

A test of the vulnerability-stress model with early maladaptive schemas for depressive and social anxiety symptoms in adolescence

Objective: This study examined whether some early maladaptive schema (EMS) domains, both alone and moderated by stressors, predict the increase of depressive and social anxiety symptoms in adolescents. **Method:** A sample of 959 adolescents (455 girls and 504 boys, Mean Age = 13.61 years) were assessed at three time points separated by 6 months. They completed measures of three domains of the EMS (disconnection/rejection, impaired autonomy, and other-directedness), social and achievement stressors, depressive symptoms, and social anxiety. **Results:** Findings indicate that depressive and social anxiety symptoms are associated with a different profile of EMS, being disconnection/rejection and impaired autonomy domains predictors of depressive symptoms, and disconnection/rejection and other-directedness domains predictors of social anxiety. Overall, findings fail to demonstrate significant interactions between EMS and stressors in the prediction of symptoms. Social stressors were particularly predictors of symptoms. Sex moderated the association between EMS and social anxiety. **Conclusions:** Early maladaptive schemas may be formed in adolescence so that they can predict future depressive and social anxiety symptoms but they operate with relative independency to the levels of stress. Identifying specific schema domain profiles for depression and social anxiety has implications for interventions in adolescents.

Key words: early maladaptive schemas; depression; social anxiety; stress; adolescents

Adolescence is a period characterized by an increase in the prevalence rates of emotional disorders such as depression and social anxiety (e.g., Avenevoli, Knight, Kessler, & Merikangas, 2008; Esbjom, Hoeyer, Dyrborg, Leth, & Kendall, 2010; Beidel, Turner, & Morris, 1999). Furthermore, beginning in adolescence the prevalence rates of both depression and social anxiety are higher in girls than in boys in general population samples (Hankin et al., 1998; Olivares, Piqueras, & Rosa, 2006). One of the factors that contribute to the development of depression and social anxiety in adolescence is the high occurrence of life stressors that take place in this period (Agoston & Rudolph, 2011; Calvete, Orue, & Hankin, in press; Hankin, Mermelstein, & Roesch, 2007; Little & Garber, 2005). Interpersonal-related stressors (i.e. relationships with peers, romantic partners, and parents) and achievement-related stressors (i.e. more academic demands, sport performance, the presence of emerging adult responsibility) are among the most reported at this life stage (e.g. Chandra & Batada, 2006; Hankin et al., 2007; Mezulis, Funasaki, Charbonneau & Hyde, 2010; Pettit et al., 2010). Gender differences have also been found with adolescent girls being more vulnerable to social stress (De Coster, 2005; Kort-Butler, 2009). Furthermore, Hankin and colleagues (2007) found that interpersonal stressors partially explained depressive symptoms among the girls, whereas boys tended to react more to achievement-related events. However, the occurrence of stressors alone does not account for the dramatic increase in depressive and social anxiety symptoms. Other factors, such as cognitive vulnerabilities, are proposed to moderate the associations between stressors and symptoms.

Cognitive vulnerabilities to depressive and social anxiety symptoms

Cognitive variables are key elements for understanding the development and maintenance of emotional disorders. The cognitive theory of emotional distress states that certain cognitive variables act as vulnerabilities to the development and maintenance of psychological disorders, such as depression (Beck, 1976). Two assumptions are particularly relevant in this model: the hypothesis of cognitive specificity and the vulnerability-stress paradigm.

The cognitive specificity hypothesis (Beck, 1976) states that each emotional disorder is characterized by a cognitive content that is specific to that disorder. According to this hypothesis, depression related cognitions refer to themes of loss, hopelessness, deprivation, failure, and negative self-evaluation (Beck, 1976; Clark, Beck, & Stewart, 1990). Depressed individuals are hypothesized to attend to and remember information congruent with those themes, and therefore they tend to be biased toward information concerned with sadness and loss (Gotlib et al., 2004). According to cognitive models of social anxiety, socially anxious individuals are highly motivated to avoid rejection and make a good impression on others (Leary, 2001). At the same time, they have a negative view of themselves (Stopa & Clark, 2000; Wells, 1997), which leads them to anticipate embarrassment (Hofmann, 2007) and negative evaluation (e.g., Clark & Wells, 1995; Gros, Simms, Antony, & McCabe, 2012; Rapee & Heimberg, 1997).

On the other hand, the vulnerability-stress paradigm proposes that cognitive factors increase the risk for emotional disorders, particularly when individuals experience stressful events. A considerable amount of research has focused on cognitive vulnerabilities for depression and has examined the role of negative inferences (Abramson, Metalsky, & Alloy, 1989), response styles (Nolen-Hoeksema, 1991), and dysfunctional attitudes (Beck, 1976) as stress diatheses of negative events. In adolescents, several studies have demonstrated that negative inferences (e.g., Calvete, Villardón, & Estevez, 2008; Cole et al., 2008; for reviews, see Abela & Hankin, 2008 and Lakdawalla, Hankin, & Mermelstein, 2007), response styles (Abela & Hankin, 2011), and dysfunctional attitudes (D'Alessandro & Burton, 2006; Hankin, Wetter, Cheely, & Oppenheimer, 2008; You, Merritt, & Conner, 2009) moderate the predictive association between stressful events and depressive symptoms. Similarly, cognitive models of social anxiety indicate that attentional biases and socially anxious thoughts contribute to generating anxiety when individuals cope with social stressors (Clark & Wells, 1995; Rapee & Heimberg, 1997).

The majority of the above studies have focused on cognitive processes such as inferential styles, response styles, and attentional biases. According to Beck's theory, cognitions are hierarchically arranged so that cognitive processes are guided by underlying cognitive schemas or structures. These schemas consist of organized elements of past behaviors and experiences that form a relatively cohesive and persistent body of knowledge about the world, relationships with others, and oneself. The present study extends both the cognitive specificity hypothesis and the vulnerability to stress paradigm by integrating them with the early maladaptive schemas (EMS) model (Young, 1990) and studying prediction of prospective depressive and social anxious symptoms among adolescents.

EMS as Vulnerabilities for Depressive and Social Anxiety Symptoms

Young and colleagues extended the original schema work of Beck and identified a variety of EMS that are hypothesized to underlie several forms of psychopathology (Young 1990; Young, Klosko, & Weishaar, 2003). In the schema theory, EMS have been defined as "broad, pervasive themes or patterns, comprised of memories, emotions, cognitions, and bodily sensations, regarding oneself and one's relationships with others, developed during childhood or adolescence, elaborated throughout one's lifetime, and dysfunctional to a significant degree" (Young et al., 2003, p. 7). EMS are theorized to result from unmet core emotional needs in childhood. Young (1999) described 18 maladaptive schemas, which are organized into five domains according to the ways they interfere with children's access to basic needs.

Three of these domains are the focus of the present study: disconnection/rejection, impaired autonomy and performance, and other-directedness. Schemas within the disconnection/rejection domain involve the beliefs that the basic needs of security, safety, nurturance, and respect will not be fulfilled. The impaired autonomy domain is characterized by the expectations about oneself and the environment interfering with one's perceived capacity to

function independently or perform successfully. Finally, schemas within the other-directedness domain consist of an extreme focus on the desires of others, at the expense of one's own needs.

