



## The role of individual temperament, family and peers in social anxiety disorder: A controlled study

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**ABSTRACT.** In the present *ex post facto* study the influence of inhibition, attachment styles, parental rearing styles and social comparison in social anxiety disorder was investigated. First, we studied the isolated effect of each variable through the comparison of two clinical groups and a control group. Then we analysed the action of these variables altogether, using the structural equation model, controlling eventual mediator effects. The sample consisted of adolescents with ages between 12 and 18 years old, who were distributed by three comparison groups: social phobia, other anxiety disorders and normal controls. A structured clinical interview and self-report instruments were used for/in youth assessment. Results showed a specific effect of inhibition and social comparison in social anxiety disorder. The structural equation model outlined the combined action of inhibition, social comparison and peers attachment quality in what concerns the prediction of social anxiety as well as the mediation role of social comparison through the effect of other variables. Although this study presents some limitations, its results contribute to the understanding of some of the ways of development and maintenance of social anxiety during adolescence.

**KEY WORDS.** Adolescents. Social anxiety. Attachment relationships. Parental rearing styles. *Ex post facto* study.

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**RESUMEN.** El presente estudio *ex post facto* informa sobre la influencia de la inhibición, estilo de apego, estilo de crianza de los hijos y comparación social sobre el trastorno de ansiedad social. Primero, se estudió el efecto aislado de cada variable mediante la comparación de dos grupos clínicos y un grupo control. Después, se analizó la influencia de estas variables en su conjunto, utilizando un modelo de ecuación estructural, controlando posibles efectos mediadores. La muestra estaba compuesta por adolescentes con edades entre 12 y 18 años, quienes fueron distribuidos en tres grupos de comparación: fobia social, otros trastornos de ansiedad y grupo control. Se utilizó una entrevista clínica estructurada e instrumentos de autoinformes para la evaluación de los jóvenes. Los resultados demuestran un efecto específico de la inhibición y la comparación social en el trastorno de ansiedad social. El modelo de ecuación estructural demostró un efecto combinado de la inhibición, comparación social y la calidad de apego a los iguales como predictores de la ansiedad social, igual que el rol mediador de la comparación social mediante el efecto de otras variables. Aunque este estudio presenta algunas limitaciones, sus resultados contribuyen al entendimiento de algunas de las vías de desarrollo y mantenimiento de la ansiedad social durante la adolescencia.

**PALABRAS CLAVE.** Adolescentes. Ansiedad social. Relaciones de apego. Estilo de crianza de los hijos. Estudio *ex post facto*.

Social anxiety disorder (or social phobia) is defined, according to Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition (DSM-IV), as «a marked and persistent fear of social or performance situations in which embarrassment may occur» (American Psychiatric Association, 2002) (p. 442). It is a common clinical disorder in childhood and adolescence, with prevalence rates in general population between 1.10 and 13.10% (Costello, Egger, and Angold, 2004). It is also associated with the development of psychosocial difficulties like poor academic performance (Beidel, Turner, and Morris, 1999) and with emotional difficulties like depression (Wittchen, Stein, and Kessler, 1999) or substance use (Burke and Stephens, 1999; Wittchen *et al.*, 1999). Simultaneously, the adolescents with high social anxiety suffer a significant alteration of their normative social development because of the discomfort felt in social interactions and consequent avoidance (Albano and Hayward, 2004; La Greca, 2001). These difficulties in childhood and adolescence have been associated with a poor interpersonal and psychological functioning in adult life (Ingersoll, 1989; Stein *et al.*, 2001). Given the prevalence and the negative potential consequences of high social anxiety in adolescence, it is crucial to have a deeper understanding about the complexity involved in the development and maintenance of this disorder in order to promote empirically based early intervention programs and effective therapeutic strategies for adolescents (Olivares-Rodríguez, Rosa-Alcázar, and Olivares-Olivares, 2006). Like the majority of other disorders, the development of social phobia is influenced by a complex interaction of biological and environmental factors (Albano and Hayward, 2004; Beidel, Morris, and Turner, 2004; Sweeney and Pine, 2004). The associations between etiological factors are not linear and a great diversity of ways can be found in individual etiology. Knowing that this disorder is

multi-determined, we selected factors of different natures to understand the relations between them and with social anxiety disorder: behavioural inhibition in childhood as the temperamental factor, attachment style with significant figures and parental rearing styles as the family variables, and peers comparison as the social factor.

Behavioural inhibition (BI) is defined by Kagan and his colleagues (Kagan, Reznick, and Gibbons, 1989) as a temperamental disposition responsible for the inhibition in response to new social and non-social events. Research has shown that behavioural inhibition is associated with anxiety disorders, especially social anxiety disorder (Biederman *et al.*, 2001; Hayward, Killen, Kraemer, and Taylor, 1998; Mick and Telch, 1998; Schwartz, Snidman, and Kagan, 1999; Van Ameringen, Mancini, and Oakman, 1998). In the perspective of family contribution to the development and maintenance of social phobia, the importance of affective bonds, parental rearing styles and parental models (regarding social questions and restrictive exposure to social situations) has been shown.

Insecure attachment has been consistently linked to clinical and sub-clinical anxiety in many age groups. This association can be greater in the presence of a temperamental vulnerability to anxiety, although this evidence is still inconclusive (Manassis, 2001). According to several studies, the insecure attachment seems to be a risk factor for the development of anxiety disorders, while the secure attachment can be protective (Muris and Meesters, 2002; Warren, Huston, Egeland, and Sroufe, 1997).

Concerning the influence of parenting practices, several studies have shown that the rearing styles based on overprotection/control, rejection, as well as the lack of emotional support play a significant role in the child's or adolescents' attitudes in face of social threat (Arrindell, Emmelkamp, Monsma, and Brilman, 1983; Bruch and Heimberg, 1994; Rapee and Melville, 1997).

Following the evolutionist models, the concept of social comparison can also contribute to understand the development and maintenance of social anxiety. Even though there is some inconsistency among the results, mostly support the hypothesis of Trower's and Gilbert's model, showing that social interactions of anxious people are characterized by behavioural strategies of greater submission and lesser dominancy. A tendency of a negative relation between social anxiety and cooperative behaviours is also prominent (Gilbert and Trower, 2001; Trower and Gilbert, 1989; Walters and Hope, 1998; Walters and Inderbitzen, 1998). Regarding social comparison, the data showed that individuals with social anxiety compare themselves in a more negative way than individuals with low social anxiety - both in hierarchic terms as well as in terms of social adjustment (Allan and Gilbert, 1995; Gato, 2003; Gilbert and Allan, 1994).

