Published in final edited form as:

J Clin Child Adolesc Psychol. 2017 ; 46(5): 686–694. doi:10.1080/15374416.2015.1079779.

Developmental differences in functioning in youth with social phobia

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Abstract

Social phobia (SoP) in youth may manifest differently across development as parent involvement in their social lives changes and social and academic expectations increase. This cross-sectional study investigated whether self-reported and parent-reported functioning in youth with SoP changes with age in social, academic, and home/family domains. Baseline anxiety impairment data from 488 treatment-seeking anxiety-disordered youth (ages 7-17, $N = 400$ with a SoP diagnosis) and their parents were gathered using the Child Anxiety Impact Scale (CAIS) and were analyzed using generalized estimating equations. According to youth with SoP and their parents, overall difficulties, social difficulties, and academic difficulties increased with age, even when controlling for SoP severity. These effects significantly differed for youth with anxiety disorders other than SoP. Adolescents may avoid social situations as parental involvement in their social lives decreases, and their withdrawn behavior may result in increasing difficulty in the social domain. Their avoidance of class participation and oral presentations may increasingly impact their academic performance as school becomes more demanding. Implications are discussed for the early detection and intervention of SoP to prevent increased impairment over the course of development.

Social phobia (SoP) is one of the most prevalent mental health disorders (Kessler et al., 1994) and is characterized by excessive fear of social or performance situations, such as exposure to unfamiliar people or to situations that involve possible scrutiny by others (American Psychiatric Association, 2013). SoP is considered to be a youth-onset disorder, as the vast majority of individuals with the disorder report onset prior to the age of 18 (Otto et al., 2001). Many youth with SoP are inhibited and socially withdrawn from an early age (Biederman et al., 2001; Chronis-Tuscano et al., 2009). However, according to a recent review, there appears to be an increase in SoP prevalence in adolescence, as compared to young and middle childhood, (Costello, Copeland, & Angold, 2011; Rapee & Spence, 2004). Logically, it seems reasonable to conclude that the increased salience of peer acceptance and evaluation during adolescence may contribute to an increase in social fears during this time, which may account for an increase in the prevalence of SoP (Brown & Larson, 2009; Ollendick & Hirshfeld-Becker, 2002). However, prior empirical research has generally failed to find an increase in social fears over the course of adolescence (Bruch & Cheek, 1995; Rankin, Lane, Gibbons, & Gerrard, 2004; Rapee & Spence, 2004). Rapee and Spence (2004) suggested that the change over time is due to an increase in the life interference associated with social fears rather than an increase in the fears themselves. Rapee and colleagues (2012) highlight the distinction between *distress* (i.e., an internal negative emotional response, such as fear) and *functional impairment* (i.e., the interference of symptoms in important domains of a child's daily life, such as avoidance of social situations), both of which are criteria for a diagnosis of social phobia (American Psychiatric Association, 2013). Research suggests that patterns of avoidance and distress in youth may vary with age. In particular, studies have found that adolescents with SoP report more

avoidance of social situations than younger children (Rao et al., 2007; Sumter, Bokhorst, & Westenberg, 2009), whereas distress during social situations was not found to increase with age (Sumter et al., 2009). The higher rates of avoidance demonstrated by adolescents with social anxiety may be associated with more functional impairment, which may account for the increase in SoP diagnoses in this age group (Rao et al., 2007; Rapee & Spence, 2004).

The higher rates of avoidance in adolescents with SoP make sense when considering how the manifestation of SoP, such as the role of parents, may differ in younger children and adolescents. Young children may have less opportunity to avoid social situations because their social lives are largely orchestrated by parents (Morris, Hirshfeld-Becker, Henin, & Storch, 2004; Ollendick & Hirshfeld-Becker, 2002). Younger children with social phobia may instead act shy and withdrawn and cling to parents or other familiar individuals when they are in social situations (Morris et al., 2004; Ollendick & Hirshfeld-Becker, 2002). Socially anxious children may also act in an oppositional manner, tantruming and refusing to attend school and other social activities that are arranged for them (Morris et al., 2004; Ollendick & Hirshfeld-Becker, 2002). However, this behavior may not be perceived as anxious avoidance.

