



## **COGNITIVE, AFFECTIVE AND BEHAVIORAL CORRELATES OF SOCIAL ANXIETY IN ADOLESCENCE**

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### ABSTRACT

Adolescence is an especially vulnerable period for developing social anxiety, which seems to be related to impairment in social functioning, by interfering in cognitive processing, anxiety control and avoidant or security behaviors. We intend to characterize an adolescent sample on cognitive, affective and behavioral correlates of social anxiety. We use two instruments in a 679 adolescent sample, both male and female, aging from 15 to 20 years old: the "Social Thoughts and Believes Scale" (STABS) for cognition and the "Social Anxiety and Avoidance Scale for Adolescents" (SAASA) for anxiety levels and behavioral avoidance. Both instruments were used in their Portuguese version and attained good reliability levels. Results showed a significant positive correlation between negative thoughts, anxiety levels and behavioral avoidance. Behavioral avoidance was significantly higher than anxiety levels or negative social thoughts. Anxiety seemed to be significantly predicted by behavior and cognition. Female adolescents and those from lower socioeconomic level seem to present the highest levels of psychological impairment. Implications for an eclectic and integrated approach to social difficulties in adolescence are presented, considering an intervention program that is being currently developed in Portugal.

Key words: social anxiety, adolescence, cognition, affection, behaviour

### INTRODUCTION

Adolescence is a differentiated stage in human development that places particular emphasis on social interaction, as means for successfully achieving developmental tasks. Participating in peer relationships and feeling socially integrated and accepted, contribute to a positive image of oneself (Erwim, 2002) and creates a privileged place for developing and training social skills (Larson, Wilson, Brown, Furstenberg & Verma, 2002).

Yet, establishing this kind of relationships is not always easy. The adolescent is now able to perceive himself as a social person who is evaluated by others (Inderbitzen, Walters & Bukowski, 1997). He is also aware of his own social failures, which arise from the discrepancy between his incipient social



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abilities and the increased social demands. This discrepancy, along with not feeling competent at the interpersonal level, may contribute to anxiety in social events (Erath, Flanagan & Bierman, 2007), which usually develops and escalates in adolescence (Swinson, 2005). Social anxiety may, therefore, be an inhibiting or interfering factor in developing an important socialization experience in adolescence, and contribute to further disturbances in social functioning (La Greca & Lopez, 1998).

Social anxiety is defined as fear of negative evaluation or scrutiny by others, who are believed to be observers of social interactions and public performances (Manfro, Isolan, Blaya, Maltz, Heldt & Pollack, 2003). It is a natural feeling for the developing adolescent that may become too intense and impair his personal and social well-being.

Namely, social anxiety is associated with getting lower social support from peers, lower perception of social acceptance, fewer close friends (La Greca & Lopez, 1998), high levels of negative thoughts on social events and deficit in social abilities (Rheingold, Herbert & Franklin, 2003). When friendships are established, they are felt like less gratifying. Socially anxious adolescents tend to show less pro-social behavior and more isolation and withdrawn from social events, not allowing for the acquisition of adequate social and coping skills (Erath, Flanagan & Bierman, 2007).

Hence, it is important to understand how this social disturbance may be presented in adolescence, in order to provide adequate prevention and intervention approaches. Cognitive models on social anxiety state that when faced with social events, the individual activates beliefs about himself as socially inept. This gives rise to anxious feelings, as well as physiological, cognitive and behavioral symptoms associated with this anxiety. At the cognitive level, negative thoughts are typical; behaviorally, avoidance is the most common answer (Rapee & Heimberg, 1997; Stopa & Clark, 1993). This same model holds for adolescence (Rheingold, Herbert & Franklin, 2003).

The present work aims to characterize an adolescent sample on anxious feelings, and cognitive and behavioral symptoms, as to better understand and approach social anxiety.

## METHOD

### Participants

The sample consisted of 679 subjects, of which 38,4% were male ( $n = 261$ ) and 61,3% were female ( $n = 416$ ). Two individuals did not give information on their sex (0,3%). Their age went from 15 to 20 years old ( $M = 17$ ).

Regarding their school year, 31,7% attended the 10<sup>th</sup> grade ( $n = 215$ ), 36,1% attended the 11<sup>th</sup> grade ( $n = 245$ ) and 32% attended the 12<sup>th</sup> grade ( $n = 217$ ). Two individuals did not give information on their school age (0,3%). Concerning the socioeconomic level, 27,4% belonged to low socioeconomic level ( $n = 186$ ), 48,3% belonged to a medium level ( $n = 328$ ) and 20,2% belonged to a high socioeconomic level ( $n = 137$ ). Twenty-eight individuals did not answer this question (4,1%). Considering their academic success, 78,5% ( $n = 533$ ) never had an academic failure, while 21,4% ( $n = 145$ ) had between one and four academic failures. One individual did not provide information on this matter (0,1%).

