

Anxiety-Promoting Parenting Behaviors in Adolescents with Social Anxiety: Controlled with a Non-Clinical Sample

ABSTRACT

Background: The majority of research on parenting behaviors in social phobia has been conducted with mother-child dyads, but there is still a gap in current knowledge about the role of fathers' parenting behaviors and adolescence period. This study focuses on the role of parent gender, parental attitudes, and familial factors in an adolescent population.

Methods: Our study sample consisted of adolescents diagnosed with social phobia ($n = 60$), healthy non-clinical adolescents ($n = 30$), and the parents of adolescents with social phobia ($n = 46$) and non-clinical adolescents ($n = 30$). A Sociodemographic Information Form, Family Interview Inventory, Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale, Liebowitz Social Anxiety Scale, and The Parent Attitude Research Instrument were administered to all groups.

Results: The parents of adolescents with social phobia have reported a higher overprotective mothering attitude when compared to parents of healthy adolescents ($P_{\text{mother}} < .001$ and $P_{\text{father}} = .009$). The mothers' overprotective parenting style and the fathers' avoidance levels were found as predictive factors for adolescents' social phobia in logistic regression analysis (respectively; $\exp(\beta) = 0.868$ and $P = .002$; $\exp(\beta) = 0.927$ and $P = .017$).

Conclusion: Our results indicate the necessity of considering both the parents in the research. We suggest that controlled prospective future studies on different ages, diagnostic groups, and cultures, which will take the gender of both parents and patients into account, may reveal important data on the relation between parenting behaviors and social anxiety.

Keywords: Gender role, parenting, adolescence, social phobia

Introduction

Social phobia (SP) is a prevalent mental disorder that often starts in early adolescence leading to impairment in school and social functioning.¹ It is widely accepted that familial factors show a noteworthy role in the onset and course of SP.^{2,3} Studies consistently revealed that parental anxiety, parent-child attachment, perceived parenting style and practices, information processing biases, child temperamental characteristics, and negative life events such as maltreatment are the putative environmental risk factors.^{2,4}

Research on the development of child anxiety has pointed particular attention to parental behaviors. In this area, one of the research subjects is how learning mechanisms may play a role in the development of anxiety. In their review, Fisak and Grill⁵ stated that the learning mechanisms: parental modelling, the transmission of information and reinforcement were significant factors in the development of child anxiety. They also referred to Bruch and Heimberg⁶ and also Caster et al⁷ who found that the parental modeling which involves isolation and increased levels of expressed concern about the opinion of others was associated particularly with social fears.⁵



Güler Özkula¹ 

Mustafa Uğurlu² 

Erkan Kuru³ 

Gül Ferda Cengiz⁴ 

Sibel Örsel⁵ 

¹Department of Psychiatry, Faculty of Medicine, University of Kyrenia, Kyrenia, Turkish Republic of Northern Cyprus
²Department of Psychiatry, The Bilkent Integrated Healthcare Campus - Ankara City Hospital, Ankara, Turkey
³Boylam Psychiatric Hospital, Ankara, Turkey
⁴Department of Psychiatry, Faculty of Medicine, University of Bozok, Yozgat, Turkey
⁵Department of Psychiatry, University of Health Sciences Dışkapı Yıldırım Beyazıt Training and Research Hospital, Ankara, Turkey

Corresponding author:

Güler Özkula
✉ ngulerpalpaslan@gmail.com

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In recent studies, not only the parental social behaviors but also the role of the gender of parents and children are considered. Challenging parenting behavior (CPB) that is based on theories on the role of fathers in child development include active physical and verbal behaviors that hearten children to push their envelope (e.g., encouragement of assertiveness or performances, rough and tumble plays, competitive games).⁸ First, Paquette⁹ described the father–child relationship that is called the “activation relationship” based on the father’s role in the child’s development. It is suggested through physical and challenging play that this “activation relationship” would aid to open the children to the world. Bogels and Phares’ review¹⁰ examined the role of the fathers in child anxiety and proposed a new model that the paternal challenging role more than the maternal protective role affects the development of child anxiety. Actually, controversial parenting roles are based on the course of human evolution; fathers are at the forefront regarding external preservation (confronting the external world), while mothers are at the forefront regarding internal protection (providing comfort and food).¹¹ Bögels’ theory included that children might be more affected by the information signaled by paternal behaviors rather than maternal concerning probable external threats instinctively. Therefore, it suggested that in the development of child anxiety, fathers’ anxious parenting behaviors (more overprotective, less challenging) have influenced more than those of mothers.¹² Majdanzick et al¹³ stated CBP of mothers predicted child anxiety when studied as a separate predictor. However, that contribution was low when examined together with the CBP of fathers. On the other hand, the literature regarding CBP of mothers has contradictory findings that it predicted more,¹² less,¹⁴ or no^{15,16} child anxiety.¹² Majdandžić et al¹³ also reported that the CPB of fathers was an essential protective role in child anxiety development. Also, in Telman et al’s research,¹⁷ investigating the specificity of child–parent relationships in anxiety disorders, one of the interesting findings was that all fathers of children with SP had SP. Therefore, SP has been reported to show a specific familial transmission differently from other anxiety disorders, and fathers have a critical role in the development of SP,¹⁷ as suggested by Bögels.