The purpose of this study<sup>2</sup> was to investigate the contribution of each one of the selected variables (behavioural inhibition, rearing and attachment styles and social comparison) as well as its combined action to understand social anxiety disorder in

<sup>2</sup> The present study is part of a broader research project on social anxiety in adolescence aimed to know the prevalence, nature and interference in Portuguese adolescents' lives as well as to identify the developmental pathways (Cunha, 2005).

young adolescents. We were interested in studying the contribution of each one of these variable to social anxiety disorder through the comparison between adolescents with a social anxiety disorder diagnosis and two control groups of adolescents with other anxiety disorders and non psychiatric controls. In a different perspective in which social anxiety is conceptualized in a continuous dimension, we tested, through the use of the structural equation model, the role of the combination of the studied variables, controlling the possible mediators effects.

## Method

### Participants

From a representative community sample of adolescents with ages between 12 and 18 years old, used in the research project on social anxiety in adolescence (Cunha, 2005), a subsample of 301 adolescents was assessed through the use of a structured clinical interview and various self-report instruments. Based on the clinical interview (Anxiety Disorder Interview for Children-ADIS-IV, Silverman and Albano, 1996) data, 3 comparison groups were recruited (180 individuals in total): SP – adolescents with a diagnosis of social phobia; OAD – adolescents with other anxiety disorders different from social phobia and NC – normal controls without psychopathology. The final sample for this study was composed by 180 individuals (see Table 1).

The social phobia group (SP) included 76 individuals (27 boys and 49 girls) and the other anxiety disorders (OAD) group had 28 individuals (11 boys and 17 girls). The constitution of the normal group (NC) was based on the demographic characteristics of the social phobia group, given that we were particularly interested in the comparison between these two groups. With the purpose of eliminating the highest possible number of differences between adolescents with social phobia and the control group, we tried to equal these two samples in variables we considered particularly important (sex, age, school years and social-economical status).

The three groups did not differ on age, [ $F_{(2, 177)} = .29; p = n.s.$ ] or on educational level [ $F_{(2, 177)} = .81; p > .05$ ]. The proportion of boys and girls did not differ across groups ( $\chi^2 = .14; p > .05$ ), or on social economic status ( $\chi^2 = 5.76; p > .05$ ).

**TABLE 1.** General characteristics of comparison groups.

	NC (n = 76)		SP (n = 76)		OAD (n = 28)		Total (N=180)	
Gender								
Boys	27	35.53%	27	35.53%	11	39.29%	65	36.11%
Girls	49	64.47%	49	64.47%	17	60.71%	115	63.88%
Age								
12-13	28	36.84%	29	38.16%	14	50.00%	71	39.44%
14-15	17	22.37%	17	22.37%	5	17.86%	39	21.67%
16-18	31	40.79%	30	39.47%	9	32.14%	70	38.89%
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
	14.66	2.08	14.61	1.93	14.32	2.13	14.58	2.02

**TABLE 1.** General characteristics of comparison groups (Cont.).

	NC (n = 76)		SP (n = 76)		OAD (n = 28)		Total (N=180)	
School Years								
7°, 8°, 9°	42	55.26%	37	48.68%	17	60.71%	96	53.33%
10°, 11°, 12°	34	44.74%	39	51.32%	11	39.29%	84	46.67%
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
	9.36	1.87	9.32	1.80	8.86	1.86	9.26	1.83
SES								
Low	25	32.89%	25	32.89%	16	57.14%	66	36.67%
Medium	42	55.26%	40	52.63%	10	35.71%	92	51.11%
High	9	11.84%	9	11.84%	2	7.15%	20	11.11%

Note. NC = Normal Control group; SP = Social Phobia group; OAD = Other Anxiety Disorders group; SES = Social economic status.

*Instruments*

Clinical diagnoses were established through the use of the Anxiety Disorders Interview Schedule for Children, according to the DSM-IV criteria: ADIS-IV (Silverman and Albano, 1996). The other psychological dimensions were assessed through the use of self-report instruments: two social anxiety measures (SAS-A and SAASA), one measure of attachment to parents and to peers (IPPA), one measure of behavioural inhibition (RSRI), one measure of parental rearing styles (EMBU) and one measure of social comparison (SCS).

- The Anxiety Disorders Interview Schedule for Children (*ADIS-C for DSM-IV*; Silverman and Albano, 1996) assesses the diagnosis of anxiety disorders, affective disorders and attention-deficit and hyperactivity disorder (Silverman and Albano, 1996). The ADIS allows the access to the total number of anxiety symptoms, clinical diagnoses and interference level of each one of the identified diagnoses. Besides the child assessment, there is also a 9-point scale - 0 (*absent*) to 8 (*very severe*) for the severity classification of problems, according to the clinical perspective (CSC - Clinical Severity Classification). Studies by Silverman and colleagues on the test-retest reliability of anxiety disorders symptoms and diagnoses indicated an excellent precision for separation anxiety disorder and specific phobia and a good reliability for the social phobia and generalized anxiety disorder diagnoses (Silverman, Saavedra, and Pina, 2001). ADIS-C validity has also been empirically supported, showing a good results for the social phobia (Wood, Piacentini, Bergman, McCracken, and Barrios, 2002).
- The Social Anxiety Scale for Adolescents (SAS-A) evaluates the experiences of social anxiety of adolescents in the context of the relationships between peers (La Greca and Lopez, 1998). It is a self-report scale composed by 22 items. These are evaluated in a Likert-like scale with 5 scores, where, the higher the total scores of the scale, the greater the measured social anxiety. The scale also allows to also obtain 3 results based on the factors or sub-scales that compose it; *FNE* (*Fear of Negative Evaluation*), *SAD-New* (*Social Anxiety Distress in New Situations*) and *SAD-General* (La Greca, 1999). The Portuguese version of this

instrument, applied in a sample of 2190 adolescents, with ages between 12 and 18 years, showed good internal consistency (Cronbach  $\alpha = .88$ ) as well as a factorial structure identical to the one found by its authors (Cunha, 2005; Cunha, Pinto-Gouveia, Alegre, and Salvador, 2004).