In adolescence, on the other hand, youth typically begin to spend more time with peers and less time with family, with reduced oversight from parents and other adults in their social lives (Brown & Larson, 2009; Hartup & Stevens, 1999). Adolescents with social anxiety may be more capable of actively avoiding feared social situations as more responsibility falls upon them to orchestrate their own social interactions without parental involvement (Rao et al., 2007). Relatedly, because adolescence is a pivotal period for the development of peer relationships and social skills (Brown & Larson, 2009), adolescents who fear and avoid social situations during this time would be expected to show especially poor adjustment and impairment in social functioning. Indeed, social withdrawal has been associated with increased peer rejection, particularly in adolescence, theoretically because social avoidance differs from typical peer interaction behavior in this age group (Ladd, 2006; Rubin, Coplan, & Bowker, 2009). In addition to problems with peer relationships, increased avoidance of social evaluation situations in adolescence, which may include school situations such as class participation and oral presentations, may also contribute to increased academic difficulties. Counter to expectations, previous research has not found a difference in functional impairment between younger children and adolescents with SoP (Rao et al., 2007), but a broad/global measure of functioning was used. Further study is needed to determine whether the changing presentation of SoP from childhood into adolescence, particularly increased avoidance of social situations, is associated with increased interference in more specific domains of real-world functioning, including academic, family, and social functioning.

In the current study, a cross-sectional treatment-seeking sample of youth with anxiety disorders, the majority of whom had SoP, with ages ranging from middle childhood to late adolescence, was used to investigate more nuanced anxiety-related difficulties in functioning in various domains across development. Overall self- and parent-reported functional impairment, as well as specific academic, social, and home and family problems, were measured at a baseline assessment before youth began receiving treatment as part of a

randomized clinical trial. Even though previous research has failed to find an increase in global impairment with age (Rao et al., 2007), based on studies indicating that avoidance of social situations increases in adolescents with SoP (Rao et al., 2007; Sumter et al., 2009), as well as research suggesting that the association between social withdrawal and peer rejection strengthens in adolescence (Ladd, 2006; Rubin et al., 2009), it was hypothesized that age would be significantly positively associated with social difficulties. In addition, because increased social avoidance in adolescence may factor into the classroom setting (e.g., class participation, oral presentations), it was also hypothesized that age would be significantly positively associated with academic difficulties. Age was not expected to be significantly associated with impairment in the home and family domains for youth with SoP, but overall impairment was hypothesized to be positively associated with age due to the increase in impairment in the social and academic domains. This study also explored whether age differentially predicted functioning in youth with SoP versus other anxiety disorders to aid in the interpretation of effects as related to SoP specifically or to anxiety in general. Because increased social avoidance with age is likely unique to SoP, it was hypothesized that the increase in social difficulties with age would be specific to youth with SoP, with no age-related increase in social impairment for other anxiety-disordered youth without SoP.

Method

Participants

The sample consisted of 488 youth (49.6% female) ages 7 to 17 years ($M = 10.7$ years) and their parents (see Kendall et al., 2010), who participated in the Child/Adolescent Anxiety Multimodal Study (CAMS; Walkup et al., 2008). Among these youth, 78.9% self-identified as white, 9.0% as black, 2.9% as Asian, 1.2% as American Indian, 0.4% as Pacific Islander, and 8.0% as Other. Socioeconomic status was classified as low for 25.4% of participants. All youth met diagnostic criteria for SoP, Separation Anxiety Disorder (SAD), or Generalized Anxiety Disorder (GAD) as a principal diagnosis, according to the Anxiety Disorder Interview Schedule for Children (ADIS-C/P; Silverman & Albano, 1996), with 11.3% meeting criteria for SoP only, 6.8% for GAD only, 3.3% for SAD only, 6.8% for both SoP and SAD, 28.1% for both SoP and GAD, 8.0% for both SAD and GAD, and 35.9% for all three anxiety disorders. Exclusion criteria for CAMS included a diagnosis of major depressive disorder, bipolar disorder, a psychotic disorder, a pervasive developmental disorder, uncontrolled ADHD, an eating disorder, or a substance use disorder; a diagnosis of any other Axis I disorder with a greater severity than the GAD, SAD, or SoP; recent severe school refusal behavior; and suicidality or homicidality.