Consistent with the vulnerability-stress paradigm, EMS are hypothesized to remain latent until they are activated by stressors that are relevant for the schemas (Young et al., 2003). When activated, EMS lead to the development of dysfunctional emotions and behaviors. However, to date, no study has examined whether EMS moderate the effect of stressors on psychological symptoms in adolescents. The available evidence about the interaction effect between EMS and stressors is scarce even in adult samples (Camara & Calvete, 2012; Eberhart et al., 2011). In a non-clinical sample of university students, Camara and Calvete (2012) found that dependence, which belongs to the impaired autonomy domain, interacted with stressors to predict depressive symptoms 5 months later. Eberhart et al. (2011), employing idiographic multilevel modeling with data from a sample of female university students assessed weekly over a six-week period, found that self-sacrifice, which belongs to the other-directedness domain, moderated the relation between interpersonal stressful events and depression.

Testing the interaction between EMS and stressors is important not only because it would provide support to the schema theory but also because of developmental implications not empirically examined to date. Although EMS are hypothesized to originate early in life (Young et al., 2003), empirical research suggests that several dysfunctional cognitive styles may not consolidate and become a stable pre-existing diathesis for psychological problems until adolescence (Cole et al., 2008; Hankin, 2008). Furthermore, adolescence is a critical period in life when social, academic, physiological, and physical changes can increase exposure to stress at the same time that negative cognitions may still be under construction. This makes the study of the vulnerability-stress paradigm especially important during adolescence.

The study of the associations among EMS and depressive and social anxiety symptoms is also relevant for the cognitive specificity hypothesis. As these schemas are hypothesized to

underlie several forms of psychopathology (Young et al., 2003), a challenge of this model is to identify the specific schema domains that explain the different disorders or symptoms.

Furthermore, existing evidence has proved the cognitive specificity hypothesis at the level of automatic thoughts (e.g. Oei & Kwon, 2007) or cognitive processes (e.g. Mongrain & Blackburn, 2006), but less research has been devoted to test specificity at the deeper cognitive level of schemas. For exceptions, studies on autonomy and sociotropy dimensions have shown certain specificity (Alford & Gerrity, 2003).

Previous research provides preliminary information about which EMS are associated with depression and social anxiety in adolescents. A number of studies indicate that schemas in the disconnection/rejection, impaired autonomy, and other-directedness domains are cross-sectionally associated with depression in adolescents (e.g., Lumley & Harkness, 2007, Muris, 2006; Van Vlierberghe, Braet, Bosmans, Rosseel, & Bögels, 2010). However, only one longitudinal study has examined predictive associations among EMS and depressive symptoms in adolescents. In this study, disconnection/rejection domain predicted an increase of depressive symptoms (Calvete, Orue, & Hankin, in press).

Research about EMS relevant for social anxiety is much scarcer. To our knowledge, only one study performed with adolescents has examined the longitudinal relation between EMS and social anxiety. In this study, Calvete, Orue, and Hankin (2012) found that the other-directedness schema domain predicted the increase of social anxiety symptoms over time, while the disconnection and rejection domain predicted increases in anxious social thoughts. Furthermore, it is noteworthy that previous studies investigating EMS have not controlled for the overlap between depression and social anxiety that is necessary (Mineka, Watson y Clark, 1998; Shanahan, Copeland, Costello, & Angold, 2008) to correctly identify the specific EMS associated with each form of emotional distress.

Sex Differences in the Role of EMS

There is a long tradition of research showing that men and women tend to emphasize autonomy and achievement versus interpersonal connection with others, respectively (Cross & Madson, 1997; Kimmelmeier & Oyserman, 2001; Rose & Rudolph, 2006). Women tend to develop a more interdependent self-concept while men tend to develop a more independent self-concept (Cross & Madson, 1997). Building on these sex difference in self-views, this study hypothesized that schema domains that are focused on relationships with others (i.e., disconnection/rejection and other-directedness domains) will play a more significant role in the development of depression and social anxiety in girls, whereas the schema domain of impaired autonomy, which is more focused on autonomy and achievement, will be more relevant in boys.

A few studies have examined sex differences in EMS. Such research shows that adult females exhibit higher levels of schemas within the disconnection/rejection, autonomy, and others-directedness domains (e.g., Shorey, Anderson, & Stuart, 2012; Welburn, Coristine, Dagg, Pontefract, & Jordan, 2002). However, only one study has evaluated whether some EMS domains are more predictive of psychological problems in men or women (Camara & Calvete, 2012). In that study, various schemas of the disconnection/rejection domain were associated more strongly with anxiety in women than in men. The schema of dependence, belonging to the impaired autonomy domain, was associated more strongly with anxiety in men than in women. No study has investigated sex differences in EMS during adolescence. The present study aimed to extend the limited research base to a sample of adolescents. This is particularly relevant because, as mentioned above, sex differences in depressive and social anxiety emerge during this developmental stage.

The Present Study

This study examined the predictive associations between three EMS domains and depressive and social anxiety symptoms in adolescents over a one-year prospective period with three waves of data. Consistent with both the cognitive vulnerability-stress paradigm and Young's

schema theory, we examined whether EMS moderated the association between specific stressors and depressive and social anxiety symptoms. This way, the present study expands on the two previous longitudinal studies that have examined whether the interaction between EMS and stressors predicts later symptoms of depression and/or anxiety in adults (Camara & Calvete, 2012; Eberhart et al., 2011). As mentioned above, testing the interaction between EMS and stressors is important not only because it would provide support to the schema theory but also because it contributes to identify at which developmental stage EMS are consolidated to act as stable pre-existing diatheses.

Drawing on the results of the available literature (e.g. Calvete, Orue, & Hankin, in press; 2012; Lumley & Harkness, 2007; Muris, 2006; Roelofs, Lee, Ruijten, & Lobbestael, 2011; Van Vlierberghe et al., 2010), schemas belonging to the disconnection/rejection, impaired autonomy, and other-directedness domains were selected for the purpose of this study. We expected that other-directedness and disconnection/rejection domains would be relevant for social anxiety symptoms as these schemas include contents, such as the need of acceptance by others and negative self-view, which have been associated with social anxiety (e.g., Leary, 2001; Stopa & Clark, 2000; Wells, 1997). In addition and consistent with previous studies (e.g., Calvete, Orue, & Hankin, in press; 2012; Lumley & Harkness, 2007) we hypothesized that the disconnection/rejection domain would be particularly relevant for depressive symptoms, although associations with impaired autonomy and other-directedness were also expected. A match between schemas and stressors was also expected, such that social stressors would interact with the schema domains that have an interpersonal focus (other-directedness and disconnection/rejection), whereas achievement related stressors would interact with the impaired autonomy domain. Thus, this study also contributes to examining which specific domains of stress (social vs. achievement) are relatively specific predictors of social anxiety and depressive symptoms.