Parenting styles are supposed to be another risk factor, and studies show that SP patients’ parents generally display overprotective, rejecting, or neglectful behaviors.^{18–21} Overprotection, which is considered more typical for the mother’s parenting role,¹⁰ inhibits gaining social skills and a sense of competency besides the development of autonomy in a child; also, the environment is perceived as unrestrainable, and child anxiety develops eventually.²² In recent years, in

studies on parenting attitude in SP development, mother and father have been dealt with separately, and it has been observed that not only the mother’s overprotection³ but also the father’s rejection^{3,23} is important. Bögels¹⁰ suggested that fathers own an unequalled developmental impact on anxiety from childhood to adolescence. Mak et al²³ revealed that father rejection predicted social anxiety in adolescence and suggested that activation relationship encourages youth to practice approaching novel social situations; thus father rejection may lead to being more fearful, avoidant of social situations, and more social isolation in youth.

One of the gaps in the field is that although SP has two peaks in late childhood and middle adolescence,²⁴ most of the research is focused on the childhood period. According to a small number of studies in the adolescence period, mother overprotection^{3,25} and father rejection^{3,23} increased the development of SP. However, father overprotection reduced that in boys.²⁶ In a limited number of studies conducted on social anxiety in adolescents, Knappe et al³ examined the association of parenting and social anxiety in adolescents and revealed that only mothers’ overprotection, not fathers’, and only fathers’ rejection, not mothers’, were associated with social anxiety. Similarly, Mak et al²³ found father rejection, not mother rejection, predicted social anxiety in adolescence. Interestingly, Van Zalk et al²⁶ reported that fathers’ overprotection predicted lower social anxiety for boys. It suggested that fathers’ overcontrol gives a sense of assertiveness and confidence rather than a limitation to sons as different from mothers. This article aimed to evaluate whether SP in adolescence is associated with specific parental attitudes, parental social anxiety, and avoiding behaviours and the gender effect of both parents and adolescents on these parameters. We hypothesized the following: H1: Adolescents whose parents have high levels of overprotection have high levels of social anxiety and avoidance. H2: Adolescents whose parents have high levels of social anxiety and avoidance have high levels of social anxiety and avoidance.

Methods

Participants

This study was planned as a cross-sectional study. Participants were of two groups: adolescents with SP and their parents (group 1), and the non-clinical adolescents and their parents (group 2). In group 1, there were 60 adolescents aged 14–24 who were admitted to the hospital first time or were in the first 3 months of treatment for social anxiety and met the DSM-IV criteria for diagnosis of SP. And also, in group 1, parents of the adolescents with SP ($n_{\text{mother}} = 46$, $n_{\text{father}} = 31$) who were recruited to the study; 3 fathers singly, 18 mothers singly, and 28 parent dyads completed the study measures. Group 2 consisted of 30 adolescents age-gender matched who were admitted to the other outpatient clinics in the hospital, did not have a history of mental illness, and did not have any existing psychiatric complaints. Also, parents of non-clinical adolescents ($n_{\text{mother}} = 30$, $n_{\text{father}} = 30$) were in group 2 (Table 1). Analyses were performed only on parent–adolescents living in the same household.

Procedure

All participants or legal guardians gave informed consent, and approval was obtained from the Ethics Committee of Dışkapı Yıldırım Beyazıt Training and Research Hospital (Approval Date: January 26, 2015; Approval Number: 19/38). The adolescent groups were

MAIN POINTS

- An overprotective mothering attitude was a predictive factor for social phobia (SP).
- Not mothers’, only fathers’ avoidance levels have been found as a predictive factor for SP.
- Fathers with social avoidance behaviors may have shown low challenging parenting behavior and may have played a role in SP development.
- We suggest conducting prospective and observational studies in which the attitudes of both parents are taken into account separately in SP development.