- The Social Anxiety and Avoidance Scale for Adolescents (SAASA; Cunha, Pinto-Gouveia, Salvador, and Alegre, 2004) is composed of 34 social situations that evaluate the level of anxiety and avoidance they cause. The scale is comprised of two subscales, the sub-scale of *Discomfort/anxiety* and the sub-scale of *Avoidance*, which allow obtaining not only a total score but also scores for each sub-scale. The response to each item from both sub-scales, varies from 1 (*not anxious and never avoid*) to 5 (*very anxious and avoid almost always*). This scale showed good psychometric properties, good internal consistency (.91 to the *Discomfort/anxiety* sub-scale and .87 to the *Avoidance* sub-scale) and adequate scores to temporal fidelity ( $r = .74$  and  $r = .71$ , to the sub-scale of *Discomfort/anxiety* and *Avoidance*, respectively) (Cunha, 2005; Cunha, Pinto-Gouveia, Salvador and Alegre, *et al.*, 2004). The factor analysis studies using Analysis of Principal Components and Confirmatory Factor Analysis have shown the existence of six different factors: a) *Interaction in new situations*; b) *Interaction with the opposite sex*; c) *Performance in formal situations*; d) *Assertive interaction*; e) *Being observed by others*; and f) *Eating and drinking in public* (Cunha, 2005; Cunha, Pinto-Gouveia, and Salvador, in press).
- The Retrospective Self-Report of Inhibition (RSRI; Reznick, Hegeman, Kaufman, Woods, and Jacobs 1992) is composed of 30 questions which evaluates, retrospectively, individual's behavioural inhibition during childhood (up to the sixth grade). The content of the questions is based on the definition of inhibition as a tendency of uncertainty and doubt that are often expressed as fear and worry in social and non-social situations. Each question is answered in a Likert-like scale with 5 scores where the higher the score, the greater the behavioural inhibition measured. This scale showed a good psychometric characteristics (Reznick, *et al.*, 1992). The results demonstrated a good internal consistency (Cronbach  $\alpha = .79$  for all 30 questions). Factorial analyses showed the existence of two distinct factors: the first, *School/social situations* comprise the items related with school and other social situations; the second factor, *Fears/illness*, refers to situations related with fears and illness in general. The Portuguese version of this scale has shown equally reasonable psychometrical data, with internal consistency scores of .86 for the total of the scale and of .84 and .70 for the two factors (Morgado and Pinto-Gouveia, 2004).
- The Inventory of Parent and Peer Attachment (IPPA), elaborated and revised by Armsden and Greenberg (1987b), is a 75-item questionnaire which evaluates the attachment quality of the adolescents to their mother, father and peers. The items of this instrument evaluate behaviours, cognitions and emotional states that comprise trust, understanding, mutual respect, accessibility and responsiveness of the figures, and also emotional states like rage, irritation, resentment directed to these figures, as well as detachment or isolation in the relationship with each

of these figures (Armsden and Greenberg, 1987a, 1987b). Concerning the classification of individual attachment differences (according to the authors), individuals can be classified as showing a secure or insecure attachment in each of the three scales, if the results are, respectively, above or below the median. The Portuguese version of IPPA has shown good psychometric characteristics, namely a good internal consistency and validity (Neves, Soares, and Silva, 1999). A factorial analysis of the item set showed, like in the revised American version, a structure that is composed by three factors, those concerning the attachment to father, peers and mother. The alpha coefficients from IPPA scales were elevated, .92, .95, and .93, for the scales *Mother*, *Father* and *Peers*, respectively.

- The Social Comparison Scale (SCS; Allan and Gilbert, 1995) evaluates the way in which the individuals compare themselves in their relationship/interaction with others. This scale was developed in the theoretical context of the evolutionist model of Trower and Gilbert (Gilbert and Trower, 2001; Trower and Gilbert, 1989), and focuses on social comparison, taking into consideration its adaptive function in the formation of dominance and group cohesion hierarchies. Using a differential semantic methodology, this instrument evaluates social ranks relative to power and force comparisons (*e.g.*, inferior, superior), to talent and social attraction comparisons and to acceptance from others comparisons (*e.g.*, adequate, inadequate). The higher the score, the more positive the way the individual evaluates him/herself. A good internal consistency (Cronbach  $\alpha = .91$ ) was found in a study with a sample of students and the factorial structure showed the existence of two pure factors of rank and social group fit (Allan and Gilbert, 1995). The Portuguese version of this instrument has shown good psychometric characteristics, with Cronbach alpha values between .88 and .89 (Cunha, 2005; Gato, 2003). Also, factorial studies confirmed the existence of two distinct factors referring to social rank and social group fit (Gato, 2003).
- The Inventory for Assessing Memories of Parental Rearing Behaviour (EMBU; Arrindell *et al.*, 1983) evaluates the occurrence frequency of certain rearing practices concerning the father and mother, separately, using a 4-score Likert-like scale that varies from *Not, never* to *Yes, most of the time*. The scale used in this study refers to the short version of EMBU, adapted for adolescents, developed by Arrindell and colleagues (1983, 1994) and composed by 23 items, divided in dimensions of *Rejection* (7 items), *Emotional support* (6) and *Overprotection* (10). The psychometric studies showed good reliability and validity indexes of this short version (Arrindell *et al.*, 1999). The application of the EMBU to adolescents was carried out in different studies with good results concerning its psychometric qualities (Arrindell *et al.*, 1994). The Portuguese version of this scale showed reasonable reliability (alpha coefficients of .81 for the mother and .78 for the father) and validity indexes (Canavarro, 1999). In factorial analyses studies that were carried out, factors found for father and mother were in accordance with the dimensions found in other studies, namely, *Emotional support*, *Rejection* and *Overprotection* (Canavarro, 1999).

### Procedure

The parents and adolescents' informed consent to participate in this *ex post facto* study (Montero and León, 2007) was previously asked. All the interviews were conducted individually by psychologists with previous training in the use of diagnostic interviewing, and were weekly discussed by the interviewer's team. The participants for clinical interview were recruited based on scores of social anxiety questionnaires they had filled previously in. The clinician interviewer was blind regarding the scores of the individuals in the social anxiety questionnaires, ignoring the percentile in which the interviewed adolescent was located. The other self-report instruments assessing the psychological dimensions (behavioural inhibition, social comparison, attachment, and rearing styles) were completed by participants in the context of the classroom, and their presentation order was balanced. The psychologists assistants were available throughout the testing to answer questions or provide help as needed.

The present document was edited following the norms by Ramos-Alvarez, Valdés-Conroy, and Catena (2006).

## Results

### *Study concerning the influence of temperamental inhibition on social phobia*

As the gender variable has shown to be related to the dependent variable (behavioural inhibition, assessed through the global measure of RSRI), we performed ANOVAS with two fixed factors to study the relation between behavioural inhibition and social phobia and the possible influence of gender in this relation.

Results have shown that the groups differ in terms of the global measure of inhibition in childhood [ $F_{(2, 174)} = 28.42; p < .001$ ], as well as in terms of inhibition at school/social situations [ $F_{(2, 174)} = 22.02, p < .001$ ] and in terms of fears/illnesses [ $F_{(2, 174)} = 12.13; p < .001$ ], assessed by the scale factors. As for the effect of the gender variable, results show that boys and girls differ between them in the way they evaluate behavioural inhibition [ $F_{(1, 174)} = 4.41, p < .050$ ] and in terms of *fears/illnesses* [ $F_{(1, 174)} = 4.39; p < .050$ ], exhibiting the girls significant higher levels. No interaction was found between gender and the comparison groups in what concerns the studied variables ( $p > .050$ ).