We examined whether sex moderated the role of schema domains and stressors as predictors of depressive and social anxiety symptoms. We hypothesized that the impaired autonomy domain would be more relevant as predictor of problems for boys as this domain is consistent with a focus on autonomy and achievement, whereas the disconnection/rejection and the other-directedness domains, focused on interpersonal relationships, would be more relevant for girls. Social stressors were expected to be stronger predictors of symptoms for girls than for boys. Finally, we explored the role of age in the relations among EMS domains, stressors, and symptoms. We expected that EMS would be more developed and consolidated among older adolescents such that schema domains would moderate the relation between stressors and depressive and social anxiety symptoms more strongly in older than in younger adolescents.

Method

Participants

The present sample included 1281 adolescents aged 13-17 (593 girls and 688 boys) who were high school students from 51 classrooms of 8 educational centers of Bizkaia (Spain). The assessments occurred at the beginning of the school year (Time 1, T1), at 6 months (T2), and one year later (T3). Three-hundred twenty-two adolescents did not complete the measurements at either time; the lack of participation was due almost entirely to sickness or absence. The attrition rate also included participants who did not respond to some of the questionnaires and were therefore eliminated from the study. Thus, the final sample comprised of 959 participants (455 girls and 504 boys), with a mean age of 13.61 years ($SD = 1.41$) at the beginning of the study. A series of *t* tests were conducted to examine differences in all study variables at T1 among the 959 adolescents who completed the three waves and those who failed to complete the study. None of these analyses was significant. The socio-economic levels were determined by applying the criteria recommended by the Spanish Society of Epidemiology and Family and Community Medicine (2000), and from the information provided by the school staff about parental education

and income. The socio-economic levels were represented with the following distribution: 19.1% low, 17.5% low-medium, 25.8% medium, 18.7% high-medium, and 18.6% high levels.

Measures

Stressors were assessed using the Adolescent Life Events Questionnaire (ALEQ; Hankin & Abramson, 2002). The ALEQ assesses a broad range of life events that typically occur among adolescents, including school/achievement problems, friendship and romantic difficulties, and family problems. Although the ALEQ consists of 70 different negative life events, in this study we used a shorter version consisting of 45 events. We did not include those events that were culturally not characteristic of Spanish adolescents (e.g., don't get invited to dances when you want to go) or that were very unusual (e.g., had a baby that you didn't plan or want). Shorter versions of the ALEQ have also been used in other studies with samples from different countries and cultures (e.g., Cohen et al., in press). Participants were asked to indicate whether these negative events had occurred to them. From the ALEQ we obtained the number of social stressors (18 items, e.g., *had an argument with a close friend*) and performance-related stressors (9 items; e.g., *got a bad report card*) reported by the adolescents. We included in these categories only those events for which there was agreement among all study researchers. The ALEQ was given at T1, T2, and T3 to assess stressors that occurred over the previous 6-month period. The ALEQ has good validity (concurrent and predictive) in that it has predicted prospective increases in depressive and anxious symptoms (Hankin, 2008). The Spanish version has demonstrated to be significantly associated with depressive symptoms (Padilla & Calvete, 2011).

Cognitive schemas were assessed by the Young Schema Questionnaire-3 (YSQ-3; Young, 2006). The YSQ-3 consists of 90 items and assesses 18 cognitive schemas (5 items per schema). Participants rated items using a 6-point scale, ranging from 1 (*completely untrue of me*) to 6 (*describes me perfectly*). In this study the YSQ-3 was used to assess the domains of disconnection/rejection, impaired autonomy, and other-directedness. The domain of

disconnection/rejection included the schemas of abandonment, mistrust, emotional deprivation, and defectiveness (e.g., “I need other people so much that I worry about losing them”, “I feel that people will take advantage of me”). In the present study, the domain of impaired Autonomy was represented by the schemas of vulnerability to harm and failure (e.g., “I worry about being attacked”, “I’m incompetent when it comes to achievement”). The schemas within the domain of other-directedness included in this study were subjugation and need of acceptance (e.g., “In relationships, I let the other person have the upper hand”). The Spanish version of the YSQ-3 has showed good psychometric properties, with confirmation of the factor structure and adequate alpha coefficients for the scales (Calvete, Orue, & Gonzalez-Diez, in press). Whereas the majority of the studies have confirmed the EMS factor structure of the YSQ, there have been mixed findings about the factor structure for the schema domains (for reviews see Calvete, Orue & Gonzalez-Diez, in press; Kriston, Schäfer, von Wolff, Härter, & Hölzel, 2012). Overall, the disconnection/rejection and impaired autonomy schema domains are well supported by confirmatory factor analyses, whereas findings for the other schema domains are mixed. For this reason, as a preliminary step, we examined whether the EMS assessed in this study were explained by a three schema domains structure by means of confirmatory factor analysis (see results section). Alpha coefficients were .89, .81, and .86 for the disconnection/rejection, impaired autonomy, and other-directedness domains.

Depressive symptoms were assessed with the *Center for Epidemiological Studies Depression Scale* (CES-D; Radloff, 1977). The CES-D consists of 20 statements rated on a 4-point scale, ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Previous research with the Spanish version of the CES-D has confirmed its factorial structure (Calvete & Cardeñoso, 1999). Mild depressed mood is indicated by a score of 16-22, moderate depressed mood is indicated by a score of 23-27, and scores of 28 or higher indicate severe

depressed mood consistent with major depressive disorder (Radloff, 1991). In this study, the alpha coefficient at T1 was .85, and at T2 and T3 .88.

Social anxiety symptoms were assessed with the *Social Anxiety Scale for Adolescents* (SAS-A, La Greca & Lopez, 1998). The SAS-A contains 18 items in the form of statements about oneself (e.g., I get nervous when I talk to peers that I don't know very well) that are rated on a 5-point scale, ranging from 1 (*not at all*) to 5 (*all the time*). The SAS-A includes items regarding fear of negative evaluation, social avoidance and distress specific to new situations, and general social avoidance. The Spanish version of the questionnaire has demonstrated good psychometric properties (Olivares et al., 2005). Alpha coefficients in this study were .89 for T1 and .92 for T2 and T3 respectively.

Procedure

Data were collected at three measurement occasions spaced 6 months apart. Participants completed measures of EMS at T1 and measures of stressors and depressive and anxiety symptoms at T1, T2, and T3. The Ethics Committee of University of XXXX approved this study. Responses were anonymous in order to promote honesty, and participation was voluntary. As there were no student names included on the surveys, the school staff chose to collect passive consent from parents. Thus, parents were notified and given the option of refusing to allow their child's participation in the three waves of the study. None of the parents refused to allow their child to participate. All adolescents consented to participate in the study. The adolescents filled in the questionnaires in their classrooms. In order to pair the questionnaires of T1, T2, and T3, a code known only by the participant was used. Some questionnaires could not be paired due to errors in the codes and were, therefore, eliminated; this comprised part of the attrition rate. The questionnaires took 45-60 minutes to complete.

