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SOCIAL ANXIETY DISORDER, SOCIAL PHOBIA, and PSYCHOEDUCATIONAL VARIABLES that affect children, adolescents, and undergraduate students around the world

Co-guest editors:
Annette M. La Greca, Usa,
and Candido J. Ingles, Spain

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UNIVERSIDAD AUTONOMA DE CHILE
MÁS UNIVERSIDAD

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SPECIAL ISSUE: SOCIAL ANXIETY DISORDER, SOCIAL PHOBIA, and PSYCHOEDUCATIONAL VARIABLES that affect children, adolescents, and undergraduate students around the world

CO-GUEST EDITORS:
Prof. Candido J. Ingles (SPAIN) and Annette M. La Greca (USA)

Introduction
Current status of research on social anxiety and relationship with psychoeducational variables: An international perspective

Vicente E. Caballo* **and Isabel C. Salazar**
University of Granada (Spain)

Social anxiety, and its most extreme condition, social anxiety disorder, is a common international problem today. The recent Covid-19 pandemic has brought relief, at least temporarily, to many social anxiety sufferers. The decrease in face-to-face social interactions and the use of face masks have reduced the usually daily discomfort of those interactions. But it has also frozen in time the practice of their social skills and served as a safe refuge from experiencing the daily symptoms of social anxiety so often. We can say, therefore, that the pandemic has served as a reinforcement of social withdrawal behaviors for people with social anxiety, both in children and in adolescents and adults.

One of the studies included in this monograph clearly supports this. In it, adolescent and young adult participants reported avoidance behaviors that were reinforced by the requirements of social distancing and decreased academic engagement during distance learning, with anticipatory anxiety about returning to normal social routines also evident (Coyle et al., 2022, in this monograph). It would be desirable to prepare people with social anxiety, whether they are children, adolescents, or adults, for the new scenario of normality

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in interpersonal relationships that, sooner or later, will have to come. But it will have to be done in the right way.

In the United States, legislation guarantees students with social anxiety that schools provide school accommodations for better functioning. Thus, those accommodations might include exemption from classroom participation (e.g., reading aloud, working at the blackboard in front of the class), granting permission to leave the classroom, and the ability to take tests in a separate, quiet environment. But we do not find it surprising that these well-intentioned adaptations may work the other way around, i.e., that by applying negative reinforcement they promote avoidance of interpersonal situations and lead to further deterioration of (social and academic) functioning (Martel et al., 2022, in this monograph). These authors note that schools should carefully consider how accommodations may affect youth with social anxiety and provide interventions that encourage approach rather than avoidance behavior.

In the same direction as above, we could anticipate that school avoidance or school refusal behaviors would be more frequent in students with social anxiety or, in other words, that adolescents with high school refusal would present greater social anxiety than those with low school refusal. This is what the study by Giménez-Miralles et al. (2022, in this monograph) found, suggesting that this rejection is due to feelings of social aversion, negative affectivity, fear of evaluation, or the use of this behavior to pursue the attention of significant others. It is not surprising, therefore, that adolescents with social anxiety disorder experience greater difficulties in school adjustment and show higher dropout rates (Essau et al., 2022, in this monograph), with social anxiety being a significant predictor of behavioral impairment, especially in friendship and classroom learning domains.

But not only do students with social anxiety have a range of problems when they are already in school, but the stressors that often accompany the school transition to high school itself may function as predictors of such social anxiety. This was found by La Greca et al. (2022, in this monograph), who further reported that the tendency to engage in repetitive negative thinking (e.g., worry and rumination), which is very typical of subjects with social anxiety, often serves as a mediating pathway between school transition stressors and social anxiety symptoms.

It seems clear that people with high social anxiety, children, adolescents, or adults, differ in a number of characteristics from those with low social anxiety or without it, as we have seen above. But there are many more, which we will not address in this introduction for lack of space. We will simply highlight briefly one of them, such as self-attributions. Urban et al. (2022, in this monograph) have found that academic self-attributions are different for students with high social anxiety, moderate social anxiety, and students with low social anxiety.

Finally, a word about gender differences in social anxiety. A large-scale study with more than 30,000 participants from 18 countries found small significant but systematic differences between males and females on five dimensions of social anxiety and on global social anxiety (Caballo et al., 2014), with females scoring higher than men in all the cases. For their part, Ranta et al. (2022, in this monograph) also found differences between adolescent boys and girls. Specifically, in one of the dimensions of social anxiety, such as the "public speaking" situation, a higher percentage of girls predicted that they were likely to become anxious in the situation, whereas boys predicted overt negative reactions from peers more frequently than girls.

In summary, this monograph presents a series of international research studies on social anxiety and several psychoeducational variables, and for this reason we congratulate the editors of this monograph and the authors participating in it. Our experience in international research on social anxiety is broad and extensive and we believe that it is necessary to continue working in the field of social anxiety gaining perspectives from different countries and with different topics. Taking into account the manuscripts published in this monograph (and other studies that are available in the literature on social anxiety), now, more than ever, increased research is needed on this construct, especially in the areas of assessment and treatment. Such research will offer increasingly effective interventions, at an international level, for the management of social anxiety (Caballo et al., 2021) and the problems associated with it (Salazar et al., 2022).

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Do School-Based Accommodations Mitigate Anxiety-Related School Impairment for Socially Anxious Youth?*

¿Los ajustes hechos en las escuelas mitigan la discapacidad fruto de la ansiedad por ir a la escuela en jóvenes con ansiedad social?

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Abstract
In the United States, legislation ensures that schools provide accommodations to students with disabilities and conditions that impair their functioning. Students with social anxiety, who face many challenges in the school context, often receive these accommodations. Yet, it is unknown whether school-based accommodations achieve their intended aims of mitigating anxiety-related school impairment. The current study therefore examined whether school-based accommodations, assessed as the presence or absence of an Individualized Education Plan (IEP) or 504 Plan, moderate associations between social anxiety symptoms and anxiety-related school impairment. We also explored grade level (elementary versus secondary) as an additional moderator of these associations and included youth sex and ethnicity as covariates. Participants were 504 youth with anxiety disorders (55% boys; 76% elementary level) and their mothers. Based on mothers' reports, we found significant associations of youth sex, social anxiety, and the presence of an IEP or 504 Plan with anxiety-related school impairment. There were no significant moderation effects. Findings are discussed with regard to the role of school-based accommodations for mitigating anxiety-related school impairment. Further research is needed to understand how to improve school-

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based accommodations to ensure they help the youth for whom they are designed, especially youth with social anxiety.

Keywords: Youth; Social Anxiety; School Impairment; Special Education; Accommodation

Resumen

En los Estados Unidos, la legislación garantiza que las escuelas proporcionan adaptaciones a los estudiantes con discapacidades y condiciones que perjudiquen su funcionamiento escolar. En este sentido, los estudiantes con ansiedad social, quienes se enfrentan a muchos desafíos en el contexto escolar, reciben, frecuentemente estas adaptaciones. Sin embargo, se desconoce si las adaptaciones en la escuela logran los objetivos previstos de mitigar el deterioro escolar relacionado con la ansiedad. Por tanto, el estudio actual examinó si las adaptaciones en la escuela, evaluadas como la presencia o ausencia de un Plan de Educación Individualizado (IEP) o Plan 504, moderan las asociaciones entre los síntomas de ansiedad social y el deterioro escolar relacionado con la ansiedad. También exploramos la etapa educativa (primaria vs. secundaria) como un moderador adicional de estas asociaciones e incluimos el sexo y el origen étnico de los jóvenes como covariables. Participaron 504 jóvenes con trastornos de ansiedad (55% niños; 76% l) y sus madres. A partir de los informes de las madres, encontramos asociaciones significativas entre sexo juvenil, ansiedad social y la presencia de un IEP o Plan 504 y el deterioro escolar relacionado con la ansiedad. No hubo efectos de moderación significativos. Se discuten los hallazgos con respecto al papel de las adaptaciones escolares para mitigar los problemas relacionados con la ansiedad y el deterioro escolar. Por tanto, son necesarias. más investigaciones para comprender y conocer las adaptaciones escolares con el fin de ayudar a los adolescentes, especialmente, diagnosticados con ansiedad social.

Palabras clave: juventud, ansiedad social, deterioro escolar, adaptación escolar especial.

More than 30% of youth (i.e., children and adolescents) meet diagnostic criteria for an anxiety disorder before 18 years of age (Kessler et al., 2012; Merikangas et al., 2010), and these rates have only increased since the start of COVID-19 (Racine et al., 2021). Social anxiety disorder is among the most prevalent pediatric anxiety disorders, with 9% of youth receiving the diagnosis prior to adulthood (Burstein et al., 2011). Central clinical features include excessive social evaluative concerns and avoidance of social evaluative situations (Diagnostic and Statistical Manual of Mental Disorders–5; American Psychiatric Association, 2013), which often are associated with profound impairment in key developmental contexts – school, peers, and family. Aligned with the theme of this Special Issue, this article focuses on the school context.

Challenges associated with social anxiety in school include reading aloud in class, asking or answering questions in class, musical and athletic performances, initiating or joining

in conversations or activities with peers, walking down hallways or into classrooms, using the restroom, and eating in the cafeteria (Green et al., 2017; Leigh & Clark, 2018). It is reasonable to assume that such challenges contribute to school-based impairment, such as poor grades, problematic relationships with peers, and non-involvement in extracurricular school activities. However, research examining associations between social anxiety and anxiety-related school impairment, especially in clinical populations, is scarce (Essau et al., 2000; Nail et al., 2015; Soohinda & Sampath, 2016). Additionally, although studies have examined anxiety-reduction psychotherapy interventions delivered in schools to individual or groups of children (e.g., Ginsburg et al., 2020; Masia Warner et al., 2016), to our knowledge no empirical studies have examined whether school-based interventions mitigate the impact of social anxiety on students' anxiety-related school impairment.

The Role of School-Based Accommodations

Schools' efforts to mitigate students' anxiety-related school impairment and improve their functioning often entail implementing *accommodations*. In the United States, under the Individuals with Disabilities Education Improvement Act (P.L. 108-446 [IDEIA]) and Section 504 of the Rehabilitation Act (P.L. 93-112, amended P.L. 93-516) schools must provide accommodations (and other specialized services) to students with learning, medical, or emotional disabilities that significantly limit students' academic functioning. For students with social anxiety, accommodations implemented within these plans may include excusing the student from classroom participation (e.g., reading aloud, writing on the board in front of the class), granting permission to leave the classroom, and allowing tests to be taken in a separate, quiet environment (Green et al., 2017).

It is widely held that school-based accommodations for anxiety are an effective means to mitigate anxiety-related impairment and improve students' academic functioning (Killu et al., 2016). However, no empirical data exist that support this view. This contrasts with the growing research on *family* accommodation of youth anxiety (e.g., Kitt et al., 2022; Shimshoni et al., 2019). Findings from this research consistently show that family accommodation (i.e., well-intentioned behaviors that facilitate child avoidance of anxiety) does not alleviate youth's anxiety symptoms, but exacerbate youth's anxiety symptoms and related impairment (e.g., Etkin et al., 2022; Lebowitz et al., 2016). School-based accommodations may exacerbate youth's anxiety as well, but this has only been recently examined. Conroy and colleagues (2020) found that 92.5% of school-based providers (e.g., psychologists, social workers; N = 134) across preschool, primary, and secondary schools reported implementing at least one accommodation classified as "avoidance-oriented" by a panel of expert psychologists. These included excusing students from participating in class, allowing breaks and visits to the school nurse, and reducing the amount of required work and grading standards.

Ginsburg and colleagues (2021) likewise found that teachers reported implementing avoidance-oriented accommodations, and that these accommodations were associated

with student avoidance and anxiety. Specifically, elementary school (Kindergarten [K] – 5th grade) teachers (N = 31) identified anxious student participants, all of whom had a primary anxiety disorder confirmed with a diagnostic interview. Teachers then rated their frequency of accommodating these students on a measure of family accommodation adapted for classroom use. Results indicated that 97% of teachers reported providing these students with weekly reassurance, 81% participated in behaviors relating to students' anxiety, 77% provided items needed, and 55% assisted their students in avoiding anxiety-provoking situations. As teachers reported more frequent accommodation (e.g., reassurance or modifying classroom activities), students showed greater teacher-identified and rated avoidance of anxiety-provoking situations and higher overall anxiety (Ginsburg et al., 2021).

These studies represent important first steps in an understudied area by showing that at least one-half of school-based accommodations for anxious students include avoidance-oriented strategies and thus may be associated with greater student avoidance of anxiety-provoking situations. This is important information for those working with anxious students in the classroom given that the well-intentioned allowance of avoidant behavior may not mitigate, but rather exacerbate anxiety and related impairment at school. Moreover, by receiving these accommodations, students may inadvertently receive a message that school staff do not believe they are capable of coping with their anxiety. Yet, no studies have examined whether school-based accommodations mitigate or exacerbate the association between social anxiety symptoms and anxiety-related school impairment. This is a glaring research gap, as youth with social anxiety are likely to be particularly challenged by many of the tasks required in the school setting.

Grade-Related Differences

An even greater research gap is considering the role of youth development or grade differentiation in associations between school-based accommodations, social anxiety, and school impairment. Given differences in social and academic demands across elementary and secondary (i.e., middle and high school) grade levels, the role of grade may be important to explore. In the one relevant study we could locate, Green and colleagues (2017) found that middle and high school students (defined as students 12 years and over) reported having more anxiety-related school impairment than elementary school students (defined as students 12 years and younger) among 51 youth referred to an anxiety disorders specialty clinic. Youth reported the highest levels of anxiety when asked to speak in front of their class and taking tests, and middle/high students were significantly more likely to report feeling anxious in at least one school situation than elementary students (Green et al., 2017). These findings suggest that grade-related differences may impact youths' levels of anxiety and impairment. In this study, in addition to examining grade-related differences in

key variables, we explore whether grade level (elementary, secondary) further moderates the impact of having an IEP or 504 Plan on associations between social anxiety and anxiety-related school impairment.

Current Study

In the current study, we addressed several gaps in the research literature by examining associations between social anxiety symptoms, school-based accommodations, and anxiety-related school impairment in a large sample of youth referred to an anxiety specialty research clinic. We included all participants whose parents provided data on their child's education. We examined whether having school-based accommodations, operationalized as the presence or absence of an IEP or 504 Plan (henceforth denotated as IEP/504), moderates associations between social anxiety symptom severity and anxiety-related school impairment, as a preliminary test of the widely held assumption that IEP/504 Plans mitigate the impact of social anxiety symptoms on anxiety-related school impairment. We hypothesized that the association between social anxiety symptoms and anxiety-related school impairment may be *stronger* for youth with school-based accommodations than those without, because, as discussed above, accommodations granted through IEP/504 Plans may enable avoidance.

We also tested whether grade-level, elementary (K – 6th grade) versus secondary (7 – 12th grade), was an additional moderator given increases in social anxiety and anxiety-related school impairment that occur as youth progress through these grades, which may be due in part to the concomitant increases in academic and social demands of school. Given the limited prior research on which to base hypotheses, this aim was exploratory. We also included youth sex and ethnicity as covariates and collected and compared mother- and youth-report data for all analyses. Our multi-informant assessment approach is another important extension of past research, as past research has relied on either youth, or youth and teacher reports; parent data seem similarly important, however. Although some parents may be unaware of their child's school experiences, parents are often the primary recipients of feedback about their child's school performance. Moreover, parents are actively involved in their child's academic planning, including requesting and attending IEP/504 meetings (LoCurto et al., 2021).

METHOD

Participants

Participants were 504 youth in K – 12th grade (76% K – 6th grade; 55% boys or young men) and their mothers who presented to an anxiety disorders specialty research clinic to determine eligibility for participation in clinical trials. Mothers reported on their child's

educational and demographic variables. Thirty-six percent of youth were identified as having an IEP/504 Plan; 64% youth did not have an IEP/504 Plan. In terms of race, 83% of youth were White, 9% were Multiracial, 4% were Black, and 3% were Asian (1% did not report). In terms of ethnicity, 13% reported being Hispanic/Latinx and 85% reported being not Hispanic/Latinx (2% did not report). Most mothers (85%) were married, and most reported annual family incomes that fell within the upper-middle range according to U.S. standards.

Procedures

Parents contacted our Program and were administered a phone screen to determine whether anxiety was a primary concern for their child. Youth with primary anxiety concerns and their mothers were invited to participate in a comprehensive clinical research evaluation. After obtaining written informed assent/consent, youth and their mothers were administered a diagnostic evaluation and completed a series of behavioral tasks (not of interest to this study) and a battery of questionnaires. Mothers also provided demographic information and responded (yes/no) to questions asking whether their child has a 504 or IEP Plan. All procedures were approved by the university's Institutional Review Board (IRB).

Youth- and Mother-Completed Measures

Social Anxiety Symptoms

The social anxiety subscale of the *Multidimensional Anxiety Scale for Children, 2nd Edition* (MASC-2; March, 2013) was used to assess youth social anxiety symptom severity. The social anxiety subscale contains nine items (e.g., feeling nervous to perform in public) rated on a scale ranging from 0 (never) to 3 (often). Scores can range from 0 to 27, with higher scores indicating greater social anxiety symptom severity. The social anxiety subscale of the MASC-2 has evidence of convergent validity with other social anxiety measures and discriminates between social anxiety and other anxiety symptoms in school-age youth (e.g., Anderson et al., 2009; MASC-2; March, 2013). Cronbach's alphas in this sample were .86 for youth-report and .87 for mother-report.

School Impairment

The school subscale of the *Child Anxiety Impact Scale* (CAIS; Langley et al., 2004) was used to assess youth impairment due to anxiety in the school context. The school subscale contains 10 items assessing difficulty due to anxiety in completing common school-based tasks, such as giving oral reports or reading out loud, concentrating on work, getting to school on time, getting good grades, and eating lunch with other kids. Items are rated on a

scale ranging from 0 (not at all) to 3 (very much) and scores can range from 0 to 30, with higher scores indicating greater anxiety-related school impairment. The school subscale of the CAIS has evidence of convergent and divergent validity with other validated youth measures (i.e., the school competence subscale of the Child Behavior Checklist (Achenbach, 1991) and the school phobia subscale of the Screen for Child Anxiety Related Emotional Disorders (Birmaher et al., 1997) and construct validity as established by a confirmatory factor analysis among school-age youth (Langley et al, 2014). Cronbach's alphas in this sample were .87 for youth-report and .86 for mother-report.

Data Analysis

We first conducted preliminary analyses to examine data for nonnormality, missingness, and outliers. We also examined descriptive statistics and zero-order correlations for continuous variables. To better characterize the youth with and without IEP/504 Plans, we examined additional descriptive statistics and conducted *t*-tests, using SPSS Version 28.0. To test the primary hypotheses, we conducted linear regression analyses using Mplus Version 8. In each model, anxiety-related school impairment was the dependent variable, social anxiety symptom severity was the independent variable, and grade level (elementary: K – 6th grades; secondary: 7 – 12th grades) and the presence/absence of an IEP/504 Plan (i.e., school accommodation) were the moderator variables. All models included youth sex assigned at birth (0 = boy, 1 = girl) and ethnicity (0 = non-Hispanic/Latinx, 1 = Hispanic/Latinx) as covariates. Models using mother- and youth-report data were tested separately. Analyses were conducted using the maximum likelihood robust estimation and full information maximum likelihood (FIML) to account for missing data.

RESULTS

Preliminary Analyses

All variables were examined for skew and kurtosis and found to be normally distributed (skew and kurtosis all < |1|). No missing data patterns or outliers were identified. Descriptive statistics and zero-order correlations are presented in Table 1. Of note, youth- and mother-reports of social anxiety severity and anxiety-related school impairment were all positively and significantly correlated, with medium-to-large effect sizes (Cohen et al., 1988). Additional descriptive statistics revealed that 42% of boys had an IEP/504 Plan (58% did not) and 28% of girls had an IEP/504 Plan (72% did not). For youth in K – 6th grades, 33% had an IEP/504 Plan (67% did not), and for youth in 7 – 12th grades, 46% had an IEP/504 Plan (54% did not).

Table 1.
Descriptive Statistics and Zero-Order Correlations Between Study Variables

	1	2	3	4
1. Social Anxiety – Y		.295*** (.617)	.447*** (.999)	.177*** (.360)
2. Social Anxiety - M			.223*** (.458)	.439*** (.977)
3. School Impairment – Y				.243*** (.501)
4. School Impairment – M				
Range	0-27	0-27	0-30	0-30
M	13.262	16.796	9.430	8.702
SD	7.214	6.209	7.359	6.674

*Note. Y = youth-report, M = mother-report. Cohen's d included in parentheses. *p <.05, **p <.01, ***p <.001*

T-tests revealed that youth with IEP/504 Plans had significantly higher social anxiety severity compared with youth without IEP/504 Plans, according to mother-report, $t(436) = -2.089$, $p < .05$, but not youth-report, $t(435) = 0.81$, $p = .935$. Youth with IEP/504 Plans also had significantly higher levels of anxiety-related school impairment compared to those without, according to mother-report, $t(472) = -6.355$, $p < .001$, and youth-report, $t(456) = -2.079$, $p < .05$. Regarding grade-level differences, youth in secondary grades had higher levels of social anxiety symptom severity than youth in elementary grades, according to mother-report, $t(436) = -2.747$, $p < .01$, and youth-report, $t(435) = -7.077$, $p < .001$. Likewise, youth in secondary grades had higher levels of anxiety-related school impairment than those in elementary grades, according to mother-report, $t(472) = -4.351$, $p < .001$, and youth-report, $t(456) = -6.339$, $p < .001$.

Primary Analyses

We first examined regression models with grade included as an exploratory moderator. There were no significant interaction effects ($ps > .05$), so interaction terms involving grade were dropped and grade was retained as an additional covariate. Results of the final regression models are presented in Table 2. In the model with mother-report data, there were significant effects of youth sex, grade, social anxiety symptom severity, and the presence of an IEP/504 Plan on anxiety-related school impairment. In the model with youth-report data, there were significant effects of grade and social anxiety symptom severity only on anxiety-related school impairment. We did not find any significant interactions between social anxiety and the presence or absence of an IEP/504 Plan in the mother- or youth-report models.

Table 2.

Linear Regression Analyses Examining Associations Between Social Anxiety and Anxiety-Related School Impairment with IEP/504 as a Moderator

Model	**Mother-Report**			**Youth-Report**		
	β	*B*	*SEB*	β	*B*	*SEB*
Sex	**-0.090***	-1.199	0.531	-0.045	-0.668	0.614
Ethnicity	0.028	0.549	0.871	0.086	1.841	0.993
Grade	**0.122****	1.895	0.734	**0.157****	2.691	0.783
Social Anxiety	**0.424*****	0.454	0.046	**0.407*****	0.423	0.056
IEP/504	**0.208*****	2.890	0.603	0.067	1.021	0.646
Anxiety x IEP/504	-0.040	-0.077	0.101	-0.019	-0.034	0.095

*Note: Sex coded 0 = boy, 1 = girl; Ethnicity coded 0 = not Hispanic, 1 = Hispanic; Grade coded 0 = elementary, 1 = secondary; IEP/504 coded 0 = child does not have an IEP/504 Plan, 1 = child has an IEP/504 Plan. *p < .05, **p < .01, *** p < .001*

DISCUSSION

IEP/504 Plans are granted to anxious students to reduce their anxiety-related impairment at school. This study is the first to show that having an IEP/504 Plan may not mitigate the anxiety-related school impairment associated with social anxiety symptoms. Aligned with other recently reported data suggesting that some school-based accommodations enable anxious students to avoid anxiety-provoking situations (e.g., Conroy et al., 2020; Ginsburg et al., 2021), our data show associations between having an IEP/504 Plan and anxiety-related school impairment, at least based on parent report. This association emerged across levels of social anxiety severity, student sex, ethnicity, and grade level. Future research is needed to examine these associations over time, and to account for the specific nature of accommodations granted in students' IEP/504 Plans to determine if indeed having an IEP/504 Plan *contributes* to avoidance of anxiety. If so, this would be problematic in allowing for the occurrence of negative reinforcement (i.e., avoiding anxiety-provoking situation maintains continued anxiety and avoidance). It would also mean these plans have the potential to reduce student confidence and perpetuate additional student (and parent) requests for readjustment of expectations (Wehby et al., 2003). Our finding that having an IEP/504 Plan was not associated with anxiety-related school impairment based on youth-report mirrors findings relating to *family* accommodation, which show that youth are more likely than their parents to view accommodation as more helpful and less problematic, at least at the time of the assessment (Lebowitz et al., 2015).

Our study addresses glaring gaps in the research literature on youth anxiety and school-based intervention, and therefore represents a novel and important contribution. We showed that school-based accommodations may not help students in intended ways. The fact that we showed this solely by relying on reports of the presence or absence of IEP/504 Plans, a quick, efficient, simple, and naturalistic method that does not require teacher participation, as in past studies, renders our findings even more novel and interesting. Although this approach did not allow us to identify specific school-based accommodations, it nevertheless is an approach that is worthy of consideration in future work. Of further note, about one-third of our sample had an IEP/504 Plan. While lower than the proportion cited in other treatment-seeking samples (e.g., 57%; Green et al., 2017), it is still striking that (1) up to one-half of clinically anxious youth may be receiving accommodations that may or may not help in intended ways, (2) and up to one-half of anxious youth may not be receiving necessary accommodations at all (LoCurto et al., 2021). The mismatch between anxiety prevalence and the prevalence of youth receiving school-based services highlights the importance of further examining the nature of these accommodations and their impact.

Another unique contribution of our study was reporting descriptive information about the youth who had IEP/504 Plans and those who did not. A greater proportion of boys compared to girls, and secondary students compared to elementary students, had IEP/504 Plans. This information may be especially important to future research seeking to advance understanding of which specific accommodations help or harm, and for whom. We also reported data revealing differences in levels of social anxiety severity and anxiety-related school impairment based on grade level and IEP/504 status in a large clinical sample of children referred to an anxiety disorders specialty program and using both youth- and mother-reports. Youth with IEP/504 Plans were significantly more socially anxious (mother-report) and impaired due to their anxiety (mother-and-youth report) compared to youth without these plans. Additionally, youth in secondary school had higher levels of social anxiety symptom severity and impairment than youth in elementary school according to both youth- and mother-reports (also reflected in the regression analyses). These findings suggest the need for both parents and school staff to be informed about the problematic nature of social anxiety in school, especially as youth move up in grade level. This can help ensure that these youths' needs are met to mitigate impairment related to their anxiety symptoms.