Measures

Child Anxiety Impact Scale – Child and Parent Versions (CAIS-C/P; Langley, Bergman, McCracken, & Piacentini, 2004)—The CAIS is a 27-item self-report questionnaire measuring self-reported and parent-reported impact of youth's anxiety on their real-world functioning, overall and in specific domains. The questionnaire generates a Total Difficulties score, as well as scores on three subscales: Academic Difficulties, Social Difficulties, and Home/Family Difficulties. For each item, youth or parents are asked to rate, on a four-point Likert-type scale (0 = *not at all*, 4 = *very much*) how much difficulty they or

their child has had in completing a certain activity over the past month because of his or her anxiety. Example items include “*Getting to school on time*,” “*Being with a group of strangers*,” and “*Getting along with parents*.” Both versions of the CAIS have demonstrated favorable psychometric properties, including very good internal reliability for the total score and subscales (Cronbach’s alphas ranging from 0.70 for the CAIS-P Home/Family Difficulties subscale to 0.90 for the CAIS-C total score), as well as convergent validity demonstrated by significant correlations with the Internalizing Scale of the Child Behavior Checklist (CBCL), the Multidimensional Anxiety Scale for Children, the Screen for Child Anxiety Related Emotional Disorders, and the Pediatric Anxiety Rating Scale (Langley et al., 2014). In prior studies, the CAIS-P demonstrated divergent validity as shown by a non-significant correlation ($R = 0.13$ for the total score) with the CBCL Externalizing Scale (Langley et al., 2004); in the current sample, the two scales were significantly correlated for the CAIS-P ($R = 0.24$ for the total score), but not for the CAIS-C ($R = 0.09$ for the total score (Langley et al., 2014).

ADIS-C/P (Silverman & Albano, 1996)—The ADIS-C/P is a semi-structured interview assessing youth anxiety disorders based on DSM-IV criteria. Youth and parents reported on the youth’s anxiety symptoms and independent evaluators provided clinician severity ratings (CSRs; Silverman & Albano, 1996) for each disorder, ranging from 0 to 8; 0 = *not at all*, 4 = *some*, and 8 = *very, very much*. A CSR of 4 or above is required for a diagnosis. A composite CSR was given for each disorder based on information gathered from both the youth and parent interviews. The ADIS-C/P has demonstrated favorable psychometric properties, including retest reliability ranging from 0.80 to 0.92 for anxiety disorders (Silverman, Saavedra, & Pina, 2001) and inter-rater agreement among diagnosticians ranging from 0.77 to 1.00 for anxiety disorders (e.g., Chavira, Stein, Bailey, & Stein, 2004). Inter-rater reliability was also high in the CAMS study, as demonstrated by intraclass correlation coefficients above 0.80 for SoP, GAD, and SAD CSRs in a randomly selected sample of interviews rated by IEs and quality assurance raters (Compton et al., 2014). The ADIS-C/P has good convergent validity based on significantly higher scores on corresponding subscales of a self-report measure of anxiety (Multidimensional Anxiety Scale for Children; March, Parker, Sullivan, Stallings, & Conners, 1997) for youth diagnosed with SoP and separation anxiety disorder (Wood, Piacentini, Bergman, McCracken, & Barrios, 2002).

Procedure

All participating youth and their parents consented to participate in CAMS (Walkup et al., 2008). Participants completed an assessment with an independent evaluator (IE) before treatment began. Youth and parents completed the ADIS-C/P with an IE and completed the youth self-report and parent-report versions of the CAIS questionnaire. Analyses for the present study used data from these baseline assessments. (For detailed CAMS procedures, see Compton et al., 2010.)