Table 1. Sociodemographic Features of Group 1 and Group 2

	Group 1 (n = 60)		Group 2 (n = 30)	
	Mean (SD)	Mean (SD)	P	
Age	19.33 (3.26)	18.76 (3.08)	.431	
Onset age	14.05 (3.30)	-	-	
Education (year)	11.27 (2.63)	11.17 (2.56)	.864	
Mother (age)	45.52 (8.29)	43.26 (6.11)	.193	
Mother (education year)	5.28 (3.22)	7.63 (4.91)	.008**	
Father (age)	49.53 (7.59)	47.46 (6.96)	.222	
Father (education year)	7.97 (3.43)	8.76 (3.66)	.311	
	n (%)	n (%)	P	
Gender				
Female	29 (48.33)	19 (63.33)	.179	
Male	31 (51.66)	11 (36.66)		
Marital status, Single	50 (83.33)	28 (93.33)	.057 [‡]	
Married	10 (16.66)	1 (3.33)		
Divorced	0 (0)	1 (3.33)		
Occupation, Student	37 (61.66)	16 (53.33)	.482	
Employee	15 (25)	7 (23.33)		
Unemployed	8 (13.33)	7 (23.33)		
School, failure at lessons (yes vs no)	9 (15)	4 (13.33)	.832	
School, absenteeism, lost year (yes vs no)	8 (13.33)	2 (6.66)	.343	
Negative life event at onset (yes vs no)	9 (15)	-	.027* [‡]	
Family income, medium income (vs lower income)	26 (43.33)	8 (26.66)	.124	
Residential area; Urban area	42 (70)	19 (63.33)	.740	
County	10 (16.66)	7 (23.33)		
City	8 (13.33)	4 (13.33)		
Migration (yes vs no)	9 (15)	4 (13.33)	.832	
Primary caregiver 0-6 ages, Parents	56 (93.33)	30 (100)	.397 [‡]	
Relatives	2 (3.33)	0 (0)		
Baby-sitter	2 (3.33)	0 (0)		
Loss of parent, divorce, or separation from family	Overall	18 (30)	2 (6.66)	.014*[‡]
	0-7 years	6 (10)	0 (0)	.078 [‡]
	8-11 years	1 (1.66)	1 (3.33)	
	>12 years	11 (18.33)	1 (3.33)	
Violence in family (yes vs no)	21 (35)	5 (16.66)	.070	
Maltreatment during childhood (yes vs no)	18 (30)	4 (13.33)	.083	

* $P < .05$, ** $P < .01$, [‡]Fisher's exact test for 2×2 contingency table, [§]Fisher-Freeman-Halton test for 2×3 contingency table.

Group 1 represents adolescent with social phobia.

Group 2 represents healthy adolescents.

screened with a structured clinical and diagnostic interview, SCID (Structured Clinical Interview for Diagnosis for DSM-IV), for psychiatric disorders by the psychiatrist at the relevant hospital. Parents were evaluated through their reports for psychiatric disorder history. All of the groups completed the Liebowitz Social Anxiety Scale (LSAS) for avoidance and anxiety behaviors. The adolescent groups were also screened with the Hamilton Depression Rating Scale (HDRS) and the Hamilton Anxiety Rating Scale (HARS) for the severity of depression and anxiety. The Parent Attitude Research Instrument (PARI) was administered for assessing parental attitudes toward both parents of adolescents.

Scales

The *Sociodemographic Questionnaire* was developed by the investigators. Information about patients' individual risk factors from early childhood development and negative life events was obtained. The demographic interview was conducted by the same psychiatrist who also conducted the diagnostic interview.

The *Parental Attitude Research Instrument* was used to investigate parental attitudes toward child-rearing and family, which was designed by Schaefer and Bell.²⁷ The reliability and validity of the Turkish version were demonstrated by LeCompte et al.²⁸ The coefficients of test-retest reliabilities of the dimensions were found between 0.58 and 0.88. The PARI score was calculated according to the parents' answers on each item using a four-point Likert scale on which the respondents indicated whether they strongly agreed, mildly agreed, mildly disagreed, or strongly disagreed with each attitude. Based on the responses obtained from the PARI questionnaire, five dimensions of the four-point Likert scale were defined as follows: PARI1 (Overprotective mothering) was defined as overly controlling and intrusive parents who expect their children to be active, hard-working, dependent, and understandable. Sixteen items (1, 3, 4, 7, 11, 12, 14, 26, 27, 28, 32, 34, 36, 46, 51, and 57) were used to measure this subscale (e.g., "Children must be protected from tiring and hard work"). PARI2 (Democratic behaviors and definitions of equality) was defined as parenting practices that recognize the equal rights of

