n (%)</i>			
Unemployed	12 (16.0)	9 (12.0)	0.480**
Employed	63 (84.0)	66 (88.0)	
<i>Marital status, n (%)</i>			
Married	7 (9.3)	6 (8.0)	0.772**
Single	68 (90.7)	69 (92.0)	
<i>Educational level, n (%)</i>			
Middle school and lower	6 (8.0)	12 (16.0)	0.307**
Student (high school or university)	59 (78.7)	55 (73.3)	
University	10 (13.3)	8 (10.7)	
<i>Residential area, n (%)</i>			
City	57 (76.0)	52 (69.3)	0.360**
Rural area	18 (24.0)	23 (30.7)	
<i>Income status, n (%)</i>			
Low	37 (49.3)	41 (54.7)	0.786**
Moderate	31 (41.3)	27 (36.0)	
Good	7 (9.3)	7 (9.3)	
<i>Age of menarche (median)</i>	13.0	14.0	0.055*
<i>BMI (mean ± SD)</i>	22.50 ± 3.85	20.82 ± 2.77	0.003***

**Note(s):** \*Mann–Whitney *U* test, \*\*chi-square analysis, \*\*\*independent-samples *t*-test

**Table II.**  
Comparison of subscales and total mean scores on SPAS of adolescent and young women with and without PCOS

Variable	Women with PCOS ( <i>n</i> : 75) mean ± SD	Healthy women ( <i>n</i> : 75) mean ± SD	* <i>p</i>
<b>SPAS</b>	35.86 ± 9.69 (33.63 – 38.09)	31.18 ± 7.94(29.26 – 32.92)	0.002
PAR	21.61 ± 6.47 (20.12 – 23.10)	18.21 ± 5.89 (16.86 – 19.59)	0.001
NEE	14.25 ± 4.13 (13.30 – 15.20)	12.97 ± 3.53(12.07 – 13.65)	0.043

**Note(s):** \*Independent-samples *t*-test

adolescent and young women ( $p < 0.05$ ). The NEE mean score was significantly higher for the adolescent and young women with PCOS than for the healthy adolescent and young women ( $p < 0.001$ ).

The linear regression analysis reveals a significant correlation between PCOS and the total SPA score,  $\beta = 0.26$ ; PAR,  $\beta = -0.26$  and NEE,  $\beta = -0.18$ . This suggests that as the suffering from PCOS increases, the suffering from SPA increases as well.

## Discussion

Patients with PCOS are faced with many problems that threaten their feminine identity, including infertility, acne, hirsutism and increased obesity [4,6]. These problems impact the patients psychosocially – in particular, such problems may cause them to withdraw from society [8,14].

It was found in our study that SPAS scores increased in adolescents and young women with PCOS compared to the control group. In previous studies conducted on healthy women and women with PCOS, it was detected that social anxiety was higher in women with PCOS [23,24]. PCOS was shown to be associated with social phobia in some studies performed on different age groups [9,11,25]. These results support the results of our study. These findings indicate that the SPA of individuals will decrease if the symptoms caused by PCOS are prevented.

Women with PCOS are more predisposed to be obese, therefore obesity is seen in more than 50% of them [12,14]. In our study, BMI values were found to be similar to those in the literature. BMI values of adolescent and young women with PCOS were observed to be significantly higher than compared to the control group. The results of our study are supported by the literature. These findings demonstrate that the battle against obesity for those suffering from PCOS has a significant role in decreasing the subscale and total mean scores on SPAS scores. It is obvious that obese women with PCOS should be prioritized in the protection against psychosocial problems and the support needed for this group to lead higher quality lives.

It is reported in the literature that oral support provided through Myo-inositol (MI) and D-chiro-inositol and the combination thereof in up to date PCOS treatment can improve the metabolic pattern and ovary functions in PCOS patients. It is proven that inositols are effective both in obese and lean women with PCOS, can improve the metabolic and hormonal state and restore spontaneous ovulation [26,27]. In a randomized control study, it was detected that MI decreased both gonadotropin quantity and ovary hyperstimulation in women with PCOS [28]. It is thought that the occurrence of SPA can be prevented by providing proper treatment and by relieving the symptoms of PCOS.

When studies on gynecological diseases with symptoms affecting womanhood roles were examined, it was reported that endometriosis is specially listed as a disorder that may dramatically jeopardize social relationships [29,30]. It is considered that the provision of proper treatment to relieve the symptoms of diseases that hinder the social lives of patients, such as PCOS and endometriosis, can prevent them from experiencing social problems.

Inadequate focus and attention on the effects of PCOS on the SPA level may cause significant problems in the lives of young women in the future. Thus, increased SPA levels must be approached sensitively, and the necessary treatment and care must be provided to ensure women's health. For the treatment and care of individuals with PCOS, SPA levels must be assessed, the necessary actions must be taken to decrease SPA, individuals must be supported to develop the appropriate coping skills, and patients must be provided with a multidisciplinary care approach.

During the treatment and care process of women with PCOS, health-care professionals must play a more significant role in the formation of social support groups and enable the communication between the woman and other health disciplines (dietician, dermatologist,

psychologist) for circumstances affecting body image. In particular, health-care providers working with adolescent women must be knowledgeable about the signs and symptoms of PCOS, its biopsychosocial effects on women, diagnosis and treatment methods and holistic disorder management. In case of suspicious circumstances, the necessary guidance must be provided and precautions taken immediately.

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### Conclusion

PCOS in adolescents and young women increased SPA levels. In line with these results, health-care professionals working with adolescents and young women with PCOS must be particularly aware of the potential psychosocial and health needs of adolescents and young women with PCOS. It is recommended that screening programs be offered, commencing from adolescence and with target groups determined from the outset, and awareness created from an early period so that PCOS and its symptoms can be better controlled. In this way, other health risks can be prevented or delayed.

### Limitations

The limitation of this study was in the fact that only patients admitted to the outpatient clinic were included in the study. This limits the generalization of the conclusions of the study to all women with PCOS as it does not cover those who had not been in contact with health-care providers.

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