Limitations, Future Directions, and Implications

Results are limited by the concurrent study design, which prohibits any causal or temporal interpretations. For example, youth with initial higher levels of social anxiety and anxiety-related impairment are perhaps more likely to receive, and have parents who request, IEP/504 Plans. Or perhaps certain IEP/504 Plans mitigate impairment over time. Future research would benefit from prospective designs to address these possibilities. Our

results are further limited by the exclusive use of youth and parent ratings. Although there is no singular gold standard method to assess anxiety, and many anxiety rating scales have excellent psychometric properties (Etkin et al., 2021a,b), future research would benefit from additional informants (e.g., fathers, teachers) and methods (e.g., behavioral observation). It would also be beneficial to gather information about the content of students' IEP/504 Plans, including the specific accommodations they entail and the length of time they have been implemented. Specifically, coding accommodations based on whether they are avoidance- or approach- oriented, as in Conroy and colleagues (2020), would allow for more nuanced conclusions about which accommodations help or harm, and the mechanisms by which this occurs. Future research could also compare a dimensional approach to measuring social anxiety, as we took in this study, to a categorical approach to determine potential differences in the impact of school-based accommodations for youth with and without diagnosed social anxiety disorder. Finally, this sample was largely ethnically and socioeconomically homogenous and from the U.S. It is important to examine whether and what type of educational plans in other countries mitigate impairment in the face of anxiety in populations of youth from across the world with diverse backgrounds, needs, and challenges. This will help determine our findings' generalizability.

This and future research focusing on how plans such as IEP/504s may contribute to social anxiety and associated avoidance and impairment may have important educational implications. School staff including teachers, administrators, and counselors, should carefully consider which accommodations may be unintentionally maintaining or increasing student's social anxiety and related impairment and take steps to reconceptualize the accommodations being offered, if warranted. Greater collaboration between parents, mental health experts, and schools would be beneficial to establish optimal ways to help anxious students succeed in the classroom while addressing the impact of anxiety in school. It has been suggested that school staff may benefit from specialized anxiety-training, and shown that empirically studied psychosocial interventions (e.g., cognitive-behavioral interventions) can support anxious students' academic success (Ginsburg et al., 2021; Masia Warner et al., 2016). Specifically considering the role of social anxiety and the principles underlying evidence-based interventions (e.g., facing fears instead of avoiding) may be important in both guiding the selection of accommodations and offering students solutions that help minimize impairment.

CONCLUSION

School-based accommodations, which are often granted through formal plans such as IEP/504s, intend to help alleviate school-based impairment for students with anxiety and other challenges. However, for youth with social anxiety, who are especially vulnerable to

school-based difficulties and impairment, it is not known whether these well-intentioned plans reduce or exacerbate impairment. In this study, we examined this question for the first time, and we did not find evidence that IEP/504 Plans mitigate associations between social anxiety symptoms and anxiety-related school impairment among clinically anxious youth. Rather, these plans were directly associated with anxiety-related school impairment, according to youth's mothers. While further research is needed to replicate and extend results of this study, our results suggest that schools should carefully consider how accommodations may impact youth with social anxiety and provide interventions that encourage approach- rather than avoidance-related behavior.

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Impact of School Transition Stressors on Hispanic Adolescents' Symptoms of Social Anxiety and Depression: Repetitive Negative Thinking as a Potential Mediator*

Impacto de los estresores de la transición escolar en los síntomas de ansiedad social y depresión de los adolescentes hispanos: el pensamiento negativo repetitivo como un mediador potencial

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Abstract

Adolescents' lives undergo considerable reorganization during school transitions, which require establishing new peer relationships and participating in more demanding academic activities. Yet, little is known about how school-transition stressors affect adolescents' feelings of social anxiety (SA) and depression, especially among Hispanic youth who are at elevated risk for school dropout. We examined school-transition stressors as predictors of adolescents' SA and depressive symptoms and evaluated whether the tendency to engage in repetitive negative thinking (RNT) (e.g., worry and rumination) served as a transdiagnostic mediating pathway. Participants were 461 Hispanic adolescents (M_{age}=14.22; 59% female) attending high school in a large metropolitan area of the U.S., who completed three surveys over the school year. At T1 (October), adolescents reported transition stressors related to school

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performance, peer pressure, teacher interactions, and school/leisure conflict, and current symptoms of SA and depression. At T2 (February), adolescents reported levels of RNT. At T3 (May), adolescents again reported symptoms of SA and depression. Structural equation modeling examined associations between transition stressors (T1) and symptoms of SA and depression at the end of the school year (T3) and whether RNT mediated these associations, controlling for gender and T1 symptoms. School performance stressors predicted increased SA and depressive symptoms at the end of the school year and RNT mediated these relationships. Furthermore, T1 peer pressure predicted T3 depressive symptoms. Overall, stressors during the high school transition affect Hispanic youth's functioning, and RNT may be an important transdiagnostic target for interventions to reduce adolescent SA and depression.

Keywords: school transitions, social anxiety, depression, repetitive negative thinking

Resumen

Las vidas de los adolescentes sufren una reorganización considerable durante las transiciones escolares, que requieren establecer nuevas relaciones con los compañeros y participar en actividades académicas más exigentes. Sin embargo, se sabe poco sobre cómo los factores estresantes de la transición escolar afectan a los sentimientos de ansiedad social (AS) y depresión de los adolescentes, especialmente entre los jóvenes hispanos que tienen un riesgo elevado de abandono escolar. Examinamos los factores estresantes de la transición escolar como predictores de la AS y los síntomas depresivos de los adolescentes y evaluamos si la tendencia a participar en el pensamiento negativo repetitivo (PNR) (por ejemplo, la preocupación y la rumiación) sirvió como una vía de mediación transdiagnóstica. Los participantes fueron 461 adolescentes hispanos (M_{edad}=14,22; 59% mujeres) que asistían a la escuela secundaria en una gran área metropolitana de los EE.UU., que completaron tres encuestas durante el año escolar. En T1 (octubre), los adolescentes informaron de los factores de estrés de transición relacionados con el rendimiento escolar, la presión de los compañeros, las interacciones con los profesores y los conflictos entre la escuela y el ocio, así como de los síntomas actuales de SA y depresión. En T2 (febrero), los adolescentes informaron de los niveles de PNR. En T3 (mayo), los adolescentes volvieron a informar de los síntomas de AS y depresión. El modelo de ecuaciones estructurales examinó las asociaciones entre los estresores de transición (T1) y los síntomas de AS y depresión al final del año escolar (T3) y si la PNR medió en estas asociaciones, controlando el género y los síntomas de T1. Los estresores del rendimiento escolar predijeron un aumento de los síntomas de SA y depresión al final del año escolar y la PNR medió en estas relaciones. Además, la presión de los compañeros de T1 predijo los síntomas depresivos de T3. En general, los factores de estrés durante la transición a la escuela secundaria afectan al funcionamiento de los jóvenes hispanos, y la PNR puede ser un importante objetivo transdiagnóstico para las intervenciones destinadas a reducir la AS y la depresión en los adolescentes.

Palabras clave: transiciones escolares, ansiedad social, depresión, pensamientos negativos repetitivos.

Key developmental changes occur during adolescence, especially during the transition to high school or secondary school (La Greca & Ranta, 2015). During such transitions, adolescents' lives undergo considerable reorganization, which includes establishing new relationships, participating in more demanding academic tasks, learning to interact with multiple authority figures (e.g., teachers), and trying to balance school and leisure activities (Cole & Cole, 2001; De Wit et al., 2011; Goodwin et al., 2012; Ratelle et al., 2005). In particular, school transitions often involve novel situations that adolescents must negotiate to develop more mature levels of academic and emotional functioning; however, the novelty can bring uncertainty, opportunities for failure, and distress. As such, the transition to high school represents a significant stressor, which could affect adolescents' psychological functioning (Grant et al., 2003) and contribute to feelings of social anxiety and depression (La Greca & Ranta, 2015). Yet, to our knowledge, no studies have examined the association between school transition stressors and adolescent symptoms of social anxiety and depression.

Both social anxiety and depression are common problems among adolescents. According to Horowitz and Graf (2019), 70% of U.S. adolescents (ages 13 to 17 years) view anxiety and depression as a major problem among their peers, and these mental health concerns cut across gender, racial, and socioeconomic lines. At a clinical level, both social anxiety disorder (SAD) and major depressive disorder (MDD) are among the most common mental health disorders in the U.S. (Kessler et al., 2005) and elsewhere (e.g., Auerbach et al., 2018). SAD typically emerges during adolescence (de Lijster et al., 2017), and the prevalence of MDD surges during adolescence and is comparable to the prevalence rate for adults (Auerbach et al., 2018; Kessler et al., 2005). Importantly, adolescents who develop significant symptoms of social anxiety or depression display impairment in a broad range of domains, including interpersonal relationships and academic functioning (La Greca & Harrison, 2005; Lewinsohn et al., 2003; Ranta et al., 2009b).

This study evaluated whether school-transition stressors experienced at the beginning of the school year predicted adolescents' increased symptoms of social anxiety and depression at the end of the school year, and whether repetitive negative thinking (RNT), or the tendency to engage in worry and rumination (Ehring & Watkins, 2008), mediated the association between initial school-transition stressors and adolescents' later symptoms of social anxiety and depression. Importantly, we focused on adolescents from Hispanic/Latinx backgrounds. In the U.S., Hispanic/Latinx adolescents are underrepresented in school transition research, despite evidence that they experience a significantly more difficult school transition than other youth (e.g., Benner & Graham, 2009).

Impact of School Transition Stressors

Multiple academic and interpersonal stressors are associated with the transition to high school. Key transition stressors are discussed below.

Academic stressors. Many adolescents experience *school performance stress*, as suggested by findings that youths' grade point average, attendance, school involvement, and feelings of school membership all decline during the transition to high school (Barber & Olson, 2004; Benner & Graham, 2009; Goodwin et al., 2012). The stress from exams also can be substantial and is associated with lower psychological well-being among Chinese adolescents (Xiang et al., 2019). School performance stress may be reflected in adolescents' difficulties with academic subjects and pressures to study.

Moreover, adolescents may experience *stress related to balancing schoolwork with extra-curricular activities.* For example, the transition to high school is associated with an increased homework burden which can interfere with leisure activities (Brodar et al., 2020; Ratelle et al., 2005). Despite these academic stressors occurring at the beginning of high school, to our knowledge, no studies have examined associations between academic transition stressors and adolescents' symptoms of both social anxiety and depression, although some evidence suggests that academic stress, in general, is associated with depressive symptoms (e.g., Yan et al., 2018).

Peer/Interpersonal stressors. School transitions also bring about significant shifts in adolescents' social lives. Adolescents may lose relationships with prior friends, and new friendships may be difficult to initiate or maintain in an unfamiliar social environment (Barber & Olsen, 2004). This is particularly concerning, in that peers, and especially close friends, are a key focus of adolescents' lives and represent a primary source of social support (Furman et al., 2009; La Greca & Landoll, 2011).

In particular, during school transitions, adolescents may experience *peer stressors,* such as pressures to "fit in" with peers (La Greca & Ranta, 2015) or feeling judged by peers and less supported by them (Newman et al., 2007). Although peer victimization is associated with social anxiety and depression (La Greca & Harrison, 2005; Ranta et al., 2009a), studies have not evaluated the relationship of less extreme peer stressors, such as peer pressure, and adolescents' psychological adjustment.

Moreover, school transitions also bring about interactions with many new adults, especially teachers (De Wit et al., 2011). Adolescent stressors related to teacher interactions might include feeling that teachers do not listen to or support them (Byrne et al., 2007).

In summary, high school transitions can be stressful as they substantially affect adolescents' academic and interpersonal lives; this could contribute to feelings of social anxiety or depression, although this has not been studied directly. In the current study, we expected that adolescents who reported higher levels of academic and interpersonal stressors occurring at the beginning of the transition to high school (T1) would report increased symptoms of social anxiety and depression at the end of the school year (T3).

Repetitive Negative Thinking (RNT) as a Mediator

RNT, or the tendency to engage in perseverative thought processes such as worry and rumination, represents an important transdiagnostic factor contributing to both anxiety and depression in children, adolescents, and adults (e.g., Ehring & Watkins, 2008; Rood et al., 2010). While rumination has traditionally been linked with depression and worry with anxiety, more recent work has identified RNT as a single factor that is related to symptoms of most affective disorders, including social anxiety and depression (Arditte et al., 2016; Drost et al., 2014).

Prior work demonstrated that specific forms of RNT mediate the effects of stressful life events on anxiety or depression in adolescents. Michl and colleagues' (2013) found that stressful events prospectively predicted rumination, which in turn was associated with increased symptoms of anxiety at follow-up. For example, an adolescent who is bullied may perseverate by dwelling on the events, and might worry more about upcoming social interactions, both of which would likely lead to an increase in their symptoms of depression and social anxiety.

Furthermore, because RNT cuts across emotional disorders transdiagnostically, understanding the effects of RNT may shed light on adolescents' shared cognitive vulnerability to both social anxiety and depression. In this study, we expected that transition stressors at the beginning of the school year (T1) would predict RNT at mid-year (T2), which in turn would mediate the effects of initial transition stressors on adolescents' symptoms of social anxiety and depression at the end of the school year (T3).

Hispanic Ethnicity

This study focused on adolescents from Hispanic/Latinx backgrounds. It is surprising than Hispanic/Latinx youth are under-represented in school transition research, given that they experience more difficult school transitions than other youth (e.g., Benner & Graham, 2009). Moreover, although there have been marked improvements in recent years, Hispanic/Latinx youth have higher rates of dropping out of high school (10%) than any other racial/ethnic group in the U.S. (Gramlich, 2017). Thus, Hispanic/Latinx youth in the U.S. represent a vulnerable population that merits further study and were the focus of the current investigation.

Gender

Finally, in evaluating our key study aim, we considered (and controlled for) gender. Adolescent girls report higher levels of social anxiety and depression than boys (e.g., Hankin et al., 2007; La Greca & Harrison, 2005), and report more stressors in general than boys,

particularly peer-related stressors (Byrne et al, 2007; Hankin et al., 2007). Finally, findings indicate that girls tend to engage in more RNT than boys (e.g., Hankin, 2008).

METHOD

Participants

At T1, participants included 461 Hispanic adolescents (59% girls; M_{age}=14.22 years, *SD*=0.52) who were entering a public high school (9th grade) in a large metropolitan area of South Florida, where 72.2% of school-aged youth identify as Hispanic (US News and World Report, 2022). Most adolescents identified as White (88.3%) and U.S.-born (74.2%) and reported Spanish as their first language (64.0%). All adolescents entering the 9th grade (ages 13-15 years) who were able to read and speak English were eligible. Exclusion criteria included enrollment in special education classes for reading/language difficulties or limited cognitive abilities. Because the vast majority of adolescents identified as Latinx/Hispanic (91.2%), analyses were limited to adolescents of Latinx/Hispanic ethnicity. At Time 1 (October), 474 participants consented and provided data. Of these, 461 (97%) also participated at Time 2 (February) and Time 3 (May). Adolescents who did not participate at all timepoints were excluded; there were no significant demographic differences between those who provided only Time 1 data compared to those who provided data at T2 or T3.

Procedure

This project was part of a study of school transitions. The University Institutional Review Board and participating school district's research office reviewed and approved the study. Adolescents were recruited via flyers and in-person information distributed at all 9th grade History/Social Studies classes in a large suburban high school at the beginning of the school year. Active parental consent was required for adolescent participation; teachers distributed letters about the project and parental consent forms (in Spanish and English) to adolescents. Adolescents returned consent forms to the school and provided written assent prior to participation. The participation rate of eligible adolescents was 50%. This is likely an underestimate as it was not possible to determine how many adolescents who received the project letters distributed them to their parents.

This study used a three-wave, prospective study design. At each time point (October, February, May), adolescents completed questionnaires (45-60 minutes) via a secure online data collection method, using school computers. During testing, project staff (doctoral students and research assistants) answered questions. Teachers whose classrooms participated received a $25 gift card for their assistance at each time point. No compensation was provided for adolescents.

Measures

Transition Stressors. At T1, four subscales of *The Adolescent Stress Questionnaire* (*ASQ*; Byrne et al., 2007) assessed transition stressors. The *ASQ* measures different stressors that adolescents experience; subscales demonstrate adequate concurrent validity, internal consistency (α=.62-.92), and test-retest reliability (*r* =.68-.88). In this study, we selected and shortened four *ASQ* subscales relevant to the high school transition: school performance (*difficulty with some subjects in school*), school/leisure conflict (*not enough time for activities outside of school hours*), peer pressure (*being judged by your friends*), and teacher interactions (*not being listened to by teachers*). Each subscale contained three items rated on a 5-point scale (1=*not at all stressful or irrelevant* to 5=*very stressful*) that were summed to produce a total for each subscale. Confirmatory factor analysis found that the shortened *ASQ* maintained the intended subscales from the original *ASQ* and demonstrated good reliability and convergent and discriminant validity (Tarlow et al., 2018). In the current study, Cronbach's alphas were .76 (school performance), .75 (school/leisure conflict), .72 (peer pressure), and .76 (teacher interaction).

Repetitive Negative Thinking (RNT). At T2, RNT was assessed by eight items with high factor loadings (>.70) from the *Perseverative Thinking Questionnaire–Child Version (PTQ-C;* Bijttebier et al., 2015) (e.g., *the same thoughts keep going through my mind again and again; thoughts come into my mind without me wanting them to)*. This scale has demonstrated concurrent and criterion validity (e.g., significant associations with other measures of RNT and with youths' symptoms of depression and anxiety) (Bijttebier et al., 2015). A one-factor solution best fits the scale (Bijttebier et al., 2015; McEvoy et al., 2018). Items were rated from 0=*Never* to 4=*Almost Always* and summed for a total score (Cronbach's α=.95).

Social Anxiety. At T1 and T3, adolescents completed the *Social Anxiety Scale for Adolescents* (*SAS-A*; La Greca & Lopez, 1998), which includes 18 items (e.g., *I worry about being teased*), and 4 fillers (e.g., *I like to read*). The 18 items are rated on a 5-point scale (1=*Not at all*, 5=*All the time*) and summed for a total score. The *SAS-A* has strong support for its measurement model, validity, and reliability with ethnically diverse adolescents (La Greca et al., 2015; La Greca & Lopez, 1998). In this study, Cronbach's α was .92 (T1) and .93 (T3).

Depressive Symptoms. At T1 and T3, adolescents completed the *Center for Epidemiological Studies Depression Scale* (*CES-D*; Radloff, 1977). This widely used well-validated measure contains 20 items rated from 0 (*Rarely*) to 3 (*Most or All of the Time*) and summed. Total scores of 16 or more indicate mild depressive symptoms (Rushton et al., 2002). In this study, Cronbach's α was .76 (T1) and .81 (T3).

Data Analytic Plan

We examined data for outliers, normality, and linear relationships between variables using SPSS Version 27. No violations of statistical assumptions were found. Data were

found to be missing completely at random (MCAR), according to Little's MCAR test (Little, 1998). In cases where partial missingness of data was observed, multiple imputation via full information maximum likelihood estimation was used to account for missing data and maximize the use of the full data set. Means and standard deviations were computed for all study variables and correlations among the variables were computed. Gender differences in study variables were also examined and controlled for in the analyses.

Structural equation modelling (SEM) evaluated the key study aim using Mplus Version 8.6. Good model fit was determined by a non-significant chi-squared test and by CFI/TLI > .95, RMSEA < .06, and SRMR < .08 (Hu & Bentler, 1999). We examined the prospective association between initial school-transition stressors and adolescents' symptoms of social anxiety and depression at the end of the school year, and whether RNT potentially mediated this association.

RESULTS

Preliminary Analyses

Means and correlations between study variables are in Table 1. Adolescents rated transition stressors pertaining to academic functioning (i.e., school performance stress, school/leisure conflict) higher than those pertaining to interpersonal functioning (i.e., peer pressure, teacher interactions; all *p*'s<.001). In addition, at T1, 26% of adolescents exceeded clinical cut-offs for social anxiety (*SAS-A* score≥50), 38% exceeded cut-offs for mild depression (*CES-D* score≥16), and 15% were elevated on both social anxiety and depression.

Table 1:
Means (SDs) and Correlations Among Study Variables (N=461).

	Mean (*SD*)	1	2	3	4	5	6	7	8
1. School performance	9.54 (3.30)	1.00							
2. Peer pressure	6.43 (3.12)	0.37	1.00						
3. Teacher interaction	6.98 (3.35)	0.56	0.42	1.00					
4. School/leisure	9.94 (3.44)	0.68	0.34	0.50	1.00				
5. T2 RNT	12.90 (8.79)	0.33	0.40	0.23	0.28	1.00			
6. T1 Social Anxiety	41.34 (15.56)	0.32	0.65	0.26	0.31	0.42	1.00		
7. T1 Depression	15.75 (10.35)	0.37	0.52	0.33	0.38	0.52	0.60	1.00	
8. T3 Social Anxiety	38.88 (15.47)	0.24	0.49	0.19	0.21	0.43	0.69	0.47	1.00
9. T3 Depression	15.70 (11.37)	0.24	0.41	0.26	0.23	0.48	0.39	0.58	0.64

Note: All correlations are significant, p <.001, two-tailed test

All school-transition stressors were significantly related to RNT (*r*'s from .23 to .40), as well as to adolescents' concurrent symptoms of social anxiety (*r*'s from .26 to .65) and depression (*r*'s from .33 to .52) and their T3 symptoms of social anxiety (*r*'s from .19 to .49) and depression (*r*'s from .23 to .41) (all *p*'s<.001). RNT also was significantly associated with T3 symptoms of social anxiety (*r*=.43) and depression (*r*=.48) (*p*'s<.001). Finally, adolescents' symptoms of social anxiety and depression were moderately intercorrelated (*r*'s=.60 for T1 and .64 for T3; *p*'s<.001).

As expected, multivariate ANOVAs found that, aside from teacher interaction stress (*p*=.61), girls reported higher levels of transition stressors (*p*'s<.02), higher levels of RNT (*p*<.001), more symptoms of social anxiety (at T1 and T3; *p*'s<.01) and depression (at T1; *p*<.001). Thus, gender was controlled in SEM analyses.

Transition Stressors Predicting Increased Symptoms of Social Anxiety and Depression

To examine whether school transition stressors predicted increased symptoms of social anxiety and depression over the school year, the SEM model (see Table 2) included the direct effects of school-transition stressors (T1) on symptoms of social anxiety and depression (T3), along with the indirect effects of stressors via RNT; both gender and T1 symptoms were controlled. The model fit the data well, χ^2=0.99, RMSEA [90% CI]=0.00[0.00, 0.08], CFI=1.00, TLI=1.00, SRMR=0.01.

Table 2:
Path Coefficients from Structural Equation Model

	Unstandardized coefficient	Standardized coefficient	SE	*t*
Direct Effects				
T2 Repetitive Negative Thinking on				
Gender	0.89	0.05	0.72	1.24
T1 Social Anxiety Symptoms	0.05	0.09	0.03	1.64
T1 Depression Symptoms	**0.31*****	**0.36**	**0.04**	**7.06**
School Performance Stress	**0.38****	**0.14**	**0.15**	**2.50**
Peer Pressure Stress	**0.33***	**0.12**	**0.16**	**2.14**
Teacher-related Stress	-0.11	-0.04	0.13	-0.80
School/Leisure Conflict Stress	-0.02	-0.01	0.14	-0.14

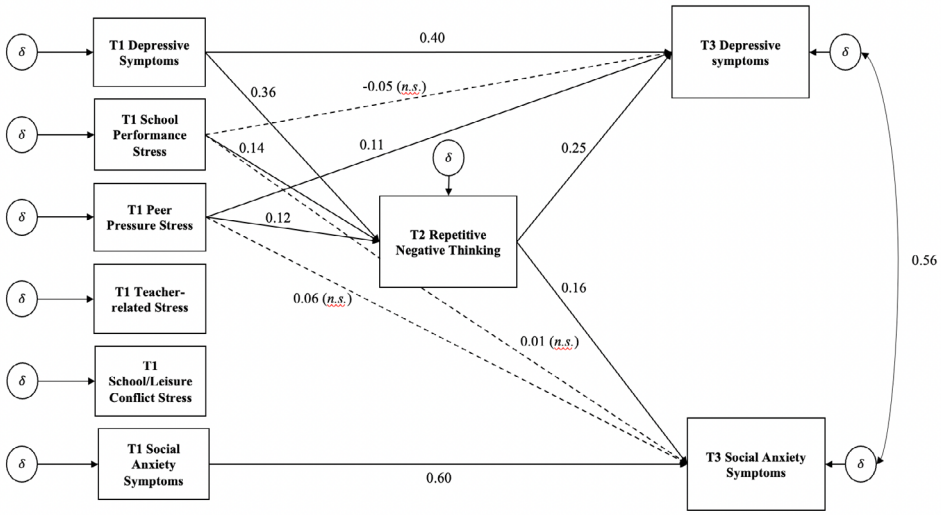
	Unstandardized coefficient	Standardized coefficient	SE	*t*
T3 Social Anxiety on				
T1 Social Anxiety	**0.59*****	**0.60**	**0.04**	**15.53**
Gender	-0.71	-0.02	1.10	-0.65
T2 Repetitive Negative Thinking	**0.28*****	**0.16**	**0.07**	**4.10**
School Performance Stress	0.03	0.01	0.23	0.12
Peer Pressure Stress	0.27	0.06	0.23	1.21
Teacher-related Stress	-0.12	-0.02	0.20	-0.58
School/Leisure Conflict Stress	-0.10	-0.02	0.21	-0.45
T3 Depression on				
T1 Depression	**0.44*****	**0.40**	**0.04**	**9.83**
Gender	-1.16	-0.05	0.88	-1.32
T2 Repetitive Negative Thinking	**0.32*****	**0.25**	**0.06**	**5.65**
School Performance Stress	-0.13	-0.04	0.19	-0.68
Peer Pressure Stress	**0.40***	**0.11**	**0.17**	**2.43**
Teacher-related Stress	0.18	0.05	0.16	1.13
School/Leisure Conflict Stress	-0.09	-0.03	0.17	-0.51
T3 Social Anxiety with				
T3 Depression	**55.33*****	**0.56**	**5.25**	**10.54**
Indirect Effects				
On Social Anxiety, via RNT				
School Performance Stress	**0.11***	**0.02**	**0.05**	**2.14**
Peer Pressure Stress	**0.09**†	0.02	0.05	1.90
Teacher-related Stress	-0.03	-0.01	0.04	-0.79
School/Leisure Conflict Stress	-0.01	-0.001	0.04	-0.14
On Depression, via RNT				
School Performance Stress	**0.12***	**0.04**	**0.05**	**2.28**
Peer Pressure Stress	**0.11***	**0.03**	**0.05**	**2.00**
Teacher-related Stress	-0.03	-0.01	0.04	-0.79
School/Leisure Conflict Stress	-0.01	-0.002	0.04	-0.14

*Note: Significant findings are in bold text. †p<.10, *p<.05, **p<.01, ***p<.001*

There was a significant direct effect of peer pressure stressors, such that higher peer pressure stressors predicted significantly increased symptoms of depression (ß=0.11), but not social anxiety (p=.23), at T3 (see Figure 1). No other transition stressors (p's>.26) emerged as predictors of symptoms at T3, nor did gender (p's>.19).

