The three-year developmental trajectory of anxiety symptoms in non-clinical early adolescents

Núria Voltas, Carmen Hernández-Martínez, Victoria Arija and Josefa Canals
Universitat Rovira i Virgili

Abstract

Background: Adolescence is a period of vulnerability regarding the emergence of internalizing disorders such as anxiety. Anxiety symptoms can persist into adulthood and involve negative outcomes. The aim of the study was to examine the developmental trajectory of several anxiety subtypes by gender, in a non-clinical sample of early adolescents over three phases. **Method:** Using a prospective design, 1514 children (mean-age = 10.23, SD = 1.23) underwent anxiety and depression screening in the first phase. Then, 562 children (mean-age = 11.25, SD = 1.04) participated in the second phase, and 242 (mean-age = 13.52; SD = .94) were followed up in the third phase. The Screen for Child Anxiety Related Emotional Disorders was administered in all phases. Developmental trajectories of anxiety scores were examined using latent growth modelling. **Results:** Manifestations of social phobia and generalized anxiety disorders remained stable. Gender differences were found: boys showed a significant decrease in the developmental trajectories of somatic/panic symptoms, separation anxiety disorder and total anxiety in comparison to girls. **Conclusions:** The data indicate that anxiety symptomatology is a significant clinical phenomenon in school-age children but that it does not increase throughout early adolescence. It is important to identify developmental patterns for anxiety subtypes and in relation to gender.

Keywords: developmental trajectories, anxiety symptoms, early adolescence, SCARED, LGM.

Resumen

Trayectoria de desarrollo de los síntomas de ansiedad durante tres años en una muestra comunitaria de adolescentes. **Antecedentes:** la adolescencia es un período de vulnerabilidad para la aparición de manifestaciones de ansiedad. El objetivo del estudio fue examinar la trayectoria de varios subtipos de ansiedad en escolares, a lo largo de tres fases y teniendo en cuenta el género. **Método:** utilizando un diseño prospectivo, 1.514 sujetos (media-edad= 10.23; DE= 1.23) se sometieron a un cribado para detectar síntomas de ansiedad y/o depresivos. 562 sujetos (media-edad= 11.25; DE= 1.04) participaron en la segunda fase y 242 (media-edad= 13.52; DE= .94) fueron seguidos en la tercera fase. En las tres fases se administró el Screen for Child Anxiety Related Emotional Disorders. Se calcularon las trayectorias de desarrollo de la ansiedad mediante modelos de crecimiento latente. **Resultados:** las manifestaciones de fobia social y de ansiedad generalizada se mantuvieron estables. Se encontraron diferencias entre sexos en las trayectorias de desarrollo de la ansiedad somática/pánico, ansiedad de separación y ansiedad total; los niños mostraron un decrecimiento significativo en comparación con las niñas. **Conclusiones:** los síntomas de ansiedad son un fenómeno clínico significativo en los escolares, pero no aumentan durante la adolescencia temprana. Es importante identificar patrones de desarrollo de cada subtipo de ansiedad teniendo en cuenta el género.

Palabras clave: trayectorias de desarrollo, síntomas de ansiedad, adolescencia temprana, SCARED, modelos de curvas de crecimiento latente.

The transition to adolescence involves many biological, psychological, cognitive and social changes. Adolescence is a period of vulnerability regarding the emergence of internalizing disorders such as anxiety (McLaughlin & King, 2015). It is known that internalizing symptoms are not as overt as externalizing symptoms and hence, there is a risk that they may not be detected. Consequently, if anxiety symptoms are untreated during childhood or adolescence, they often can persist into adulthood or be related to other multiple negative outcomes (Bettge, Wille, Barkmann, Schulte-Markwort, & Ravens-Sieberer, 2008). Even subclinical anxiety symptoms during childhood and adolescence can be associated with negative outcomes such as later psychopathology in adolescence or adulthood (Fergusson, Horwood, Ritter, & Beautrais, 2005; Georgiades, Lewinsohn, Monroe, & Seeley, 2006).

Current prevalence rates for any anxiety disorder in pre-adolescent samples from several countries range between 2-32% (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Coughlan et al., 2014; Merikangas et al., 2010). In Spain, these rates could reach 47% if subclinical anxiety or anxiety symptoms are taken into account (Orgilés, Méndez, Espada, Carballo, & Piqueras, 2012; Romero-Acosta et al., 2010).

To date, there have been various follow-up epidemiologic studies that examine the course of anxiety symptoms in several developmental stages using community samples (Côté et al., 2009; Hale III, Raaijmarkers, Muris, Van Hoof, & Meeus, 2008; Leikanger & Larsson, 2012; McLaughlin & King, 2015; Nelemans et al., 2014). Studies generally suggest that anxiety symptoms present a chronic development, albeit with various degrees of

severity (Bosquet & Egeland, 2006). Overall, previous studies of anxiety trajectories showed that anxiety symptoms tend to increase in frequency over the first five years of life (Côté et al., 2009), decrease during early adolescence, and then increase from middle to late adolescence and into adulthood (McLaughlin & King, 2015; Van Oort, Greaves-Lord, Verhulst, Ormel, & Huizink, 2009).