Tukey *post-hoc* tests allowed locating the differences between groups (Table 2). The SP group scored significantly higher than the normal control group ( $p < .001$ ) and than the OAD group ( $p < .05$ ), in the total of RSRI and in the factor of inhibition related to school or social situations ( $p < .001$ ). It is also noteworthy that the OAD group and the normal control group do not distinguish from each other in these two variables ( $p > .05$ ). Finally, in what concerns fears and illnesses, results show that the social phobics only differ from normal controls because they present significantly higher scores ( $p < .001$ ), and do not differ from adolescents with other anxiety disorders ( $p > .050$ ). The group of adolescents with other anxiety disorders does not differ from the normal control group ( $p > .05$ ).



**TABLE 2.** Means, standard deviations and multiple comparison tests for behavioural inhibition factors and total according to clinical groups.

	<i>Normal Control Group (NC)</i> ( <i>n</i> = 76)		<i>Social Phobia Group (SP)</i> ( <i>n</i> = 76)		<i>Other Anxiety Disorders Group (OAD)</i> ( <i>n</i> = 28)		<i>F</i>	<i>p</i>	<i>Post-hoc</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
RSRI - total	57.82	11.08	74.01	14.22	64.04	10.74	28.42	.000	SP>NC**; SP>OAD*
School/social sit.	25.97	6.54	33.99	7.89	28.43	7.18	22.02	.000	SP>NC**; SP>OAD**
Fears/illnesses	18.87	4.95	23.87	6.37	21.39	5.25	12.13	.000	SP>NC**

\*\* *p* < .001; \* *p* < .05

*Note.* RSRI = Retrospective Self-Reported Inhibition; School/social sit. = fears related with schools and social situations; Fears/illnesses = non social fears and illnesses.

*Study concerning the influence of attachment relations on social phobia*

According to the adaptation process of the attachment scale to the Portuguese population presented by Neves, Soares and Silva (1999), the individuals are classified as having a secure or insecure style of attachment in accordance with the results being above or under the median score. By following this procedure and attending to the median score of the total sample, it is possible to classify the participants of our study as having a secure or insecure pattern of attachment to the mother, father and peers. These data are presented in Table 3.

**TABLE 3.** Adolescent’s classification according secure or insecure parental and peer attachment

<i>Attachment</i>	<i>Normal Control</i>	<i>Social Phobia</i>	<i>Other Anxiety Disor.</i>
Mother	Secure <i>n</i> = 46 (61%)	Secure <i>n</i> = 33 (43%)	Secure <i>n</i> = 11 (39%)
	Insecure <i>n</i> = 30 (39%)	Insecure <i>n</i> = 43 (57%)	Insecure <i>n</i> = 17 (61%)
Father	Secure <i>n</i> = 45 (59%)	Secure <i>n</i> = 28 (39%) <sup>3</sup>	Secure <i>n</i> = 13 (46%)
	Insecure <i>n</i> = 31 (41%)	Insecure <i>n</i> = 41 (57%)	Insecure <i>n</i> = 15 (54%)
Peer	Secure <i>n</i> = 48 (63%)	Secure <i>n</i> = 29 (38%)	Secure <i>n</i> = 13 (46%)
	Insecure <i>n</i> = 28 (37%)	Insecure <i>n</i> = 47 (62%)	Insecure <i>n</i> = 15 (54%)

When comparing the three groups in what concerns the adolescents distribution in the styles of attachment to each of the attachment figures, we verify that there are significant differences in the attachment to peers [ $\chi^2_{(2)} = 9.67; p < .05$ ]. The SP group presents mainly the insecure style and the NC group the secure style. No significant differences between the three groups were found in the attachment to the mother [ $\chi^2_{(2)} = 5.97; p > .05$ ] and in the attachment to the father [ $\chi^2_{(2)} = 5.17; p > .05$ ]. However the difference related to the attachment to the mother was near to the significance level (*p* = .051).

<sup>3</sup> The subjects with scores were on media point were not classified (*n* = 3); four adolescents of social phobic group did not fill in the father scale because theirs fathers had already gone and the adolescents did not presented other substitute figure.

Besides the classification related to the attachment type, we considered relevant to use the differences between means as statistics to compare the samples. To analyze the gender effect, the effect of clinical groups and the interaction between clinical groups and gender, we performed ANOVAS with two fixed factors for each one of the indices of attachment: Mother, father and peers. The gender variable and the three groups of comparison were used as fixed factors and results from each of the attachment scales as dependent variables.

As for the attachment to the mother, results show a significant effect of clinical groups [ $F_{(2, 177)} = 3.97$ ;  $p < .05$ ], and the inexistence of a gender effect [ $F_{(1, 178)} = .14$ ;  $p > .05$ ] or effect of the interaction gender  $\times$  clinical groups  $F_{(5, 174)} = .42$ ;  $p > .05$ . Tukey post-hoc tests (Table 4) allowed locating the differences between the groups in this attachment index. The normal control group presented higher mean scores, only distinguishing from the group of adolescents with other anxiety disorders ( $p < .05$ ). No significant differences were found between normal controls and social phobics ( $p > .05$ ) and between normal controls and adolescents with other anxiety disorders ( $p > .05$ ).

**TABLE 4.** Means, standard deviations and multiple comparison tests for IPPA scales according to clinical groups.

	<i>Normal Control</i> ( <i>n</i> =76)		<i>Social Phobia</i> ( <i>n</i> =76)		<i>OAD</i> ( <i>n</i> =28)		<i>F</i>	<i>p</i>	<i>Post hoc</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Mother Attach.	99.01	15.54	93.39	15.95	90.64	14.56	3.97	.021	NC>OAD*
Father Attach.	92.86	19.46	85.04	18.51	88.68	15.78	2.80	.064	
Peer Attach.	98.45	12.37	87.00	17.03	93.14	13.97	11.47	.000	NC>SP**

\*\* $p < .001$ ; \*  $p < .05$

*Note.* NC = Normal Control group; SP = Social Phobia group; OAD = Other Anxiety Disorders group;

In relation to the attachment with the father, results reveal that there was not a significant effect of clinical groups [ $F_{(2, 173)} = 2.80$ ;  $p > .050$ ], of gender [ $F_{(1, 174)} = .07$ ;  $p > .05$ ] or of the interaction between gender and clinical groups [ $F_{(5, 171)} = .62$ ,  $p > .05$ ].

Lastly, in what concerns the attachment to peers scale, ANOVA results show a significant effect of clinical [ $F_{(2, 177)} = 11.47$ ,  $p < .001$ ] and of gender [ $F_{(1, 173)} = 7.21$ ;  $p < .05$ ], but there was not an effect of the interaction between gender and clinical groups [ $F_{(2, 177)} = .09$ ;  $p > .05$ ]. Tukey *post-hoc* tests (Table 4) revealed that social phobic subjects showed lower values of attachment to peers, significantly distinguishing from the normal control group ( $p < .001$ ), whose results were, as expected, the higher ones. The SP group does not differ from the group with other anxiety disorders, nor does this one differ from the normal control group. When analyzing the gender effect, we verify that girls present higher scores of attachment with peers ( $M = 95.23$ ;  $SD = 15.43$ ), when compared to boys ( $M = 88.46$ ;  $SD = 15.02$ ), and this is a significant statistical difference [ $t = -2.86$ ;  $p < .05$ ].