Results

Preliminary Analyses: Measurement model of schema domains

Table 1 displays the correlation coefficients among all study variables, as well as the means and standard deviations for schema domains, number of social and achievement stressors, and depressive and social anxiety symptoms at T1, T2 and T3. Correlations among the three schema domains were high and, therefore, a confirmatory factor analysis was conducted to assess the latent structure of the domains and test whether they are different constructs. The model was tested via maximum likelihood (ML) estimation with LISREL 8.8 (Jöreskog & Sörbom, 2006). Following the recommendations of a number of authors (e.g., Byrne, 1999; Hu & Bentler, 1999), goodness of fit was assessed by the comparative fit index (CFI) and the non-normed fit index (NNFI), the root mean square error of approximation (RMSEA) and the standardized root-mean-square residual (SRMR). Generally, CFI and NNFI values of .95 or above and RMSEA and SRMR values of .08 or less reflect that the model adequately fits the data. We used the effects-coding method proposed by Little, Slegers, and Card (2006) to identify and set the scale of the latent variables. This method consists of constraining the set of indicator intercepts to sum to zero for each construct and the set of loadings for a given construct to average 1.0, which is the same as having them sum to the number of unique indicators. According to Little et al., this method is suitable to confirm the factor structure of a construct from particular items. The items of the schemas that correspond to each domain were used as indicators. The error variances of the items were not allowed to covary in the model. Each item loaded only on one factor. The hypothesized model consisted of a three correlated domain structure (disconnection/rejection, impaired autonomy, and other-directedness). This model showed adequate fit indexes, $\chi^2(899, N = 1281) = 6173$, RMSEA = .078 (90% CI: 0.075; 0.080), CFI = .95, NNFI = .95, SRMR = .069. All factor loadings were statistically significant and are presented in Table 2. Thus, these results supported that the three schema domains included in this study are highly correlated but empirically distinct latent constructs.

Table 3 displays sex and age differences. Girls scored higher than boys on all of the study variables except the number of stressors. There were no gender differences in social stressors, and boys scored higher than girls on achievement stressors at T1 and T2. Younger adolescents (first cycle of high school; $n = 461$) scored higher than older adolescents (last cycle of high school; $n = 498$) on social anxiety at T1 and on schema domains (disconnection/rejection, impaired autonomy and other-directedness), whereas older adolescents scored higher on the number of social and achievement stressors at T2. However, effect sizes were low in all the cases. The prevalence of moderate depressed mood (cutoff score > 23 on the CESD) was 21.1, 17.9, and 16.7% at T1, T2, and T3. The prevalence of severe depressed mood (cutoff score > 28) was 12, 10, and 10.1% at T1, T2, and T3. The overall prevalence of clinically significant social anxiety, using the cutoff score of 50 or more on the SAS-A (La Greca & López, 1998), was 25.8, 25.4, and 23.8% at T1, T2, and T3, respectively.

EMS as Moderators of the Association among Stressors and Depressive and Social Anxiety Symptoms.

Overview of Statistical Approach. The analysis of multiple levels of data was accomplished in HLM 7 (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011) using a restricted maximum likelihood estimator and robust standard errors. The models included the construction of Level 1 and 2 equations. We conducted separate analyses for depressive symptoms and for social anxiety as outcomes. At level 1, regression equations were constructed that model separately the variation in the repeated measures (e.g., depressive symptoms, stressors) as a function of time (i.e., the 3 waves of data). Each equation included various parameters to capture features of an individual adolescent's level of symptoms (i.e., depression and social anxiety) and social and achievement stressors over time, such as an *intercept* that describes an individual's average level on the variable across time and a *time-varying covariate* that describes the strength of association between within-person fluctuations in one construct

(e.g., depressive symptoms) and within-individual changes in another construct (e.g., social stressors) over the 3 waves of data. Symptom scores at time T served as the dependent variable in the HLM analysis and time T-1 symptom scores were included in the level 1 model along with social and achievement stressors at time T (i.e., number of stressors that happened in the previous 6 months). In addition, measures of stressors were centered within person as this approach has been suggested as the best choice to examine whether deviations from the adolescent's usual level of stress affects symptoms (West, Ryu, Kwok, & Cham, 2011). This is consistent with recommended approaches to analyzing vulnerability-stress predicting symptom changes over time (Abela & Hankin, 2008). Thus, social and achievement stressors scores were centered at each adolescent's mean so that they reflect upward or downward fluctuations in an adolescent's level of stressors compared with his or her mean level of stressors.

At Level 2, equations were specified that model individual differences in the Level 1 parameters as a function of between-subjects' variables. At Level 2 we included as predictors the three schema domains (disconnection/rejection, impaired autonomy, and other-directedness). This allowed to test whether the scores on schema domains at T1 predicted both the average levels of symptoms and the trajectories of change in symptoms over time. Furthermore, the schema domains-stress interaction was tested by examining the cross-level interaction term representing the effect of schema domains, at Level 2, on the slope of within-adolescent variability in the strength of the relation between stressors and symptoms at Level 1. That is, schema domains were entered at level 2 to enable an examination of whether stressors, in interaction with schemas, were associated with prospective changes in symptoms scores between time T-1 and time T. This approach enables a stringent idiographic examination of the relation between stressors and symptoms for each adolescent along with the essential investigation of the role of schemas, as a Level 2 between-subjects factor, as a moderator of this within-person stressor-symptoms relation

(see Hankin, Wetter, Cheely, & Oppenheimer, 2010, for similar analyses). Scores on schema domains were centered around the sample for these analyses.

In addition, we included initial levels of social and achievement stressors as Level 2 predictors to restore information about individual differences in stressors (West et al., 2011). Finally, we included social anxiety as predictor for the depressive symptoms model, and depressive symptoms as predictor for the social anxiety model. This way, we controlled the overlapping among these variables, which is an essential step to study specificity (Shanahan et al., 2008).

Depressive symptoms, schema domains, and stressors model. The equations used to test the hypotheses were:

The equation used for level 1 model for depressive symptoms over 3 time points:

$$Depression_{tij} = \beta_{0j} + \beta_{1j}*(achievement\ stressors_{ij}) + \beta_{2j}*(social\ stressors_{ij}) + \beta_{3j}*(Depression_{t-1ij}) + r_{ij}$$

Equations for level 2 models:

$$B_{0j} = \gamma_{00} + \gamma_{01}*(anxiety_j) + \gamma_{02}*(disconnection_j) + \gamma_{03}*(autonomy_j) + \gamma_{04}*(other-directedness_j) + \gamma_{05}*(T1\ achievement\ stressors_j) + \gamma_{06}*(T1\ social\ stressors_j) + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}*(disconnection_j) + \gamma_{12}*(autonomy_j) + \gamma_{13}*(other-directedness_j) + u_{1j}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}*(disconnection_j) + \gamma_{22}*(autonomy_j) + \gamma_{23}*(other-directedness_j) + u_{2j}$$

$$\beta_{3j} = \gamma_{30}$$

Results of these HLM analyses for depressive symptoms are presented in Table 4.

Regarding Level 1 results, within-person fluctuations in social stressors (.44, $p < .001$), but not in achievement stressors (.10, *ns*), predicted prospective depressive symptom changes over time. Previous levels of depressive symptoms were negatively associated with the increase in symptoms (-0.96, $p < .001$). Regarding Level 2, initial levels of social stressors and both disconnection/rejection and impaired autonomy schema domains predicted average levels on

depressive symptoms over time. However, no significant interactions between schema domains and within-person change in stressors emerged.