Figure 1:

Path diagram for the structural equation model. Solid lines represent significant direct effects. Dashed lines represent non-significant direct effects from T1 school performance and peer pressure stressors to T3 symptoms when including RNT as a mediator.



We next examined whether RNT mediated the relationship between T1 school-transition stressors and T3 symptoms by testing the indirect effects of T1 transition stressors on T3 symptoms of social anxiety and depression via RNT. School performance stressors (ß=0.14), peer pressure stressors (ß=0.12), and T1 symptoms of depression (ß=0.36) predicted RNT at T2. In turn, RNT predicted significantly increased symptoms of social anxiety (ß=0.16) and depression (ß=0.25) at T3, over and above the significant effects of T1 symptoms (social anxiety ß=0.60; depression ß=0.40). In addition, indirect effects indicated that RNT significantly mediated the relationship between school performance stressors and social anxiety at T3 (b = 0.11, 95% CI [0.03, 0.19], ß=0.02, SE = 0.05, t = 2.14, p = .03) and between school performance stressors and depression at T3 (b = 0.12 95% CI [0.03, 0.21], ß=0.04, SE = .05, t = 2.28, p = .02).

Additionally, RNT significantly mediated the relationship between peer pressure stressors and T3 depression (b = 0.11 95% CI [0.02, 0.19], ß=0.03, SE = .05, t = 2.00, p = .046). The indirect effect of peer pressure stressors and social anxiety at T3 via RNT was marginally significant (b = 0.09 95% CI [0.02, 0.17], ß=0.03, SE = .05, t = 1.90, p = .06). No other indirect effects emerged as significant (p's>.43).

DISCUSSION

In a sample of Hispanic/Latinx adolescents entering high school, we examined the prospective effects of academic and interpersonal school-transition stressors on increased symptoms of social anxiety and depression over the school year, and whether repetitive negative thinking mediated the association between initial stressors and later symptomatology. Key findings indicated that transition stressors pertaining to school performance were prospectively associated with increased symptoms of social anxiety and depression, and this association was mediated by repetitive negative thinking. Also, transition stressors related to peer pressure predicted increased depressive symptoms and tended to predict increased social anxiety over the school year.

School transitions are common and potentially disruptive to adolescents' lives, although little attention has been given to transition stress and its impact on adolescents' symptoms of social anxiety and depression (La Greca & Ranta, 2015). Yet, both social anxiety disorder and depression are associated with high rates of school dropout among adolescents (Chalita et al., 2012; Stein & Kean, 2000), and adolescents with moderate to high mental health concerns are nearly twice as likely to drop out of high school than other teens, especially during the first year of a school transition (Andersen et al., 2021).

Impact of School Transition

In the present study, adolescents' social anxiety and depressive symptoms at the beginning of the school year were somewhat elevated compared to norms for community populations (e.g., La Greca et al., 2015). Specifically, more than a quarter of the youth reported subclinical levels of social anxiety and nearly 40% reported subclinical depression; such adolescents are already at risk for poor educational and occupational outcomes (Fergusson & Woodward, 2002; Stein & Kean, 2000). Moreover, school performance stressors contributed to further increases in social anxiety and depression across the school year, potentially exacerbating adolescents' vulnerability to poor educational and life outcomes.

All four school-transition stressors were concurrently related to adolescents' social anxiety and depression, although adolescents perceived academic stressors (school performance, school/leisure conflict) as more stressful than peer/interpersonal stressors. Furthermore, over the course of the school year, school performance stressors uniquely contributed to increased social anxiety and depression. Items from the school performance subscale reflect issues such as "having to study things you don't understand," and "having difficulty with some subjects." These academic demands contributed to adolescent worry and rumination (i.e., RNT), which in turn predicted increased social anxiety and depression. Thus, both school performance pressures and RNT may play a role in adolescents' symptoms of social

anxiety and depression during school transitions. Adolescents who ruminate or worry about stressors in their lives are especially at risk for poor mental health outcomes.

Importantly, our findings suggest that school performance stress can affect adolescents' symptoms of social anxiety – independent of the transition's impact on depressive symptoms. This is a novel finding that extends the limited research on school transitions, which has focused on symptoms of depression (Newman et al., 2007). As adolescents make the transition to high school, they often encounter a very different school environment than previously, including substantially larger schools and different social networks (Evans et al., 2018), as well as greater emphasis on performance-based educational goals (Madjar et al., 2018). Performance-based goals might lead to negative experiences, such as social humiliation (if performance is below expected) or observational threats (e.g., seeing others being told off or humiliated when performing below expectations) (Evans et al., 2018), which could heighten feelings of social anxiety.

Finally, we found that peer pressure contributed to adolescents' increased symptoms of depression over time, but not increased social anxiety. However, it is important to note that peer pressure was strongly related to social anxiety at the beginning of the school year (r=.65), and that symptoms of social anxiety were very stable over time (r=.69). Thus, peer pressure may have had an *immediate* impact on adolescents' symptoms of social anxiety, which did not change further over time. These findings regarding peer pressure suggest that interventions to improve peer functioning during school transitions could be very valuable for reducing symptoms of both depression and social anxiety.

Clinical and Educational Implications

Our findings imply that preventive interventions to smooth the transition to high school might improve adolescents' academic functioning and mental health. Universal strategies such as teaching time-management skills and offering periodic counseling sessions to all youth (e.g., Bonnesen et al., 2020) might be beneficial. Furthermore, stress-management interventions (e.g., Kallianta et al., 2021) could target adolescents who report high levels of stress for more intensive instruction.

Moreover, because RNT may play a role in perpetuating stress and increasing adolescents' internalizing symptoms, cognitive-behavioral strategies that address worry and rumination may be beneficial. For example, Hilt and Swords (2021) found that a brief mindfulness mobile app intervention was engaging and useful in reducing adolescents' repetitive negative thinking and internalizing symptoms. Finally, to specifically address peer pressures occurring during the school transition, interventions that target improved peer functioning, such as those based on interpersonal models (e.g., La Greca et al., 2016; Young et al., 2012), could be especially valuable.

Limitations and Future Directions

Several study limitations should be noted. First, we relied on adolescent-reported data and used questionnaires to assess symptoms of social anxiety and depression. A diagnostic interview, and multiple informants, would provide a fuller picture of adolescents' symptomatology and impairment. Second, the study focused on transition stressors, but did not evaluate other stressors that might affect adolescents' mental health, such as deficits in peer or family support. Third, the participation rate appeared comparable to but a bit lower than other community-based studies (Blom-Hoffman et al., 2009). It is possible that some adolescents who are socially anxious or depressed may not have participated due to higher school absences among such youth. In future studies, providing monetary compensation or other incentives for youth participation may help. Fourth, although the focus on a Hispanic/Latinx sample was a strength, findings may not generalize to youth from other ethnic backgrounds. Finally, Hispanic/Latinx individuals are a majority population in South Florida; thus, such youths' adjustment to high school may differ in locations where they are ethnic or racial minorities (Benner & Graham, 2009). As such, future research might examine diversity issues more extensively, such as by evaluating how acculturation stressors (e.g., learning a new language, discrimination) impact youths' functioning during school transitions.

CONCLUSION

Overall, our findings are consistent with previous work demonstrating that school transitions are associated with poor mental health outcomes (De Wit et al., 2011), and that RNT is a potential pathway linking stressors with social anxiety and depression (Michl et al., 2013). Finally, this study represents an important extension of prior findings by examining Hispanic/Latinx youth in the U.S., a vulnerable population for poor educational outcomes.

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Social anxiety profiles and academic self-attributions in secondary school students. What are we really talking about? Theoretical, methodological, and statistical preciseness

Perfiles de ansiedad social y auto-atribuciones académicas en estudiantes de Educación Secundaria ¿De qué hablamos realmente? Precisiones teóricas metodológicas, metodológicas y estadísticas

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Resumen

El objetivo de este estudio fue analizar la relación entre las autoatribuciones académicas y la ansiedad social subclínica en una muestra de adolescentes españoles, así como comprobar si existen diferencias estadísticamente significativas en autoatribuciones académicas entre subgrupos de jóvenes con ansiedad social subclínica. Se realizó un

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muestreo aleatorio por conglomerados. La muestra final estuvo formada por 717 estudiantes españoles de Educación Secundaria (51 % mujeres) de 14 a 17 años (M = 15.68; DT = 1.16). Se administraron la *Social Anxiety Scale for Adolescents* (SAS-A) y la *Sydney Attribution Scale* (SAS). El análisis de conglomerados identificó tres clústeres: (1) estudiantes con alta ansiedad social (n = 102) y puntuaciones altas en miedo a la evaluación negativa (FNE), ansiedad en situaciones sociales nuevas o ante extraños (SAD-N) y ansiedad en situaciones sociales en general (SAD-G); (2) estudiantes con ansiedad social moderada (n = 290) y puntuaciones moderadas en FNE, SAD-N y SAD-G; y (3) estudiantes con baja ansiedad social (n = 325) y bajas puntuaciones en FNE, SAD-N y SAD-G. Los análisis multivariados (MANOVA) examinaron las diferencias en autoatribuciones académicas entre los tres grupos de ansiedad social subclínica, encontrando diferencias estadísticamente significativas en los seis tipos de autoatribuciones académicas (Lambda de Wilks = .89, $F_{(12,714)}$ = 7.11, p <.001, η^2 = .06), incluyendo éxito atribuido a la capacidad, éxito atribuido al esfuerzo, éxito atribuido a causas externas, fracaso atribuido a la capacidad, fracaso atribuido al esfuerzo y fracaso atribuido a causas externas. Se discuten las implicaciones de estos hallazgos para profesionales de la Psicología y de la Educación.

Palabras clave: ansiedad social, autoatribuciones académicas, adolescencia, Educación Secundaria, análisis de conglomerados.

Abstract

The aim of this study was to identify the relationship between academic self-attributions and subclinical social anxiety in a sample of Spanish adolescents and examine statistically significant differences in academic self-attributions among subgroups of socially anxious youth. Random cluster sampling was conducted. The final sample consisted of 717 Spanish students enrolled in Secondary Education (51% girls) aged 14 to 17 years (M = 15.68, SD = 1.16). The *Social Anxiety Scale for Adolescents* (SAS-A) and the *Sydney Attribution Scale* (SAS) were administered. Cluster analysis identified three clusters: (1) students with high social anxiety (n = 102) and high scores on fear of negative evaluation (FNE), anxiety toward strangers or new social situations (SAD-N), and anxiety in social situations in general (SAD-G); (2) students with moderate social anxiety (n = 290) and moderate scores on FNE, SAD-N, and SAD-G; and (3) students with low social anxiety (n = 325) and low scores on FNE, SAD-N, and SAD-G. Multivariate analyses (MANOVA) examined differences in the academic self-attributions across the three clusters of subclinical social anxiety, finding statistically significant differences in the six types of academic self-attributions (Wilks Lambda = .89, $F_{(12,714)}$ = 7.11, p < .001, η^2 = .06), including success attributed to ability, success attributed to effort, success attributed to external causes, failure attributed to ability, failure attributed to effort, and failure attributed to external causes. The implications of these findings for Psychology and Education professionals are discussed.

Keywords: social anxiety, academic self-attributions, adolescence, Secondary Education, cluster analysis.

The American Psychiatric Association (2022) defines social anxiety as an intense and persistent fear of social situations where the person is exposed to unfamiliar people or possible scrutiny by others. If untreated, the course of clinical social anxiety can be chronic (Carballo et al., 2010) and can affect adolescents in many situations, such as taking part in conversations, attending parties, being assertive, dating, speaking in public, and performing certain actions in front of people (e.g., eating or phoning), among others. Social anxiety may cause discomfort, avoidant behavior, and interfere with adolescents' daily lives. Functional impairment and distress are related to even moderate levels of subclinical social anxiety in high school students (Dell'Osso et al., 2003).

SAS-A cut-off points for Spanish adolescents were applied (Olivares et al., 2002). Based on these cut-off points, in the present study, subclinical social anxiety was assessed, and three groups were established: adolescents with subclinical high, moderate, and low social anxiety. In this line, subclinical social anxiety is not the same as social anxiety disorder (i.e., SAD) or social phobia, which imply a clinical diagnosis through the administration of clinical interviews (e.g., Anxiety Disorders Interview Schedule, ADIS-V or VI) based on the diagnostic criteria established by the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition-text revision* (DSM-5-TR; American Psychiatric Association, 2022) or the *International Classification of Diseases* (ICD; World Health Organization, 2021).

Previous empirical evidence has consistently shown that social anxiety occurs along a continuum that ranges from social fears or shyness to subclinical social anxiety (low, medium, and high), reaching social phobia or SAD (e.g., Henderson, & Zimbardo, 2010). This is a relevant concern because the prevalence of social anxiety can vary significantly depending on whether social fears, shyness, subclinical social anxiety, SAD or social phobia are analyzed. Moreover, differences among the three subclinical social anxiety groups (low, medium, and high) are also found in the type and number of feared social situations, their meaning for adolescents, and their symptomatology. In addition, depending on the type or level of social anxiety, the statistical differences and the magnitude (i.e., effect sizes) of the relationship with other variables may vary significantly, as occurs in this study with the type of academic self-attributions and subclinical social anxiety (low, moderate, high). In this sense, researchers should be cautious when comparing previously published studies, whose findings may differ significantly or contradict each other depending on how social anxiety was measured and assessed (subclinical low, medium, or high social anxiety, SAD, or social phobia).

Given these findings, we need to understand the factors that may contribute to social anxiety in adolescents in academic settings. One such factor may be academic self-attributions.

According to Weiner's (2018) attribution theory, self-attributions are the inferences made about the causes underlying an event or behavior. Weiner states that an individual's causal attributions for achievement affect their subsequent behaviors and motivation.

Academic self-attributions are supported by Weiner's (2018) theory, which examined the perceived causes of academic achievement (Graham, 2020). In this line, Kaur (2017) found that negative academic self-attributions are associated with social anxiety. Specifically, he showed that university entrants with high social anxiety had a dysfunctional attributional style and attributed their failures to their ability.

The findings of Kaur (2017) are similar to those found in other constructs closely related to social anxiety, such as school anxiety (Lagos San Martin et al., 2016), perfectionism (Vicent et al., 2019), and school refusal (Gonzálvez et al., 2021; Gonzálvez et al., 2018), which reveal an attributional pattern consisting of taking responsibility for failures (e.g., lack of ability or effort) and attributing successes mainly to external causes. This maladaptive attributional pattern is logically consistent with a maladaptive motivational pattern (Ingles et al., 2015), through which these students' school learning is clearly based on social reinforcement goals. Thus, these students continuously seek a positive evaluation of their school achievements by their significant others, avoiding negative evaluation.

Bearing in mind the previous empirical evidence, we extended the results of research, proposing three hypotheses:

(1) we expected students with low social anxiety to attribute their academic successes to internal causes (mainly to effort) and, to a lesser extent, to external causes. In addition, students with low social anxiety will be more likely to attribute their academic failures to internal causes;

(2) we expected students with moderate social anxiety to show mixed or less well-defined academic self-attributions than the other two groups, although it is an open research question.; and

(3) we expected students with high social anxiety (similar to SAD or social phobia) to attribute their academic successes to external causes and their academic failures to internal causes (ability and effort).

METHOD

Participants

We conducted random cluster sampling in a province of southeastern Spain. We randomly selected six high schools from urban and rural areas; four were public high schools, and the others were private. One high school was in the north of Alicante province, one in the south, one in the west, and one in the center, plus two high schools in the east of

Alicante province, the most populated area. We randomly selected four classrooms with an average of 128 students from each high school.

The initial sample consisted of 769 students enrolled in Secondary Education. The ages of the participants ranged from 14 to 17 years (M = 15.68, SD = 1.16). Thirty-one students (4.03 %) were excluded from the initial sample to avoid outliers and missing data. Furthermore, 21 foreign students (2.73 %) who did not have an adequate command of Spanish were also excluded. Therefore, the final sample consisted of 717 students. Table 1 presents the demographic information of the sample.

Table 1

Demographic Data of the Sample

Participants	14-year-olds	15-year-olds	16-year-olds	17-year-olds	Total
	n	*n*	*n*	*n*	*n*
	%	%	%	%	%
Boys	65	100	101	85	351
	9.1%	13.9%	14.1%	11.9%	49.0%
Girls	52	87	117	110	366
	7.3%	12.1%	16.3%	15.3%	51.0%
Total	117	187	218	195	717
	16.3%	26.1%	30.4%	27.2%	100.0%

The chi-square test of homogeneity assessed the distribution in the gender and age groups (i.e., there were four age groups, each with two genders). No statistically significant differences were found among the eight groups of Gender x Age (χ^2 = 6.42, p = .09).

The ethnic composition of the sample was as follows: 87.7% European-Spanish, 4.81% other European, 4.28% Latin-American, 2.55% Arab, and 0.66% Asian.

Instruments

Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998)

The SAS-A measures students' perceptions of their social anxiety. It contains 18 self-statement items and 4 filler items (e.g., "I like to play sports"); the 18 items yield three subscales: Fear of Negative Evaluation (FNE; 8 items), concerning adolescent fears or worries about their peers' negative evaluations (e.g., "I worry about what others think of me"); Social Avoidance and Distress in New Situations (SAD-New; 6 items), concerning social avoidance and distress when with unfamiliar persons or in new social situations (e.g., "I feel nervous when I'm around certain people"); and Social Avoidance and Distress-General (SAD-General; 4 items), concerning general social inhibition, distress, and discomfort (e.g.,

"I'm quiet when I'm with a group of people"). Students rate each item on a 5-point Likert-type scale (1 = *not at all* to 5 = *all the time*). The total SAS-A score ranges from 18 to 90. Higher scores (for the total scale and each subscale) reflect greater levels of social anxiety. A total SAS-A score below 37 identifies "non-socially anxious" adolescents, whereas a score above 44 detects social anxiety among adolescents (Olivares et al., 2002).

There are versions of SAS-A in different languages, including Spanish (García-López et al., 2001), Portuguese (Cunha et al., 2004), Turkish (Aydin & Sutcu, 2007), and Chinese (Zhou et al., 2008). In the Spanish version (García-López et al. al., 2001), high levels of internal consistency were found for the FNE (.94), SAD-N (.87), and SAD-G (.80) subscales and for the total score (.91). Furthermore, Ingles et al. (2010) found measurement invariance for the correlated three-factor model of the SAS-A across gender and age samples. The reliability alpha coefficients in this study were .84 for FNE, .78 for SAD-N, and .79 for SAD-G.

Sydney Attribution Scale (SAS; Marsh, 1984)

The SAS measures students' perceptions of the causes of their academic successes and failures in 24 hypothetical situations (Ingles et al., 2015). The scale combines three dimensions: two academic areas (verbal-reading, Mathematics), two hypothetical and opposite results (success, failure), and three types of causes (ability, effort, external causes). It contains 72 items rated on a 5-point Likert-type scale ranging from 1 (*false*) to 5 (*true*). Six global scores are provided: success-ability, success-effort, success-external causes, failure-ability, failure-effort, and failure-external causes. Internal consistency was higher for the internal scales than for the external ones and was acceptable both in the success and failure scales. We used these six factors of specific self-attribution types in the present study.

The psychometric properties of the SAS in primary and secondary education have been examined in several research studies, showing that the SAS is an appropriate instrument to assess academic self-attributions in Secondary Education (Ingles et al., 2015; Redondo et al., 2014) and college students (Ingles et al., 2008). Ingles et al. (2015) found internal consistency coefficients of .83 (success-ability), .84 (success-effort), .71 (success-external causes), .78 (failure-ability), .73 (failure-effort), and .72 (failure-external causes).

Procedure

After selecting the participant high schools, we held meetings with the school principals and the adolescents' parents to inform them about the research and obtain written informed consent. The SAS-A and SAS were administered in a counterbalanced manner in class under the supervision of research assistants who also read the instructions aloud and emphasized the

importance of answering every question. Students answered the questionnaires voluntarily in their classrooms. The average administration time was 40 minutes.

Data analysis

Data were analyzed with the *Statistical Package for the Social Sciences,* SPSS, 23rd version. Quick cluster analysis was conducted to establish the different groups or clusters of adolescents. In addition to being a non-hierarchical method (i.e., the groups to be formed should be specified a priori), it is also a reassignment method (i.e., an individual assigned to a group can be assigned subsequently to another group to optimize the selection).

After establishing the different groups (high, moderate, and low subclinical social anxiety), we determined possible significant group differences in academic self-attributions. We initially performed a multivariate analysis of variance (*MANOVA*) to examine whether the identified clusters differed significantly in the SAS-A variables. To evaluate the relationship between subclinical social anxiety and academic self-attributions among adolescents with high, moderate, or low subclinical social anxiety, we conducted *MANOVA*. To assess the effect size of each variable (success attributed to effort, failure attributed to external causes…) among clusters, we used eta squared: $\eta^2 = .01 - .06$ indicates a small effect size, $.06 < \eta^2 < .14$ indicates a medium effect size; and $\eta^2 > .14$ indicates a large effect size (Cohen, 1988). Furthermore, the effect sizes of the differences in academic self-attributions among the three clusters were determined using the *d* index proposed by Cohen (1988): $0.20 \leq d < 0.50$ indicates a small effect size; $0.50 \leq d < 0.80$ indicates a medium effect size; and $d \geq 0.80$ indicates a large effect size.

RESULTS

Identification of Social Anxiety Profiles

Cluster analysis identified three clusters (see Table 2). The first consisted of a group of 102 students (14.23%) with high social anxiety (High Social Anxiety Group), and also high fear of negative evaluation (FNE), anxiety toward and social avoidance of strangers or in new social situations (SAD-N), and anxiety in social situations in general (SAD-G). The second group consisted of 290 students (40.44%) with moderate social anxiety (Moderate Social Anxiety Group) and moderate scores on FNE, SAD-N, and SAD-G. The last group consisted of 325 students (45.33%) with low social anxiety (Low Social Anxiety Group) and low scores on FNE, SAD-N, and SAD-G.

Table 2

Final Clusters Centers

	High Social Anxiety	Moderate Social Anxiety	Low Social Anxiety
Z-score (SAS-A_FNE)	1.55	.30	-.75
Z-score (SAS-A_SADN)	1.58	.31	-.77
Z-score (SAS-A_SADG)	1.67	.28	-.77

Note. Z-scores cut points: > .5 (High Social Anxiety); -.5 to .5 (Moderate Social Anxiety); < -.5 (Low Social Anxiety).

Inter-Group Differences in Academic Self-Attributions

Regarding differences in the scores of the academic self-attribution variables across the three clusters of subclinical social anxiety, a *MANOVA* yielded statistically significant differences in the six types of academic self-attributions (Wilks Lambda = .89, $F_{(12,714)}$ = 7.11, p <.001, η^2 = .06). Table 3 presents the mean SAS scores (and standard deviations) of the students enrolled in Secondary Education with high, moderate, or low social anxiety. In terms of attributions for success, students with low social anxiety attributed success to their ability and effort more than students with high or moderate social anxiety. Students with high social anxiety attributed academic success to external causes more than students with low or moderate social anxiety. Finally, students with low social anxiety attributed success to internal causes (i.e., effort, ability) more than students with high or moderate social anxiety.

Regarding attributions for academic failures, students with high social anxiety attributed failures to their (lack of) ability and effort more than students with low or moderate social anxiety. Students with high social anxiety also attributed failures to their (lack of) effort more than students with low or moderate social anxiety. Finally, students with low social anxiety attributed failures to external causes more than students with high or moderate social anxiety.

Table 3

Mean and Standard Deviations obtained by the three Groups and the Eta Square Values for each Causal Attribution

	High Social Anxiety n = 102		Moderate Social Anxiety n = 290		Low Social Anxiety n = 325		MANOVA Statistical significance		
Dimensions	M	SD	M	SD	M	SD	$F_{(2,714)}$	p	η^2
Success attributed to ability	2.83	1.44	**6.28**	1.43	**6.69**	1.55	5.76	.003	.02
Success attributed to effort	3.48	1.20	**6.77**	1.30	**7.12**	1.54	7.19	.001	.02

	High Social Anxiety *n* = 102		Moderate Social Anxiety *n* = 290		Low Social Anxiety *n* = 325		MANOVA Statistical significance		
Success attributed to external causes	**7.01**	1.07	**6.24**	.89	6.40	1.28	5.31	.005	.02
Failure attributed to ability	8.14	1.28	5.61	1.27	5.08	1.41	27.88	<.001	.07
Failure attributed to effort	**7.09**	1.22	5.84	1.04	5.66	1.14	6.37	.002	.02
Failure attributed to external causes	4.35	1.12	**6.49**	.91	**8.75**	.96	9.29	<.001	.03

DISCUSSION

The general objective of this study was to examine the relationship between adolescents' social anxiety profiles and their academic self-attributions and evaluate possible significant differences among social anxiety groups in a sample of Spanish students enrolled in Secondary Education. The results revealed the existence of three groups of students with relatively different levels of social anxiety. The smallest group of students (14.2%) reported high social anxiety, followed by a group of students who reported moderate social anxiety (40.4%), and lastly, the largest group of students (45.3%) reported low social anxiety.