children, support their ideas, relate as friends, and share many issues with them. Nine items (2, 13, 18, 22, 29, 37, 44, 45, and 59) were used to measure this subscale. (e.g., "If children disapprove of family rules, they should be welcome to tell their parents"). PARI3 (Mother's "rejection of the housewife role" attitude) was defined as mothers depending on others to fulfill the typical requirements of motherhood, disliking spending long periods of time with their children, and being nervous and fearful of caring for a newborn. Thirteen items (6, 9, 16, 17, 21, 23, 31, 32, 41, 42, 49, 52, and 55) were used to measure this subscale (e.g., "No woman should be expected to care for a newborn baby alone"). PARI4 (Husband and wife incompatibility) referred to conflicts between the father and mother regarding child-rearing and a father who is emotionally absent and does not help the mother. Six items (8, 19, 33, 40, 48, and 54) were used to measure this subscale (e.g., "Some issues between parents cannot be resolved with a light discussion"). PARI5 (Harsh discipline) referred to negative attitudes toward child-rearing and included aggression, strict discipline, the suppression of sexual behavior, and absolute dominance of parents. Sixteen items (5, 10, 15, 20, 24, 25, 30, 35, 39, 43, 47, 50, 53, 56, 58, and 60) were used to measure this subscale (e.g., "The best adults emerge from children who are brought up with strict rules"). High scores from the dimensions show that the respondents support the attitude mentioned in this dimension. Other than the democratic attitude dimension, high scores from all the other dimensions show a negative parental attitude. In our study, Cronbach's alpha values for mothers, fathers, and adolescents were found to be 0.90, 0.87, and 0.88, respectively.

Hamilton Depression Rating Scale was developed by Hamilton²⁹ to measure the severity of depression. The 17-item, 4 points Likert scale has a maximum score of 53. Scores ≥ 14 are indicative of depression. The Turkish version of the scale was reported to be valid and reliable for use, and the Cronbach's alpha value was found to be 0.75.³⁰ The participants in each study group filled in the scale taking into account their own situation. In our study, Cronbach's alpha value was found to be 0.91.

Hamilton Anxiety Rating Scale was developed by Hamilton³¹ to determine the level of anxiety and distribution of symptoms and to measure the change in symptom severity. In this study, the inter-rater reliability was found to be between 0.91 and 0.95. It consists of 14 items that assess both mental and somatic symptoms. Each item is in a 4-point Likert type. The Turkish version of the scale was reported to be valid and reliable for use in Turkey by Yazıcı et al.³² The participants in each study group filled in the scale taking into account their own situation. In our study, Cronbach's alpha value was found to be 0.86.

The Liebowitz Social Anxiety Scale was developed by Liebowitz³³ to measure social anxiety levels and is made up of two subscales: anxiety and avoidance. The scale includes 24 items, the first subscale has 11 items for social relationships and the second one has 13 items for performance. The 4-point Likert-type scale measures the intensity of fear and avoidant behaviors during the previous week. The correlations and alpha coefficients for all the LSAS scales and subscales are high. Soykan et al.³⁴ studied the scale's reliability and validity in Turkey and reported its internal validity (Cronbach's alpha) 0.96. The participants in each study group filled in the scale taking into account their own situation. In this way, the anxiety and avoidance

levels of parents (mother and father) and adolescents in social situations will be determined. In our study, Cronbach's alpha values for mothers, fathers, and adolescents were found to be 0.89, 0.93, and 0.95, respectively.

The Structured Clinical Interview for DSM-IV Axis I Disorders is a semi-structured interview for establishing the presence of major DSM-IV Axis I diagnoses. The interview takes about 25-60 min. Reliability studies with SCID-I have shown moderate to excellent levels of inter-rater agreement.³⁵ In our study, because all SCID-I interviews were conducted by the same psychiatrist, an inter-rater agreement could not be determined. The scale was developed by First et al.³⁶ it was adapted to Turkish by Özkürkçügil et al.³⁷ and the validity and reliability of the scale were established.

Statistical Analysis

We hypothesized the following: H1: Adolescents whose parents have high levels of overprotection have high levels of social anxiety and avoidance. General linear model-multivariate analysis (2×2 MANOVA) was used for that. H2: Adolescents whose parents have high levels of social anxiety and avoidance have high levels of social anxiety and avoidance. Independent *t*-tests were used for that.

Descriptive statistics are given as mean (SD) or median and interquartile range (IQR) for continuous variables and frequency (n) and percentage (%) for categorical variables. Independent *t*-tests, Mann-Whitney U-test, Fisher's exact test, and chi-square tests for comparative analysis and general linear model-multivariate analysis (2×2 MANOVA) were used for parental attitudes and social behaviors regarding adolescent's gender and group effect in adolescents and their parents; MANCOVA was used for analysis in the mothers' group because of the difference in mothers' education level. We also used MANCOVA in group 1 and group 2 to control the interfering effect of depressive symptoms. Bonferroni correction is used in multiple comparisons in order to prevent inflating of significance in multiple comparisons. In multiple comparisons, the corrected alpha ($\alpha' = \alpha/m$) is calculated by dividing alpha (α) by the number of comparisons (m). Then, each H(i) hypothesis is tested against this new alpha (corrected alpha - α') level. On the other hand, adjusted *P* values (*P'*) can also be calculated for these multiple H(i) hypotheses. In this case, the *P'* value for each hypothesis will be P^*m . In our study, we used corrected *P* (*P'*) values instead of corrected α (α'). Risk factors were evaluated using binary logistic regression analysis by the forward conditional method. The significance level was established at $P < .05$. The Statistical Package of Social Sciences (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.) was used for analysis.