### Instruments

#### *Social Thoughts and Beliefs Scale (STABS).*

It is a 21 item questionnaire intended to address negative social thoughts activated in social events by individuals with social anxiety (Turner, Beidel, Heiser, Johnson & Lydiard, 2003). Its Portuguese version attained good reliability and construct validity results and is composed of two subscales: negative thoughts on social interaction and negative thoughts on public performance (Vagos & Pereira, in review).



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sion). The reliability results for the present work was  $\alpha = 0.93$  for the complete scale,  $\alpha = 0.91$  for the social interaction subscale and  $\alpha = 0.83$  for the public performance subscale.

#### *Social Anxiety and Avoidance Scale for Adolescents (SAASA).*

It is a 34 item questionnaire with two scales. One addresses the anxiety felt in social events typical of adolescence; the other tackles the avoidance of those typical social events (Cunha, 2005). Previous work has attested for its reliability and validity (Cunha, Gouveia & Salvador, 2008). Each scale includes six subscales: interaction with the opposite sex, performance in formal social situations, interaction in social situations, assertive interaction, observation by others, and public exposure. The reliability results for the present work were  $\alpha = 0.94$  for the anxiety scale and  $\alpha = 0.91$  for the avoidance scale. Concerning the subscales, alpha values were between 0,66 and 0,84.

#### **Procedure**

Authorizations and availability for participating in the study were obtained from the education ministry and the executive boards of Secondary Schools. Questionnaire were then delivered and collected in time made available by the teachers. Confidentiality and voluntary participation was guaranteed to all participants. All analysis presented in this correlation study were conducted using SPSS v.15.0.

#### **Results**

##### *Descriptive analysis for cognitive, affective and behavioral measures*

Descriptive analyses for the cognitive measure are presented in table 1.

Table 1: Descriptive analysis for cognitive measure

	n	Range	M	SD
STABS complete scale	679	21-94	45,33	13,53
STABS social interaction	679	13-58	26,73	8,62
STABS public performance	679	8-38	18,6	5,71

There seems to be a significantly higher level of thoughts of discomfort in social interaction than in public performance ( $t = 38,34$ ;  $p = 0,000$ ).

Descriptive analyses for both the affective and behavioral measures are presented in table 2.

Table 2: Descriptive analysis for affective and behavioral measures

	Anxiety				Avoidance		
	n	range	M	SD	range	M	SD
Complete scale	679	34-160	63,81	19,17	34-163	65,15	18,1
Interaction with the opposite sex	679	8-40	18,84	5,92	4-20	8,84	3,15

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Performance in formal social situations	679	5-24	7,85	3,35	6-30	10,21	4,17
Interaction in new social situations	679	5-25	10,74	3,97	6-30	12,01	4,9
Assertive interaction	679	7-33	12,82	4,48	8-38	17,38	5,1
Observation by others	679	6-29	9,63	3,99	5-25	8,31	3,78
Public exposure	679	3-15	4,2	1,77	5-25	8,41	3,52

All the differences between correspondent scales were significant. Overall, students in this sample present higher levels of behavioral avoidance than anxiety in social events ( $t = -2,34$ ;  $p = 0,019$ ). Specifically, results shown higher behavioral avoidance than anxiety in the subscales of performance in social situations ( $t = -20,42$ ;  $p = 0,000$ ), interaction in new social situations ( $t = -9,36$ ;  $p = 0,000$ ), assertive interaction ( $t = -26,98$ ;  $p = 0,000$ ) and public exposure ( $t = -35,71$ ;  $p = 0,000$ ).

Cognitive measures attained the lowest results, compared to either anxiety ( $t = 31,57$ ;  $p = 0,000$ ) or behavioral avoidance ( $t = -29,37$ ;  $p = 0,000$ ) measures.

*Correlation analysis for cognitive, affective and behavioral measures*

We found significant positive correlations between measures of cognitive, affective and behavioral correlates of social anxiety (Table 3).

Table 3: Correlations between cognitive, affective and behavioral measures

	Cognitive complete scale	Anxiety complete scale	Avoidance complete scale
Cognitive complete scale	-	0,613 <sup>(**)</sup>	0,456 <sup>(**)</sup>
Anxiety complete scale		-	0,967 <sup>(**)</sup>
Avoidance complete scale			-

\*\* Correlation is significant at the 0.01 level (2-tailed).