Statistical Analyses

Because it is difficult to assume parent and child reports of child impairment to be totally independent observations, violating an assumption of the general linear model (GLM), an

extension of the GLM known as generalized estimating equations (GEE), which assumes that dependent variable observations are correlated in some way (Hanley, Negassa, Edwardes, & Forrester, 2003), was deemed appropriate for the primary analyses in this study. GEE allows for the designation of clustered observations (e.g., parent-child dyads) and has been used for analyses involving parent and child reports of the same construct (e.g., De Los Reyes, Lerner, Thomas, Daruwala, & Goepel, 2013; Lipton, Augenstein, Weeks, & Reyes, 2013). Before the primary GEE analyses were conducted, a preliminary linear regression tested whether SoP severity, as measured by the IE's composite CSR for SoP, was significantly associated with age to determine whether it should also be included as a continuous control variable in the SoP-only sample. Separate GEE analyses evaluated whether age (in months) was a significant predictor of the Total Difficulties, Academic Difficulties, Social Difficulties, and Home/Family Difficulties scores on the CAIS for only those youth with a diagnosis of SoP ($N = 400$). For each CAIS subscale analysis, an identity link function with an unstructured correlation matrix was used. CAIS informant was designated as a within-subjects variable, and the CAIS subscale or total score was entered as the dependent variable. Age in months was entered first in the model as a continuous variable, with informant entered next as a categorical variable (compared in descending order) to test for informant discrepancies. Gender was next entered as a control variable. To test whether relations between age and CAIS scores were unique to youth with SoP, GEE analyses were then conducted using the full treatment-seeking sample (including youth without SoP) to test an interaction between age and SoP diagnostic status in predicting CAIS scores. For these analyses, age was entered first in the model, followed by SoP diagnostic status and the age-by-SoP status interaction term. Gender was again entered as a control variable.

Results

Preliminary Analyses

Descriptive statistics are in Table 1. There was a significant association between age and SoP composite CSR for youth with a SoP diagnosis and for the full sample, such that the severity ratings increased as age increased (SoP Sample: $\beta = 0.21$, $t(398) = 4.34$, $p < 0.01$; Full Sample: $\beta = 0.23$, $t(487) = 5.29$, $p < 0.01$). Therefore, all linear regressions testing predictors of CAIS scores included baseline SoP CSR (severity) as a control variable to determine developmental influences at equal disorder severity.

Impairment across Development in Youth with SoP¹

The results of GEE analyses testing age as a predictor of CAIS scores in youth with SoP are summarized in Table 2. When controlling for SoP severity, CAIS Total Difficulties, Social Difficulties, and Academic Difficulties scores were significantly associated with age, with difficulties increasing as age increased. Home/Family Difficulties significantly decreased with age. For an estimate of effect size, pseudo- R^2 values were calculated by dividing the

¹Because age may not always be an entirely reliable measure of developmental stage, and pubertal status information was available for the sample, pubertal status was also investigated as a potential predictor to aid in the interpretation of age effects as reflecting developmental effects. Because the results were the same with puberty as a predictor, only the results for age as a predictor are reported in this paper, in the interest of space and avoiding redundancy.

Wald χ^2 estimate for age by the total of Wald χ^2 estimates for all predictors in the model, as described by De Los Reyes and colleagues (2013).

Informant Discrepancies

In youth with SoP, informant was a significant predictor of CAIS Total Scores and scores across all subscales. Pairwise comparisons using Bonferroni-corrected p -values indicated that parents reported significantly more impairment than youth. For the Total Score, the estimated marginal mean difference was 8.28, $p < 0.001$. For the Social Difficulties score, the estimated marginal mean difference was 2.63, $p < 0.001$. The estimated marginal mean difference between parent and youth scores on the Academic Difficulties subscale was 3.53, $p < 0.001$. For the Home/Family Difficulties score, the estimated marginal mean difference was 2.12, $p < 0.001$.

Comparisons between Youth with SoP and Youth with Other Anxiety Disorders

Table 3 summarizes the GEE analyses testing the interaction between age and social phobia diagnostic status (yes/no) in the full sample of anxiety-disordered youth. Age significantly interacted with SoP diagnostic status in predicting child-reported Total Difficulties and Social Difficulties scores. The interaction for Academic Difficulties scores was marginally significant. For both the Total Difficulties and Academic Difficulties scales, age was not significantly associated with CAIS scores for anxiety-disordered youth without a SoP diagnosis, whereas age was significantly positively associated with these scores for youth with SoP, as reported above. For the Social Difficulties subscale, age was significantly negatively associated with CAIS scores for anxiety-disordered youth without SoP, whereas it was positively associated with these scores for youth with SoP. No significant age-by-diagnosis interaction was found for the Home/Family difficulties subscale.