*Study concerning the influence of parental rearing styles on social phobia*

Due to the fact that there was not found a significant correlation between gender and each one of the variables associated with parental styles, we decided to perform ANOVAS (One-Way) in order to compare the groups from our sample in what concerns perception of the rearing styles characteristics of the father and the mother (Table 5). A total related to the addition of the *Rejection*, *Overprotection*, and *Emotional support* items was calculated. The emotional support items were previously inverted. According to this, higher scores in this global index reflect a more negative parental style, with more rejection, more overprotection and less emotional support.

**TABLE 5.** Comparison of the three groups according parental rearing styles (EMBU).

	Normal Control (n = 76)		Social Phobia (n = 76)		Other Anxiety Disorder (n = 28)		F		Post hoc
	M	SD	M	SD	M	SD	(2, 177)	p	
<b>Father</b>									
Emotional Support	22.20	4.70	21.03	4.60	21.75	4.20	1.21	.300	
Rejection	10.03	2.71	10.94	3.39	10.18	2.65	1.85	.161	
Overprotection	13.79	3.39	14.56	3.21	15.04	3.18	1.84	.162	
Total	36.62	8.32	39.47	8.68	38.46	7.63	2.19	.116	
<b>Mother</b>									
Emotional Support	23.39	3.60	22.50	3.75	22.86	3.29	1.17	.313	
Rejection	11.45	2.59	12.93	4.06	12.18	3.08	3.73	.026	SP>NC*
Overprotection	14.34	3.32	15.68	3.71	15.29	3.31	2.88	.059	
Total	39.94	7.38	41.12	8.08	39.61	7.19	4.52	.012	SP>NC*

\*  $p < .050$

Note. NC = Normal Control group; SP = Social Phobia group; OAD = Other Anxiety Disorders group.

As we can see in Table 5, there is no significant effect of the sample groups on the rearing styles of the father. When considering the mother, results show that the three groups differ in the way they perceive the global rearing style [ $F_{(2, 177)} = 4.52; p < .05$ ] and the rearing style characterized by rejection [ $F_{(2, 177)} = 3.73, p < .05$ ].

The differences were studied through Tukey post-hoc tests and the SP group scored higher in maternal rejection and in the global rearing style, significantly distinguishing from the normal controls. Normal controls do not differentiate from subjects with other anxiety disorders and this last group does not differ from social phobics.

*Study concerning the influence of social comparison on social phobia*

ANOVAS results (Table 6) show that there is a main effect of the groups for the total of SCS [ $F_{(2, 177)} = 11.44, p < .001$ ], and Hierarchy [ $F_{(2, 177)} = 5.63; p < .005$ ] and Social Adjustment factors [ $F_{(2, 174)} = 10.62; p < .001$ ].

**TABLE 6.** Comparison of the three groups according total and factors of the Social Comparison Scale (SCS)

	Normal Control (n = 76)		Social Phobia (n = 76)		Other Anxiety Dis. (n = 28)		F	p	Post hoc
	M	SD	M	SD	M	SD			
SCS total	71.30	12.70	60.91	14.98	69.79	14.01	11.44	.000	SF<NC**; SF<OAD*
Hierarchy	29.86	5.61	26.68	6.29	29.43	6.59	5.63	.004	SF<NC*
Adjustment	34.86	7.07	29.40	8.30	34.18	6.96	10.62	.000	SF<NC**; FS<OAD*

\*\* p<.001; \* p<.05;

Note. SCS = Social Comparison Scale (total); NC = Normal Control group; SP = Social Phobia group; OAD = Other Anxiety Disorders group.

Tukey *post-hoc* tests confirm that social phobic subjects presented significant lower values than the normal control group ( $p < .001$ ) and than adolescents with other anxiety disorders ( $p < .05$ ) in the total SCS, and in the *adjustment* factor. On the other hand, the other anxiety disorders group and the normal control group did not differ between them on these two variables.

Finally, in what concerns the *hierarchy* factor, results show that the social phobics only differ from normal controls because they present significantly lower scores in this kind of assessment ( $p < .005$ ), and do not differ from adolescents with other anxiety disorders ( $p > .050$ ). The group of adolescents with other anxiety disorders does not differ from the normal control group ( $p > .05$ ).

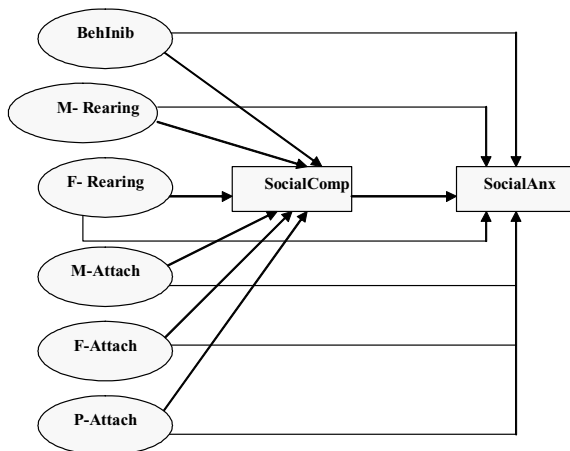
#### *Relation between the different variables in social anxiety prediction: the structural equation model*

Derived from previous studies' results (Cunha, 2005) and based on the literature a model was elaborated concerning the relation between our specific variables and social anxiety. The model presented in Figure 1 assumes a joint action of temperamental variables (behavioural inhibition), family variables (parental rearing styles and quality of parents' attachment) and variables related with peers (attachment with peers). The effect of each variable on social anxiety can be direct or mediated by social comparison, that is, by the way the adolescents compare themselves with others of the same age.

We used the matrix of correlations of the latent variables as an input<sup>4</sup> and we tested the suggested model using the program LISREL 8.12 (Jöreskog, Sörbom, and SPSS Inc., 1988). However, the use of the LISREL model to test the hypotheses was difficult because of the high number of relations between the present variables. The results

<sup>4</sup> In this model the following variables and indicators were considered. Behavioural Inhibition: fears related with schools/social situations and non social fears/illnesses; Attachment to father: communication, trust and alienation; Attachment to mother: communication, trust and alienation; Attachment to peer: communication, trust and alienation; Paternal rearing style: rejection, emotional support, overprotection; Maternal rearing style: rejection, emotional support, overprotection; Social comparison: social adjustment and social hierarchy; Social anxiety: EAESSA (anxiety and avoidance) and SAS-A (Sad-G, Sad-N and FNE).