Results

Group Comparisons and Descriptive Statistics on Demographic and Familial Factors

We conducted independent *t*-tests and chi-square analyses to examine the baseline equivalence of group 1 and group 2 and two-parent groups on demographic variables. The results indicated that there was no statistically significant difference between group 1 and group 2 in terms of age, gender, education year, economic level, and employment (respectively: $P = .431$, $P = .179$, $P = .864$, $P = .124$). No statistically significant difference was found between the parents of the adolescents in terms of age ($P_{\text{mother age}} = .193$, $P_{\text{father age}} = .222$).

Mothers of group 2 had statistically significantly higher education years with a mean of 7.6 (4.9) years than 5.28 (3.2) years of mothers of group 1 ($P=.008$). Seventy percent of group 1 ($n=42$) and 63.33% of group 2 ($n=19$) reported their birthplace and residential area as an urban area ($P=.740$), and the migration rate was 11.66% ($n=7$) versus 13.33% ($n=4$). No statistically significant difference was found in terms of both variables ($P=.832$). Table 1 provides t -test and chi-square analyses and descriptive statistics for familial and demographic variables between group 1 and group 2.

Negative Life Events, Childhood, and Adolescence

In relation to the early childhood period, while 30% of the group 1 member ($n=18$) reported statistically significant higher parental loss, divorce, or separation rates in group 2, only two participants (6.66%) had a history of parental loss and divorce ($P=.012$). The primary caregiver was mostly parents in group 1 and group 2 between 0 and 6 years and was not statistically significant (respectively 93.33% [$n=56$] vs 100% [$n=30$], $P=.553$). Thirty-five percent of group 1 members ($n=21$) reported experiencing violence in the family; it was 16.66% in group 2 ($n=5$). The difference between the groups was not statistically significant ($P=.070$). Eight adolescents with SP (13.33%) reported negative life events related to SP onset. They reported failure at education, but not at a significant level ($P=.832$). The groups were also similar for marital status, occupation, and education level (respectively: $P=.077$, $P=.482$, and $P=.864$). There were no statistically significant differences (Table 1).

Group Comparisons on Clinical Variables

Comorbidity rates in group 1 were as follows: depression ($n=5$, 8.33%), obsessive-compulsive disorder ($n=2$, 3.33%), impulse control disorders ($n=2$, 3.33%), panic disorder ($n=1$, 1.66%), and others ($n=2$, 3.33%). No psychiatric disorder was found in group 2. The severity of depression (median=4) and anxiety (median=16) in group 1 was statistically higher than group 2 (Mann-Whitney U-test, $P_{\text{depression}}=.038$, $P_{\text{anxiety}}<.001$). The rate of at least one suicide attempt was 11.66% ($n=7$) in group 1. There is no suicide attempt in group 2 and no statistical difference was found (Fisher's exact test, $P=.090$). Group 1 and group 2 showed a non-significant difference in the rates of separation anxiety (28.33%, $n=17$ for group 1 and 13.33%, $n=4$ for group 2) in the childhood period ($P=.113$) (Table 2).

Table 2. Clinical Characteristics of the Groups

	Group 1, n (%)	Group 2, n (%)	P
Comorbidity (yes)	15 (25)	3 (10)	.094
Suicide (yes)	7 (11.66)	0 (0)	.090 [†]
Smoking (yes)	3 (5)	3 (10)	.370
Alcohol abuse (yes)	4 (6.66)	2 (6.66)	1.000
Separation anxiety (childhood) (yes)	17 (28.33)	4 (13.33)	.113
Mother, psychiatric disorder (yes)	10 (16.66)	1 (3.33)	.092
Father, psychiatric disorder (yes)	4 (6.66)	2 (6.66)	1.000
Family, psychiatric disorder (yes)	15 (25)	3 (10)	.094

Group 1 represents adolescent with social phobia.

Group 2 represents healthy adolescents.

[†]Fisher's exact test for 2×2 contingency tables.