Our study's first hypothesis —students with high social anxiety would attribute their academic success to external causes and their academic failures to lack of effort or ability— was confirmed. Our findings also aligned with our second hypothesis regarding students with moderate social anxiety. As expected, we found that these students showed mixed or less well-defined academic self-attributions than the other two groups. Finally, consistent with our third hypothesis, findings revealed that students with low social anxiety attributed their academic success to internal causes and their academic failures to external causes.

Results should be interpreted with caution considering the study's limitations. First, subclinical social anxiety levels were established using the clinical cut-off points of the SAS-A in the Spanish adolescent population (Olivares et al., 2002). Thus, we do not know how many adolescents had a clinically significant social anxiety disorder or social phobia. Accordingly, the results might vary if the study were conducted with a clinical population of adolescents. Second, the results cannot be generalized to other cultures or ethnic groups, other age groups, or a clinical sample of adolescents. According to Torregrosa et al. (2022), social norms and cultural values (individualism-collectivism) may influence the significance, intensity, and symptoms of social anxiety.

In terms of directions for further research, it would be useful to replicate this study in other age groups or academic levels (e.g., Primary or Higher Education), compare male and female adolescents, examine clinical samples of adolescents, and extend these findings using

longitudinal research designs. Future research efforts might also examine how social anxiety and academic causal self-attributions conjointly affect other psychoeducational variables, such as academic achievement, academic engagement, academic self-concept, or academic adjustment. The effect of family environment on adolescents' self-attributions and social anxiety could also be considered.

In any case, our findings have potential implications for practitioners. Psychoeducational interventions and programs could be implemented for adolescents with high social anxiety (e.g., Olivares & García-López, 2001; La Greca et al., 2016) to modify maladaptive academic self-attributional patterns (e.g., *Reattribution Training*; Kaur, 2017). However, interventions with adolescent girls could be more intense than those targeting adolescent boys due to girls' higher levels of social anxiety (Ingles et al., 2010).

Cognitive Bias Modification (CBM; Mathews & Mackintosh, 2000), which modifies maladaptive attributional patterns by training clients to focus on more adaptive interpretations, is a possible intervention for reducing maladaptive academic self-attributions. CBM has shown preliminary efficacy in attribution biases and short-term efficacy in social interaction anxiety in undergraduate students (Min et al., 2020). Attributional retraining treatments are another alternative, although Perry et al. (2014) suggest further research on complex causal thinking to complement the prevalent emphasis on single attributions. Transdiagnostic psychotherapeutic treatments, such as emotion-focused therapy, also consider that the so-called "problematic self-treatment" is very important in therapy. This consists of a set of self-directed problematic processes related to emotional avoidance, such as self-criticism, self-worrying, self-scaring, self-managing and self-interrupting. These self-attributions of responsibility should be formulated and addressed in therapy as forms of problematic self-directed processes for diagnostic categories, such as social anxiety (Timulak & Keogh, 2020).

FRIENDS for Life (Barrett et al., 2000) is a useful cognitive-behavioral intervention program for child and adolescent anxiety; it can be carried out with an attributional retraining component. Education professionals can provide feedback about students' causal interpretations so anxious adolescents can replace their attributional style with more adaptive attributions (Fernández-Sogorb et al., 2020).

Also noteworthy are some other transdiagnostic cognitive-behavioral interventions, specifically designed for children and adolescents, which address cognitions (self-attributions among them). For instance, we note the Super Skills for Life (Essau & Ollendick, 2013) and the Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A; Ehrenreich-May et al., 2018; Ehrenreich-May & Kennedy, 2021).

In conclusion, this study contributes to a better understanding of the relationship between different levels of sublinical social anxiety in adolescents and academic self-

attributions. Furthermore, it is a first step to determine the role of academic self-attributions in subclinical social anxiety in Spanish of Secondary Education.

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Adolescents' interpersonal cognition and self-appraisal of their own anxiety in an imagined anxiety-provoking classroom presentation scenario: Gender differences

Cognición interpersonal de los adolescentes y autoevaluación de su propia ansiedad en un escenario imaginado de presentación en el aula que provoca ansiedad: Diferencias de género

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Abstract

Oral class presentations are regularly assigned to adolescents, but often provoke social anxiety, due to the importance of peer approval and need to appraise oneself as normal. Also, little is known about gender differences in girls' and boys' interpersonal cognition and appraisals of anxiety and self in anxiety-provoking speech situations. We examined gender differences in interpersonal cognition and appraisals of anxiety in an imagined class presentation scenario in a normative sample of 687 adolescents, 14-16-years-old, from Southwest Finland. Measures included the Classroom Questionnaire of Social Anxiety and Interpersonal Cognition and the Social Anxiety Scale for Adolescents. T-tests examined gender differences in interpersonal cognition, and chi-square tests examined adolescents' appraisals of the likelihood of their own presentation anxiety and self as anxious. Girls more frequently reported positive, and less frequently reported negative, responses toward the depicted, anxious peer than boys. Also, a higher percentage of girls predicted that becoming anxious in the situation was likely, and non-acceptance of self as anxious was more frequent among girls. Boys predicted negative overt classmate reactions (e.g., laughing) towards the depicted, anxious peer,

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and towards themselves more frequently than did girls. Results are discussed in the context of gender-specific development and procedures for reducing adolescent social anxiety.

Keywords: adolescence, social anxiety, interpersonal cognition, gender, school

Resumen

Las presentaciones orales de la clase se asignan regularmente a los adolescentes, pero a menudo provocan ansiedad social, debido a la importancia de la aprobación de los compañeros y la necesidad de evaluarse a sí mismo como normal. También, se sabe poco acerca de las diferencias de género en la cognición interpersonal de las niñas y los niños y las evaluaciones de la ansiedad y el yo en situaciones de habla que provocan ansiedad. Se examinaron las diferencias de género en la cognición interpersonal y las valoraciones de la ansiedad en un escenario imaginado de presentación de clase en una muestra normativa de 687 adolescentes, de 14 a 16 años, del suroeste de Finlandia. Las medidas incluyeron el Cuestionario de Aula de Ansiedad Social y Cognición Interpersonal y la Escala de Ansiedad Social para Adolescentes. Las pruebas T examinaron las diferencias de género en la cognición interpersonal, y las pruebas de chi cuadrado examinaron las evaluaciones de los adolescentes de la probabilidad de su propia ansiedad de presentación y de sí mismo como ansioso. Las niñas reportaron con más frecuencia respuestas positivas, y menos frecuentemente negativas, hacia el grupo representado y ansioso que los niños. Además, un mayor porcentaje de niñas predijo que era probable que se volvieran ansiosas en la situación, y la no aceptación de sí mismas como ansiosas era más frecuente entre las niñas. Los niños predijeron reacciones negativas abiertas de los compañeros de clase (por ej., risas) hacia el compañero representado, ansioso, y hacia ellos mismos con más frecuencia que las niñas. Los resultados se discuten en el contexto del desarrollo específico de género y los procedimientos para reducir la ansiedad social de los adolescentes.

Palabras clave: adolescencia, ansiedad social, cognición interpersonal, género, escuela

1. INTRODUCTION

During adolescence, remarkable changes occur on several domains of individual development and social functioning. On the individual level, pubertal maturation, and central nervous system (CNS) development are central (Blakemore, Burnett, & Dahl, 2010). In a dynamic interaction with CNS development, a paramount change takes place in the social context and a marked increase in the importance of peers and time spent with them (Nelson et al., 2005).

Concurrent with improvements in several cognitive processing abilities, metacognition, awareness and understanding of own thinking is enhanced (Weil et al., 2013). Of social cognitive functions, capacity for social perspective-taking advances more rapidly in girls relative to boys. The gender difference is evident during early adolescence, and the gap grows until early adulthood as girls' perspective-taking capacity increases faster than boys' (Van der Graaff et al., 2014). Recognition and cognitive understanding of complex emotional states in others are still developing (Tousignant et al., 2017).

However, these multiple and interrelated developmental changes may also contribute to increasing emotional stress and anxiety for adolescents (La Greca & Ranta, 2015). The incidence of social anxiety and social anxiety disorder (SAD) increases (Beesdo et al., 2009), and both are more common in adolescent girls than in boys (Knappe et al., 2015). Public speaking and presentation situations are contexts in which adolescents most frequently experience social anxiety; as many as 20% to 30% report marked fear in these situations (Essau et al., 1999; Ranta et al., 2007). Presentation fears are also slightly more common in girls; however, gender ratios seem more even than for SAD (Essau et al., 1999; Ranta et al., 2007; Furukawa et al., 2014).

Developmental research has found adolescent girls are more attuned to social relationships, but also more dependent on peer support and approval (Rose & Rudolph, 2006). Social anxiety is associated with more impairments in relationships among girls than among boys, including lower quality of close relationships, fewer friendships, and relational peer victimization (La Greca & Lopez, 1998; Pickering et al., 2020).

Gender role research has mainly found boys to be more performance- and girls to be more relationship-oriented, although a secular trend towards partial diminishing of such role differences has been observed (Priess et al., 2009). Adopted gender roles may affect attitudes on psychological distress. For example, adolescent boys with a pronounced masculine gender role appear more reluctant to seek help for anxiety than boys with a less pronounced masculine role, or than girls (Clark et al., 2020).

Advancing metacognitive capabilities form the basis for increased psychological self-reflection (Barkai & Rappaport, 2011). More so than children, adolescents will reflect on topics such as their self-concept, public self-presentation, and social role (Sebastian et al., 2008). Adolescents struggle to build a positive self-concept, self-esteem, consolidation of stable identity, and accepted social role (Becht et al., 2016). Appraisals of one's own capacities and deficiencies in relation to those of peers and one's perceived normality may be especially salient in social or group contexts (Crone & Fuligni, 2020). Experiencing oneself psychologically as not normal or weak may be associated with global, negative self-evaluations (Hanlon & Swords, 2019).

A heightened tendency towards self-criticism, instead of acceptance of one's own emotional states such as anxiety, have been associated with social anxiety in adolescents

and young adults (Henderson et al., 2014). Levels of self-criticism seem to increase with age among children and adolescents with SAD. Relative to boys, socially anxious girls show higher persistence of self-criticism even when offered positive feedback (Lau et al., 2022).

Research on mental health stigma is relevant to the study of adolescents' appraisals on social anxiety and its acceptability (Jorm & Wright, 2008). *Personal stigma* refers to adolescent's own cognitive, emotional, and behavioural responses towards a peer with a mental health condition. *Perceived* stigma refers to his/her perception of peers' responses towards an individual with the condition, and *self-stigma* refers to internalization of perceived stigma by an adolescent suffering from symptoms of a mental health condition, as evidenced by cognitive and emotional responses towards the self (De Luca, 2021).

Most of this research indicates that adolescents frequently appraise social anxiety in a peer as a sign of personal weakness, both from their personal viewpoint, and as expected peer appraisals (Reavley & Jorm, 2011; Hanlon & Swords, 2019). Studies have found boys attach higher personal stigma to social anxiety than girls (Jorm & Wright, 2008; Lynch et al., 2021).

The Current Study

Based on research reviewed above, there may be gender differences in adolescents' interpersonal cognition and self-appraisals related to experiencing anxiety in everyday social contexts. Results from population studies may inform further refinement of developmentally sensitive cognitive behavioural interventions (Baker et al., 2021).

We examined adolescent boys' and girls' interpersonal cognition and self-appraisals in a classroom presentation situation, in a population sample of 14-16-year-old Finnish adolescents. Using the Classroom Questionnaire for Social Anxiety and Interpersonal Cognition (CQ-SAIC; Ranta et al., 2016), we examined gender differences in adolescents': 1. own overt and covert responses towards an anxious classmate; 2 predictions of the likelihood of themselves becoming anxious; 3. acceptance of self when experiencing anxiety; and 4. predictions of classmates' overt and covert responses towards the anxious classmate / themselves as presenter.

We hypothesized that girls would show more frequent positive and less frequent own reactions towards an anxious classmate; they would report higher likelihood of becoming anxious; and they would predict more positive classmate responses towards the anxious peer and themselves. We also predicted that boys would show lower acceptance of self when anxious.

2. METHOD

2.1 Participants and procedure

Participants were 687 adolescents, including 371 (54 %) girls and 172 (25 %) in 8th and 515 (75%) in 9th grade.

Data came from a population cohort study performed in Southwest Finland that sampled students from three public secondary schools in Turku (approximately 175,000 inhabitants), and Lieto (approximately 175,000 inhabitants) (Ranta et al., 2016). The students represent the general population, as all adolescents attend secondary schools except for students with severe handicaps or learning disabilities. The socioeconomic composition of sample represents urban and sub-urban population in Finland (Statistics Finland, 2007). The studies were approved by the Ethics Committee of the Hospital District of Southwest Finland and by local school authorities.

Written consent and completed study questionnaires were obtained from 687 students; the participation rate was 77%. Questionnaires were administered in the classrooms during regular school day. The amount of missing data for individual CQ-SAIC items was small, ranging from 1.7 to 3.8 %.

2.2. Measures

The Classroom Questionnaire of Social Anxiety and Interpersonal Cognition (CQ-SAIC). (Ranta et al., 2016). The CQ-SAIC assesses several dimensions of adolescents' interpersonal cognition and their self-evaluations of the likelihood and acceptability of experiencing speech anxiety before the class. The CQ-SAIC first presents a vignette describing a student experiencing cognitive, emotional, behavioral, and bodily symptoms of anxiety in a classroom presentation situation in front of the classmates. See Figure 1.

After reading the vignette, respondents describe their: 1. own overt/covert responses towards the anxious peer (OR subscale), 2. evaluation of the likelihood of themselves becoming anxious like the depicted peer (LPA subscale), 3. acceptance of self as anxious, like the depicted peer, and 4. predictions of classmates' responses towards either the depicted peer (MEPE-peer subscale), or towards themselves as the presenter (MEPE-self subscale).

The OR and MEPE-peer, and MEPE-self subscales each consist of 18 items, describing 6 overt responses, 6 cognitive responses, and 6 emotional responses of either positive, neutral, or negative affective valence (2 of each). Items are further classified according to their affective valence. Thus, CQ-SAIC further yields the six-item positive, neutral, and negative OR-, MEPE-peer-, and MEPE-self scales.

Figure 1.
The CQ-SAIC vignette

"*Please read the following story and imagine it would happen in your own class*".

Mary was supposed to give an oral presentation on a book to her class. Mary tended to feel very nervous about speaking in front of her class, no matter how familiar she was with her classmates. Although she knew that everyone would have to give a presentation, this did not make her feel any less nervous. Mary had been feeling anxious about the presentation for several days already, and she was certain that she would make a fool of herself in front of the class. She believed that she would forget everything she had planned to say. As she stood in front of the class, she could feel herself sweating and her heart starting to beat hard. Mary noticed that she was speaking unclearly, and that nervousness was making her voice tremble. She sensed that she would soon start mixing up her words. She pictured in her mind other pupils noticing that her hands were shaking. She felt all of her classmates staring at her, and she was convinced that they would find her ridiculous. In her nervousness, she dropped her notes on the floor and felt herself blushing in embarrassment. Tears filled her eyes, as she believed she had made a total idiot of herself in front of the class.

For the OR scales, respondents rate items on a 4-point scale, describing the level of certainty with which their own response would be accordance with the presented response. On MEPE scales adolescents rate items on a 5-point scale, representing their evaluation of how frequent the response would be among their classmates. The range of total scores for positive, neutral, and negative OR scale is 6-24 points; for MEPE-peer and MEPE-self scales it is 6-30 points. The full items and prompts for CQ-SAIC subscales are in the Appendix. Key content of the items is presented in Tables 1, 3, and 4.

For the LPA subscale (likelihood of presentation anxiety) respondents rate the likelihood of themselves becoming anxious when being the presenter, in response to the question: "*Now imagine that you were in the same situation as Mary. Would you be anxious in that situation like Mary?*" The response alternatives are: 1. absolutely not, 2. hardly, 3. likely, 4. surely. Answers are defined to indicate low (absolutely not/hardly) or high (likely/surely) perceived likelihood of presentation anxiety.

For acceptance vs. non-acceptance, adolescents are asked: "*If you would be anxious like Mary, what would you think of yourself as a person?"* Adolescents answer on a scale reflecting either negative (i.e., non-accepting), neutral, or positive metacognitive stance. The response alternatives are: 1. I would consider myself weird or over-sensitive, 2. I would consider myself like others, and 3. I would accept myself despite feeling anxious. Alternative 1

indicates non-acceptance, alternatives 2 and 3 indicate acceptance of self when experiencing presentation anxiety.

Social Anxiety Scale for Adolescents (SAS-A). The Social Anxiety Scale for Adolescents (La Greca & Lopez, 1998), is a 22-item self-report measure assessing general social anxiety among adolescents. SAS-A is a valid measure of social anxiety in Finnish adolescents (Ranta et al., 2012).

2.3 Statistical analysis

Cronbach's alphas (α) were calculated to evaluate internal consistencies of OR and MEPE subscales. Means and standard deviations of answers to all CQ-SAIC items were examined separately for both genders. Girls' and boys' mean scores on OR and MEPE scales were compared with Bonferroni adjusted Student's t-tests for independent samples, reporting Cohen's effect sizes (*d*). Full comparisons are presented for positive and negative OR and MEPE scales. Results from neutral scales are briefly summarized.

Concurrent validity of the LPA subscale was studied by examining Spearman rank order correlation coefficients (r_s) between SAS-A and LPA total scores for total sample, and for both genders separately. Gender differences on LPA subscale, and in acceptance of self as anxious, were examined with chi square tests, reporting Cramer's *V* effect sizes.

Associations between perceived likelihood of own presentation anxiety and acceptance of self as anxious were examined in cross-tabulations, using chi-square tests. Gender differences were examined by performing a three-way interaction analysis between gender, likelihood of anxiety, and acceptance using log-linear modeling; we also did separate analyses for both genders. Finally, we compared whether general social anxiety, assessed with SAS-A, was related to acceptance of self as anxious using cross-tabulations and chi-square tests. The level of trait social anxiety was dichotomized to high/low according to belonging to high/low quartile of SAS-A distribution of respective sex.

Only questionnaires with complete responses were included in the analyses. Because of multiple comparisons, significance level of *p* was adjusted to 0.05/6 = 0.008 using Bonferroni's procedure. IBM SPSS statistical software version 26 was used.

3. RESULTS

3.1. Reliability and validity of CQ-SAIC

Cronbach alphas for OR subscale (negative scale α = .81, positive scale α = .88, neutral scale α = .76) demonstrated good internal consistency. Alphas for MEPE-peer and MEPE-self subscales were good, ranging from .78 to .87. The LPA subscale correlated positively

with the SAS-A total score (total sample: r_s = .321, p < .001; girls: r_s = 0.358, p < .01; boys: r_s = .264, p < .01), suggesting concurrent validity of LPA subscale.

3. 2. Own responses

Positive responding. Girls scored higher on the positive OR total scale and on all positive response items (all p's <.001). Compared with boys, higher proportion of girls reported they would probably/surely show positive overt responses (49-53% vs. 9-15%), thoughts (60-74% vs. 27-28%), and emotional responses (64-91% vs. 17-71%) towards the anxious peer. Positive overt responses were rarer than covert responses among both genders. Very few (0.3%) of boys reported they would surely encourage or comfort the anxious peer, compared with 7% of girls. Less than one fifth of boys reported they would surely respond by feeling compassion/concern.

Negative responding. Gender differences were also found on the negative OR total scale and all of its items (all p's <.001). Boys, more frequently than girls, reported they would probably/surely show negative overt responses (5-15% vs. 1-4%), thoughts (14-32% vs. 6-18%) and emotional responses (12-18% vs. 4-10%). Overt negative responses were more infrequent than covert responses, especially in girls. For example, no girls expected responding with ridiculing or teasing the anxious peer. See Table 1.

No gender differences were found on the neutral OR scale means.

Table 1.

Boys' and girls' negative and positive own responses (OR) towards the anxious classmate. Distributions of answers, means, significance of gender differences, and effect sizes.

	BOYS (n=313)					GIRLS (n=374)						
	%	%	%	%		%	%	%	%			
	Absolutely not	Hardly	Probably	Surely	Mean (SD)	Absolutely not	Hardly	Probably	Surely	Mean (SD)	*p*	*d*
	1	2	3	4		1	2	3	4			
Positive OR-scale												
I would encourage her	19.9	65.6	14.2	0.3	1.95 (0.59)	7.1	44.0	42.0	6.9	2.49 (0.73)	<.001*	0.814
I would comfort her	29.8	60.9	8.9	0.3	1.80 (0.60)	8.2	39.2	45.5	7.1	2.52 (0.75)	<.001*	1.060
I would think: "I hope you can make it"	23.2	49.3	26.8	0.7	2.05 (0.73)	6.6	19.2	54.1	20.1	2.88 (0.80)	<.001*	1.084
I would think "She's doing fine"	22.6	50.8	24.9	1.7	2.06 (0.74)	7.9	32.3	50.7	9.0	2.61 (0.76)	<.001*	0.733
I would understand how she feels	5.6	23.9	52.8	17.7	2.83 (0.78)	1.9	7.1	47.8	43.2	3.32 (0.69)	<.001*	0.665
I would feel compassion and concern for her	27.3	55.3	14.1	3.3	1.93 (0.74)	9.0	26.8	46.8	17.3	2.72 (0.85)	<.001*	0.991
Total score of positive OR-scale					12.60 (3.03)					16.52 (3.46)	<.001*	1.205
Negative OR-scale												
I would laugh at Mary	32.0	52.1	13.5	1.3	1.84 (0.70)	64.6	31.9	3.0	0.5	1.40 (0.58)	<.001*	0.684
I would ridicule or tease Mary	56.4	37.6	4.3	1.7	1.51 (0.66)	86.0	13.2	0.8	-	1.15 (0.38)	<.001*	0.669
I would think: "she loses her nerve for nothing"	25.2	43.2	25.6	6.0	2.12 (0.86)	38.6	43.3	15.6	2.5	1.82 (0.78)	<.001*	0.365
I would think: "she is weird"	37.7	48.7	11.6	2.0	1.78 (0.73)	64.9	29.6	4.7	0.8	1.41 (0.62)	<.001*	0.546
I would feel glad over Mary's distress	37.5	50.3	9.2	3.0	1.78 (0.73)	69.8	26.4	3.3	0.5	1.35 (0.57)	<.001*	0.657
I would feel superior to Mary	28.4	54.1	14.9	2.6	1.92 (0.73)	42.7	46.8	9.9	0.5	1.68 (0.67)	<.001*	0.343
Total score of negative OR-scale					10.94 (3.14)					8.82 (2.44)	<.001*	0.754

**independent samples t-test with Bonferroni correction: p is significant at the level 0.05/6 = 0.008*

d = Cohen's d effect size: ≥ 0.20 = small, ≥ 0.50 = medium, ≥ 0.80 = large

3.3 Perceived likelihood of anxiety and acceptance of self

Half of participants (50.1%) expected they would likely/certainly experience similar anxiety as the anxious peer while performing before the class, girls more frequently than boys (54.1% vs. 45.4%, $p<.05$). Of participants, 79.1% reported accepting, and 20.9% non-accepting metacognitive stance towards one's self as anxious. Girls showed more frequent non-acceptance than boys (25.4% vs. 15.7%, $p=.002$).

Among girls, the acceptance/non-acceptance ratio was equal regardless of whether they evaluated likelihood of their own presentation anxiety as being high or low. Among boys, accepting stance was more frequent among those reporting the likelihood of their own presentation anxiety as high ($p = .001$). (See Table 2.) The 3-way interaction term (likelihood*acceptance*gender) was significant in the loglinear model ($p = .010$), indicating a gender effect on this association.

Table 2.

Boys' and girls' evaluations of the likelihood of experiencing presentation anxiety and their metacognitive acceptance of experiencing anxiety before the class.

	BOYS (n=306)		GIRLS (n=355)	
	Expected likelihood of own presentation anxiety*			
	Low	High	Low163	High
	167	139		192
	54,6 %	45,4 %	45,9 %	54,1 %*
Acceptance of own presentation anxiety**				
YES				
I would accept myself despite anxiety	130	128	120	145
I would consider myself like others	77,8 %	92,1 %	73,6 %	75,5 %
NO				
I would consider myself weird or oversensitive	37	11	43	47
	22,2 %	7,9 %	26,4 %	24,5 %
	100	100	100	100
	Chi square = 11.634		Chi square = 0.168	
	Cramer's V = 0.195		Cramer's V = 0.022	
	$p = .001$		$p = .682$	

Low: denotes "surely not" or "hardly". High: denotes "likely" or "surely".

**Percentage of participants reporting likelihood high: girls>boys (Chi square = 4.171, df = 1, p = .041, Cramer's V = .079).*

*** Percentage of participants with non-accepting stance towards self as anxious: girls > boys (Chi Square = 9.181, df = 1, p = .002, Cramer's V = .12).*

Non-acceptance of self as anxious was three times more common in girls with a high level of trait social anxiety, compared to those with a low level (45.4% vs. 13.8%) The effect size was moderate (Chi Square = 18.094, df = 1, $p < .001$, Cramer's V = .323). In boys, the level of trait social anxiety was not associated with acceptance of self as anxious (high 26.0% vs. low 16.0%; Chi Square =2.322, df = 1, $p = 0.128$, Cramer's V = .123).

3.4 Metaperception

Peer-referent metaperception. Compared with boys, girls expected more frequent positive classmate responses towards the anxious peer. Differences in this direction were found on the positive MEPE-peer scale total and on 5 of 6 individual items (all *p*-values < .008), the remaining item showed a trend level difference (p=.009). Overt positive responses from majority of classmates (almost all/all) were predicted being more infrequent than covert positive responses among both girls and boys (See Table 3).

Fewer gender differences in expecting negative classmate responses towards the anxious peer were found. However, expecting a majority (almost all/all) of classmates to laugh was more common (13% vs. 8%, $p = .006$) in boys. (Table 3). Neutral responding was clearly the most common expected response expected towards the anxious peer. Of all participants, 33% to 55% expected the majority of classmates to show overt/covert neutral responses, girls more often than boys (neutral MEPE-peer total score comparison, $p = .003$).

Self-referent metaperception. Girls predicted more frequent positive classmate responses towards themselves than boys did, shown by comparisons of positive MEPE-self scale total means, and individual item means (all *p*'s < .008). Overt positive responses towards self from the majority of classmates were expected to be rarer than covert positive responses, among both girls and boys. (Table 4).