Discussion

Consistent with hypotheses, youth with SoP and their parents reported an increase in overall functional impairment, as well as impairment specifically in the social and academic domains, as age increased. The results also support the prediction that the age-related increase in social difficulties is specific to youth with SoP compared to other anxiety-disordered youth. The increase in impairment was also specific to youth with SoP for overall impairment. Contrary to expectations, youth with SoP and their parents reported *decreased* impairment associated with age in the home/family domain; these results did not differ between youth with SoP and non-SoP youth with other anxiety disorders.

An increase in social difficulties with age in a sample of 7 to 17 year olds with SoP is consistent with the literature on youth with SoP. As children develop into adolescents, a normative shift occurs in the importance of peers and social relationships, such that adolescents spend more time with peers and are more independent in orchestrating their social lives, with progressively less involvement from parents (Brown & Larson, 2009; Hartup & Stevens, 1999). Relatedly, adolescents who excessively fear social interactions and events are likely to avoid social situations when the onus is upon them (rather than their parents as may be the case when they are younger) to initiate such social situations. Studies

examining avoidance across a range of ages have found that adolescents with social fears avoid social situations more than younger children, even though social fear and distress do not likely increase in adolescence (Bruch & Cheek, 1995; Rankin et al., 2004; Rao et al., 2007; Rapee & Spence, 2004; Sumter et al., 2009). Younger children, on the other hand, are not necessarily expected to initiate social interactions and are less able to avoid social situations that are arranged for them, and thus parents may not report as much impairment in the social realm in this age group (Morris et al., 2004; Ollendick & Hirshfeld-Becker, 2002). However, although social withdrawal behaviors in early childhood may be perceived as less impairing in that age group, inhibited behaviors in social situations may somewhat hinder the development of appropriate social skills, influencing social adjustment later on during adolescence, when peer acceptance is especially important (Morris et al., 2004).

During adolescence, when rapid social development is occurring (Albert, Chein, & Steinberg, 2013; Brown & Larson, 2009), it is expected that youth who avoid social situations and interactions with peers would show increased impairment in the social domain as they quickly fall behind in comparison to their peers, who are progressively increasing their time spent with friends (Brown & Larson, 2009). For example, a wealth of research has demonstrated that socially anxious youth tend to have poorer social skills, experience higher levels of peer victimization and less peer liking, and anticipate more negative outcomes in social situations than non-anxious youth (e.g., Kingery, Erdley, Marshall, Whitaker, & Reuter, 2010; Verduin & Kendall, 2008), which could lead to an increasingly impairing cycle of avoidance and negative social experiences throughout development. Indeed, additional research has suggested that socially withdrawn behavior becomes increasingly associated with peer rejection and subsequent internalizing problems in middle childhood and adolescence, compared to earlier childhood (Ladd, 2006; Rubin et al., 2009).

The increase in academic difficulties with age may reflect increasing demands for class participation, oral presentations, and group projects as children progress into middle school and high school, leading to increased academic impairment for youth who avoid meeting these requirements due to social anxiety. Although previous research suggested that rates of public speaking fears and associated impairment are lower for socially anxious adolescents than adults (Hofmann et al., 1999), the increase in academic problems for socially anxious adolescents in this study suggests that public speaking fears may begin to have an impact at that stage. It was somewhat surprising that home and family difficulties showed a significant decrease for SoP youth, especially given that parent-child conflict tends to show a normative increase during adolescence (Laursen & Collins, 2009). However, if adolescents with social fears engage less in the normative shift toward peer relationships and away from family members, the normative increase in family conflict may not occur for these youth, who instead experience difficulties in the social domain.