Correlations were particularly high between avoidance and anxiety and between cognition and anxiety.

*Linear regression analysis on cognitive, affective and behavioral measures*

Stepwise regression analysis shown that only the affective measure could be significantly predicted by both the cognitive and behavioral measures (Table 4).



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Table 4: Regression analysis for variables predicting anxiety

Variables	B	SE B	$\beta$
Cognition	0,528	0,039	0,373*
Avoidance	0,532	0,028	0,527*

Note:  $R^2 = 0,596$  ( $p < 0,05$ ).

\*  $p < 0,05$ .

Anxiety seemed to be the only significant predictor of both cognition and avoidance in social anxiety (Table 5 and 6).

Table 5: Regression analysis for variables predicting cognition

Variables	B	SE B	$\beta$
Step 1			
Anxiety	0,405	0,030	0,574
Avoidance	0,040	0,030	0,056*
Step 2			
Anxiety			
Avoidance	0,433	0,021	0,613*

Note:  $R^2 = 0,378$  for Step 1 ( $p < 0,05$ );  $\Delta R^2 = 0,376$  ( $p < 0,05$ ).

\*  $p < 0,05$ .

Table 6: Regression analysis for variables predicting avoidance

Variables	B	SE B	$\beta$
Step 1			
Anxiety	0,663	0,035	0,669*
Cognition	0,065	0,049	0,046
Step 2			
Anxiety	0,691	0,027	0,697*
Cognition			

Note:  $R^2 = 0,487$  for Step 1 ( $p < 0,05$ );  $\Delta R^2 = 0,486$  ( $p < 0,05$ ).

Behavioral avoidance could not be predicted by negative cognition in social events, nor could negative cognition in social events be predicted by behavioral avoidance.





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### *Analyses by demographic variables*

Female students, when compared to male students, shown higher levels of negative thoughts ( $t = -2,01$ ;  $p = 0,045$ ), anxiety ( $t = -4,86$ ;  $p = 0,000$ ) and avoidant behaviour in social events ( $t = -2,3$ ;  $p = 0.022$ ), as can be seen in Table 7.

Table 7: Descriptive results by sex

	Female			Male		
	range	M	SD	range	M	SD
Cognitive complete scale	21-94	46,17	13,36	21-92	44,03	13,77
Anxiety complete scale	34-160	66,62	19,94	37-146	59,38	17,02
Avoidance complete scale	34-163	66,5	18,22	34-143	63,07	19,98

We found significant differences between students from low and medium socioeconomic levels on cognition ( $t = 2,56$ ;  $p = 0,011$ ) and anxiety ( $t = 2,69$ ;  $p = 0,007$ ) measures. Also, we found significant differences between students from low and high socioeconomic levels, on cognition ( $t = 3,57$ ;  $p = 0,000$ ), anxiety ( $t = 4,82$ ;  $p = 0,000$ ) and behavior ( $t = 2,87$ ;  $p = 0,004$ ). Finally, we found significant differences between medium and high socioeconomic levels on anxiety ( $t = -3,13$ ;  $p = 0,002$ ) and behavior ( $t = -2,62$ ;  $p = 0,009$ ) measures. Descriptive measures by socioeconomic level can be seen in Table 8.

Table 8: Descriptive results by socioeconomic level

	Low			Medium			High		
	range	M	SD	range	M	SD	n	M	SD
Cognitive complete scale	21-84	47,8	13,66	21-94	44,69	12,98	21-82	42,47	12,72
Anxiety complete scale	36-160	68,4	21,62	34-139	63,56	18,38	34-102	57,99	15,26
Avoidance complete scale	34-138	66,75	18,02	34-163	66,09	19,71	34-143	61	17,54

Concerning academic success, we found that students who had had academic failures shown significant higher levels of avoidant behavior ( $t = -2,28$ ;  $p = 0,024$ ), but not of negative cognition or anxiety in social events. Students with no academic failure had a mean score of 64,12 (SD = 17, 08) on avoidant behavior, whereas students with academic failures had a mean score of 69,06 (SD= 24,47).

Age did not correlate significantly with any measure considered. Also, no significant differences were found according to school year.

A stepwise regression analysis shown that adding demographic variables to the predictive model improved it. Sex and socioeconomic level shown to be significant predictors of anxiety in social events (Table 8).