Boys expected more frequent negative classmate responses towards themselves than girls did, shown by comparing negative MEPE-self total scores ($p = .001$), and items on laughing ($p < .001$) and feeling glad over the speaker's distress (p=.008). Other items mainly showed trend level differences in the same direction. Fewer girls expected the majority of classmates to respond negatively towards self than did boys on all response types: overt (3-4% vs. 4-12%), cognitive (4% vs. 7-8%), and emotional (4-5% vs. 9-11%).

Responses of neutral valence were also the most frequently expected responses towards self. Of all participants, 46% to 73% expected the majority of classmates to respond neutral, girls more frequently than boys (neutral MEPE-self total mean comparison, $p < .003$).

Table 3.

Boys' and girls' metaperceptions of their classmates' positive and negative responses to a classmate (MEPE-peer). Distributions of answers, means, significance of gender differences, and effect sizes.

	BOYS (n=313)						GIRLS (n=374)							
	%	%	%	%	%		%	%	%	%	%	%		
	No one	Just one	Some	Almost all	All	Mean (SD)	No one	Just one	Some	Almost all	All	Mean (SD)	*p*	*d*
	1	2	3	4	5		1	2	3	4	5	.		
Positive MEPE-peer scale														
They would encourage her	32.1	17.2	42.4	7.3	1.0	2.28 (1.03)	21.9	17.8	49.4	10.8	-	2.49 (0.95)	.006*	0.212
They would comfort her	36.2	20.3	36.9	6.0	0.7	2.15 (1.01)	23.6	18.9	50.3	6.7	0.6	2.42 (0.94)	<.001*	0.277
They would think "I hope you can make it"	16.8	21.8	51.5	9.2	0.7	2.55 (0.90)	10.2	15.7	52.8	19.6	1.7	2.87 (0.90)	<.001*	0.356
They would think "she's doing fine"	22.2	18.9	43.4	14.6	1.0	2.53 (1.02)	16.3	16.6	45.4	19.9	1.7	2.74 (1.01)	.009	0.207
They would understand how she feels	4.9	7.8	55.6	28.8	2.9	3.17 (0.81)	0.8	5.0	54.4	36.7	3.0	3.36 (0.67)	.001*	0.256
They would feel compassion and concern for her	22.3	22.3	46.2	8.3	1.0	2.44 (0.96)	11.0	21.3	56.4	10.8	0.6	2.69 (0.83)	<.001*	0.279
Total score of positive MEPE-scale						15.08 (4.00)						16.55 (3.75)	<.001*	0.379
Negative MEPE-peer scale														
They would laugh at Mary	18.5	10.6	57.9	11.3	1.7	2.67 (0.96)	23.4	15.1	53.6	7.7	0.3	2.46 (0.94)	.006*	0.221
They would ridicule or tease Mary	39.0	17.7	38.7	3.3	1.3	2.10 (1.01)	43.9	20.8	30.6	4.4	0.3	1.96 (0.97)	.072	0.141
They would think "she loses her nerve for nothing"	16.1	11.2	45.7	25.0	2.0	2.86 (1.03)	16.5	10.5	54.0	17.1	1.9	2.77 (0.98)	.300	0.090
They would think "she is weird"	29.8	16.1	42.1	10.0	2.0	2.38 (1.08)	32.6	22.7	35.4	8.0	1.4	2.23 (1.04)	.060	0.141
They would feel glad over Mary's distress	21.4	22.0	42.8	12.5	1.3	2.50 (1.01)	24.5	24.8	42.1	8.0	0.6	2.35 (0.96)	.048	0.152
They would feel superior to Mary	16.2	7.0	57.9	15.6	3.3	2.83 (0.99)	11.6	15.2	60.2	11.0	1.9	2.77 (0.87)	.385	0.064
Total score of negative MEPE-scale						15.39 (4.12)						14.57 (4.03)	.011	0.201

**independent samples t-test with Bonferroni correction: p is significant at the level 0.05/6 = 0.008.*

d = Cohen's d effect size: ≥ 0.20 = small, ≥ 0.50 = medium, ≥ 0.80 = large

Table 4.

Boys' and girls' metaperceptions of their classmates' positive and negative responses to themselves as presenter (MEPE-self). Distributions of answers, means, significance of gender differences, and effect sizes.

	BOYS (n=313)						GIRLS (n=374)							
	%	%	%	%	%		%	%	%	%	%	%		
	No one	Just one	Some	Almost all	All	Mean (SD)	No one	Just one	Some	Almost all	All	Mean (SD)	*p*	*d*
	1	2	3	4	5		1	2	3	4	5			
Positive MEPE-self scale														
They would encourage her	41.1	17.9	32.5	7.0	1.7	2.10 (1.08)	16.9	16.0	55.2	11.3	0.6	2.63 (0.91)	<.001*	0.531
They would comfort her	64.6	8.9	22.5	3.0	1.0	1.67 (0.99)	30.5	15.8	47.6	5.3	0.8	2.30 (0.99)	<.001*	0.636
They would think "I hope you can make it"	44.0	11.9	37.1	5.6	1.3	2.08 (1.07)	14.3	13.2	57.4	13.2	1.9	2.75 (0.92)	<.001*	0.671
They would think "she's doing fine"	31.5	12.6	42.4	11.3	2.3	2.40 (1.11)	7.7	10.8	56.6	22.4	2.5	3.01 (0.86)	<.001*	0.614
They would understand how she feels	13.9	8.3	45.7	27.2	5.0	3.01 (1.06)	5.5	4.1	49.0	34.8	6.6	3.33 (0.88)	<.001*	0.328
They would feel compassion and concern for her	43.3	17.0	32.0	7.0	0.7	2.05 (1.05)	19.3	14.6	55.6	9.6	0.8	2.58 (0.94)	<.001*	0.547
Total score of positive MEPE-scale						13.32 (4.84)						16.59 (4.19)	<.001*	0.722
Negative MEPE-self scale														
They would laugh at me	33.4	14.9	40.1	8.6	3.0	2.33 (1.12)	51.4	17.4	27.3	3.3	0.6	1.84 (0.97)	<.001*	0.468
They would ridicule or tease me	56.6	14.6	25.2	1.7	2.0	1.78 (1.01)	62.7	18.8	15.7	2.5	0.3	1.59 (0.86)	.010	0.203
They would think "you lose your nerve for nothing"	43.2	15.8	33.0	5.0	3.0	2.09 (1.11)	48.8	16.3	30.9	3.3	0.8	1.91 (1.00)	.035	0.170
They would think "you are weird"	54.0	16.2	23.2	4.0	2.6	1.85 (1.07)	55.4	21.6	19.1	3.3	0.6	1.72 (0.92)	.096	0.130
They would feel glad over my distress	38.1	20.2	33.1	5.6	3.0	2.15 (1.09)	44.1	22.9	29.2	3.0	0.8	1.94 (0.96)	.008*	0.204
They would feel superior to me	25.6	15.0	48.5	8.3	2.7	2.48 (1.04)	18.7	19.0	57.3	4.4	0.6	2.49 (0.87)	.839	0.010
Total score of negative MEPE-scale						12.66 (4.78)						11.48 (4.06)	.001*	0.266

**independent samples t-test with Bonferroni correction: p is significant at the level 0.05/6 = 0.008*

d = Cohen's d effect size: ≥ 0.20 = small, ≥ 0.50 = medium, ≥ 0.80 = large

4. DISCUSSION

We found clear gender differences across domains of interpersonal cognition and in self-evaluations between adolescent boys and girls as they relate to anxiety experienced in a classroom presentation situation. We also obtained support for the psychometric properties of the CQ-SAIC as a multidimensional measure of interpersonal cognition in adolescents.

Regarding the CQ-SAIC, reliability of OR, MEPE-peer and MEPE-self subscales ranged from .76 to .88 (i.e., within acceptable/good range; Cicchetti, 1994). The LPA subscale was moderately highly correlated with the SAS-A, a measure of general/trait social anxiety, lending support to its concurrent validity. As LPA assesses expected state-type anxiety in a presentation situation in classroom, it is both more specific and circumscribed than SAS-A. Of respondents, 12% reported they would surely, and 38% probably would experience presentation anxiety, frequencies concordant with the prevalence of public speaking fears in adolescents (Essau et al., 1999; Knappe et al., 2015).

In terms of gender differences, our finding that girls' own overt and covert responses towards the anxious peer were more positive and less negative than those of boys is concurrent with findings on girls' greater orientation to social connectedness, greater sensitivity to peers' distress, and tendency to use their attunement in interactions and relationships (Rose & Rudolph, 2006; Flannery & Smith, 2017). It is also in line with findings of a temporal dip in emphatic concern among boys approaching middle adolescence, the time frame of this study (van der Graaff et al., 2014); and with findings of adolescent girls attaching lower personal stigma to social anxiety than boys do (Jorm & Wright, 2008; Lynch et al., 2021).

Girls' higher prosocial responding in this context might also be related to a gender-specific (tend-or-befriend) response pattern to stress, more prevalent in adolescent girls than in boys (Taylor et al., 2000). The finding that both girls' and boys' own overt responses, whether positive or negative, were rare compared with their covert responses, and that neutral responses were the most common, could be interpreted to describe adolescents' uncertainty and avoidance of perceived risk of peer rejection (Jorm & Wright, 2008; Tomova et al., 2021).

Girls predicted becoming anxious in the classroom presentation situation slightly more often than boys. This finding is consistent with gender comparisons from population studies (Furukawa et al., 2014; Essau et al., 1999). Our findings of high levels of anticipated presentation anxiety among both genders, and of more even female-to-male ratio than found for general social anxiety and SAD (Knappe et al., 2015), indicates that classroom presentations are typical, developmentally salient contexts for the occurrence of anxiety for both genders.

Girls reported lower acceptance of self as anxious in the classroom presentation situation. This finding was unexpected, given that boys' gender-typical role stresses independence,

with which showing anxiety may be incongruent (Rice et al., 2021). However, some studies have found that relative to boys, girls report lower levels of self-compassion, and specifically more negative self-judgements as they approach mid-adolescence (Bluth & Blanton, 2015; Gill et al., 2018).

A gender difference was also found in associations between general social anxiety and accepting self as anxious while giving a presentation; nearly half of socially anxious girls showed non-acceptance. Indeed, clinical research has found low levels of self-compassion, and high levels of self-blame and self-criticism associated with shyness and social anxiety in adolescents and young adults (Henderson et al., 2014). Essau et al. (1999) studied mid-adolescents' subjective concerns in feared social situations and found that girls, more often than boys, feared becoming judged as weak/crazy, and felt ashamed of oneself. In a Scottish population study, social anxiety was associated with higher self-criticality and more negative self-judgements in 14-18-year-old girls, while higher levels of self-compassion were found in boys (Gill et al., 2018). Despite methodological differences, results from these studies point to similar gender differences as we found.

Our results on peer-referent metaperception relate to studies examining perceived social anxiety stigma. We found girls showed a higher expectancy of positive, and lower expectancy of negative classroom responses towards the anxious peer, indicating lower levels of perceived stigma. In stigma studies, perceived social anxiety stigma most often relates to expectations of the described individual being weak; however, gender differences have not been found (Jorm & Wright, 2008; Lynch et al., 2018). It may be that presentation anxiety symptoms, being very frequent, do not trigger expectations of stigmatizing classroom responses. The results may simply reflect girls' normative expectancy of attuned, emphatic concern and supportive behavior (Rose & Rudolph, 2006; Hollarek & Lee, 2022) in a stressful situation.

The results from analyses on MEPE-self scale reflect adolescents' social self-perceptions (Kenny, 1994). When imagining themselves as the presenter, girls again predicted more frequent positive, and fewer negative classroom responses compared with boys. This could reflect findings of adolescent girls reporting more positive and less negative peer group interactions overall, relative to boys (Gavin & Furman, 1989). In contrast, boys predicted more frequent negative classmate responses overall, and also overt negative responses (e.g., laughing) towards self. This finding might be explained by some boys adopting a traditional masculine role, even perceiving presentation situations as arenas in which to demonstrate a highly independent attitude. Research findings on masculinity-oriented adolescent boys' less favorable attitudes towards help-seeking (Clark et al., 2020) may translate to a similar denial/minimization of anxiety. On the other hand, boys' higher expectancies of overt negative responding might plainly reflect their slower development of social cognition and emotion recognition (van der Graaff et al., 2018).

Several study limitations should be considered. We asked adolescents to self-report on their own and peers' behaviors, attitudes, and emotions. Self-report methods should optimally be combined with observations of real-life interactions (Hollarek & Lee, 2022). Also, the CQ-SAIC presented the example of an anxious girl, which meant that boys reacted to an opposite-sex peer, and girls to a same-sex peer, which may have influenced the results (Tisak et al., 2012). Reavley and Jorm (2011) presented vignettes of a socially anxious female/male peer to young people, randomizing the gender of the person in the vignette, and found no in gender differences in attitudes, suggesting that such an effect might be small.

The present study also has strengths, including the use of a large representative population, and instruments validated for use in this age group. By covering several aspects of interpersonal cognition and assessing a typical, widely anxiety-inducing and ecologically relevant situation, the use of CQ-SAIC may reveal social cognitive response tendencies not accessible by strictly specified methods, such as facial emotion recognition methods (Hollarek & Lee, 2022).

Our findings add to research on gender differences in adolescents' inter- and intrapersonal cognition and their response tendencies in age-typical stress situations. The effect of gender on the acceptance of self as anxious, and the interaction between gender, trait social anxiety and acceptance of self merit further study.

Given the importance of self-development in adolescence and noting that half of girls with high trait social anxiety reported non-acceptance of self as anxious, clinical interventions for adolescents' social anxiety might benefit from adding work modules on self-concept/image (Moscovitch, 2009), or of using self-compassion techniques (Stefan & Cheie, 2022).

In conclusion, adolescent girls and boys differ markedly in their interpersonal cognition and self-evaluations related to experiencing anxiety in a class presentation situation. Research and development of interventions for adolescents' social anxiety may need to take in account such differences and tailor interventions for boys and girls, recognizing their needs in this developmental stage.

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APPENDIX:

The CQ-SAIC instructions and items presented to subjects on own reactions (OR), peer-referent metaperception (MEPE-peer), and self-referent metaperception (MEPE-self) subscales.

Own reactions (OR subscale)

My own reactions toward the anxious peer

Question:
How would you react if you were sitting in the classroom listening to Mary's performance?
Please read each item and circle the alternative that best describes your reaction. Be sure to answer all questions.

Scale: 1 = absolutely not, 2 = hardly, 3 = likely, 4 = for certain

a) I would laugh at Mary (1) (2) (3) (4)
b) I wouldn't do anything in particular (1) (2) (3) (4)
c) I would support Mary (1) (2) (3) (4)
d) I would ridicule or tease Mary (1) (2) (3) (4)
e) I would comfort Mary (1) (2) (3) (4)
f) I would be just silent (1) (2) (3) (4)

a) I would think: "Mary gets nervous for no reason!" (1) (2) (3) (4)
b) I would think: "I hope you will make it!" (1) (2) (3) (4)
c) I would think: "Mary is weird, isn't she?" (1) (2) (3) (4)
d) I would think: "Mary is doing fine, isn't she?" (1) (2) (3) (4)
e) I would not think anything in particular about Mary. (1) (2) (3) (4)
f) I would think that being nervous is normal. (1) (2) (3) (4).

a) I would understand how Mary feels (1) (2) (3) (4)
b) I would feel pleasure at Mary's misfortune (1) (2) (3) (4)
c) I would feel superior to Mary (1) (2) (3) (4)
d) I would feel nothing particular toward Mary (1) (2) (3) (4)
e) I would feel neutral about the situation (1) (2) (3) (4)
f) I would feel compassion and concern for Mary (1) (2) (3) (4)

Peer-referent metaperception (MEPE-peer subscale)	Self-referent metaperception (MEPE-self subscale)
My classmates' reactions to Mary's performance	My classmates' reactions to my performance
Question: *How do you think your own classmates would react to Mary's performance?*	Question: *How do you think your own classmates would react to your performance when you are giving the speech yourself?*
Please circle the alternative that best describes the responses of your classmates. Be sure to answer all questions.	*Please circle the alternative that best describes the responses of your classmates. Be sure to answer all questions.*
How many students in your class would act in the following way?	*How many students in your class would act in the following way?*
Scale: no one (0)—just one (1)—some (2)—almost all (3)—all (4)	Scale: no one (0)—just one (1) —some (2)—almost all (3)—all (4)
a) Laugh at Mary (0) (1) (2) (3) (4) b) Do nothing in particular (0) (1) (2) (3) (4) c) Support Mary (0) (1) (2) (3) (4) d) Ridicule or tease Mary (0) (1) (2) (3) (4) e) Comfort Mary (0) (1) (2) (3) (4) f) Be just silent (0) (1) (2) (3) (4)	a) Laugh at you (0) (1) (2) (3) (4) b) Do nothing in particular (0) (1) (2) (3) (4) c) Support you (0) (1) (2) (3) (4) d) Ridicule or tease you (0) (1) (2) (3) (4) e) Comfort you (0) (1) (2) (3) (4) f) Be just silent (0) (1) (2) (3) (4)
How many students in your class would think in the following way?	How many students in your class would think in the following way?
a) "Mary gets nervous for no reason!" (0) (1) (2) (3) (4 b) "I hope Mary will make it!" (0) (1) (2) (3) (4) c) "Mary is weird, isn't she?" (0) (1) (2) (3) (4) d) "Mary is doing fine, isn't she?" (0) (1) (2) (3) (4) e) Think nothing particular about Mary (0) (1) (2) (3) (4) f) Think that being nervous is normal (0) (1) (2) (3) (4)f	a) "You get nervous for no reason!" (0) (1) (2) (3) (4) b) "I hope you will make it!" (0) (1) (2) (3) (4) c) "You are weird, aren't you?" (0) (1) (2) (3) (4) d) "You are doing fine, aren't you?" (0) (1) (2) (3) (4) e) Think nothing particular about you (0) (1) (2) (3) (4) f) Think that being nervous is normal (0) (1) (2) (3) (4)
How many students in your class would feel in the following way?	How many students in your class would feel in the following way?
a) Understand how Mary feels (0) (1) (2) (3) (4) b) Feel pleasure at Mary's misfortune (0) (1) (2) (3) (4) c) Feel superior to Mary (0) (1) (2) (3) (4) d) Feel nothing particular toward Mary (0) (1) (2) (3) (4) e) Feel neutral about the situation (0) (1) (2) (3) (4) f) Feel compassion and concern for Mary (0) (1) (2) (3) (4)	a) Understand how you feel (0) (1) (2) (3) (4) b) Feel pleasure at your misfortune (0) (1) (2) (3) (4) c) Feel superior to you (0) (1) (2) (3) (4) d) Feel nothing particular toward you (0) (1) (2) (3) (4) e) Feel neutral about the situation (0) (1) (2) (3) (4) f) Feel compassion and concern for you (0) (1) (2) (3) (4)

SOCIEDAD CIENTÍFICA ESPAÑOLA PARA LA INVESTIGACIÓN Y FORMACIÓN EN CIENCIAS DE LA SALUD

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Relationship between Social Anxiety Symptoms and Behavioral Impairment in Adolescents: The Moderating Role of Perfectionism and Learning Motivation

Relación entre los síntomas de ansiedad social y el deterioro del comportamiento en los adolescentes: el papel moderador del perfeccionismo y la motivación del aprendizaje

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Abstract
Numerous studies have found that adolescents with social anxiety disorder experience greater difficulty in school adjustment and show higher dropout rates. Perfectionism and learning motivation are known to be significant predictors of academic achievement; these factors may enhance or diminish behavioral impairment within the school setting. The purpose of the present study was to examine the relationship between social anxiety, learning motivation, perfectionism, and behavioral impairment within a community sample of adolescents. Five hundred ninety-four German middle school students aged 12-17 years (mean age = 14.60, SD=1.64; 59.4% female) were recruited through their schools to respond to a questionnaire package consisting of Spence Children's Anxiety Scale, the Child and Adolescent Perfectionism Scale, impact supplement of the Strengths and Difficulties Questionnaire, and intrinsic values subscale of Motivational Strategies for Learning Questionnaire. Results of correlational and multiple regression analysis showed that social anxiety symptoms were a significant predictor of distress and behavioral impairment, especially in friendship and classroom learning domains. It was shown that intrinsic learning motivation

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promotes classroom learning in students with high levels of social anxiety, whereas perfectionism interferes with domains outside the classroom, such as friendships and leisure activities. Limitations and implications for future research were discussed.

Keywords: social anxiety disorder, learning motivation, perfectionism, Germany, behavioral impairment.

Resumen

Numerosos estudios han encontrado que los adolescentes con trastorno de ansiedad social experimentan mayor dificultad en el ajuste escolar y muestran tasas más altas de abandono escolar. Se sabe que el perfeccionismo y la motivación de aprendizaje son predictores significativos del logro académico; estos factores pueden mejorar o disminuir el deterioro del comportamiento en el entorno escolar. El propósito del presente estudio fue examinar la relación entre la ansiedad social, la motivación de aprendizaje, el perfeccionismo y el deterioro del comportamiento dentro de una muestra comunitaria de adolescentes. Quinientos noventa y cuatro estudiantes de secundaria alemanes de 12 a 17 años de edad (edad media = 14,60 años, DE = 1,64; 59,4% mujeres) fueron reclutados a través de sus escuelas para responder a un paquete de cuestionarios consistente en la Escala de Ansiedad Infantil de Spence, la Escala de Perfeccionismo Infantil y Adolescente, suplemento de impacto del Cuestionario de Fortalezas y Dificultades, y subescala de valores intrínsecos del Cuestionario de Estrategias Motivacionales para el Aprendizaje. Los resultados del análisis de correlación y regresión múltiple mostraron que los síntomas de ansiedad social eran un predictor significativo de angustia y deterioro del comportamiento, especialmente en los dominios de la amistad y el aprendizaje en el aula. Se demostró que la motivación intrínseca del aprendizaje promueve el aprendizaje en el aula en estudiantes con altos niveles de ansiedad social, mientras que el perfeccionismo interfiere con dominios fuera del aula, como las amistades y las actividades de ocio. Se discutieron las limitaciones y las implicaciones para la investigación futura.

Palabras clave: trastorno de ansiedad social, motivación de aprendizaje, perfeccionismo, Alemania, deterioro del comportamiento.

1. INTRODUCTION

Social anxiety disorder is a debilitating state that affects approximately 11-12% of the population at some point in their life (Beesdo et al., 2007; Ruscio et al., 2007). Typically starting in childhood and early adolescence (Chavira & Stein, 2005; Kessler et al., 2007), social anxiety disorder is associated with impairment in various life domains, including study performance, social life, and family relationships (Aderka et al., 2012; Wong et

al., 2012). Youth with social anxiety disorder show a higher risk of premature school withdrawal, and there is some evidence that this risk may be higher than for other anxiety disorders (Van Ameringen et al., 2003). Prevention and early intervention are important not only to alleviate present sufferings but also to help students fulfill their potential and achieve future goals.

From the scope of prevention, identifying those with high risks and increasing protective factors within adolescent community samples is an important issue. Essau et al. (1999) show that while approximately 50% of adolescents randomly selected from German schools report more than one social fear, only 23.5% of those meeting diagnostic levels of social anxiety and 14.5% of those with social fears seek treatment. The low percentage, in addition with the high stability and the significant oscillation above and below the diagnostic threshold (Merikangas et al., 2002), indicate that addressing subsyndromal levels of social anxiety in youths is a promising approach to reach out to those in need of intervention. Further, there is data that 70% to 80% of children who receive mental health services receive them in school, and for many children, the school system provides their only form of mental health treatment (Burns et al., 1995). Taken together, identifying behavioral impairment, preventing premature dropout from school, and encouraging educational achievement is beneficial in itself, but can also function as a means to provide professional support for students in need of treatment for social anxiety symptoms.

While there is ample evidence that social anxiety symptoms interfere with school performance (e.g., Vilaplana-Pérez et al., 2021), less is known about the moderating factors which promote or undermine behavioral impairment. One promising factor from the field of educational psychology is learning motivation. Ryan and Deci (2000) classified motivation into multiple categories based on the reasons and goals initiating the behavior, the most basic distinction being intrinsic and extrinsic motivation. Intrinsic motivation is reinforced by the inherent attractiveness or enjoyment in the activity itself, whereas extrinsic motivation is based on a separable outcome (e.g., external reward or social approval, avoidance of punishment or attainment of a valued outcome). Intrinsic learning motivation is a pervasive drive for children and adolescents to learn for the sake of fun or interest and has been positively correlated with school achievement and academic competence (Gottfried, 1985). An interesting feature of intrinsic and extrinsic motivation is that the two dimensions are independent and only moderately correlated with each other (Lepper et al., 2005). While students with social anxiety symptoms may be reinforced by extrinsic motivation (i.e., to avoid scrutiny from others and receive social approval), they can at the same time be motivated by the learning process itself. This can act as a protective factor from impairment in school performance.

Another psychological trait which is influential in predicting school performance is perfectionism. Perfectionism is described as a personality disposition characterized by striving

for flawlessness and setting exceedingly high standards for performance, accompanied by tendencies for overly critical evaluations (Frost et al., 1990; Stoeber et al., 2009). In their multidimensional model of perfectionism, Hewitt and Flett (1991a) described the difference between self-oriented perfectionism and socially prescribed perfectionism. The former is defined as unrealistic standards and perfectionistic motivation for the self and is mainly internally motivated. The latter is defined as the belief that others expect oneself to be perfect and is mainly an externally motivated form of perfectionism. Self-oriented perfectionism is generally associated with higher academic achievement (Osenk et al., 2020), whereas socially prescribed perfectionism has been consistently linked to negative outcomes, including higher test anxiety (Stoeber et al., 2009), less self-efficacy for learning and performance (Mills and Blankstein, 2000), and maladaptive appraisal of interpersonal situations in socially anxious individuals (Laurenti et al., 2008).