Developmental psychopathology models suggest that normative developmental changes exist in specific expressions of anxiety. The incidence of certain subtypes of anxiety is therefore related to the subject's developmental stage. Separation anxiety and some types of phobias have been observed to have an earlier age of onset than generalized anxiety and panic disorders, which are more frequent in late adolescence and young adulthood (Becker et al., 2007; Kessler et al., 2005). Many complex interactions between biological, behavioural or cognitive processes influence the developmental trajectories of children who present specific anxiety symptoms. This fact is well documented by Weems (2008) and Weems, Graham, Scott, Banks, & Russell (2013). For instance, separation anxiety symptoms are more prevalent in children and decrease with age as the sense of self-reliance and autonomy from parents develops in school aged children. As children grow, their cognitive abilities develop and earlier anxieties give way to other concerns resulting from an increasing understanding of a number of issues such as crime, death, and danger. For this reason, generalized anxiety and somatic symptoms are positively correlated with age. Social anxiety symptoms also showed positive correlations with age and again this is consistent with the idea that increasing social understanding and comprehension in adolescence leads to social and evaluative concerns becoming the dominant expression of anxiety in older youths (Weems, 2008; Weems et al., 2013). Nelemans et al. (2014) published an important study that prospectively examined the developmental trajectories of anxiety symptoms from early to late adolescence. Specifically, they found that symptoms of general anxiety disorder (GAD) and panic disorder (PD) displayed a nonlinear increase from early into late adolescence, whereas symptoms of social anxiety (SA) and separation anxiety (SAD) displayed a nonlinear decrease over time. Significant gender differences were found for symptoms of GAD, SAD, and SA, with girls reporting higher levels of these symptoms over time. Those authors concluded that different age-related normative developmental changes exist during adolescence for different anxiety disorder symptoms. Moreover, they also found that girls presented higher levels of generalized anxiety, separation anxiety, and social anxiety symptoms over time.

The developmental theory of Weems suggests that some children follow a stable trajectory, which can be either high or low, whereas others outgrow their anxious reactions (Duchesne, Larose, Vitaro, & Tremblay, 2010; Leikanger & Larsson, 2012). Different groups of children, therefore, may follow different trajectories with respect to anxiety (Cicchetti & Rogosch, 2002). In this regard, in addition to biological factors, the theoretical model suggested by Weems (2008) also takes into account general levels of predisposition to anxious emotion and social risk factors. This model has been replicated by other authors who have generally found the following anxiety symptoms trajectories: children who generally display no anxiety or low and stable levels of anxiety symptoms with modest declines at times (between 19% and 73%); children who display stable and high levels of anxiety (between 8% and 34%); children who show different patterns of decline (29%) or escalation over time (18-19%) most likely due to environmental influences; and children who display fluctuations over time (high initial rates that decrease in the middle of the time period and increase at the end of the time period) (between 1% and 5%). The latter have been described by Weems, Hayward, Killen, & Taylor (2002) as an unreliable respondents, a finding supported by other authors (Allan, Felton, Lejuez, Macpherson, & Schmidt, 2015; Morin et al., 2011; Weems, 2008; Weems et al., 2002).

Given the high prevalence of anxiety symptoms in Spanish school-children and the lack of follow-up studies, the present study's main aim was to prospectively examine the developmental trajectories of anxiety symptoms in school-aged children at the beginning of adolescence. We used the anxiety factors from the *Screen for Child Anxiety Related Emotional Disorders* (SCARED) questionnaire (Birmaher et al., 1999): Somatic/Panic (S/P), Social Phobia (SP), Generalized Anxiety (GAD), and Separation Anxiety (SAD). SCARED is regarded as one of the best multidimensional anxiety disorder symptoms questionnaires and has been proven to be a useful, valid and reliable tool for screening anxiety symptoms in samples of school-age children (Canals, Hernández-Martínez, Cosi, & Domènech, 2012; Myers &Winters, 2002; Vigil-Colet et al., 2009).