Three adolescents (8.33%) were smoking, and four adolescents ($n=6.66\%$) were using alcohol in group 1. There was no statistically significant difference between the groups in terms of smoking and alcohol use (respectively: $P=.370$, $P=1$). Family histories of psychiatric disorders were reported as 25% ($n=15$) versus 10% ($n=3$) in group 1 and group 2. There was no significant difference between group 1 and group 2 in terms of comorbid psychiatric disorders ($P=.092$). The comorbid psychiatric disorders in the family of groups 1 and 2 were similar and no statistically significant difference was found ($P=.094$) (Table 2).

Parental Anxiety-Avoidance Behaviors

H1 hypothesis was confirmed by analysis. We used 2×2 MANCOVA to investigate adolescents' gender and group (group 1 and group 2) effects and covariance of depression. We found that LSAS anxiety-avoidance scores were statistically significantly higher in group 1 (Father: $F_{\text{group}}=3.712$, $P=.031$, Mother: $F_{\text{group}}=3.427$, $P=.038$). After controlling for mothers' educational level, we found only a statistically significant group effect for the fathers' group's avoidance subscale ($P=.008$). There was no statistically significant effect of adolescents' gender on any outcome variable ($P_{\text{mother}}=.923$, $P_{\text{father}}=.582$) (Table 3).

Parental Attitudes

H2 hypothesis was confirmed by analysis. Parental attitudes of group 1 and group 2 were compared with regard to gender through the PARI subscales. Both parents reported higher overprotective mothering (PARI1) styles. For mothers, the total year of education was used as a covariate in the analysis because of the significant difference in the mother's education levels. The results of multivariate analysis of mothers' and fathers' PARI measures showed statistically significant differences for groups 1 and 2 as follows: PARI_{mother} $P=.001$; PARI_{father} $P=.042$.

Univariate analyses were examined for group differences. The mothers and fathers of group 1 had statistically significantly higher scores than the mothers and fathers of the control group in the overprotective mothering subscale ($P_{\text{MotherPARI1}}<.001$, $P_{\text{FatherPARI1}}=.009$). No statistically significant group or gender differences were found in other parenting attitudes ($P>.05$) (Table 4).

Regression Analysis

We applied binary logistic regression analysis by the conditional forward method. In the analysis, the group (group 1 vs group 2) was the dependent variable and the patients' and parents' LSAS and PARI subscale scores, presence of negative life events, and separation anxiety were independent variables.

According to the logistic regression analysis results, the mothers' overprotective attitude and the fathers' avoidance levels were statistically significant predictive factors for adolescents' SP (respectively; $\beta=0.868$ and $P=.002$; $\beta=0.927$ and $P=.017$) (Table 5).

Discussion

According to current models, the development of SP depends on individual factors like genetics, temperament, and traumatic experiences in childhood and also social factors such as parenting, attachment styles, peer relationships along with cultural factors.^{2,38,39} In this article, we aimed to evaluate whether SP in adolescence is associated

Table 3. MANOVA and ANOVA Results According to Mother and Father LSAS Scores

Dependent Variable		Mean (SD)	Std. Err.	Sig.	95% CI	
					Lower Bound	Upper Bound
Father LSAS-Ax	Group 1	46.87 (10.1)	2.07	0.058	42.72	51.02
	Group 2	41.10 (12.2)	2.14		36.80	45.40
Father LSAS-Av	Group 1	46.72 (10.3)	1.96	0.008	42.80	50.65
	Group 2	38.97 (10.9)	2.02		34.90	43.03
Mother LSAS-Ax	Group 1	51.68 (14.4)	1.97	0.024	47.74	55.61
	Group 2	44.31 (11.2)	2.52		39.28	49.35
Mother LSAS-Av	Group 1	50.59 (12.4)	1.90	0.014	46.79	54.39
	Group 2	42.81 (10.9)	2.44		37.94	47.67

Covariates appearing in the model are evaluated at the following values: depression score = 4.569 ± 2.97.

Multivariate test results for Father’s LSAS scores: $F_{group} = 3.712, P = .031; F_{Gender} = 0.547, P = .582; F_{Group*Gender} = 0.984, P = .380$.

Multivariate test results for Mother’s LSAS scores: $F_{group} = 3.427, P = .038; F_{Gender} = 0.080, P = .923; F_{Group*Gender} = 1.261, P = .290$.

According to this table, while the social anxiety scores of the parents caused a significant difference between the groups, no significant effect of gender or group*gender interaction was found (for father, $P = .380$ and for mother $P = .290$).

MANOVA, Multivariate Analysis of Variance; ANOVA, Analysis of Variance; LSAS, Liebowitz Social Anxiety Scale.

with specific parental attitudes, parental social anxiety and avoiding behaviors, and the gender effect of both parents and adolescents on these parameters.