Social anxiety symptoms, schema domains, and stressors model. A similar model was tested for social anxiety. In this case, depressive symptoms at T1 were included to control for the overlapping among depression and social anxiety. The results are presented in Table 5.

Regarding Level 1 results, as with depressive symptoms, within-person fluctuations in social stressors ($.56, p < .001$), but not in achievement stressors, predicted the increase in social anxiety symptoms. Previous levels of social anxiety were negatively associated with the increase in symptoms ($-1.01, p < .001$). Regarding Level 2, individual differences in both initial levels of social and achievement stressors predicted the average level on social anxiety symptoms over time. Similarly, both disconnection/rejection and other-directedness schema domains predicted social anxiety symptom levels over time. Furthermore, the disconnection/rejection and the impaired autonomy domains moderated the predictive association among within-individual change in achievement stressors and subsequent elevation of social anxiety symptoms.

These interactions were displayed by means of a tool developed by Preacher, Curran, and Bauer. (2006). Figure 1 and 2 display the results for stressors depicted at 1 SD above and below the mean for idiographic scores and with schema domains depicted at 1 SD above and below the sample mean. As can be observed, disconnection/rejection and impaired autonomy appear to have opposing roles as moderators of the association between achievement stressors and the increase in social anxiety symptoms. This association is stronger for adolescents who score high on impaired autonomy and weaker for those who score high on disconnection/rejection, although the slopes were not significantly different from 0 in any case.

Moderation by Age and Sex

We conducted additional analyses to test whether sex and age moderated the paths reported above. These analyses were conducted using the same HLM equations with the exception that the main and all interactive effects between age, sex, schema domains and social and achievement stressors were added (e.g., age X disconnection/rejection, age x disconnection/rejection x social stressors, sex x other-directedness x social stressors, etc.). Age was centered around the sample, and sex was coded as -1 (male) and 1 (female).

Depressive symptoms model. Age was significantly associated with depressive symptoms over time ($B = .03$, $SD = .01$, $t = 2.1$, $p = .04$). In addition, age moderated the association between within-individual change in achievement stressors and subsequent elevation in depressive symptoms ($B = -0.02$, $SD = 0.004$, $t = -3.81$, $p < .001$). Figure 3 displays this interaction for the mean and one deviation above the mean of change in achievement stressors and for three age groups (13, 15, and 17 yr.). The association among the longitudinal increase in achievement stressors and change in depressive symptoms tends to be stronger among the younger adolescents relative to the older youth.

Sex was associated with depressive symptoms ($B = 1.01$, $SD = .02$, $t = 5.13$, $p < .001$), such that being female increased the probability of exhibiting increasing levels of depressive symptoms over time. No significant interactions between age or sex and schema domains were found for depressive symptoms.

Social anxiety symptoms model. Sex moderated the predictive association among disconnection/rejection and social anxiety ($B = 1.20$, $SD = 0.50$, $t = 2.38$, $p = .02$) and among impaired autonomy and social anxiety ($B = -0.81$, $SD = 0.38$, $t = -2.12$, $p = .03$). These interactions are displayed in Figure 4 and 5. The slope of the association between disconnection and social anxiety was higher for girls than for boys. Impaired autonomy was associated with an increase of social anxiety symptoms only among boys.

In addition, age moderated the association among within-person change in achievement stressors and subsequent social anxiety symptoms ($B = -0.01$, $SD = 0.01$, $t = -2.54$, $p = .011$). This interaction was similar to that observed for depressive symptoms (and for this reason is not displayed), with higher association among increase in achievement stressors and social anxiety symptoms among the younger adolescents.

Discussion

This study examined whether the EMS proposed in schema therapy can predict depressive and social anxiety symptoms in adolescents. The results have implications for both the cognitive specificity hypothesis, finding that some domains are more relevant to depression and others to social-anxiety, and to the potential cognitive vulnerability-stress extension of the theory, showing that the role of EMS is independent of the occurrence of stressors. Below we discuss the most relevant findings.

EMS associated with Depressive and Social Anxiety Symptoms

This study provides support for the cognitive specificity hypothesis by showing that depression and social anxiety are associated with different EMS profiles. As hypothesized, increases in social anxiety were predicted by the EMS of the disconnection/rejection and other-directedness domains. Both domains have a major focus on interpersonal themes and include contents that are consistent with those cognitions identified in previous research investigating characteristics of socially anxious individuals (Clark & Wells, 1995; Leary, 2001; Wells, 1997). Namely, the other-directedness domain includes the subjugation and need of approval schemas, which involve a high need for being accepted by others, the fear of being rejected, and the feeling that one should suppress one's preferences, decisions, desires, and emotions to avoid negative reactions in others. The disconnection/rejection domain also predicted prospective changes in social anxiety over time. This domain involves schemas, such as abandonment and defectiveness, which are consistent with social cognitions associated with social-phobia, such as negative self-

concept thoughts and anticipatory negative evaluations (Gros et al., 2012). Therefore, these findings suggest that a profile of schemas, involving both seeking others' approval and, at the same time, expectations of being rejected by others, increases the risk of social anxiety. Most of the previous research on cognitive vulnerabilities and social anxiety has focused on the superficial level of easily accessible cognitions (Boden et al., 2012), whereas the present study examined which deep schema domains can predict prospective changes of social anxiety symptoms over time. Thus, these results importantly advance knowledge on the cognitive specificity for social anxiety at the schema level.

In the case of depression, disconnection/rejection and impaired autonomy domains predicted the increase of depressive symptoms over time. The domain of disconnection/rejection has been associated cross-sectionally (Lumley & Harkness, 2007, Muris, 2006; Van Vlierberghe et al., 2010) and prospectively (Calvete, Orue, & Hankin, in press) to depression in adolescents. This domain involves a negative view of the self and feelings of rejection by others, aspects widely associated with depression in previous studies on the level of automatic thoughts (e.g., Calvete & Connor-Smith, 2005). However, although the domain of other-directedness was correlated with depressive symptoms, contrary to expectations, it did not predict the increase of depressive symptoms over time. This contradicts previous studies showing that schemas that imply a focus on others, such as sociotropy, neediness, and social-evaluative concerns, predict depressive symptoms (Calvete, 2011; Little & Garber, 2005; Rudolph & Conley, 2005). Probably the lack of significance in this study is due to the strictness of the analysis, which controlled the overlap between depression and social anxiety, and included all domains simultaneously in the model whereas the mentioned studies did not combined different domains in the same analysis. .