From the present results, it appears that the developmental increase in social difficulties linked to anxiety is unique to youth with SoP. Overall, across the full age range, youth with SoP did not have significantly more problems functioning in the social realm than their anxious, but not socially anxious, peers. This finding suggests that it is the *increase* in social difficulties with development that is different in youth with SoP, with non-SoP anxious youth showing a *decrease* in social impairment. Problems with social functioning are

associated with anxiety disorder severity in general (Settipani & Kendall, 2013), possibly due to peer rejection of anxious behaviors or social incompetence and biases in reading social cues (Verduin & Kendall, 2008; Waas & Graczyk, 1999; Waters, Henry, Mogg, Bradley, & Pine, 2010). However, although these anxiety-related social difficulties may occur throughout youth and may even improve with the development of social skills, difficulties linked to avoidance of feared social situations are likely unique to youth with SoP. The literature suggesting these avoidance behaviors increase with youth age (Rao et al., 2007; Sumter et al., 2009) may explain why life interference in the social realm shows an increase across development for youth with SoP.

A few limitations merit consideration. First, the study was cross-sectional; a longitudinal study would better inform the conclusion that functional impairment increases across development for youth with SoP. Second, the sample had high rates of comorbidity, making it difficult to draw conclusions about SoP alone; however, the interactions found between age and SoP diagnostic status were fairly robust given that many of the youth with SoP also had other anxiety disorders. Future research should investigate how different comorbid presentations may be related to functional impairment across development. Comorbidities outside the anxiety domain should also be considered in future research, such as the dual role of ADHD and anxiety in functional impairment. Studies should also investigate how pubertal timing influences functional impairment in youth with social phobia. Although associations between social phobia impairment and pubertal timing were not a specific focus of this study, research suggests that advanced pubertal status significantly predicts social anxiety symptoms for girls in early adolescence (e.g., Deardorff et al., 2007).

The present results support the importance of considering *real-world impairment* when assessing and treating SoP in youth of different ages. Even though younger children may not show as much avoidance, and thus not as much social impairment, failing to address their social fears may lead to problems with social adjustment later in adolescence, when peer relationships become especially important. Academic difficulties related to social anxiety may also develop or become more impairing if not addressed early. Intervening early may help prevent the avoidance of social situations later in youth and thus prevent more severe social anxiety and impairment. Indeed, the social impairment associated with one disorder may, if untreated, be a risk factor for the emergence of another disorder (Cummings, Caporino, & Kendall, 2014). In addition, the discrepant findings between parent report and youth self-report highlight the importance of using multiple informants when assessing anxiety symptoms and impairment. Research suggests that parents and youth each provide unique and clinically relevant information about youth anxiety (De Los Reyes, Thomas, Goodman, & Kundey, 2013; DiBartolo, Albano, Barlow, & Heimberg, 1998; Villabø, Gere, Torgersen, March, & Kendall, 2012; Wei et al., 2014). Finally, it is important for parents and clinicians to be vigilant of the avoidance of social situations in adolescents with SoP, even if problems are not apparent in the home environment at this time.

Acknowledgments

FUNDING

This research was supported by NIMH grant (MH063747) awarded to Philip C. Kendall. Views expressed within this article represent those of the authors and are not intended to represent the position of NIMH, NIH, or DHHS.

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Table 1

Descriptive Statistics for Predictor and Outcome Variables

Variable	With Social Phobia Diagnosis		Full Sample	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age (in months)	136.59	33.88	134.07	33.76
Average Petersen Puberty Score	2.08	0.87	2.03	0.85
Social Phobia CSR	5.39	1.02	4.65	1.91
CAIS-C				
Total Difficulties	17.45	13.45	16.56	13.01
Academic Difficulties	7.81	6.28	7.34	6.14
Social Difficulties	6.41	6.07	5.96	5.78
Home/Family Difficulties	3.23	3.33	3.26	3.31
CAIS-P				
Total Difficulties	25.75	13.57	24.22	13.40
Academic Difficulties	11.35	6.71	10.74	6.71
Social Difficulties	9.05	6.88	8.16	6.72
Home/Family Difficulties	5.36	3.68	5.32	3.62

Note: SoP = social phobia; CAIS-C = Child Anxiety Impact Scale, child version; CAIS-P = Child Anxiety Impact Scale, parent version; CSR = Clinician Severity Rating

Table 2

Generalized estimating equations predicting CAIS scores for youth with SoP, based on parent and child report, as a function of age (in months)