**FIGURE 1.** Hypothetical model of the relations between the different variables in social anxiety.



showed an inappropriate model fit  $\chi^2_{(197)} = 958.30; p < .0001$ ,  $RMR = .093$ ,  $RMSEA = .12$ ,  $GFI = .75$ ,  $AGFI = .67$ ,  $NFI = .79$ ,  $NNFI = .79$ . The modification indicators supplied by LISREL pointed to problems in the model of measure, namely errors correlated among items, as the main causes of this lack of fit. These problems are frequent when we apply LISREL to analyse complex instruments of psychological evaluation that were not conceived to be used with this type of program.

In view of these results, and to avoid that the problems with measures affected the possibility to obtain solid conclusions from a theoretical standpoint, we chose to reduce the parameters to be evaluated, using only observed variables, that is, unique indicators, for all of them. In this new model six predictor variables were considered: the global perception of behavioural inhibition, the global perception of parental rearing styles (paternal and maternal) and the global perception of attachment with significant figures (mother, father and peer). As indicated in Figure 1, *social anxiety* was the dependent variable and *social comparison* a mediator variable. The correlation between variables related to parental rearing styles (paternal and maternal) and variables related to maternal and paternal attachment was allowed.

In the case of social anxiety measured by SAASA, and after eliminating the non significant paths, the obtained results are represented in the diagram Figure 2. The achieved model showed an excellent adjustment  $\chi^2_{(18)} = 7.09, p = .99$ ,  $RMR = .014$ ;  $RMSEA = .00$ ,  $GFI = .99$ ,  $AGFI = .99$ ,  $NFI = .99$ .

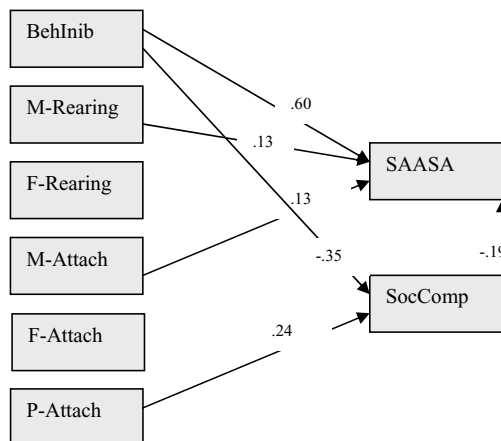
The existence of an effect of a joint action of behavioural inhibition, social comparison, global maternal rearing style, global perception of maternal attachment and attachment with a peer in social anxiety measured by SAASA was corroborated by this model. The behavioural inhibition was the variable that exhibited the greatest effect (.60) on social

anxiety, in a direct or indirect way through social comparison ( $-.35 \times -.19 = .06$ )<sup>5</sup>. The quality of the relationship with a peer seemed to influence social anxiety by social comparison ( $.24 \times -.19 = -.05$ ), and attachment perception with mother (.13) and global measure of maternal rearing style (.13) although still significant, appear to have little effects on social anxiety.

Surprisingly, the correlation between attachment style with the mother and social anxiety is positive, which refutes the results found in previous studies (bivariate correlations). These, exhibit a negative pattern of correlation and in accordance with theoretical data show an inverse relation between attachment quality and social anxiety. However, statistically it is possible to explain this result with the suppression effect, which means the effect of behavioural inhibition on the influence of attachment measures on social anxiety, is controlled.

In this conceptual model (Figure 2), behavioural inhibition, maternal rearing style (characterized by rejection, overprotection and a lack of emotional support) and the description of the relation with the mother as good, showed a positive correlation with the values of social anxiety. Also, the way adolescents perceive their relationship with peers proved to have an indirect effect on social anxiety, mediated by social comparison - that is, by the way they compare themselves with peers concerning adjustment and social hierarchy. A perception of the relationship with peers based on trust, communication and acceptance is positively associated with a more positive social comparison, which in turn is negatively associated with social anxiety. Behavioural inhibition, apart from the direct effect on social anxiety, also showed an indirect (although inferior) effect on social anxiety through social comparison. High scores of behavioural inhibition are associated with a more negative comparison with others (lower scores of social comparison), which in turn is associated with high scores of social anxiety.

**FIGURE 2.** A structural equations model for social anxiety measured by SAASA.



<sup>5</sup> This score corresponds to the magnitude of the indirect effect, which is the product of the influences we found.

## Discussion

In order to understand the possible factors involved in the development and maintenance of social anxiety we analyzed a range of variables from different theoretical contexts related to the individual, family and peers. We tried to establish an integrative investigation strategy that considered, on one hand, the clinical groups comparison to identify a specific influence on social phobia and, on the other hand, the use of methods that allowed to test a conceptual model of the conjunct action of the variables, controlling possible mediator and moderator effects.

### *Behavioural inhibition influence*

Social phobic individuals differ from normal controls in the way they evaluate their behavioural inhibition during childhood, showing significant higher scores in the global measure of inhibition and in the social fears/school and fear of illnesses (non social fears). The same is to say that social phobic adolescents, when compared to normal controls, perceive themselves as being, during their childhood, more fearful, with more discomfort and avoidance experience of new situations, with more fears related to school and more fears and illness, in general.

When compared to the other anxiety disorders group, social phobics also differ in the global measure of inhibition, in the social fears dimension, and do not differentiate only in the non social fears dimension, which points to a specific effect of these indices. The fears and illnesses dimension, by not allowing distinguishing between social phobics and adolescents with other anxiety disorders, seems to be a vulnerability factor common to these two clinical groups. These results are congruent to the ones obtained in similar studies, besides the research design differences (Hayward *et al.*, 1998; Mick and Telch, 1998; Van Ameringen *et al.*, 1998). The cited authors tried to emphasize the bidimensional utility of the behavioural inhibition construct, assessed through RSRI, showing that the social fears dimension has more discriminant power than the non social fears dimension. The behavioural inhibition component related to the social fears seems to be a particular predictor of social anxiety, which confirms the idea that this kind of fears during childhood can exacerbate or create the conditions for augmenting the social anxiety levels.

Once the high correlation between the social fears dimension and social anxiety could contaminate the results on the inhibition effect, we repeated the same analysis excluding the items that constitute the social fears factor. Results continued to evidence the discriminant effect of behavioural inhibition, as a global measure, in the three groups comparison. This last data supports the conclusion that the relation between social anxiety in adolescents and the reports of childhood behavioural inhibition is not only due to the overlap of social fears items.

The transversal study does not allow determining the antecedent-consequent relation of this variable in what concerns social phobia. Another limitation inherent to this kind of studies is that the inclusion of subjects with a disorder creates potential bias of memories associated to the presence of the disorder. Besides these limitations, results from our study seem to support the hypothesis of the behavioural inhibition, measured

through RSRI, being specifically associated with social phobia. If we bear in mind that behavioural inhibition can be identified earlier than manifest anxiety, then the generalized confirmation of these results can have important implications for anxiety disorders prevention, in general, and social anxiety, in particular.