EMS and the cognitive vulnerability to stress theory

Overall results from this study did not support the hypothesis, as extended from Young's original EMS model, that EMS could be a diathesis that interacts with stress to predict later symptoms. The results show that the role of EMS is relatively independent of the within-individual changes in stressors. The only statistically significant interactions occurred among the achievement stressors and the disconnection/rejection and impaired autonomy domains. These interactions showed that the influence of achievement stressors on anxiety symptoms tended to be somewhat higher among adolescents who scored high on impaired autonomy and among those who scored low on disconnection/rejection. However, these interactions are not very relevant since the slope for the association between changes in achievement stressors and social anxiety elevations was not statistically significant in all cases, meaning that the slopes are different from each other but not from zero. These findings suggest that, contrary to what the theory of schemas stipulates, the EMS operate with relative independency to the occurrence of stressors. Furthermore, these limited results for the interactions between EMS and stressors are particularly noteworthy as the match between specific stressors and EMS domains was considered. Abela and Taylor (2003) also obtained limited support for the specific vulnerability hypothesis in children.**

This study provides information on the role of changes in stressors in predicting prospective elevations in depressive and social anxiety symptoms. Specifically, social stressors most strongly predicted changes in symptoms. This is consistent with the importance of interpersonal relationships in adolescence (Flynn & Rudolph, 2011; Hankin et al., 2007; Little & Garber, 2005). Therefore, findings indicate that social stressors and EMS domains exert main, but not interactive, effects on emotional disorders in adolescents.

Furthermore, recent research indicates that the relations among EMS, stressors, and symptoms may be much more complex than stated by traditional diathesis-stress models. Such findings reveal reciprocal relations among these variables (e.g., Calvete, Orue, & Hankin, in press; LaGrange et al., 2011). For instance, schemas and depression can generate new stressors, and

depressive symptoms can worsen previous schemas. Thus, future research should include these bidirectional relations among schemas, stressors, and symptoms to better understand these dynamic associations over time.

Sex and Age Differences

We also examined the role of youths' gender to evaluate whether EMS predicts depressive and social anxiety symptoms equally for adolescent girls and boys. First and consistent with previous studies, girls exhibited higher levels of depressive symptoms (Twenge & Nolen-Hoeksema, 2002), social anxiety (Inderbitzen-Nolan & Walters, 2000; Ranta et al., 2007), and EMS (Calvete, 2011; Mezulis et al., 2010) than boys.

We hypothesized that domains with an interpersonal focus would be more relevant for girls than for boys whereas the impaired autonomy domain would be more relevant for the boys. Results partially supported this hypothesis. On the one hand, disconnection/rejection was associated more strongly with social anxiety among girls than among boys, whereas impaired autonomy was more strongly associated with social anxiety among boys. On the other hand, there were no sex differences in the role of other-directedness. Furthermore, no significant interaction between sex and EMS was obtained for depressive symptoms. Thus, this result adds to a growing body of literature reporting mixed findings regarding sex moderation effects on the role of cognitive vulnerabilities in depression (Abela & McGirr, 2007; Calvete, 2011; Hankin, Abramson, & Siler, 2001; Mezulis et al., 2009; Morris, Ciesla, & Garber, 2008; Prinstein & Aikins, 2004).

The strength of the relations among EMS and symptoms was not moderated by age. As mentioned above, this finding suggests that schemas are already developed among younger adolescents, so that they can prospectively predict increases in symptoms. Moreover, although not an explicit focus in the present study, the results indicate an age x achievement stressors interaction, where increases in achievement stressors are more predictive of both depressive and social anxiety symptoms in younger than in older adolescents. This higher association among

younger adolescents may be because these adolescents had recently initiated secondary education, which represents a substantial change in academic requirements. It is possible that in this transition adolescents get more affected by the stressors that are related to school and sport performance.

Limitations and Implications for Future Research

This study has some limitations that provide opportunities for future research. The main limitation refers to the exclusive use of self-report measures, which could contribute to enhanced associations among variables due to the shared-method variance (Kliwer, Lepore, Oskin, & Johnson, 1998). However, self-report measures have considerable value, constitute a reliable approach to assess emotional states and cognitions, and are excellent predictors of mood, emotion, and psychopathology (Haefffel & Howard, 2010). Furthermore, the YSQ is the standard approach to assess EMS. Still, it would be recommendable that future studies include contextual stress interviews and diagnostic of depression and social anxiety disorders. Another limitation is that the measure we used to assess stressors included a relatively few number of achievement stressors. This could have limited the examination of the cognitive vulnerability-stress hypothesis. Moreover, we only assessed EMS belonging to three schema domains. These EMS were selected based on previous research. Although we tested the factor structure and validity of these schema domains as latent variables using confirmatory factor analyses, future research should be conducted with all the schema domains proposed in schema theory (Young et al., 2003). Finally, the present study used a nonclinical sample and focused on the symptoms level, so findings may not be generalizable to clinical samples of adolescents with depression or anxiety disorders. Furthermore, this study is based on a sample of Spanish adolescents. Although all socioeconomic levels were well represented in the sample, cultural differences could have influenced the results. For instance, interpersonal focus has been proposed to be more relevant in Spain than in other countries (Gouveia,

Clemente, & Espinosa, 2003), which could have contributed to the important role of social stressors in adolescents of this study.

Despite these limitations, this study contributes to a developmental psychopathological understanding of the role of EMS in depression and anxiety. The use of a representative sample of adolescents with multiple measures over time enabled examination of whether EMS have coalesced and formed, and thus are available to predict later symptoms, at this age. Furthermore, this is the first longitudinal study to examine the interaction between EMS and stressors as predictor of later depressive and social anxiety symptoms. Findings suggest that EMS and stressors represent independent influences in the development of depressive and social anxiety symptoms. Whereas most vulnerability-stress studies include general stressors, we included both social and achievement stressors together in same level 1 analysis. Thus, this study contributes to examining which domain of stress (social vs. achievement) is relatively specific predictor of social anxiety and depressive symptoms after controlling for both forms of stress and symptoms in the same model. Finally, the study contributes to identifying which EMS domains are more relevant for social anxiety and depression, thereby providing support to the cognitive specificity hypothesis.

These findings have implications for interventions. The results of this study suggest that the treatment and prevention of adolescents' depression and social anxiety should be focused on changing specific schema domains. In particular, schemas related to the expectation of security and emotional care needs not being fulfilled will be relevant in depression, whereas schemas focused on the need of other's approval are relevant in social anxiety. Moreover, interventions should consider that the presence of social stressful events pose a risk for increasing adolescents' distress.

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Table 1.

Means, standard deviations and correlations among study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	M	SD
1. Disconnection & Rejection	1														2.33	0.82
2. Autonomy	.82	1													2.48	0.94
3. Other-directedness	.80	.89	1												2.86	0.93
4. Social Stressors T1	.36	.34	.30	1											4.37	2.15
5. Achievement Stressors T1	.20	.22	.13	.43	1										1.17	0.99
6. Social Stressors T2	.39	.35	.32	.50	.35	1									6.65	3.98
7. Achievement Stressors T2	.25	.23	.16	.33	.41	.63	1								4.61	2.21
8. Social Stressors T3	.29	.26	.23	.43	.31	.61	.45	1							6.92	4.14
9. Achievement Stressors T3	.20	.17	.13	.31	.35	.45	.51	.63	1						4.78	2.21
10. Depression T1	.59	.55	.52	.27	.18	.31	.18	.22	.10	1					12.48	5.55
11. Depression T2	.47	.42	.40	.22	.16	.40	.24	.33	.18	.55	1				11.27	5.62
12. Depression T3	.46	.41	.39	.30	.18	.40	.24	.46	.27	.49	.61	1			11.33	5.73
13. Social Anxiety T1	.68	.66	.69	.26	.06 ^{ns}	.28	.13	.21	.11	.41	.34	.37	1		41.51	12.81
14. Social Anxiety T1	.49	.48	.52	.23	.06 ^{ns}	.37	.20	.26	.17	.31	.42	.43	.59	1	40.57	13.24
15. Social Anxiety T1	.44	.42	.47	.21	.06 ^{ns}	.29	.12	.34	.16	.31	.38	.53	.54	.65	39.87	13.59

Note. All coefficients are statistically significant at $p < .001$ except those marked as ^{ns}.