CAIS Scale/Predictors	Wald χ^2	Pseudo- R^2	B(SE)	95% CI	p
Total Difficulties					
Age (months)	7.41	0.04	0.04 (0.02)	[0.01, 0.07]	<0.01
Informant	108.55	0.66	-8.28 (0.79)	[-9.84, -6.72]	<0.001
Gender	0.49	0.003	0.71 (1.01)	[-1.27, 2.68]	0.48
SoP CSR	48.41	0.29	3.66 (0.53)	[2.63, 4.68]	<0.001
Social Difficulties					
Age (months)	18.06	0.15	0.03 (0.01)	[0.02, 0.05]	<0.001
Informant	47.61	0.40	-2.63 (0.38)	[-3.38, -1.88]	<0.001
Gender	0.66	0.01	0.38 (0.47)	[-0.54, 1.30]	0.42
SoP CSR	51.61	0.44	1.79 (0.25)	[1.30, 2.28]	<0.001
Academic Difficulties					
Age (months)	6.82	0.06	0.02 (0.01)	[0.01, 0.04]	<0.01
Informant	85.67	0.70	-3.52 (0.38)	[-4.27, -2.78]	<0.001
Gender	0.33	0.003	-0.29 (0.50)	[-1.26, 0.69]	0.57
SoP CSR	29.33	0.24	1.41 (0.26)	[0.90, 1.92]	<0.001
Home/Family Difficulties					
Age (months)	7.02	0.06	-0.01 (0.004)	[-0.02, -0.003]	<0.01
Informant	104.40	0.83	-2.12 (0.21)	[-2.53, -1.72]	<0.001
Gender	4.88	0.04	0.61 (0.28)	[0.07, 1.16]	<0.05
SoP CSR	9.08	0.07	0.45 (0.15)	[0.16, 0.75]	<0.01

Note: CAIS = Child Anxiety Impact Scale; SoP = Social Phobia; CSR = clinician severity rating; B = unstandardized beta; SE = standard error; CI = confidence interval.

Generalized estimating equations for the interaction between age (in months) and SoP diagnostic status (yes/no) in predicting CAIS scores, based on parent and child reports

Table 3

CAIS Scale/Predictors	Wald χ^2	Pseudo- R^2	B(SE)	95% CI	p
Total Difficulties					
Age (months)	3.38	0.15	-0.47 (0.03)	[-0.10,0.003]	0.07
SoP vs. no SoP Dx	3.81	0.16	-8.13 (4.17)	[-16.30,0.04]	0.05
Age $\times$ SoP Dx interaction	13.86	0.60	0.11 (0.03)	[0.05,0.17]	<0.001
Gender	2.06	0.09	1.32 (0.92)	[-0.48,3.13]	0.15
Social Difficulties					
Age (months)	15.41	0.21	-0.03 (0.01)	[-0.05, -0.02]	<0.001
SoP vs. no SoP Dx	14.92	0.20	-6.29 (1.63)	[-9.48, -3.10]	<0.001
Age $\times$ SoP Dx interaction	42.39	0.57	0.08 (0.01)	[0.05,0.10]	<0.001
Gender	1.89	0.03	0.58 (0.43)	[-0.25,1.42]	0.17
Academic Difficulties					
Age (months)	0.03	0.01	-0.002 (0.02)	[-0.03,0.03]	0.87
SoP vs. no SoP Dx	0.34	0.09	-1.30 (2.25)	[-5.72,3.11]	0.56
Age $\times$ SoP Dx interaction	3.48	0.90	0.03 (0.02)	[-0.002,0.07]	0.06
Gender	0.03	0.01	0.08 (0.46)	[-0.18,0.97]	0.87
Home/Family Difficulties					
Age (months)	2.31	0.24	-0.01 (0.01)	[-0.03,0.004]	0.13
SoP vs. no SoP Dx	0.17	0.02	-0.54 (1.29)	[-3.07,1.99]	0.68
Age $\times$ SoP Dx interaction	0.30	0.03	-0.01 (0.01)	[-0.01,0.03]	0.59
Gender	7.02	0.72	0.66 (0.25)	[0.17,1.15]	<0.01

Note: SoP = social phobia; CAIS = Child Anxiety Impact Scale; Dx = diagnosis; B = unstandardized beta; SE = standard error; CI = confidence interval.