#### *Attachment relations influence*

In our study, the significant differences between the three groups (social phobia, other anxiety disorders and normal controls) can only be observed in the attachment experiences with peers. The social phobia group presented mainly the insecure attachment type (62%) and the normal controls the secure type (63%). In what concerns parental figures, although there was a consistent predominance of the insecure classification in both clinical groups (adolescents with social phobia and with other anxiety disorders), in opposite to the pattern of the normal control group, differences between the three groups are not statistically significant.

These data are similar to the ones found by other authors, independently of the methodologies, in which the insecure pattern is well established among adolescents with anxiety disorders (Manassis, 2001; Warren *et al.*, 1997) or among adolescents with subclinical levels of anxiety (Cassidy and Berlin, 1994).

Besides the subjects' classification in terms of attachment style, we considered pertinent to use differences between means as statistics for group comparisons. When the attachment to each of the parents is separately analyzed in the three groups' comparison, we verify that adolescents with other anxiety disorders perceive a lower capacity of the maternal figure being able to establish good communication and understanding, and express resentment and hopelessness to the mother, significantly distinguishing from normal controls. In what concerns attachment with the father, there were no significant statistically differences between the three groups.

In the domain of the perception of attachment relationships with other significant figures - as the close friends - we found meaningful results, comparatively with parental attachment. As refers Ainsworth (1991), even though not all the relations of close friendships assume attachment components, some close friendships can provide reciprocal feelings of understanding, security and aid, constituting important sources of intimacy and social influence. The perception of these feelings in what concerns close friends showed, when compared the three groups, significant differences between social phobics and normal controls. Adolescents with social anxiety disorder perceive their relationship with peers in a more unsafe way, translated for the lower perception of trust and communication, and of greater alienation and isolation in the relation with these figures, illustrating the frequent difficulties experienced by these young in interpersonal functioning that many times leads to social isolation (Beidel *et al.*, 1999; La Greca and Lopez, 1998). On the contrary, the majority of the young without anxious pathology presented signals of secure attachment to friends, what may reflect the importance, in this phase, of relationships established between peers while sources of psychological security for the adolescents.

In the literature, studies that analyzed relation between social phobia and attachment styles revealed that this disorder was negatively connected with secure attachment



patterns and positively related to insecure attachment (Eng, Heimberg, Hart, Schneier, and Liebowitz, 2001; Michelson, Kessler, and Shaver, 1997). Besides this, both studies showed that social phobics exhibited difficulties in the areas of confidence, security and proximity in their intimate relationships (Eng *et al.*, 2001; Michelson *et al.*, 1997).

The fact that social phobic adolescents do not distinguish from adolescents with other anxiety disorders in any attachment experiences measure is not in contrast with empirical research on the relation between attachment organizations and psychopathology. In what concerns this aspect, we note that there were not found systematic relations between some kind of insecure attachment and a specific type of psychological disorder, although some clinical groups exhibit an over representation of a specific insecure type (Soares, 2000). It is still noteworthy that the fact that we use the IPPA as an attachment measure, does not allow the inference on specific types of insecure attachment that can characterize the participants in our study and, in this way, contribute to a clarification on the insecure attachment type that may be associated to social phobia. Another limitation has to do with the other anxiety disorders group small size that may justify the inexistence of more significant effects on the three groups' comparison. Lastly, the fact that there was a percentage (lower) of social phobics that showed a secure attachment style may be one more point in favor of the hypothesis that the affective relationships problems with the attachment figures are, along with other vulnerability factors, just one of these and that it is only the consideration of its interaction with other factors that can clarify the role of attachment in what concerns the development of social anxiety disorder.

#### *Parental rearing styles influence*

When considering familiar factors that may be involved in the etiology of social anxiety disorder, parental rearing styles assume an important role, supported by many retrospective studies (with adults) that have evidenced an association between general rearing practices related to overprotection, rejection and lack of emotional support and social fears (Arrindell *et al.*, 1983; Arrindell *et al.*, 1989; Bruch and Heimberg, 1994; Gerlsma, Emmelkamp, and Arrindell, 1990).

In our study, social phobic adolescents perceived the maternal rearing style significantly different, in its generality, as well as in the rejection dimension. Compared to the normal control group, they characterize their adolescence as having less emotional support, more rejection and more overprotection from their mothers. Social phobic adolescents do not differ from adolescents with other anxiety disorders in any of the rearing styles assessed. The fathers' rearing styles did not evidence a significant effect on the three groups.

When comparing our results with the ones of studies with adults, there are some fundamental differences. The parental overprotection dimension, frequently pointed (Arrindell *et al.*, 1983; Arrindell *et al.*, 1989; Rapee and Melville, 1997) as a family characteristic of social phobics was not confirmed in our study. A possible explanation for this is that parental overprotection may not be a totally negative rearing behaviour at these ages. This dimension may also include attention and orientation (extra) that adolescents with social anxiety may need in order to deal with difficult social situations.

If we attend to studies involving children or adolescents we may identify some convergence in general conclusions, besides some differences in partial results (Bogels, van Oosten, Muris, and Smulders, 2001).

In our study the evidence that maternal rejection and a negative global rearing style are related to the development or maintenance of social phobia was not very strong. Adolescents with social phobia indicated their mothers as more rejecting and with a more negative global rearing style, but the effect was not specific of social phobia: the social phobic group does not differ from the other anxiety disorders group in what concerns this aspect. We can not conclude that the maternal rejection behaviour or her global rearing behaviours are a specific way to the development of social phobia. However, as we have been pointing, we have to be careful with the comparison with the other anxiety disorders group (OAD), and this must be addressed in future research. In a similar way, Bogels and colleagues study (2001), comparing a clinical group of children with social anxiety with two control groups (a clinical group of children without social anxiety and another one of normal children), did not find significant differences between the social anxiety group and the clinical control group. Children with social anxiety differed from normal children by evaluating their parents as less emotional supportive and more rejecting (Bogels *et al.*, 2001). Although in what concerns overprotection, the authors found mixed results: maternal overprotection was found to significantly predict social anxiety in the regression analysis but did not distinguish between social anxiety children and the ones from the control groups.

In conclusion, research on the family aspects, namely on attachment and parental rearing styles, seem to point that these aspects are important for the development of vulnerabilities that can induce social anxiety. However, our results do not allow concluding how this vulnerability will lead to social anxiety. The differences between the social phobia group and the normal control group, but the fact that no differences were found between the social phobia group and the other anxiety disorders group (besides the precautions already mentioned), may suggest that this vulnerability predisposes to anxiety in general and may lead to social anxiety by its interaction with other factors.