Table 2.

Factor loadings of the three schema domains

Disconnection		Impaired Autonomy		Other-Directedness	
Items	Factor loadings	Items	Factor loadings	Items	Factor loadings
Abandonment 1	.96	Failure 1	.89	Subjugation 1	.71
Abandonment 2	.99	Failure 2	.99	Subjugation 2	.93
Abandonment 3	.81	Failure 3	.98	Subjugation 3	.63
Abandonment 4	.91	Failure 4	.86	Subjugation 4	.93
Abandonment 5	.90	Failure 5	.96	Subjugation 5	.66
Emotional deprivation 1	.87	Vulnerability to harm 1	.77	Need of acceptance 1	.89
Emotional deprivation 2	.58	Vulnerability to harm 2	.81	Need of acceptance 2	.98
Emotional deprivation 3	.86	Vulnerability to harm 3	.73	Need of acceptance 3	.99
Emotional deprivation 4	.75	Vulnerability to harm 4	.78	Need of acceptance 4	.90
Emotional deprivation 5	.56	Vulnerability to harm 5	.64	Need of acceptance 5	.98
Mistrust 1	.60				
Mistrust 2	.78				
Mistrust 3	.80				
Mistrust 4	.87				
Mistrust 5	.84				
Defectiveness 1	.83				
Defectiveness 2	.80				
Defectiveness 3	.52				
Defectiveness 4	.89				
Defectiveness 5	.58				

Table 3.

Gender and age differences in the variables of the study

	Girls M(SD) <i>n</i> = 455	Boys M(SD) <i>n</i> = 504	F(1,956)	Cohen's <i>d</i>	Younger adolescents M(SD) <i>n</i> = 461	Older adolescents M(SD) <i>n</i> = 498	F (1,957)	Cohen's <i>d</i>
Disconnection	2.45(0.80)	2.22(0.83)	25.10**	0.28	2.38(0.85)	2.27(0.81)	6.47*	0.13
Autonomy	2.67(0.96)	2.36(0.92)	35.28**	0.33	2.57(0.96)	2.44(0.94)	6.75*	0.14
Other-directedness	3.02(0.93)	2.68(0.91)	45.09**	0.37	2.95(0.98)	2.73(0.87)	18.18**	0.24
Social Stressors T1	6.51(2.18)	6.36(2.15)	1.51	0.07	6.35(2.18)	6.50(2.15)	1.44	0.12
Achievement Stressors T1	4.11(0.95)	4.32(1.02)	13.10**	0.21	4.18(1.00)	4.26(0.98)	1.70	0.08
Social Stressors T2	7.09(3.96)	6.86(4.35)	0.92	0.06	6.65(3.94)	7.26(4.37)	6.11*	0.15
Achievement Stressors T2	4.54(2.12)	4.91(2.30)	8.14*	0.17	4.45(2.23)	5.02(2.18)	19.73**	0.26
Social Stressors T3	6.02(4.42)	5.67(4.68)	1.73	0.08	5.70(4.18)	5.95(4.90)	0.94	0.05
Achievement Stressors T3	4.56(2.14)	4.98(2.26)	1.07	0.19	3.98(2.53)	4.08(2.81)	0.36	0.04
Depressive symptoms T1	13.63(6.16)	11.80(5.33)	33.36**	0.32	12.85(6.01)	12.41(5.55)	1.92	0.08
Depressive symptoms T2	12.30(6.25)	11.15(5.82)	11.66**	0.19	11.87(6.16)	11.63(6.14)	0.48	0.04
Depressive symptoms T3	12.10(6.23)	10.67(5.23)	32.09**	0.25	11.11(5.69)	11.60(5.85)	1.77	0.08
Social Anxiety symptoms T1	43.00(12.54)	39.12(13.15)	28.92**	0.30	41.62(14.27)	40.14(11.69)	4.19*	0.11
Social Anxiety symptoms T2	42.39(13.19)	39.00(14.12)	19.17**	0.25	41.26(14.25)	40.05(13.46)	2.45	0.09
Social Anxiety Symptoms T3	41.29(12.73)	38.59(14.21)	9.53*	0.20	40.48(13.85)	39.29(13.32)	1.84	0.09

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

Table 4.
Schema domains and stressors predicting prospective elevations of depressive symptoms over 1 year.

Fixed Effect	Coefficient	SE	<i>t</i> (954)	<i>p</i>
Level 1				
Achievement stressors, γ_{10}	0.10	0.07	1.46	0.146
Social stressors, γ_{20}	0.44	0.06	7.82	<0.001
Previous level of depression, γ_{30}	-0.96	0.14	-6.93	<0.001
Level 2				
Social Anxiety, γ_{01}	0.04	0.03	1.70	0.090
Disconnection/rejection, γ_{02}	3.22	0.44	7.32	<0.001
Impaired autonomy, γ_{03}	1.25	0.31	4.04	<0.001
Other-directedness, γ_{04}	0.09	0.35	0.25	0.803
Initial level of achievement stressors, γ_{05}	0.06	0.06	0.97	0.329
Initial level of social stressors, γ_{06}	0.29	0.07	3.87	<0.001
Disconnection x achievement stressors, γ_{11}	-0.06	0.14	-0.43	0.664
Autonomy x achievement stressors, γ_{12}	0.07	0.11	0.71	0.480
Other-directedness x achievement stressors, γ_{13}	-0.00	0.12	-0.02	0.983
Disconnection x social stressors, γ_{21}	-0.20	0.11	-1.80	0.073
Autonomy x social stressors, γ_{22}	0.12	0.09	1.35	0.177
Other-directedness x social stressors RS, γ_{23}	0.05	0.11	0.42	0.675
Random effects				
	Estimate	SD	χ^2	<i>p</i>
Intercept variance, u_0	4.91	24.14	3363	< .001
Achievement stressors slope, u_1	0.78	0.61	1192	< .001
Social stressors slope, u_2	0.56	0.60	1101	< .001
Level 1, r_{ij}	5.33	28.51		

Table 5. *Schema domains and stressors predicting prospective elevations of social anxiety symptoms over 1 year.*