Despite the fact that both learning motivation and positive forms of perfectionism have been linked with higher functioning in school, their relationship with social anxiety symptoms and behavioral impairment in school-aged adolescents is yet to be pursued. If these factors function as moderators between social anxiety and behavioral difficulties, it will carry implications for prevention and early intervention in school settings. Therefore, the purpose of the present study was (1) to examine the relationship between symptoms of social anxiety and behavioral impairment, with a special emphasis on friendship and classroom learning domains, and (2) to explore whether intrinsic learning motivation and perfectionism act as moderators between social anxiety symptoms and behavioral impairment. It was hypothesized that (A) social anxiety symptoms will be linked with stronger distress and behavioral impairment in all areas (i.e. home life, friendships, classroom learning, and leisure activities), but the strongest correlation will be in the domains of friendship and classroom learning, (B) participants scoring high in social anxiety symptoms will show greater behavioral impairment when associated with higher levels of socially prescribed perfectionism, and (C) participants scoring high in social anxiety symptoms will display more behavioral impairment when their intrinsic learning motivation is low.

2. METHODS

2.1. Participants

Participants were 594 adolescents recruited from four high schools (two urban and two rural schools) in Nordrhein Westfalia, Germany. The size of these four schools and the number of children in each class was similar; the average school and class size was approximately 600 and 24 students, respectively. Almost all of the sample was of German origin (92%), with the remainder coming from other ethnic backgrounds, mostly from Southern Europe. Participant age ranged from 12–17 years, and mean age was 14.60

(SD=1.64). Slightly more than half of the subjects were females (241 males, 40.6%; 353 females, 59.4%). The socioeconomic status of participants varied greatly, ranging from parents with low-skill jobs to physicians.

2.2. Procedure

All participants were invited to take part in a questionnaire study via their respective schools. After school approval was obtained, all participants had to provide a parental written informed consent before participating in the study. Adolescents' participation was voluntary, and no incentive was given for participation. About 90% of the adolescents who were invited to participate in the study did so. Responders did not differ significantly from non-responders in terms of age and gender. The adolescents completed questionnaires in their classroom and the order of administration was counterbalanced across classrooms. Those who did not participate in the study took part in their regular lesson. One research assistant was present throughout to provide assistance if needed and to ensure confidential and independent responding.

2.3. Instruments

The Spence Children's Anxiety Scale (SCAS; Spence, 1997) is a 38-item measure of anxiety symptoms in children and adolescents. The items measure DSM-IV anxiety disorders including separation anxiety, social phobia, obsessive-compulsive disorder, panic/agoraphobia, physical injury fears, and generalized anxiety disorder. For the purpose of this study, only the social phobia subscale and total score was used. Each item is rated on a 4-point scale in terms of its frequency from "never" (0) to "always" (3), and higher scores reflect higher levels of anxiety symptoms. The reliability and the validity of the German SCAS has been examined in a sample of German primary school children (Essau et al., 2002). For the present study, internal consistency for the total scale was .89 and for the social phobia subscale was .72.

The Child and Adolescent Perfectionism Scale (CAPS; Flett et al., 2016) was used to assess self-oriented and socially prescribed perfectionism. The CAPS contains 22 items, which are rated on a three-point Likert scale ranging from "not true" (0) to "very true" (2). The CAPS consists of two subscales: self-oriented perfectionism and socially prescribed perfectionism. The validity of the CAPS was supported by its significant correlation with various forms of emotional distress, including anxiety, depression, and stress (Flett et al., 2016). In this study, the CAPS was demonstrated to have moderate internal consistency, with Cronbach's alpha of 0.82 for the total scale, 0.75 for self-oriented perfectionism, and 0.79 for socially prescribed perfectionism.

The Strengths and Difficulties Questionnaire (SDQ; Goodman 1997) is a measure used to assess general difficulties and positive attributes in adolescents. It includes a section called "impact supplements", in which the subjects were asked whether they have difficulties in emotion, concentration, behavior, or interpersonal relationships. If the answer is "yes", further questions were asked on the distress, behavioral impairment, burden, and chronicity of the problem. Impairment is divided into four life domains: home life, friendships, classroom learning, and leisure activities. Other items include how long the problem has been present, levels of distress caused by the problem, and whether the difficulties make it hard for other people such as family, friends, and teachers. The official German adaptation of the SDQ was used in the present study (https://www.sdqinfo.org/py/sdqinfo/b3.py?language=German). The SDQ is one of the most commonly used questionnaires to measure general difficulties and positive attributes in Germany because of its sound psychometric properties among German children and adolescents (e.g., Barzilay et al., 2019; Ghinea et al., 2019).

Motivational Strategies for Learning Questionnaire (MSLQ; Pintrich and DeGroot, 1990) is a self-report inventory for measuring student's motivational orientation and self-regulated learning strategy use. It consists of 6 motivation subscales and 9 learning strategies scales. Factorial and predictive validity, as well the reliability of the scale has been confirmed (Credé and Phillips, 2011; Duncan and McKeachie, 2005; Pintrich et al., 1991). For the purposes of the present study, the intrinsic goal orientation subscale was used to measure the degree to which the student is motivated by the learning task itself. Items of this subscale measure the degree to which the student perceives him/herself to be participating in academic tasks for reasons such as challenge, curiosity, or a sense of mastery. The inventory uses a 7-point Likert scale, ranging from 1 (not at all true of me) to 7 (very true of me). Scores are calculated by taking the mean of the items that make up that scale. Alpha coefficient of the scale in the present study was 0.84.

2.4. Translation of questionnaires

The English version of the questionnaires (CAPS and MSLQ) were adapted and translated according to guidelines that are widely accepted for the successful translation of instruments in cross-cultural research (Brislin, 1970). Based on this approach one bilingual translator who was also a native speaker or culturally informed individual translated the questionnaires from the original language (English) to the second language (German), and another bilingual translated it back to the original language (German back to English). Differences in the original and the back-translated versions were discussed and resolved by joint agreement of both translators.

2.5. Data Analysis

First, age x gender distribution was checked to determine if there was a significant distribution bias. Paired t-tests were utilized to examine mean differences between male and female data for the variables included in the study. Next, polyserial correlations between the SCAS social phobia subscale and items from SDQ impact supplement were calculated to examine the association between social anxiety symptoms and subjective distress/impairment. The values were compared to the correlation with total SCAS scores excluding the social anxiety symptoms in order to evaluate the specificity of the relationship. Finally, a series of regression analysis were employed to examine the direct effect of social anxiety symptoms, self-oriented perfectionism, socially prescribed perfectionism, and intrinsic learning motivation, as well as the interaction between social anxiety symptoms and the latter three variables on behavioral impairment (i.e., in home life, friendships, classroom learning, and leisure activities domains).

3. RESULTS

Incomplete data were omitted from analysis since the values were missing at random. Since previous studies show gender differences in social anxiety (e.g., McLean et al., 2011), the effect of gender was examined for each of the variables. Chi-squared test showed a significant age x gender distribution bias for the present sample ($\chi 2$ (5) = 19.56, p<.01), and Cramer's V was 0.18 (effect size=weak). Residual analyses showed a significant distribution bias in males and females for 12-year-olds (p<.001; 45 males, 26 females) and 17-year-olds (p<.05; 31 males, 68 females). The descriptive statistics for the variables included in the study are shown in Table 1. The largest skew and kurtosis were found for the SCAS total score, but for the most part, the variables were normally distributed. From the results of the t-tests, females scored higher than males on SCAS social anxiety and total anxiety score, while males scored slightly higher than females on socially prescribed perfectionism and total perfectionism score.

Table 1

Descriptive statistics of measures included in the study and tests for gender differences

	Total mean (SD)	**Skewness**	**Kurtosis**	**Male mean (SD)**	**Female mean (SD)**	**t-test**
The Spence Children's Anxiety Scale (SCAS)						
Social phobia	5.83 (2.90)	0.54	0.11	5.08 (2.77)	6.34 (2.89)	t(592)=-5.30***
SCAS total	22.75 (10.83)	1.00	1.79	18.66 (10.11)	25.54 (10.41)	t(592)=-8.00***

	Total mean (SD)	**Skewness**	**Kurtosis**	**Male mean (SD)**	**Female mean (SD)**	**t-test**
The Child and Adolescent Perfectionism Scale (CAPS)						
Self-oriented	9.49 (4.09)	0.39	0.04	9.79 (3.61)	9.29 (4.38)	t(571.17)=1.52
Socially prescribed	3.93 (3.39)	0.93	0.19	4.26 (3.43)	3.69 (3.36)	t(589)=2.00*
CAPS total	13.40 (6.22)	0.58	-0.04	14.05 (5.64)	12.95 (6.55)	t(589)=2.12*
Motivational Strategies for Learning Questionnaire (MSLQ)						
Intrinsic value	4.34 (1.05)	0.04	0.10	4.44 (1.15)	4.28 (0.97)	t(455.10)=1.86

** p<.05, *** p<.001*

Polyserial correlations between the SDQ impact supplement items and SCAS social phobia subscale is provided in Table 2. For comparison, the correlation between each item and the total SCAS score excluding the social phobia subscale is also provided. Results of Wald tests showed that all correlations except for the correlation between SCAS total score (omitting social phobia) and impairment in leisure activities were significant. Social anxiety was most strongly linked with distress associated with the symptoms (r=.48), whereas the link between distress and other anxiety symptoms was r=.37. In regard to impairment, the association between social anxiety symptoms and impairment was strongest in friendship and classroom learning domains. Thus, hypothesis (A) was supported.

Table 2

Polyserial correlations between SDQ impairment and social phobia subscale/ SCAS total score excluding social phobia

	Length	Distress	Impairment				Impact on others
			Home	Friend	Class	Leisure	
Total SCAS (excluding social phobia)	0.19**	0.37***	0.25**	0.28***	0.39***	0.13	0.25**
Social phobia	0.17*	0.48***	0.30***	0.40***	0.41***	0.23**	0.29***

*Note: * p<.05, ** p<.01, *** p<.001*

SDQ= The Strengths and Difficulties Questionnaire, SCAS=Spence Children's Anxiety Scale

A series of regression analyses were conducted to examine the predictive value of social anxiety, perfectionism, and learning motivation on behavioral impairment as measured by the SDQ impact supplements (i.e., impairment indicators). Social anxiety, self-oriented

perfectionism, socially prescribed perfectionism, intrinsic learning motivation, and the interaction between social anxiety and each of the scales were included as independent variables. Dependent variables were home life, friendships, classroom learning, and leisure activities impairment. The results are shown in Tables 3-6.

Table 3

Regression Analysis for Impairment in Home Life

Predictors (R^2=0.07**)	Beta	95%CI	VIF
Social phobia	0.13*	[0.001, 0.033]	1.15
Self-oriented perfection	0.08	[-0.004, 0.019]	1.34
Socially prescribed perfectionism	0.01	[-0.012, 0.015]	1.29
Intrinsic learning motivation	-0.06	[-0.007, 0.003]	1.08
Social phobia x self-oriented perfectionism	0.01	[-0.003, 0.004]	1.29
Social phobia x socially prescribed perfectionism	0.13*	[0.000, 0.011]	1.25
Social phobia x intrinsic learning motivation	-0.06	[-0.002, 0.001]	1.10

**p<.05, **p<.01*

Table 4

Regression Analysis for Impairment in Friendships

Predictors (R^2=0.18***)	Beta	95%CI	VIF
Social phobia	0.33***	[0.056, 0.113]	1.15
Self-oriented perfection	0.12*	[0.001, 0.043]	1.34
Socially prescribed perfectionism	0.09	[-0.007, 0.043]	1.29
Intrinsic learning motivation	-0.06	[-0.014, 0.004]	1.08
Social phobia x self-oriented perfectionism	-0.17**	[-0.016, -0.003]	1.29
Social phobia x socially prescribed perfectionism	0.09	[-0.002, 0.017]	1.25
Social phobia x intrinsic learning motivation	0.11*	[0.000, 0.006]	1.10

** p<.05, ** p<.01, *** p<.001*

Table 5

Regression Analysis for Impairment in Classroom Learning

Predictors (R^2=0.19***)	Beta	95%CI	VIF
Social phobia	0.34***	[0.055, 0.109]	1.15
Self-oriented perfection	0.02	[-0.017, 0.022]	1.34
Socially prescribed perfectionism	0.14*	[0.005, 0.052]	1.29
Intrinsic learning motivation	-0.07	[-0.014, 0.003]	1.08

Predictors (R^2=0.19***)	Beta	95%CI	VIF
Social phobia x self-oriented perfectionism	-0.02	[-0.008, 0.005]	1.29
Social phobia x socially prescribed perfectionism	0.05	[-0.005, 0.013]	1.25
Social phobia x intrinsic learning motivation	-0.12*	[-0.006, 0.000]	1.10

** p<.05, *** p<.001*

Table 6

Regression Analysis for Impairment in Leisure Activities

Predictors (R^2=0.10***)	Beta	95%CI	VIF
Social phobia	0.12*	[0.000, 0.036]	1.15
Self-oriented perfection	0.18**	[0.006, 0.032]	1.34
Socially prescribed perfectionism	0.02	[-0.013, 0.018]	1.29
Intrinsic learning motivation	0.03	[-0.004, 0.007]	1.08
Social phobia x self-oriented perfectionism	-0.08	[-0.007, 0.001]	1.29
Social phobia x socially prescribed perfectionism	0.02	[-0.005, 0.007]	1.25
Social phobia x intrinsic learning motivation	0.20**	[0.001, 0.005]	1.10

**p<.05, **p<.01, ***p<.001*

Beta coefficient for social phobia (beta=0.13, p<.05) and the interaction between social phobia and socially prescribed perfectionism (beta=0.13, p<.05) were significant in predicting impairment in home life. Simple slope analysis showed that social anxiety had a pronounced effect on impairment in home life when socially prescribed perfectionism was high (beta=0.27, p<.01), but this effect was not significant when socially prescribed perfectionism was low (beta=-0.01, *p=n.s.*). Thus, the results provided support for hypothesis (B), and it was suggested that socially prescribed perfectionism was associated with greater home life impairment in socially anxious adolescents.

For impairment in friendship, beta coefficients for social phobia (beta=0.33, p<.001), self-oriented perfectionism (beta=0.12, p<.05), the interaction between social phobia and self-oriented perfectionism (beta=-0.17, p<.01), and the interaction between social phobia and intrinsic learning motivation (beta=0.11, p<.05) were significant. Simple slope analysis showed that social anxiety had a pronounced effect on impairment in friendship when self-oriented perfectionism was low (beta=0.49, p<.001). The effect of social anxiety was weaker albeit significant when self-oriented perfectionism was high (beta=0.18, p<.05). While self-oriented perfectionism is associated with higher friendship impairment on its own, it may act as a protective factor in socially anxious adolescents. Similarly, social anxiety had a stronger effect on friendship impairment when intrinsic learning motivation was high (beta=0.44, p<.001). The result was in support of hypothesis (C); the effect of social anxiety was weaker when intrinsic motivation was low (beta=0.22, p<.01).

With regards to impairment in classroom learning, beta coefficients for social phobia (beta=0.34, $p<.001$), socially prescribed perfectionism (beta=0.14, $p<.05$), and the interaction between social phobia and intrinsic learning motivation (beta=-0.12, $p<.05$) were significant. Simple slope analysis showed that social anxiety had a stronger effect on impairment in classroom learning when intrinsic motivation was low (beta=0.46, $p<.001$). The results contradicted hypothesis (C). The effect of social anxiety was weaker when intrinsic motivation was high (beta=0.21, $p<.05$).

As for impairment in leisure activities, beta coefficients for social phobia (beta=0.12, $p<.05$), self-oriented perfectionism (beta=0.18, $p<.01$), and the interaction between social phobia and intrinsic learning motivation (beta=0.20, $p<.01$) were significant. Simple slope analysis showed that social anxiety had a stronger effect on friendship impairment when intrinsic motivation was high (beta=0.33, $p<.001$), which was in accordance with hypothesis (C). The effect of social anxiety was not significant when intrinsic motivation was low (beta=-0.09, *p=n.s.*).

4. DISCUSSION

The present study examined the influence of social anxiety symptoms, perfectionism, and intrinsic learning motivation on behavioral impairment, with an emphasis on the interaction effect between social anxiety symptoms and perfectionism/ learning motivation. Polyserial correlation between social anxiety symptoms and the SDQ impact supplement showed that social anxiety symptoms were moderately correlated with subjective distress levels, as well as impairment in friendship and classroom learning domains. Such results are in line with previous studies which show that adolescent social phobia is associated with serious impairment, especially in the domains of interpersonal relationships (La Greca and Lopez, 1998) and academic achievement (e.g., de Lijster et al., 2018). Social anxiety symptoms also showed a weak correlation with impairment in home life and leisure domains, and impact on others. These results show that while strongest correlation is with impairment in friends and school domains, adolescents' social anxiety symptoms may be related with adverse family life and extracurricular activities as well. The weakest correlation was between symptom severity and how long these difficulties have been present. As previously mentioned, social anxiety persists over years, but symptom severity fluctuates (Merikangas et al., 2002). Therefore, the sum of social anxiety symptoms was not necessarily strongly associated with duration of impairment.

For the regression analyses, social anxiety symptom was the only variable that was significantly associated with behavioral impairment in all 4 domains. Self-oriented perfectionism was correlated with impairment in friendships and leisure activities. Many previous studies failed to find a specific relationship between self-oriented perfectionism and

interpersonal problems (e.g., Stoeber et al., 2021). However, there are studies showing that self-oriented perfectionism is associated with evaluation anxiety (Newby et al., 2017) and depression (Hewitt and Flett, 1991b). These factors may have contributed to the increased burden in friendships and extracurricular activities domains. Furthermore, the interaction between social phobia and self-oriented perfectionism was significantly associated with impairment in friendships. Here, the association between social anxiety symptoms and friendship impairment was weaker when self-oriented perfectionism was high. As Stoeber et al. (2009) note, self-oriented perfectionism is an ambivalent form of perfectionism associated with both psychopathological symptoms and positive interpersonal characteristics, such as conscientiousness, self-esteem, and positive affect. This may be responsible for the mixed results of the present study, in which direct effect functions negatively, while moderator effect functions positively, toward friendship retainment.

Socially prescribed perfectionism was significantly associated with impairment in classroom learning. Socially prescribed perfectionism is, in its extreme form, compulsive sense of being obliged to be perfect in ways that are publicly recognizable and demanded (Flett et al., 2022). As a result, the sense of failing to live up to the highly salient expectations emerges, which can be deleterious in pursuing classroom learning. Furthermore, the interaction effect between social phobia and socially prescribed perfectionism was significant for impairment in home life; socially prescribed perfectionism magnified the negative association of social anxiety. Perceived high standards from the society, in combination with social evaluative concerns, might result in workaholism and excessive effort to achieve the demanded high standards. This may have compromised or interfered with family life and relationships.

Intrinsic learning motivation was not a direct predictor for any of the behavioral impairment domains. However, significant interaction effects between social anxiety symptoms and intrinsic learning motivation emerged. Specifically, impairment in friendships, classroom learning, and leisure activities were significantly associated with the interaction effect. For the classroom learning domain, social anxiety had less effect on impairment when intrinsic motivation was high. Intrinsic motivation may mitigate the negative effects of social evaluative concerns and enable students to enjoy learning out of challenge, curiosity, or sense of mastery. However, for friendships and leisure activities domains, the effects were the opposite: social anxiety had a stronger effect when intrinsic learning motivation was high. High intrinsic learning motivation, together with high social evaluative concerns, may encourage students to make greater academic efforts, but this may interfere with the time spent for other activities, such as with friends or for leisure.

In sum, social anxiety symptoms are associated with behavioral impairment in all domains, and especially in friendship and classroom learning. Learning motivation may help student with high social anxiety symptoms to enjoy the process of learning per se and

shield them from the negative effects of social evaluative concerns, but at the same time, may interfere with personal life, such as friendship and leisure activities. Perfectionism, whether self-oriented or socially prescribed, also encourages one to devote time and effort towards academic performance, but this may interfere with activities outside the classroom.

These results hold several implications for educators and mental health staff working within the school setting. First, school is an important outlet for students not only to attain educational goals but also to receive mental health services when required. Intrinsic learning motivation might help them minimize the effect of social anxiety symptoms, thereby preventing premature dropout.

Second, perfectionism and excessive focus on classroom activities appears to interfere with home life, friendship, and leisure activities. Educators should be aware that the perfectionistic student sensitive to social evaluation, while behaving attentively in class and handing in quality assignments, may be doing so at the expense of their personal relationships and extracurricular activities. Since adolescence is a critical period for socio-emotional development, difficulties in the friendship domain are especially serious in this population. Impairment should be assessed comprehensively, and interpersonal relationships outside the school setting should be taken into account.

Third, while intrinsic learning motivation may be beneficial in preventing impairment for socially anxious individuals in classroom learning, it can promote impairment in friendship and leisure domains. Such potential negative effects should be averted not by lowering levels of motivation, but by treating social anxiety. In other words, prevention and early intervention of social anxiety will enable students to fully enjoy their studies, and at the same time help them appreciate activities or relationships outside of the academic domain, shifting from "what they need to do" to "what they want to do".

Some common approach to enhance intrinsic motivation within the classroom include (1) promoting student autonomy by allowing choice and input into different activities, (2) making classroom tasks, activities, and assignments meaningful and interesting, (3) providing students with optimal levels of challenge, and (4) encouraging students to focus on mastery and improvement rather than solely focusing on grades and test scores (Jansen et al., 2022). In addition, teacher-student relationships, such as close communication and teacher support, as well as the quality of instructional practices and feedback techniques, are strong predictors of students' academic motivation. From the scope of social anxiety intervention, a wide range of efficacious cognitive-behavioral programs that can be implemented in the school setting are offered. These include the FRIENDS program (Barrett et al., 2000), Cool Kids Anxiety Program (Rapee et al., 2006), Skills for Academic and Social Success (Masia-Warner et al., 1999), and Super Skills for Life (Essau and Ollendick, 2013). Accordingly, teachers and mental health professionals can work together to meet the needs of the individual student.

There are some limitations to the present study that should be considered in interpreting the results. First, participants were a convenience sample of students drawn from the selected schools. While participation rate was high, there was a significant asymmetry in the number of males and females. These methodological shortcomings may have influenced the results. Second, the CAPS and MSLQ have been translated for the purposes of this study. While both measures have been translated according to conventional guidelines and demonstrate moderate internal consistency, measurement invariance was not directly examined in comparison with the original language. Third, all measurement was based on self-report by the adolescents. While the use of self-report is recommended when measuring internalizing symptoms and impairment (The Good Childhood Report, 2019), it should nevertheless be noted that the correlation between variables may be inflated by the use of a common methodology. Finally, our results are based on a sample of German adolescents, and it is unknown whether these findings can be extended to samples derived from other countries and cultural backgrounds.

In spite of these limitations, the present study highlights the importance of motivational factors in minimizing behavioral impairments in adolescents with social anxiety symptoms. Future studies should pursue how to encourage self-regulated behaviour in these individuals, as well as environmental factors that provide support in actualizing such behaviour.

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The predictive ability of school refusal on high social anxiety in Chilean adolescents

Capacidad predictiva del rechazo escolar sobre la alta ansiedad social en adolescentes chilenos

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Abstract
There is a growing interest in quantifying the risk of presenting maladaptive behaviors through the use of multivariate prediction algorithms such as logistic regressions. The objective of this study was to analyze the predictive capacity of school refusal behavior on high levels of social anxiety. The study used a sample of 895 Chilean adolescents (54.3% girls) aged between 14 and 17 years. The School Refusal Assessment Scale-Revised (SRAS-R) and the Social Anxiety Scale for Adolescents (SAS-A) were administered. The results revealed that adolescents with school refusal presented significantly higher scores in social anxiety than their peers with low scores in school refusal. This is due to feelings of social aversion, negative affectivity, fear of evaluation, or the use of this behavior to pursue the attention of significant others. This type of school refusal was found to be a positive and statistically significant predictor of high scores for social anxiety. On the contrary, when school refusal is based on obtaining tangible reinforcement outside the school, this factor acts as a negative and statistically significant predictor of high scores for social anxiety. These findings are discussed with reference to the differences found according to the type of school refusal behavior and its impact on the appearance of high levels of social anxiety.

Keywords: school refusal behavior; social anxiety; predictive ability; adolescents.

Resumen

Existe un interés creciente por cuantificar el riesgo de presentar conductas desadaptativas mediante algoritmos de predicción multivariante como las regresiones logísticas. El objetivo de este estudio fue analizar la capacidad predictiva del rechazo escolar sobre los altos niveles de ansiedad social. Participaron 895 adolescentes chilenos (54.3% chicas) con edades comprendidas entre los 14 y los 17 años. La Escala de Evaluación del Rechazo Escolar-Revisada (SRAS-R) y la Escala de Ansiedad Social para Adolescentes (SAS-A) fueron administradas. Los resultados revelaron que los adolescentes con rechazo escolar debido a sentimientos de aversión social, afectividad negativa, miedo la evaluación o cuando se pretende captar la atención de personas significativas presentaron puntuaciones significativamente más altas en ansiedad social que sus iguales con bajas puntuaciones en rechazo escolar. Este tipo de rechazo escolar resultó ser un predictor positivo y estadísticamente significativo de altas puntuaciones en ansiedad social. Por el contrario, cuando el rechazo escolar se basa en la obtención de refuerzos tangibles externos a la escuela este factor actúa como un predictor negativo y estadísticamente significativo de altas puntuaciones en ansiedad social. Se discuten estos hallazgos en basa a las diferencias encontradas según el tipo de rechazo escolar y su repercusión en la aparición de altos niveles de ansiedad social.

Palabras clave: rechazo escolar; ansiedad social; capacidad predictiva; adolescentes.

School refusal behavior (SRB) is identified as a general concept that comprises learners who reject to attend school or who are faced with continual obstacles, which may or may not be based on anxiety-driven behaviors, that prevent them from remaining in class (Hendron & Kearney, 2011). The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (American Psychiatry Association, APA, 2013) does not classify the school refusal behaviour as an autonomous diagnostic classification. Nonetheless, it can be associated with several mental health disorders such as: separation anxiety disorder, generalized anxiety disorder, oppositional defiant disorder, schooling-related events (critics, punishment, ridicule), or depression (Kearney & Albano, 2004). School avoidant behavior is considered to be one of the major problems due to their adverse repercussions for children and adolescents such as emotional and behavioral difficulties (Dube & Orpinas, 2009), lower academic achievement, psychiatric disorders (Egger et al., 2003), depression, anxiety (Gonzálvez et al., 2018), and, occasionally, even early school dropout (Gubbels et al., 2019).