After controlling for mothers’ educational level, we found that -not mothers’ social anxiety and avoidance- only father’s social avoidance

were predictors for SP. Early research usually focused on the behaviors of mothers, but growing literature examined the role of anxious behaviors of fathers. Paquette⁹ described the father-child “activation relationship” (different from the mother-child “attachment relationship”), which is also called CPB, as active verbal and physical behaviors of fathers’ that encourage independence, curiosity, and competition.

Table 4. MANOVA and ANOVA Results According to Adolescent, Mother, and Father PARI Scores

	Groups	Mean (SD)	Std. Err.	Sig.	95% CI	
					Lower Bound	Upper Bound
Mother PARI1	Group 1	49.79 (7.6)	1.10	<0.001	47.58	51.99
	Group 2	42.76 (6.8)	1.45		39.85	45.67
Mother PARI2	Group 1	23.25 (3.3)	0.46	0.294	22.32	24.18
	Group 2	22.43 (2.8)	0.61		21.20	23.66
Mother PARI3	Group 1	30.64 (7.7)	1.04	0.915	28.56	32.71
	Group 2	30.45 (5.4)	1.37		27.71	33.19
Mother PARI4	Group 1	16.76 (3.6)	0.51	0.070	15.73	17.79
	Group 2	15.18 (3.2)	0.68		13.81	16.54
Mother PARI5	Group 1	39.37 (8.7)	1.24	0.414	36.88	41.85
	Group 2	37.67 (7.5)	1.64		34.40	40.95
Father PARI1	Group 1	48.64 (8.3)	1.30	0.009	46.04	51.25
	Group 2	43.56 (6.4)	1.36		40.83	46.30
Father PARI2	Group 1	23.13 (3.7)	0.63	0.327	21.86	24.41
	Group 2	22.22 (3.4)	0.66		20.88	23.56
Father PARI3	Group 1	30.46 (5.6)	1.06	0.060	28.34	32.59
	Group 2	27.51 (6)	1.11		25.27	29.74
Father PARI4	Group 1	14.19 (3.3)	0.61	0.093	12.96	15.41
	Group 2	12.67 (3.3)	0.64		11.38	13.96
Father PARI5	Group 1	38.02 (7.5)	1.28	0.438	35.44	40.60
	Group 2	36.56 (6.6)	1.35		33.85	39.26

Group 1 represents the adolescents with social phobia.

Group 2 represents healthy adolescents.

PARI1, Overprotective mothering; PARI2, Democratic behaviors and definitions of equality; PARI3, Mothers’ rejection of housewife role; PARI4, Husband and wife incompatibility; PARI5, Harsh Discipline.

Multivariate test results for Mother’s PARI scores: $F_{group} = 5.105, P = .001; F_{Gender} = 0.565, P = .726; F_{Group*Gender} = 0.661, P = .654$.

Multivariate test results for Father’s PARI scores: $F_{group} = 2.502, P = .042; F_{Gender} = 1.367, P = .251; F_{Group*Gender} = 0.288, P = .918$.

According to this table, maternal PARI scores (overall) have a significant effect in the group with social anxiety. The univariate analysis determined that maternal PARI1, one of the PARI sub-dimensions, had a significant effect ($P < .001$), while other subgroups (PARI2, 3, 4, and 5) did not (respectively: $P = .294, P = .914, P = .070, P = .414$). Finally, paternal PARI scores (overall) have a significant effect in the group with social anxiety. The univariate analysis determined that paternal PARI1, one of the PARI sub-dimensions, had a significant effect ($P = .009$), while other subgroups (PARI2, 3, 4, and 5) did not (respectively: $P = .327, P = .060, P = .093, P = .438$).

MANOVA, Multivariate Analysis of Variance; ANOVA, Analysis of Variance; LSAS, Liebowitz Social Anxiety Scale.

Table 5. Binary Logistic Regression Analysis of Predictor Variables in SP Group

	Sig.	Exp(β)	95% CI for Exp(β)	
			Lower	Upper
Father LSAS-Av	0.017	0.927	0.870	0.987
MotherPARI1	0.002	0.868	0.793	0.950
Constant	0.000	19 482.16	-	-

Adjusted R^2 : 0.382 and P value for Omnibus test: .008.

SP, social phobia.

Other variables and their P values included in the logistic regression analysis but not found to be significant: MotherLSAS-Ax, $P = .167$; MotherLSAS-Av, $P = .199$; Negative life event at onset, $P = .216$; Separation anxiety (childhood), $P = .457$; Father PARI1, $P = .231$.