Fixed Effect	Coefficient	SE	<i>t</i> (954)	<i>p</i>
Level 1				
Achievement stressors, γ_{10}	0.00	0.08	0.03	.970
Social stressors, γ_{20}	0.57	0.08	7.58	<.001
Previous level of social anxiety, γ_{30}	-1.01	0.20	-5.11	<.001
Level 2				
Depressive symptoms, γ_{01}	0.05	0.04	1.09	.276
Disconnection/rejection, γ_{02}	3.61	0.58	6.24	<.001
Impaired autonomy, γ_{03}	-0.07	0.43	-0.15	.878
Other-directedness, γ_{04}	4.15	0.52	7.98	<.001
Initial level of achievement stressors, γ_{05}	-0.20	0.09	-2.32	.021
Initial level of social stressors, γ_{06}	0.26	0.11	2.34	.019
Disconnection x achievement stressors, γ_{11}	-0.46	0.16	-2.90	.004
Autonomy x achievement stressors, γ_{12}	0.31	0.14	2.20	.028
Other-directedness x achievement stressors, γ_{13}	0.19	0.15	1.30	.193
Disconnection x social stressors, γ_{21}	-0.16	0.14	-1.13	.073
Autonomy x social stressors, γ_{22}	0.04	0.11	0.34	.177
Other-directedness x social stressors RS, γ_{23}	0.00	0.13	0.02	.675
Random effects				
	Estimate	SD	χ^2	<i>p</i>
Intercept variance, u_0	6.86	47.06	3085	<.001
Achievement stressors slope, u_1	0.62	0.39	1030	.038
Social stressors slope, u_2				
Level 1, r_{ij}	7.92	62.71		

Figure 1.

Disconnection x achievement stressors interaction for social anxiety

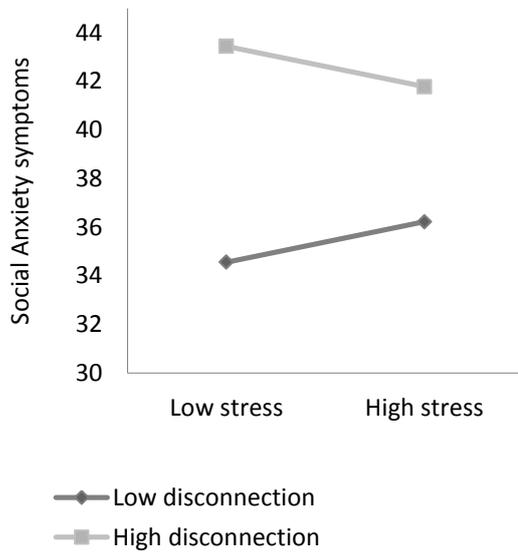


Figure 2.

Impaired autonomy x achievement stressors interaction for social anxiety

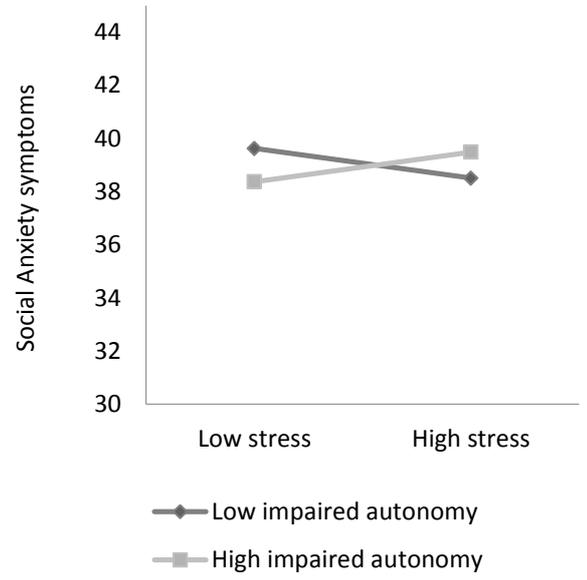


Figure 3.

Age x achievement stressors interaction for depressive symptoms

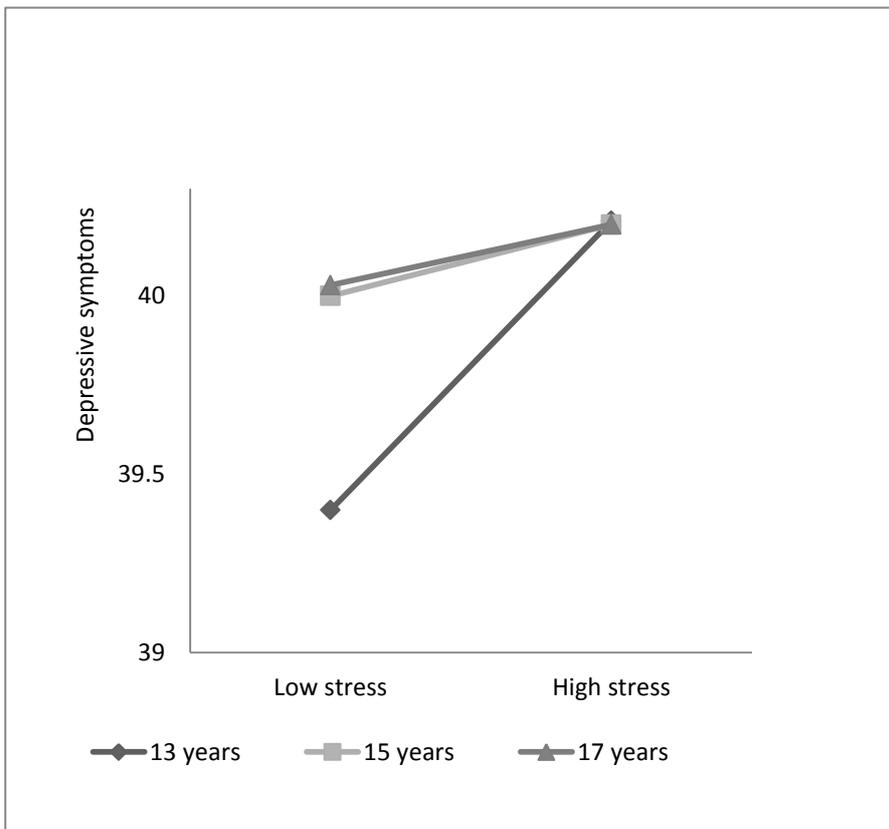


Figure 4.

Sex x disconnection domain interaction for social anxiety symptoms

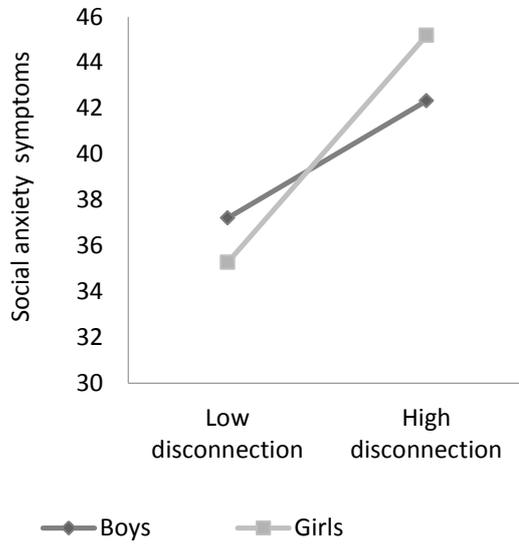


Figure 5.

Sex x impaired autonomy domain interaction for social anxiety symptoms