The influence of attachment factors and rearing practices may be associated not as much as with the etiology of social anxiety but with its maintenance. Some adolescents with social fears may be more capable of coping when they have more secure attachment styles and rearing practices more positive, whereas the ones with a more insecure attachment or exposed to a more negative rearing style will tend to evidence more difficulties and live in a more isolated fashion.

### *Social comparison influence*

To a different conceptual level, the ranking theory defends that the classification/ordinance occurs in all the social species in that a competition for the resources exists and that it is a basic strategy to regulate the behaviour and to keep the cohesion inside the group. In the case of the human beings, this ordinance is related, among other things, with the evaluation of the social comparison (Allan and Gilbert, 1995) and self-esteem. Many therapeutic models have suggested that the trend for a negative comparison with other people, that is, a vision of the self as inferior in some domains, is associated

with a variety of psychological difficulties, including, among others, social anxiety (Beck, Emery, and Greenberg, 1985; Trower and Gilbert, 1989). In this line of inquiry, the social comparison can act as a modelling for self-esteem and confidence (Allan and Gilbert, 1995).

In our study the results suggest that the measures of social comparison have an important influence in the social phobia, evidencing the social phobics to be distinguished from the other groups (normal and other anxiety disorders), for comparing themselves with others, in a more negative way.

When compared in the social adjustment domain, that includes feelings of rejected/accepted, misadjusted/adjusted, different/equal, undesirable/desirable, disagreeable/more likeable, social phobics evaluate themselves more negatively than normal controls and other anxiety disorders, distinguishing significantly from both groups.

Already in relation to the social comparison in terms of hierarchy, that reflects feelings of inferior/superior, incompetent/more competent/, without talent/more talented, weaker/stronger, not attractive/more attractive, social phobics continue to compare themselves in a more negative way than the other groups, even so the difference is significant only in relation to the young without pathology. The groups of normal controls and other anxiety disorders do not differentiated themselves in none of the studied variables. In such a way, the results obtained in this study had confirmed the hypothesis of the relation between social comparison and social phobia, verifying a specific effect of social phobia, since these differ from the normal ones and the young with anxious disturbances for presenting more favorable global social comparisons and in the domain of social adjustment. These data are, in general, in accordance with other studies (Gato, 2003; Gilbert and Allan, 1994; Gilbert and Trower, 2001; Trower and Gilbert, 1989) held in Portugal and abroad. In Portugal, results from Gato (2003) comparing young adults with high, average and low social anxiety, in what concerns the way they socially compare themselves with others, are coincident with ours.

According to the theory of Trower and Gilbert, a possible relation between social comparison and social phobia is that of the young, when comparing themselves with others in a negative way, will tend to, in these situations, activate defensive behaviours, for example, submission strategies, which central aim is to prevent or to limit the damage, leading, thus, to less cooperative and dominant behaviours. This type of behaviour promotes in the adolescents a perception of inefficacy to deal with social situations, the one that strengthen the will of avoiding them or of protecting themselves. The maintenance of these behaviours does not allow them to invalidate its beliefs, nor to learn more adequate social abilities, what increases, even more, social difficulties of the young.

#### *Relation between the different variables in social anxiety prediction*

By using the structured equation model we tried to analyze the effect of the conjunct action of the different variables on social anxiety. This model has the advantage of allowing a rigorous vision of all the involved variables, allowing testing the mediator effect of some variables.

The results of the application of a structural equations model for the prediction of social anxiety measured by SAASA supported the idea of a joint action of behavioural inhibition, maternal rearing style, global perception of maternal attachment, global measure of attachment with peer and social comparison on social anxiety. The behavioural inhibition was the variable that exerted the greatest effect on social anxiety. The existence of a direct effect and an indirect effect through social comparison were identified. Higher scores of behavioural inhibition are associated to a stronger social anxiety, as well as high values of behavioural inhibition are associated to a more negative comparison with others (lower scores of social comparison), which in turn is associated with higher scores of social anxiety.

The effect of attachment quality with a peer on social anxiety is mediated by social comparison. Or, the influence of the quality of the relationship with peers effects the way the adolescents compare themselves with others. The more negative the perception of the relationship with others (based on lack of confidence, communication, comprehension and non-acceptance), the more negatively the way youths compare themselves with peers, and the more social fears/social anxiety they will have.

The perception of the attachment to the mother and the global measure of maternal rearing style showed direct and modest, although still significant, effects on social anxiety. Concerning the parenting style of the mother, a style that is characterized by rejection, overprotection and poor emotional support showed to be positively associated to social anxiety. Concerning maternal attachment, the description of the relation as good showed to be positively associated to social anxiety, contrarily to what we would expect. In fact, this data, showing that the perception of more positive experiences of attachment with the mother is associated to higher scores of social anxiety, is (apparently) not only contrary to the literature, but also to the data obtained in the study of bivariate correlations that exhibit a negative pattern of correlation. However, statistically it is possible to explain this result with the effect of suppression, because here the effect of behavioural inhibition on the influence of the measure of attachment on social anxiety is controlled.

In theoretical terms, a possible explanation of this positive correlation can involve the idealization phenomena, common in adolescents (Soares, 2000; Soares and Dias, 2007). In other words, after eliminating the effect of behavioural inhibition, only the component of idealization of the attachment relationship with the mother remains, which refers to the tendency of adolescents to idealize their relationship with the mother, describing it as more positive, based on good communication and mutual confidence.

Finally, social comparison showed to be a mediator variable of the inhibition effect and of the global measure of attachment to peers. It also exerts a direct effect on social anxiety. This data suggests that social comparison is influenced by the way youths perceive their behavioural inhibition and their relationship with peers. These variables will influence social anxiety by way of social comparison. This mediator effect of social comparison in attachment and mother's rearing style was not confirmed, each of these effects being modest and directly influencing social anxiety. Concerning the paternal figure, no significant relations to social anxiety were verified. The developmental context of affective relationships can help to understand these results because in comparative

terms these studies have shown that in adolescence the mother is generally the preferred figure to turn to in periods of stress and need (Paterson, Field, and Pryor, 1994). Peers are used as sources of support more often than the paternal figure. Another possible explanation would be the fact that in Portugal, generally, women are more involved with child rearing than men, which could justify that women have more influence in social behaviour and social fears of their children.

To conclude we would like to emphasize the urgency of prospective studies that evaluate the causal relation between the studied variables. These studies should also evaluate the stability of social anxiety by way of observation in different moments crucial to development (transition moments), in order to identify risk and protection factors in (dis)continuity of the disorder during childhood and adolescence.

Another path to explore in future research could also be the use of other methodologies other than self-report questionnaires as, for example, observation systems of the interaction with peers or with family.

If our results contribute to a comprehension of some development and maintenance factors of social anxiety, they also pose new questions. Additional research is necessary for a better understanding of developmental trajectories of social phobia, especially the study of factors like traumatic experiences with peers, which were not explored in our study.

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