Recent studies revealed that children are more susceptible to paternal signals,^{10,13} and CPB prevents the development of anxiety in children.¹⁰⁻¹³ Besides, in a study that includes all anxiety disorders, SP has been reported to show familial transmission differently from other anxiety disorders, and fathers have a critical role in that.¹⁷ We found that similar to the literature, adolescents were more sensitive to anxiety and avoidance signals from the father-like children, and fathers' social avoidance was a predictor for SP. Fathers with social avoidance behaviors may have shown low CPB and may have played a role in SP development.¹⁷

In our study, when we examined different perspectives of family members on five parental attitudes, "overprotective mothering" was observed by both fathers and mothers in adolescents with SP. However, overprotective mothering has been found as a predictor of SP. Overprotection inhibits gaining social skills and a sense of competency besides the development of autonomy in a child; also, the environment is perceived as unrestrainable, and child anxiety develops eventually.²² In childhood research, although overprotectiveness was identified as a factor in developing all anxiety disorders,^{3,10,11,22,40} it was found mostly associated with SP.^{17,41} However, recent studies have shown that neither mothers' nor fathers' overprotective attitude is related to the development of anxiety⁸; furthermore, it has been reported that the mothers' overprotectiveness reduces the development of anxiety.¹³ This finding has emerged contrary to¹³ hypotheses and has been explained as some degree of overprotection may be normative in the early years, and the parents of the sample from relatively high SES may not have exhibited more overprotective behaviors that may provoke child anxiety.⁸

As well as contradictory results in childhood research, there are few studies on the perspectives of adolescents on parenting styles in spite of mid-adolescence being the other risky period for SP onset. Van Zalk et al²⁶ reported that mothers' overprotectiveness was increased at the end of 2 years in boy adolescents with SP, while fathers' overprotectiveness reduces the development of SP. They stated fathers' over-control might be associated with signals of assertiveness and confidence rather than restraint for boys. In Mak et al's study,²³ father rejection was reported to increase the development of SP. Türe et al⁴² and Ghazwani et al⁴³ reported that adolescents with social anxiety perceive as overprotectiveness of their parents. On the other hand, Dwairy et al⁴⁴ indicated that any mental illnesses were not related to authoritarian parenting style.

Conflicting findings regarding the overprotectiveness in the literature may be related to different sampling ages, whether to temperament

characteristics of the children are taken into account, and the difference in measurement instruments. In our study, parental attitudes were evaluated with PARI, and it was found that an overprotective mothering attitude was a predictor of the development of SP. There was no difference in the subscales of democratic attitude, rejection, marital discord, and strict discipline, which are the other subscales of PARI. In one of the studies conducted with PARI in the literature, it was seen that the democratic attitude increased social initiative in adolescents.⁴⁵ In another study, the democratic attitude was more common in parents of children with SP, and they attributed this result to the absence of fathers' data in the study.⁴⁶ Although studies with PARI⁴⁷⁻⁴⁹ seen that the scale was applied to both parents, some questions about overprotection (It is a mother's duty to make sure she knows her child's innermost thoughts.) and almost all questions about rejection (Mothers often feel that they cannot stand their children a moment longer.) are related to the mother. In our study, the evaluation of the difference in parental attitudes according to parental gender may have been limited. On the other hand, most of the items pertain to the cognitive aspect of attitudes. Hence, it may have not exactly reflected the practice in the family. Therefore, we suggest conducting prospective and observational studies in which the attitudes of both parents are taken into account separately in SP development.

We can state that the strengths of this paper are the adolescence with SP and non-clinical adolescents, the evaluation of both parents, and the evaluation of the effect on the gender of both adolescents and the parents. Second, the elaboration of familial and environmental variables in the youth period provided multi-dimensional and multi-informant evaluations in the investigation of variables related to the etiology of SP. On the other hand, the retrospective nature of the data and small size, lack of evaluation of parental psychopathology by standardized tools, and use of a self-report scale for parental attitudes are the limitations simultaneously.

We have attempted to focus on the association between environmental factors and gender in SP with the comparative non-clinical group and their parents for modeling the associated risk factors in adolescence. Similar to the literature on childhood anxiety and parenting styles, a reciprocal relationship seems to continue between parental attitudes and anxiety-avoidance behaviors. However, no sufficient evidence supports a causal effect. The fact that both of the parents, but not adolescents, reported overprotective mothering and also fathers' significantly higher avoidance levels indicate the necessity of considering both of the parents in the research. We suggest that controlled prospective future studies on different ages, diagnostic groups, and cultures, which will take the gender of both parents and patients into account, may reveal important data on parenting behavior and social anxiety.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of Dışkapı Yıldırım Beyazıt Training and Research Hospital (approval No:19/38).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

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Interpretation – M.U., S.Ö.; Literature Review – G.Ö., E.K., G.C.; Writing – G.Ö., S.Ö.; Critical review – M.U., S.Ö.

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