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Table 9: Regression analysis for variables predicting anxiety

Variables	B	SE B	$\beta$
Step 1			
Age	-0,228	0,85	-0,013
Sex	4,332	0,963	0,11*
School year	0,349	1,05	0,015
Academic failure	0,598	1,075	0,02
Socioeconomic level	-1,817	0,709	-0,067*
Cognition	0,521	0,039	0,368*
Avoidance	0,523	0,028	0,517*
Step 2			
Age			
Sex	4,338	0,961	0,11*
School year			
Academic failure			
Socioeconomic level	-1,805	0,698	-0,066*
Cognition	0,52	0,039	0,368*
Avoidance	0,524	0,028	0,519*

Note:  $R^2 = 0,607$  for Step 1 ( $p < 0,05$ );  $\Delta R^2 = 0,607$  ( $p < 0,05$ ).

\*  $p < 0,05$ .

Demographic variables were not significant predictors of either negative cognition or avoidant behavior in social events.

## DISCUSSION

Social anxiety in adolescence seems to be better characterized by avoidant behavior, while performing in social situations, interacting in new social events, performing assertive interactions and being publicly exposed. Anxious feelings towards social events are the next social anxiety marker, followed by negative social thoughts, especially towards social interactions. These negative thoughts seem to develop especially in adolescence (Alfano, Beidel & Turner, 2006).

Women seem to be the most affected by this social disturbance, along with students from low socioeconomic levels. Academic failure seems to fallow from avoidant behaviour, possibly relating to not participating and asking for clarification in classes.

Cognitive, behavioral and affective correlates of psychological functioning are, nevertheless, strongly associated. There seems to be a reciprocal relationship between anxiety and both cognition and behavior. Models of social anxiety propose this association. After biased interpretation of social events as excessively negative and of the self as incapable of construing adequate social relationships



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(Hoffman, 2007), anxious feelings arise, negatively interfering in social efficacy, by eliciting negative thoughts and inadequate social answers (Erath, Flanagan & Bierman, 2007).

This functioning pattern in social anxiety seem to elicit negative answers from others (Erath, Flanagan & Bierman, 2007), namely rejection or no social reinforcement (Inderbitzen, Walters & Bukowski, 1997). These social answers serve to confirm the negative thoughts and beliefs of threat associated to social events, sustaining anxiety activation in those same events (Creed & Funden, 1998). Hence, social anxiety may be considered an interpersonal disturbance, because of the negative influence it has on the self and the other, as mutual actors of satisfactory and healthy social relationships (Alden & Taylor, 2004).

Considering that difficulties in establishing gratifying social relationships seem associated with psychopathology (Landazabal, 2006), aspects that may impede or inhibit an adequate interpersonal functioning, especially in adolescence, should be carefully considered (La Greca & Lopez, 1998). Early diagnosis and intervention (Swinson, 2005), as well as programs aimed at promoting socialization and socio-emotional development (Landazabal, 2006), are pertinent, since this disturbance usually has chronic course.

Several eclectic programs have been developed for social anxiety in adolescence, both for prevention and intervention on clinical impairment. Developing abilities to deal with anxiety, negative cognition and avoidant behavior may help to prevent or minimize the disturbance severity in adulthood (Manfro, Isolan, Blaya, Maltz, Heldt & Pollack, 2003).

Cognitive-behavioral programs are considered to be effective (Gil, Carrillo & Meca, 2001), combining cognitive restructuring, behavioral practice based on modeling, relaxation techniques, social skills training and homework. All the facets of psychological functioning are addressed, providing for a holistic and integrated approach to social anxiety, which has proven to be efficient (Kearney, 2005). Portuguese adolescents should benefit from these same kind of approaches, since they seem to suffer from the same types of symptoms.

An eclectic program has been developed for Portuguese adolescents, based on previous international programs, namely the Skills for Academic and Social Success (Masia et al, 1999) and the Cognitive Behavioral Group Therapy for Adolescents (Albano & DiBartolo, 2007a; 2007b). It consists of a preventive approach to social difficulties, and encompasses all the above mentioned strategies. It also uses peer support to increase generalization of the acquired skills. It is currently being implemented and the participating adolescents describe it as useful, contributing to increased self-confidence and feeling comfortable in social interactions. Considering the evidence-based paradigm (APA, 2006), this program, which addresses all the correlates of social anxiety, needs now to be fully evaluated, as to prove itself to be an effective and clinically useful preventive approach to social anxiety.

It seems important to consider social anxiety as a broad interpersonal disturbance, affecting cognition, affect and behavior, especially in women and students from low socioeconomic levels. This will allow for targeting it from every front and hence providing a more adequate, integrated and successfully approach.

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