Recent studies have identified profiles or subgroups that share similar characteristics related to school attendance problems (SAPs) depending on the reasons on which such behaviors are based (Fornander & Kearney, 2020; Kearney et al., 2020). One of the best-known explanatory theoretical models is the functional model, which has been established using the four conditions for the emergence and maintenance of SRB: (1) Avoidance of stimuli that provoke negative affectivity; (2) Escape from aversive social and/or evaluative

situations; (3) Pursuit of attention from significant others; and (4) Pursuit of tangible reinforcement outside of the school (Kearney, 2002). Students who have high scores in the first factor are considered to present generalized anxiety disorder (GAD), constant pleas, and somatic complaints with the goal of not having to attend school (Haight et al., 2011). Those who show high scores in the second factor are considered to have GAD and social anxiety and show withdrawal behaviors (Kearney & Albano, 2004). Students with high scores in the third factor are positively correlated with separation anxiety disorder and oppositional defiant disorder (ODD) (Kearney & Albano, 2004). Finally, students with high scores in the fourth factor are considered to also have ODD (Dahl, 2016). In the first two conditions, refusal is maintained by negative reinforcement (e.g., experiencing stage fright during an oral presentation). While in the last two conditions, refusal is maintained due to positive reinforcement (e.g., staying at home and using social media). Not only do studies on school refusal behavior profiles differentiate between different grouping of learners with SAPs but they also examine the connection of these profiles with other variables associated with internalizing problems, such as anxiety, depression, or stress. Gonzálvez et al. (2019) revealed in a non-clinical sample of Spanish adolescents that the profile of high school refusal behavior, characterized by high scores in the four conditions proposed by the functional model, showed higher scores in social anxiety. People with social anxiety suffer fear and anxiety in social environments in which they will be negatively evaluated or judged by others, and this may restrict their occasions to have significant social relationships (Alden & Taylor, 2004; Hofmann, 2007; Rapee & Heimberg, 1997). According to the DSM-V (APA, 2013), social phobia or social anxiety disorder is the noticeable fear or anxiety, which is out of proportion to the real threat posed by the social situation and to the sociocultural setting, concerning one or more social environments wherein the subject is exposed to probable scrutiny by several more (social interactions, being observed, and performing in front of the others). The fear, anxiety, or avoidance provoke noteworthy pain or impairment in social, occupational, or other imperative areas of functioning, without being attributable to the physiological effects of a substance and not better explained by the symptoms of another mental disorder (panic disorder, autism spectrum disorder).

School and social anxiety are widespread problems and have a significant impact on adolescents' growth (Delgado et al., 2019). Previous research has demonstrated that anxiety disorders, and specifically social anxiety, show comorbidity with SRB (Kearney & Albano, 2004; Richards & Hadwin, 2011; Van Amerigen et al., 2003). Positive associations between unexcused absences and social anxiety have been revealed by studies developed both with community samples (Ingul et al., 2012, 2013; Pflug & Schneider, 2016) and with clinical sample (Hansen et al., 1998). However, little evidence of an association between truancy and social anxiety assessed via diagnostic interview has been also revealed with a community sample (Egger et al., 2003). Overall, there is evidence to suggest that school absenteeism

may be associated with symptoms of social anxiety disorder but findings need to be more consistent, and there was a lack of longitudinal research (Finning et al., 2019).

The rate of anxiety and depression is increasing among children and young people. The pooled anxiety prevalence estimate from random-effects meta-analysis was 19.1%, differing by study location: research performed in the United States were found to report a higher prevalence (20.8%) than analyses conducted in Europe (17.2%). Whilst the prevalence of depressions was 14,3% (Barker et al., 2019). Similarly, in the meta-analysis conducted by (Racine et al., 2021) the pooled prevalence throughout COVID-19 estimates that child and adolescent depression and anxiety were 25.2% and 20.5%, correspondingly. According to Strauss et al. (1988), children who were rated by their teachers as highly anxious were less liked and more actively disliked by their classmates than their non-anxious peers. The age of onset for anxiety has been found to be between 15-21 years old (de Lijster et al., 2017). Nevertheless, the age period in which anxiety disorders develop is relatively wide. Separation anxiety disorder, specific phobia, and social phobia begin in childhood and adolescence (Legerstee et al., 2019). Therefore, recent policies have focused on the primary prevention of mental disorders (Caldwell et al., 2019). Anxiety may be correlated with poor attendance at school and this fact may lead to a variety of adverse consequences: the fear of social rejection, personal distress, and the impairment of interpersonal and occupational functioning (Finning et al., 2019; Sultana et al., 2017). Socially anxious individuals are afraid of being watched, judged, and criticized negatively by others. They face extreme distress in different social situations such as participating in class, publicly presenting work, and asking the teacher questions both in public and in private (Bernstein et al., 2007). High levels of anxiety are linked to the first three factors suggested by the functional model of SRB (Kearney & Albano, 20004). For adolescents with social anxiety disorder (SAD) that is left untreated, there are increased possibilities for school dropout, academic underachievement, and later unemployment (Rapee & Spence, 2004).

Despite the need to treat this condition and the high prevalence rates of SAD, most young people suffering from this disorder do not receive any treatment since their symptoms are misinterpreted as signs of shyness, which is presumed to disappear with age (Tillfors et al., 2011). The analysis of the literature suggests that anxiety symptoms, specifically social anxiety, are correlated with SRB. Thus, the present study focuses on this matter using a sample of Chilean adolescents and seeks to provide new empirical evidence regarding the relationship between SRB and social anxiety by means of the School Refusal Assessment Scale-Revised (SRAS-R) (Kearney, 2002), as well as the Social Anxiety Scale for Adolescents-Revised (SAS-A) (La Greca & López, 1998).

The objective of this research was to analyze the relationship between school refusal behavior and social anxiety in Chilean adolescents. Specifically, the objectives were: (a) to analyze if there are differences in the mean scores for SRB between children with high and

low levels of social anxiety and (b) to examine the predictive capacity of SRB on scoring high for social anxiety. Considering that the scientific literature has generally found SRB to be significantly and positively linked to social anxiety (García-Fernández et al., 2016; Gonzálvez et al., 2019), students with high social anxiety are expected to score significantly higher in SRB than their peers with low social anxiety due to their feelings of social aversion, negative affectivity, or the use of the behavior to pursue the attention of significant others (Factors I, II, and III). Moreover, these types of SRB (Factors I, II, and III) are expected to be statistically significant and positive predictors of high levels of social anxiety (Hypothesis 1). Furthermore, in accordance with previous studies that have found SRB that receives tangible reinforcement outside the school (Factor IV) to be significantly and negatively associated with anxiety (García-Fernández et al., 2019; Gonzálvez et al., 2019), students with high SRB (Factor IV) are expected to score significantly lower in social anxiety, and SRB (Factor IV) is expected to be a statistically significant and negative predictor of high social anxiety levels (Hypothesis 2).

METHOD

Participants

The participants of this research were recruited by random cluster sampling. One or two secondary education centers were randomly chosen in the geographical area of Ñuble (Chilean province). Five geographical areas were considered: center, north, south, east, and west. As a result, 9 secondary schools participated in this study. The sample consisted of a total of 895 Chilean adolescents (54,3% girls) whose ages ranged between 14 and 17 years (M = 15.80; SD = 1.05) (see Table 1). The chi-squared homogeneity test in the frequency distribution showed the absence of statistically significant differences between the sex and age groups (χ^2 = 1.12; p = .77).

Table 1

Sample distribution across gender and age

		Age				
		14	15	16	17	Total
Gender	Boys	72	113	113	111	409
		8.0%	12.6%	12.6%	12.4%	45.7%
	Girls	84	122	135	145	486
		9.4%	13.6%	15.1%	16.2%	54.3%
	Total	156	235	248	256	895
		17.4%	26.3%	27.7%	28.6%	100%

Instruments

School Refusal Assessment Scale-Revised (SRAS-R) (Kearney, 2002). This instrument is a self-reporting measure consisting of 24 items that are answered on a 7-point Likert scale, ranging from 0 (never) to 6 (always). It evaluates the four functional conditions for the continuance of the school refusal behavior: (1) Avoidance of school-based stimuli that provoke a general sense of Negative Affectivity (ANA) (e. g., how often do you feel worse at school (for example, scared, nervous, or sad) compared to how you feel at home with friends?); (2) Escape from aversive Social and/or Evaluative situations at school (ESE) (e. g., how often do you stay away from school because you do not have many friends there?); (3) Pursuit of Attention from Significant others (PAS) (e.g., how much would you rather be taught by your parents at home than by your teacher at school?); and (4) Pursuit of Tangible Reinforcements outside of school (PTR) (e.g., would it be easier for you to go to school if you could do more things you like after school hours (e.g., being with friends)?). In this study, the version of the SRAS-R validated in Chile was applied (Gonzálvez et al., 2017). The coefficients of internal consistency (Cronbach's alpha test) in this study were: .76 (ANA), .83 (ESE), .78 (PAS), and .69 (PTR).

Social Anxiety Scale for Adolescents-Revised (SAS-A) (La Greca & López, 1998). This measure assesses the experiences of social anxiety and the fear of negative evaluation for adolescents in the context of relationships with peers. It is composed of 22 items (4 of these are neutral and are not considered for obtaining the scores) that are evaluated on a 5-point Likert scale ranging from 1 (not at all) to 5 (all the time). It consists of three subscales: Fear of Negative Evaluation comprises 8 items and reflects fears of negative evaluations from peers (FNE; e.g., "I worry about what others say about me"); Social Avoidance and Distress Specific to New Situations or Unfamiliar Peers consists of 6 items and indicates avoidance and distress in new social situations or with new peers (SAD-N; e.g., "I get nervous when I talk to peers I don't know very well"); and Social Avoidance and Distress that is generally experienced in the company of peers is formed by 4 items, and reveals more generalized social distress that is obvious throughout many social circumstances (SAD-G; e.g., "I'm quiet when I'm with a group of people"). The SAS-A has been analyzed using samples consisting of Spanish (García-López et al., 2001; Inglés et al., 2010; Olivares et al., 2005), Portuguese (Cunha et al., 2004), Chinese (Zhou et al., 2008), Turkish (Cakin et al., 2010), Finnish (Junttila et al., 2010), and North American students (La Greca & Lopez, 1998; Inderbitzen-Noral et al., 2004). All of these studies have indicated that the scale has reasonable reliability and factorial validity. In this study, we used the Spanish version of the SAS-A (Bellón et al., 1996). The coefficients of internal consistency for this measure in the present study were .85, .81, and .81, respectively, for the three factors of the SAS-A.

Procedure

First, a meeting was organized with the schools' principals to describe the study's objectives and ask for their participation. When they agreed to participate in the study, a letter indicating the purpose of the research was given to the students' families or legal guardians. Over a two-week period, students were notified about the study and their voluntary participation. They completed the instruments during class time and had 30 minutes to do so. The participants filled out both questionnaires (15 minutes for the SRAS-R and 15 minutes for the SAS-A). During these sessions, at least one member of the research team was present to resolve any doubts the students may have had and manage the completion of the questionnaire. In compliance with the ethical standards of the Declaration of Helsinki, a statement of ethical principles for research involving human subjects was guaranteed for the study. The study was also authorized by the Ethics Committee of the University of Alicante (UA-2017-09-05).

Statistical analysis

To establish the variations in the mean scores of students having high and low school refusal for the variable of high social anxiety, the sample was divided into groups with high (scores ≥ quantile 75) and low (scores ≤ quantile 25) school refusal scores. The students' tests were used and the magnitude of the effect sizes for the differences found was assessed with a *d* index (Cohen, 1988): small (.20 - .50), medium (.51 - .79), and large (≥.80).

A binary logistic regression method was used following a stepwise regression procedure based on the Wald statistic with the aim of analyzing the predictive ability of school refusal on high social anxiety. Once all the statistics had been performed, the odds ratio (*OR*) statistic was applied to interpret the results: scores > 1 showed a positive prediction; scores < 1 indicated negative predictions; and scores = 1 revealed no prediction. The SPSS 22 program was used for all statistical analyses.

RESULTS

Mean differences

The differences in mean scores between students with low and high scores in the dimensions of the SAS-A according to the different school refusal behaviors are presented in Table 2. The results show that adolescents with high scores in the three assessed dimensions of the SAS-A (FNE, SAD-N, and SAD-G) obtained a higher score in the first three factors of the SRAS-R (Factor I, Factor II, and Factor III) than their peers with low scores in the SAS-A. The difference in mean scores was large for the first two factors of the SRAS-R (Factor I, d = 1.16; Factor II, d= 1.21) whereas, for Factor III, the difference was medium

(*d* = .75). Despite this, students with low scores in the three subscales of the SAS-A (FNE, SAD-N, and SAD-G) obtained higher scores when the school refusal behavior was based on the fourth factor of the SRAS-R, obtaining significant differences for the SAD-N and SAD-G dimensions. In this case, the magnitude of the differences was small.

Table 2

Differences in school refusal behavior in students with high and low scores in social anxiety

Variables		Levene's test		Low score		High score		Statistics			
		F	*p*	*M*	*SD*	*M*	*SD*	*t*	*d.f.*	*p*	*d*
FNE	FI SRAS-R	17.07	<.001	10.56	4.66	17.15	6.33	-12.73	446.97	<.001	-1.16
	FII SRAS-R	73.06	<.001	7.98	3.93	14.83	6.73	-13.51	414.31	<.001	-1.21
	FIII SRAS-R	12.43	<.001	13.89	6.13	19.03	7.37	-8.08	449.30	<.001	-0.75
	FIV SRAS-R	5.09	.025	12.52	4.64	11.98	4.23	1.28	409.61	.200	-
SAD-N	FI SRAS-R	17.95	<.001	10.68	4.75	17.18	6.51	-11.78	413.08	<.001	-1.12
	FII SRAS-R	62.52	<.001	7.92	4.01	14.58	6.94	-12.28	380.70	<.001	-1.14
	FIII SRAS-R	22.16	<.001	13.98	6.22	19.38	7.85	-7.85	416.87	<.001	-0.75
	FIV SRAS-R	7.63	.006	13.35	5.01	12.08	4.38	2.73	372.58	.007	0.27
SAD-G	FI SRAS-R	13.36	<.001	10.82	5.15	17.17	6.45	-11.92	471.57	<.001	-1.07
	FII SRAS-R	66.48	<.001	7.83	3.97	14.66	6.62	-13.96	455.46	<.001	-1.21
	FIII SRAS-R	4.78	.029	14.17	6.60	19.24	7.29	-7.91	455.76	<.001	-0.72
	FIV SRAS-R	2.02	.155	13.56	4.69	12.15	4.43	3.34	474	.001	0.31
Total	FI SRAS-R	21.13	<.001	10.28	4.62	17.35	6.38	-13.64	438.68	<.001	-1.26
	FII SRAS-R	97.58	<.001	7.73	3.60	14.93	6.82	-14.33	377.09	<.001	-1.30
	FIII SRAS-R	12.48	<.001	13.64	6.17	19.43	7.40	-9.08	452.12	<.001	-.84
	FIV SRAS-R	5.74	.017	13.13	4.76	11.94	4.33	2.77	429.89	.006	0.26

Note: FI SRAS-R= Avoidance of stimuli that provoke negative affectivity; FII SRAS-R= Escape from aversive social and/or evaluative situations; FIII SRAS-R= Pursuit of attention from significant others; FIV SRAS-R= Pursuit of tangible reinforcement outside of the school; FNE= Fear of negative evaluation; SAD-N= Social avoidance and distress in new situations; SAD-G= Social avoidance and distress that is experienced commonly in the company of partners.

Predictive capability

Table 3 shows the results of the binary logistic regression analysis for the probability of receiving high scores in the FNE based on SRB. The proportion of correctly classified cases ranged from 66.5% of the cases (χ^2 = 59.60; p = 0.001) for the third factor in the SRAS-R and 77% of the cases (χ^2 = 151,94; p = 0.001) for the second. The values of the OR were higher than 1 for the school refusal models and the probability of having a high score in the FNE was 1.24 (Factor I), 1.28 (Factor II), and 1.11 (Factor III) times greater for each point that the scores increased, respectively, in the cited school refusal dimensions.

Table 3

Binary Logistic Regression for the probability of presenting high scores on Fear of Negative Evaluation based on school refusal behaviour

Variables		χ^2	R^2	*B*	E.T.	Wald	*p*	*OR*	*I.C.* 95%
FI SRAS-R	Correctly classified: 74.8%	135.12	.35	.21	.02	90.06	<.001	1.24	1.19-1.30
	Constant	-2.69	.31	74.76	<.001	.06			
FII SRAS-R	Correctly classified: 77%	151.94	.38	.25	.03	88.57	<.001	1.28	1.22-1.35
	Constant	-2.44	.28	76.81	<.001	.08			
FIII SRAS-R	Correctly classified: 66.5%	59.60	.17	.11	.31	49.20	<.001	1.11	1.08-1.15
	Constant	-1.59	.26	34.98	<.001	.20			

Note. FI SRAS-R= Avoidance of stimuli that provoke negative affectivity; FII SRAS-R= Escape from aversive social and/or evaluative situations; FIII SRAS-R= Pursuit of attention from significant others.

Table 4 shows the results of the binary logistic regression analysis for the probability of receiving high scores in the SAD-N based on SRB. The percentage of correctly classified cases ranged from 61.6% of the cases (χ^2 = 7.62; p = 0.006) for the fourth factor in the SRAS-R and 74.5% of the cases (χ^2 = 129.68; p = 0.001) for the second. The values of the OR were higher than 1 for the school refusal models, and the probability of having a high score in the SAD-N was 1.22 (Factor I), 1.26 (Factor II), and 1.11 (Factor III) times greater for each point that the scores increased, respectively, on the cited SRB dimensions. Despite the values of the OR being lower than 1 for the fourth factor in the SRAS-R, the probability of having a high score in the SAD-N was .94 (Factor IV) times less for each point that the scores increased.

Table 4

Binary Logistic Regression for the probability of presenting high scores on Social Avoidance and Distress in New situations based on school refusal behaviour

Variables		χ^2	R^2	*B*	E.T.	Wald	*p*	*OR*	*I.C.* 95%
FI SRAS-R	Correctly classified: 72.6%	116.80	.33	.20	.02	78.80	<.001	1.22	1.17-1.28
	Constant	-2,53	,31	64.93	<.001	.07			
FII SRAS-R	Correctly classified: 74.5%	129.68	.36	.23	.02	76.60	<.001	1.26	1.20-1.34
	Constant	-2.27	.28	65.36	.000	.10			
FIII SRAS-R	Correctly classified: 65.9%	55.48	.17	.10	.01	46.13	<.001	1.11	1.08-1.15
	Constant	-1.53	.26	32.34	<.001	.21			

Note. FI SRAS-R= Avoidance of stimuli that provoke negative affectivity; FII SRAS-R= Escape from aversive social and/or evaluative situations; FIII SRAS-R= Pursuit of attention from significant others.

Table 5 shows the results of the binary logistic regression analysis for the probability of receiving high scores in the SAD-G based on SRB. The percentage of correctly classified cases ranged from 60.5% of the cases (χ^2 = 11.07; p = 0.001) for the fourth factor in the SRAS-R and 75.1% of the cases (χ^2 = 161.59; p = 0.001) for the second. The values of the OR were higher than 1 for the school refusal models, and the probability of having a high score in the SAD-G was 1.20 (Factor I), 1.29 (Factor II), and 1.11 (Factor III) times greater for each point that scores increased, respectively, on the cited school refusal dimensions. Despite the values of the OR being lower than 1 for the fourth factor of the SRAS-R, the probability of having a high score in the SAD-G was .93 (Factor IV) times less for each point that the scores increased.

Table 5

Binary Logistic Regression for the probability of presenting high scores on Social Avoidance and Distress that is experienced commonly in the company of partners based on school refusal behaviour

Variables		χ^2	R^2	*B*	E.T.	Wald	*p*	*OR*	*I.C.* 95%
FI	Correctly								
SRAS-R	classified: 71.2 %	120.37	.30	.18	.02	85.19	<.001	1.20	1.16-1.25
	Constant	-2.25	.28	64.44	<,001	.10			
FII	Correctly								
SRAS-R	classified: 75.2%	161.59	.38	.26	.02	92.28	<.001	1.29	1.23-1.37
	Constant	-2.43	.27	77.21	<,001	.08			
FIII	Correctly								
SRAS-R	classified: 66.2%	58.07	.15	.10	.01	48.68	<.001	1.11	1.08-1.14
	Constant	-1.44	.25	30.86	<,001	.23			
FIV	Correctly								
SRAS-R	classified: 60.5%	11.07	.03	-.06	.02	10.80	.001	.93	.90-.97
	Constant			1.17	.28	16.99	<.001	3.22	

Note. FI SRAS-R= Avoidance of stimuli that provoke negative affectivity; FII SRAS-R= Escape from aversive social and/ or evaluative situations; FIII SRAS-R= Pursuit of attention from significant others; FIV SRAS-R= Pursuit of tangible reinforcement outside of the school.

Table 6 shows the results of the binary logistic regression analysis for the probability of receiving high scores in social anxiety with regard to the total scores in the SAS-A based on SRB. The percentage of correctly classified cases ranged from 57.1% of the cases (χ^2 = 7.72; p = 0.006) for the fourth factor in the SRAS-R and 75.4% of the cases (χ^2 = 153.55; p = 0.001) for the first. The values of the OR were higher than 1 for the school refusal models and the probability of receiving high scores in social anxiety with regard to the total scores

in the SAS-A was 1.25 (Factor I), 1.32 (Factor II), and 1.13 (Factor III) times greater for each point that the scores increased, respectively, on the cited school refusal dimensions. Despite the values of the OR being lower than 1 for the fourth factor in the SRAS-R, the probability of receiving high scores in social anxiety with regard to the total scores on the SAS-A was .94 (Factor IV) times less for each point that the scores increased.

Table 6

Binary Logistic Regression for the probability of presenting high scores in social anxiety with regard to the total scores in the SAS-A based on school refusal behaviour

Variables		χ^2	R^2	*B*	E.T.	Wald	*p*	*OR*	*I.C.* 95%
FI	Correctly								
SRAS-R	classified: 75.4%	153.55	.38	.23	.02	98.15	<.001	1.25	1.20-1.32
	Constant	-2.94	.31	86.80	<,001	.05			
FII	Correctly								
SRAS-R	classified: 77.4%	173.86	.44	.28	.02	93.14	<.001	1.32	1.25-1.40
	Constant	-2.78	.29	88.91	<,001	.06			
FIII	Correctly								
SRAS-R	classified: 68.1%	74.42	.20	.12	.01	59.64	<.001	1.13	1.10-1.17
	Constant	-1.87	.27	47.58	<,001	.15			
FIV	Correctly								
SRAS-R	classified: 57.1%	7.72	-02	-.05	.02	7.58	.006	.94	.91-.98
	Constant			.85	.28	9.43	.002	2.36	

Note. FI SRAS-R= Avoidance of stimuli that provoke negative affectivity; FII SRAS-R= Escape from aversive social and/or evaluative situations; FIII SRAS-R= Pursuit of attention from significant others; FIV SRAS-R= Pursuit of tangible reinforcement outside of the school.

DISCUSSION

The aim of this research was to analyze the relationship between school refusal behavior and social anxiety in Chilean adolescents. According to the first hypothesis, due to feelings of negative affectivity, social aversion, or the use of the behavior to pursue the attention of significant others (Factors I, II, and III), students with SRB were positive predictors of high levels of social anxiety and students with high scores in social anxiety obtained higher mean scores in these three factors of SRB. These outcomes are in line with previous studies that have specified that high scores in the SRB dimensions are most likely to show positive correlations with internalizing difficulties, such as anxiety, depression, stress, and social anxiety (Dube & Orpinas, 2009; Elliott & Place, 2019; Gonzálvez et al., 2018; Ingul & Nordahl, 2013; Kearney & Albano, 2004; Prabhuswamy, 2018).

Regarding the second hypothesis, it was assumed that students who based their SRB on obtaining tangible reinforcement outside the school (Factor IV) showed lower scores in social anxiety and this acted as a significant and negative predictor of high social anxiety. The results support the second hypothesis since the students showed odds ratio values that were lower than 1 in total for the SAD-G and SAS-A scales. These results are consistent with the previous scientific literature as this type of SRB is usually associated with externalizing problems (such as oppositional defiant disorder; Dahl, 2016); Gonzálvez et al., 2020), but not so much with emotional disorders (Kearney, 2002; Kearney & Albano, 2004).

As a result of these findings, it can be concluded that when an adolescent refuses to attend school, social anxiety is more likely to occur, especially when the SRB is based on negative affectivity, social and evaluation fears, or when the student pursuits attention from significant others. This fact is particularly significant due to their stage of development because during adolescence they start a period of socialization, growing relationships, learning interpersonal skills, and building their identities and personalities. These aspects affect their social and psychological adjustment, as well as their academic achievement (Kingery et al., 2010; Schneider & Tessier, 2007; Sheldon & Epstein, 2004). In several situations of SRB in adolescents, they have been given attention and support from their families to diminish their anguish at the same time as having access to reinforcing objects such as electronic devices (Rohrig & Puliafico, 2018).

Despite these findings, this investigation has a variety of constraints that should be taken into account for upcoming research. Firstly, the investigation should be based on a larger and more diverse sample. A community sample of adolescents was recruited in this study and it is unknown whether specific samples like students diagnosed with social anxiety disorder or social phobia would get similar results. For this reason, future studies should recruit adolescents diagnosed with social anxiety disorder or social phobia and analyze whether these findings are replicated. Moreover, additional key variables such as country of birth, health, psychological record, and differences between schools should be considered as they would be helpful for future studies. In terms of evaluation, not only self-reports should be used, but different types of data collection sources should be applied in future work, such as interviews, observation records, etc. Additionally, future research should also take into consideration the immediate environments and broader contexts that may impact a person's behavior. According to Inglés et al. (2015) preventing truancy and school refusal is an issue of global concern that affects society as a whole. Hence it is pivotal to determine the elements that could be linked to SRB beyond internalizing type problems. In this sense, the link between school attendance problems and academic factors, family functioning, cultural context and sociodemographic variables (including socioeconomic inequalities) should be considered (Chmielewski, 2019; Cooper and Stewart, 2021; Gubbels et al., 2019; Klein et al., 2020).

On the whole, these findings are relevant for the educational and psychological field since they provide more information about social anxiety and its relationship with school refusal behavior. There is an ongoing need for rigorous studies that can provide evidence to support the different types of responses that students with high social anxiety may show during their learning trajectories. Based on the results of this research, there is a need to identify students' needs, as well as the difficulties they might face. It is highly recommended that education professionals receive appropriate training courses designed to combat and manage social anxiety, depression, school anxiety and other variables that affect pupils. Not only do psychologists and educational professionals give the chance to offer more personalized responses to help students manage with anxiety while at school, but also provide different strategies to the families, such as training courses, talks, and seminars about how to support their children to handle with this problematic (e.g, Coyle et al., 2020; García-Escalera et al., 2017).

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A qualitative study of social anxiety and impairment amid the COVID-19 pandemic for adolescents and young adults in Portugal and the US*

Un estudio cualitativo de la ansiedad social y el deterioro durante la pandemia de COVID-19 en adolescentes y adultos jóvenes en Portugal y EE. UU.

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Abstract
This qualitative investigation explored the social and academic experiences of socially anxious adolescents and young adults in Portugal and the US as they lived through the restrictions imposed by the COVID-19 pandemic. Participants were 10 Portuguese adolescents (mean age = 16.9 years; 50% female) and 7 young adults in the US (mean age = 19.67 years; 71% female; racially/ethnically diverse). Participants completed a semi-structured interview evaluating how the pandemic and social restrictions impacted social anxiety symptoms and associated functional impairment in social and academic domains. Thematic analysis was used to categorize responses across developmental stages and countries. Findings show consistent patterns across cultures, with symptoms of SAD extending to virtual contexts. Participants reported avoidance behaviors that were reinforced by social distancing mandates and declines in academic engagement during remote learning. Anticipatory anxiety about the return to normal social routines was also evident. Schools should be aware of the impact of social confinement on socially anxious students as they return to in person school schedules and social demands.

Keywords: Social anxiety, Social isolation, Academic impairment

Resumen
Esta investigación cualitativa exploró las experiencias sociales y académicas de adolescentes y adultos jóvenes con ansiedad social en Portugal y Estados Unidos mientras vivían las restricciones impuestas por la pandemia COVID-19. Los participantes fueron 10 adolescentes portugueses (media de edad = 16,9 años; 50% mujeres) y 7 adultos jóvenes en los Estados Unidos (media de edad = 19,67 años; 71% mujeres; racialmente/étnicamente diversas). Los participantes completaron una entrevista semiestructurada en la que evaluaron cómo la pandemia y las restricciones sociales impactaron los síntomas de ansiedad social y el deterioro funcional asociado en los ámbitos social y académico. Se utilizó el análisis temático para clasificar las respuestas en las distintas etapas de desarrollo y países. Los hallazgos muestran patrones consistentes entre culturas, con síntomas de TAE extendiéndose a contextos virtuales. Los participantes reportaron comportamientos de evitación que fueron reforzados por mandatos de distanciamiento social y disminuciones en el compromiso académico durante el aprendizaje remoto. La ansiedad anticipatoria sobre el retorno a las rutinas sociales normales también fue evidente. Las escuelas deben ser conscientes del impacto del confinamiento social en los estudiantes socialmente ansiosos a medida que regresan a los horarios escolares en persona y las demandas sociales.

Palabras clave: Ansiedad social, Aislamiento social, Deterioro académico.

Social anxiety disorder (SAD) is a debilitating psychological condition characterized by an intense fear of negative evaluation (La Greca & Stone, 1993). Adolescents with SAD

typically avoid social and performance situations or endure them with extreme distress, leading to pervasive impairment in interpersonal contexts (Beesdo-Baum et al., 2012). Its peak onset is adolescence, with 10% of teenagers meeting diagnostic criteria and about 90% of cases emerging during this period (Merikangas et al., 2010). Occurring worldwide, SAD is an international public health issue that begins at a critical time for social and academic growth (Jefferies & Ungar, 2020).

As the majority of feared situations occur at school, it is an especially challenging setting for youth with SAD (Masia Warner et al., 2016). The social avoidance characteristic of SAD restricts involvement in school activities and undermines class performance (Ranta et al., 2013). In fact, nearly 90% of youth with SAD report that their education is negatively impacted by anxiety (Gren-Landell et al., 2009). Thus, those with SAD have an increased likelihood of failing classes and dropping out of school (Stein & Kean, 2000; Vilaplana-Perez et al., 2021).

SAD symptoms also influence performance in post-secondary education, as students often have difficulty adjusting to the increased demands of college life (Hjeltnes et al., 2016; Russell & Topham, 2012). For example, one study of 1,073 Canadian college students found that greater social anxiety was related to less communication with instructors, classroom engagement, and school satisfaction (Archbell & Coplan, 2021). Consistent results were found in another study of 787 university students in the UK (Russell & Topham, 2012). Not surprisingly, SAD in emerging adults is associated with lower grades, compromised educational attainment, and greater absenteeism (Brook & Willoughby, 2015; Strahan, 2003; Urani et al., 2003).

COVID-19 and Social Anxiety

In March of 2020, the World Health Organization categorized COVID-19 as a global pandemic, resulting in drastic changes in how people interact, communicate, and learn. Initial work on the impact of COVID-19 on mental health suggests that individuals were negatively affected, especially those with pre-existing mental health conditions (Hawes et al., 2021). One meta-analysis including 29 studies of over 80,000 participants internationally found that the prevalence of youth with clinically elevated anxiety doubled (Racine et al., 2021). This pattern of deteriorating mental health has also been documented in emerging adults (i.e., individuals in their late teens/early-mid 20s; Arnett, 2007; Reyes-Portillo et al., 2022).

Less work has specifically examined how socially anxious youth have fared. Based on the nature of SAD, and its connection to social isolation and depression, there is particular concern about negative consequences for this population. The few studies exploring social anxiety have mixed findings. A longitudinal study of children and adolescents in the US (aged 10-16 years at Time 1 and 12-18 years at Time 2) showed that home

confinement was associated with *decreased* social anxiety and *increased* generalized anxiety during the pandemic (Hawes et al., 2021). However, a sample of adults in Germany with self-reported SAD found no change in pandemic distress (Bendau et al., 2021). Finally, three studies of adults in the US indicated that pre-pandemic SAD symptoms were associated with greater pandemic distress (Buckner et al., 2021; Ho & Moscovitch, 2022; Samantaray et al., 2022). Only one was exclusively focused on a sample with an SAD diagnosis (Samantaray et al., 2022).

The Current Study

Most information regarding the impact of the pandemic on mental health has relied on quantitative self-report data of psychological symptoms in general samples. Less work has investigated how the pandemic has affected adolescents and young adults with SAD, a population at heightened risk for negative adjustment especially as social restrictions end. This qualitative study explored how the pandemic affected socially anxious adolescents and young adults in Portugal and the United States, respectively. Because the pandemic disrupted education with most secondary schools and colleges/universities transitioning to remote instruction, the pandemic's impact on educational experiences was also explored.

METHOD

Participants were composed of two samples: 1) adolescents in Portugal and 2) young adults in the US. Prior to participating, individuals were screened to determine whether they met inclusionary criteria of having clinically significant SAD. Below is a description of the recruitment and screening process for each sample.

Screening and participants

Sample 1

Participants were adolescents recruited from a larger research project, "Changing the course of social anxiety in adolescence: What works, why, and for whom." Six hundred and eighty participants were screened for eligibility using the Social Anxiety Scale for Adolescents (SAS-A, La Greca & Lopez, 1998; Portuguese version, Cunha et al., 2004). Adolescents scoring above the normative mean (n= 129) participated in a follow up diagnostic interview using the Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-KID; Sheehan et al., 1998). Of those, 56 received a primary diagnosis of SAD. Each one was individually contacted to take part in the current study. The first five girls and first five boys who agreed to participate were included in the final sample. Mean age was 16.9

(SD = 0.57; range = 16 to 18 years) and participants were in the 10th (*n* = 3) and 11th (*n* = 7) grades. The mean SAS-A score was 69.20 (SD = 10.34, range = 64-82).

Sample 2

Participants were undergraduate students recruited from a larger study (*n*= 575) investigating stress and anxiety at a large public university in the United States. Participants completed the social anxiety subscale of the Screen for Adult Anxiety Related Disorders (SCAARED; Angulo et al., 2017) and were asked to provide consent to be contacted about the current investigation if their SAD score was above the clinical cutoff of 7. One hundred and seven students with elevated SAD provided consent and were asked to participate in a diagnostic interview. Of those, 23 individuals (21.5%) responded and participated in the Social Phobia module of the Mini-International Neuropsychiatric Interview (MINI; Sheehan et. al., 1998). Seven students who met at least subthreshold diagnostic criteria were invited to participate in the qualitative interview. The final sample included two males and five female and were racially/ethnically diverse (57.14% White; 14.3% Black and 28.6% Biracial), with a mean age of 19.57 years (*SD* = 1.51). Their mean SAD score was 12.14 (SD = 1.8).

Measures

COVID-19 Social Anxiety Qualitative Interview (CSAQI; Vagos et al., 2021).

Participants across samples that met inclusionary criteria completed a semi-structured interview developed by three researchers (Vagos, Ganho-Ávila and Lima) with experience in social anxiety. The CSAQI assessed the impact of pandemic restrictions on social anxiety symptoms and experiences. Six open-ended questions assessed: 1) changes in how adolescents contacted others during social restrictions; 2) experiences regarding the use of different communication channels; 3) changes in self-representations; 4) changes in SAD symptoms from pre-pandemic; 5) experiences with social distancing and safety measures; and 6) generalized anxiety. The CSAQI was developed in Portuguese and translated for us with the United States sample. In addition, for the US sample, questions about remote learning were added to capture the experiences of college students at the time of the interview.

Procedures

Qualitative interviews for the Portuguese sample were conducted in November 2020. Adolescents in Portugal had returned to schools for about two months following a lockdown period. CSAQI interviews were conducted virtually by two masters-level clinicians, and

lasted from 29 to 85 minutes (M = 52.8). Interviews with the US sample were conducted between June and August of 2021. The US was no longer in lockdown, but all college courses were remote and social distancing was required. Interviews were conducted virtually by senior psychologists and doctoral students, and lasted an average of 44 minutes (range= 35-60 minutes). All interviews were recorded and transcribed for coding.

Qualitative Analysis Procedures

Thematic analysis was utilized to identify interview themes across samples. Following a process recommended by Braun and Clark (2006), a series of iterative steps were used. First, the research team reviewed transcripts and developed initial codes. After applying the initial codes, transcripts were reviewed again, revising as needed. Codes were then combined to identify themes. Finally, the identified themes were reviewed in tandem with the coded text and definitions were further refined and entered into the coding manual (Braun & Clark, 2006). Table 1 includes the final themes and definitions. The coding manual was developed in collaboration with researchers across locations to ensure that identified themes were applicable to both samples. Research teams met weekly to discuss any coding disagreements, which were resolved via consensus.

RESULTS

Themes identified in the interviews and participant quotes that represent each of the themes are presented Table 1[1]. Quotes were selected based on how well they captured the most common responses from the interviews.

A. Changes in the Nature of Social Interactions.

Portuguese Sample. Most participants (90%) reported that they had fewer and lower quality interactions during and after confinement (A1:P2; A2:P1 A3:P7). Though 60% of participants said that they did not initiate contact with others during or after the lockdown, the remaining 40% noted that the confinement helped them to nurture existing peer relationships.

US Sample. All participants reported greater social isolation, more virtual communication (e.g., texting, social media) and reduced in-person socialization (A4:P6; A5:P5). Over

1 Representative quotes from the table are presented in text by the code letter (e.g., A= Changes in Nature of Social Interactions), followed by the quote number in the table (e.g., 1= first quote presented) and the participant number. For example, A1:P2 means that this is the first quote in the table for the theme A= Changes in the Nature of Social Interactions and that it was said by participant number 2.

Table 1.

Impact of COVID-19 Pandemic on SAD

Theme	Definition	Quotes from Portuguese Sample	Quotes from US Sample
A. Change in Nature of Social Interactions	Changes in the modality and frequency of communication, as well as other interaction characteristics (e.g., quality or intentionality).	1. "I did not socialize that much with other people, did not talk much… I just kept to myself" (A1:P2). 2. "It was mostly through social media, like Whatsapp or Instagram, and I think that was it" (A2:P1). 3. "This year I am a bit isolated… I normally am 'on the side' … listening to music or watching people go by…" (A3:P7).	4. "The first few months I was…completely isolated I didn't see anybody..." (A4:P6). 5. "I would say I would talk to them more now over text" (A5:P5). 6. "I think it's made me …have more of an intent behind things when I communicate with people and really have to take a more active role in making sure I'm socializing and hanging out with people versus pre-pandemic when it was just a natural part of life." (A6:P3).
B. Changes in Social Anxiety Symptoms	Changes during the pandemic in the intensity and expression of cognitive, behavioral or somatic symptoms.	1. "I (*am afraid I may*) do something that they are not expecting and that that will be seen in a negative way" (B1:P8). 2. "Concerning interactions with other people, the anxiety has definitely diminished because... I didn't have to face any of my colleagues when I didn't want to." (B2:P10). 3. "(my anxiety was) a little higher when it was time to come back… When we had to come back, it was almost as like… a… new beginning. People I used to talk to, after this (confinement), it has been I don't know how many months… So, I have to try again… But it was even more difficult… So, I would say (my anxiety) is a little worse" (B3:P6).	4. "(Panic attacks) are worse cause like I'm just I'm still not used to seeing so many people again. It just feels amplified." (B4:P6). 5. "...I made a friend during my first semester… I recently talked to her in person and it was hard for me to say what I wanted to and there was a lot of awkward pauses" (B5:P2). 6. "I definitely feel like I'm out of practice" (B6:P1). 7. "I feel like because of the pandemic now when I have a social interaction I'm like (dead) for the rest of the week" (B7:P4).

Theme	Definition	Quotes from Portuguese Sample	Quotes from US Sample
C. Avoidance of Judgment in Online Interactions	Safety behaviors associated with fear of negative evaluation online (e.g., turning off video camera, remaining silent).	1. "Sometimes I do strange things when I'm on camera I do a lot of gestures and funny expressions with my face… so it is awkward for me" (C1:P7). 2. "We don't need to reply right away, and we can think about what we going to write and what we are going to say" (C2:P6). 3. "Sometimes I wanted to talk to someone, and instead of doing it in an instance, I would delay doing it for days… and then I would be like "how am I going to do that now…?" (C3:P10).	4. "I felt more pressure to keep up some sort of appearance of what my room is supposed to be like and everything like that. And having people seeing the inside of my house too" (C4:P5). 5. "(During zoom) I'm so glad I can hang a backdrop up so I don't have people in my private space of my room." (C5:P3). 6. "Having it be over the internet and not having my face attached to the things that I've said made it easier to speak my mind cause I didn't have to worry about who was going to judge me afterwards" (C6:P1).
D. Academic Impact due to COVID-19	Impact of COVID on academic outcomes including academic engagement, participation, focus, performance and other school-related worries.	1. "I didn't use to ask many questions... now I do even less…" (D1:P8). 2. "During online classes it was more difficult for me to understand the subjects… I did not understand them as well as I used to in in-person classes (D2:P6). 3. "When I am really confident in the answer, I may try it, but when in doubt, I rather not say anything" (D3:P4). 4. "I don't like interrupting people and it is likely that I would in online classes, so I think that's why I participated less" (D4:P7). 5. "For instance, we had to present a book online and if it was in-person I would have to go up front and be in front of everyone. Online, I just had to talk to the computer" (D5:P1).	6. "It's hard for me to pay attention during online classes but it's also easier…if I wanna ask a question in class it'll be easier for me to say it on zoom when the camera is off than … in class with a whole bunch of people around" (D6:P2). 7. "Jumping in to try and ask a question is so much harder on zoom, because you have to do the little hand raise icon and hope somebody gets to you or put it in the chat and hope someone answers it." (D7:P5). 8. "I am a lot more comfortable with my Zoom ones because yes I get tired over Zoom but afterwards I'm still in my home. I'm still where I'm comfortable." (D8:P4).

Theme	Definition	Quotes from Portuguese Sample	Quotes from US Sample
E. Impact of COVID-19 Mandates on Socialization	Reactions to COVID-19 mandates, including positive reactions (e.g., increased comfort in social situations) and negative reactions (e.g., difficulty speaking clearly).	1. "I also like having my space, and so when people cross my space, I get a little worried. And now that space is always there!" (E1:P2). 2. "Because people only see half my face they don't see how nervous I am so much" (E2:P5). 3. "With the mask… I don't feel comfortable if I am doing something and the person may be reacting behind the mask without me noticing it" (E3:P8).	4. "…I don't have to interact with people at all….I guess that would be easier.… I get to avoid social interaction entirely." (E4:P1). 5. "It's nice when I'm feeling in a withdrawn mood because half my face is covered so I feel anonymous." (E5:P3). 6. "I like the masks because it will hide my face and I'll feel less insecure about that but I usually talk… quietly so I have to repeat myself a lot which makes it a little bit more awkward" (E6:P2).
F. Increases in General Anxiety	Increases in non-social worries.	1. "If there is something that worries me now is the probability of me getting infected… and then infecting the other members of my family" (F1:P6). 2. "My mother is a teacher, and they said that if the schools close, the teachers won't get paid…" (F2:P2). 3. "I think now there will be a big crisis and it will be very complicated… Going to college and then trying to get a job… that makes me a bit anxious" (F3:P3). 4. "So much has changed, and if it was different we could be together again… We are not going to have a prom or our seniors trip" (F4:P1).	5. "I'm a lot more concerned about germs and how clean things are… When we bring home groceries from the store we wipe them down, so for post-pandemic it'll be weird to not wipe things down with Clorox wipes as soon as you get home" (F5:P4). 6. "I worry about the vaccine a lot. 'Cause now it's a thing and I don't like that it's mandatory… they're trying to be safe but still I don't like that it's mandatory 'cause people should get to make their own choices." (F6:P7).

Note. Quotes are labeled with the code letter (e.g., A= Changes in Nature of Social Interactions), followed by the quote number in the table (e.g., 1= first quote presented) and the participant number. For example, A1:P2 means the quote is the first quote presented for theme A= Changes in the Nature of Social Interactions, and that is was said by participant number 2.

half of participants reported that their social interactions were more purposeful during the pandemic (A6:P3), with four participants (57%) noting that they used this time to prioritize the relationships that were most meaningful to them.

B. Changes in Social Anxiety Symptoms

Portuguese Sample. Seventy percent of participants reported greater symptoms of SAD, which extended to online contexts, including fear of judgment (100%), somatic symptoms (80%), avoidance of social interactions (90%), and post-event processing (80%; B1:P8). Seventy percent of students expressed that avoidance helped to reduce anxiety (B2:P10). Most participants (70%) described significant anticipatory anxiety surrounding in-person interactions, with 60% of youth reporting they felt out of practice and needed to relearn how to socialize (B3:P6).

US Sample. SAD symptoms increased for most participants (n = 6, 86%) despite social demands being reduced and interactions being mostly virtual (B4:P6). Fears central to SAD remained present in online interactions, including fear of judgment (100%), fear of being watched (71%), somatic symptoms (71%), avoidance of social interactions (100%), and post-event processing (43%). All participants described increased apprehension about resuming in-person socialization, even with familiar people (B4:P2). Many noted that interactions were difficult and more exhausting than they were previously (B5:P1; B6:P4).

C. Avoidance in Online Interactions

Portuguese Sample. Ninety percent of participants engaged in avoidance behaviors during online interactions (e.g., keeping their cameras off). Participants who choose to keep their cameras on still found it distressing and were self-conscious about their appearance (C1:P7). Half of adolescents described safety behaviors such as not responding to messages right away and ruminating over what to say when communicating online (C2:P6; C3:P10).

US Sample. The most common fear was worry about negative evaluation during online interactions. All participants worried about judgement regarding their surroundings or behaviors (e.g., fidgeting; C4:P5; C5P3). Most participants (*n* =5; 72%) engaged in safety behaviors (e.g., keeping cameras off) to reduce evaluative anxiety (C6:P1).

D. Academic Impact

Portuguese Sample. Most participants (90%) reported that the pandemic impacted their educational experiences. Eighty percent participated less (or not at all) during online classes and avoidance continued when classes resumed in person (D2:P8). Twenty percent indicated difficulties paying attention and understanding content during online

instruction (D2:P6). Some students (30%) felt more anxious speaking up in online classes (D3:P4), which was attributed to a fear of being perceived negatively by peers (D4:P7). Others felt more comfortable speaking up (20%), because they felt less exposed behind a screen (D4:P7). Twenty percent of students felt their classes were less demanding, which alleviated anxiety.

US Sample. Most participants (86%) described challenges during remote learning, such as difficulty participating, connecting to other students, and paying attention (D6:P2; D7:P5). Worries about appearing too eager or interrupting classmates interfered with participation (29%). Unlike in-person courses, it was more difficult to establish relationships with classmates (57%). One student noted more comfort participating in courses in the familiar home environment and that asking questions and presenting were easier on screen (D8:P4).

E. Impact of COVID-19 Mandates on Socialization

Portuguese Sample. Adolescents had mixed feelings about social distancing measures, with 50% reporting both positive and negative reactions. Eighty percent indicated that social distancing (E1:P2) and mask mandates (E2:P5) increased comfort in social interactions, mostly because they facilitated avoidance. However, 70% acknowledged that the mandates impaired their ability to interact and read others' reactions during social situations (E3:P8).

US Sample. All participants perceived social distancing requirements positively, as they justified decreased social contact and lessened anxiety (E4: P1). Relatedly, 100% of participants noted that mask mandates increased comfort interacting with others and helped to maintain anonymity in public (E5:P3). However, three participants acknowledged that masks sometimes created discomfort in interactions (e.g., making it more difficult to speak clearly; E6:P2).

F. Increases in General Anxiety

Portuguese Sample. All participants described increased awareness of non-social worries related to health (90%; F1:P6), finances (40%; F2:P2), and the future (e.g., going to college, being able to find employment; 30%; F3:P3). Two participants (20%) felt distressed about missing out on normative life experiences such as prom and senior trips (F4:P1).

US Sample. Participants indicated generalized worries related to health (86%), finances (29%) and apprehension about the future (43%). More than half elaborated on health anxieties related to germs and contamination (57%; F5:P4) and the COVID vaccine (57%; F6:P7).

DISCUSSION

The tremendous social and academic changes spurred by the pandemic have obvious relevance for adolescents and young adults with social and performance fears. This qualitative study supports this notion, providing rich descriptions of how social anxiety and its manifestations have been influenced. Participants reported greater social isolation and more virtual communication, during which the social fears typical of SAD were experienced, suggesting that social anxiety permeates all social situations. Fear of judgement, behavioral avoidance, and the use of safety behaviors were common across participants, providing short term relief of symptoms. Academic engagement during online courses was also negatively impacted. Finally, significant anticipatory anxiety surrounding the return to normal routines and in person courses were pervasive among participants. Most striking was the consistency in findings across developmental periods and countries.

A common theme was that social restrictions necessitated by the pandemic reduced social expectations and allowed for increased avoidance. For example, remote learning allowed students to avoid many experiences typically distressing to individuals with SAD such as speaking in class, presenting, and communicating with instructors and classmates (Ranta et al., 2013). This is consistent with studies indicating that home confinement reduced social anxiety in youth during the pandemic (Hawes et al., 2021). Although avoidance may provide short term relief, it also maintains and worsens anxiety over time (Clark & Wells, 1995; Miers & Masia, in press). Thus, the increased avoidance during the pandemic likely has long-term repercussions, such as difficulty establishing friendships, romantic relationships, and developing social skills (Reyes-Portillo et al., 2022). Participants in the current study recognized these possible challenges moving forward; all students reported significant anticipatory anxiety regarding increased socialization and the potential deterioration of their social skills.

Notably, a main area of impairment was related to educational experiences. Participants reported that remote learning had several negative consequences including difficulty developing relationships with peers in class, staying focused, and participating. These findings suggest that associations between SAD and academic engagement extend to virtual learning environments (Archbell & Coplan, 2021). Reduced academic engagement continued once students returned to in person classes for the Portuguese sample, indicating that motivating youth to participate and reconnect as schools return to traditional formats may be a significant challenge. Unexpectedly, only one participant across samples noted concerns about academic performance/grades, despite research suggesting that SAD is associated with academic impairment (Ranta et al., 2013; Stein & Kean, 2000). It is possible that academic engagement was most negatively affected. However, given the link between academic engagement and performance, future research should monitor academic progress of socially anxious students.

Clinical Implications

Results indicate that socially anxious adolescents and young adults are likely to have substantial challenges as they transition back to pre-pandemic routines. To ease the adjustment, it is important to provide these youth with appropriate school supports. For example, psychoeducation delivered in classes can help students understand their anxious feelings, the negative impact of avoidance behaviors in school, and the benefits of gradually entering feared situations. Given that many struggles occur within the school context (e.g., asking questions in class, joining groups with peers), school personnel can assist students in practicing these skills in classrooms and around the school building (Masia-Warner et al., 2016). In addition, encouraging youth to capitalize on potential relationships strengthened during the pandemic and to maintain them by continuing to initiate social contacts may also reduce distress. Finally, given declines in academic engagement, it is important that schools provide stimulating assignments reflecting the unique interests of the student body and support positive school relationships (Furlong & Christenson, 2008). One mechanism to improve school connections is to educate teachers and school staff members on the unique risk factors associated with social anxiety through mental health literacy efforts. Psychological check-ins, such as having brief daily meetings with those at risk, might be effective in monitoring symptoms, ensuring that youth are academically engaged in their courses and making academic progress (Mansfield et al., 2021).

Limitations

While this study has several strengths including a focus on those with clinically significant social anxiety and a diverse sample of participants across two countries, it also has limitations. Data from the current study are qualitative summaries of individuals' experiences, and quotes presented were chosen because they were strong representations of the common themes identified across all interviews. Though this provides rich data, it is important to note that this is a small sample and represents the individual experiences of the participants in the current study. More research with larger samples and mixed methods is needed. It is also important that future research explore whether the experiences of those with SAD differ from healthy adolescents and young adults. Finally, the different cultural contexts and time periods in which data were collected prevent the direct comparison of the two samples. However, it is important to note that striking similarities were apparent across cultures.

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