Method

Participants

We conducted a three-year follow-up study of 242 early adolescents. The participants were recruited from a three-phase epidemiological study of anxiety and depression disorders that was conducted in the town of Reus (a Spanish town of 100,000 inhabitants). The first phase was conducted during the 2006/2007 academic year, the second phase during the 2007/2008 academic year, and the third phase during the 2009/2010 academic year. Therefore, one year passed between the first and second measurements, and two years passed between the second and third measurements. The baseline sample in the study was a group of 1,514 children (720 boys) in the fourth, fifth and sixth grades of primary school with a mean age of 10.23 (SD = 1.23). The participants came from thirteen schools randomly chosen from the town's state schools and state-subsidized private schools. Regarding socioeconomic status (SES), 39.5% of the children belonged to families with a low socioeconomic status, 42.5% to families with a medium SES and 18% to families with a high SES. Furthermore, 87.5% of the sample was born in Spain, and 85.9% belonged to a nuclear family. After screening the first phase, 562 students (254 boys) with a mean age of 11.25 (SD = 1.04) were selected to participate in the second phase as subjects at risk of anxiety or depression disorders (72.1%) or as members of a control group without risk (27.9%). Two years later, all 562 children were invited to participate in the third phase follow-up, and 242 (95 boys) with a mean age of 13.52 (SD = .94) did so. No significant differences were found between the psychopathological scores of children who participated in the third phase and children who dropped out of the study, or between these two groups and socio-demographic variables such as gender, birthplace or family type. However, there were differences related to SES: low SES participants were associated with higher dropout rates than medium or high SES participants ($\chi^2_{2,561}$ = 13.557; p = .001).

Instruments

Screen for Childhood Anxiety Related Emotional Disorders (SCARED) (Birmaher et al., 1999) is a self-report questionnaire comprising 41 items that assess anxiety disorder symptoms in subjects aged 8 to 18. Subjects are asked about the frequency of each symptom using a 3-point response format: 0 (almost never), 1 (sometimes), and 2 (often). The internal consistency of the Spanish version is α = .86. It consists of 4 factors, namely Somatic/Panic (S/P) (12 items/α = .78), Social Phobia (SP) (7 items/α = .69), Generalized Anxiety (GAD) (9 items/α = .69), and Separation Anxiety (SAD) (13 items/α = .70) (Vigil-Colet et al., 2009). For the present paper, a score of 25 was taken as the cut-off point for risk of anxiety symptomatology (Birmaher et al., 1999; Canals et al., 2012). Canals et al. (2012) also proposed cut-off scores for the SCARED factors with sensitivities between 74% and 78%.

We designed a *socio-demographic questionnaire* for this study to assess the socio-demographic characteristics of the sample. The children answered questions about age, gender, place and date of birth, family type and parental occupation. Their parents corroborated this information. SES was established using the Hollingshead index (Hollingshead, 2011). Family SES was determined by combining the data obtained from the father and the mother. The scores ranged from 0 to 66; therefore, to obtain three categories (low, medium and high), we considered scores below 22 to be low SES, those between 23 and 44 to be medium SES, and those above 44 to be high SES. This questionnaire was administered in the first phase.

Procedure

Before beginning the study, we obtained the approval of the Rovira i Virgili University's ethics committee to conduct research on individuals and received permission from the Catalan Government's Department of Education. Then, we selected a representative sample of school-age children. Cluster sampling was conducted by randomly selecting a set of 13 schools from 26 schools across all five representative areas of Reus. We then contacted the school boards, who all agreed to participate. Letters were sent to all parents to inform them about the study and ask for their written informed consent.

Participants in the first phase answered screening tests for anxiety and depressive symptoms. During the second phase, subjects at risk of anxiety and depressive disorders according to their cut-off point in the screening tests were selected. Given that, at this time, the SCARED cut-off had not yet been validated in Spain, we selected the 32 score corresponding to percentile 75 of our sample and which was the same percentile used by Birmaher et al. (1999) in a sample of outpatients from the USA; the *Children's Depression Inventory* (CDI) cut-off point was 17 (Canals, Martí-Henneberg, Fernández-Ballart, & Domènech, 1995); the *Leyton Obsessional Inventory-Child Version* (LOI-CV) cut-off point was an interference score of 25 (Berg, Whitaker, Davies, Flament, & Rapoport, 1988). Controls with the same age and gender but without risk scores on any test were also selected. The SCARED was also administered in the second phase. Finally, in the third phase, all children from the second phase were re-invited to participate and a retest with the SCARED was conducted. The participants completed the questionnaire in small groups with the researchers present.

Data analysis

Statistical analyses were performed using SPSS 20.0 (SPSS Inc, Chicago, IL, USA) and Mplus version 6.0 (Muthén & Muthén, 2010), using the Maximum Likelihood Robust (MLR) estimation method.

First, we calculated the following descriptive statistics of the anxiety variables: mean, standard deviation, the Pearson correlations between successive phases and the within-phase correlations between different anxiety symptoms.

Developmental trajectories of early adolescent anxiety scores were examined using Mplus' latent growth modelling (LGM). In LGM, development is represented by latent factors: an intercept factor and one or more slope factors. In the present study, mean levels of anxiety scores at each phase were used as indicators to estimate the latent intercept and slope factors in the LGM, and SES was introduced as a control variable. The periods between the three measurements were not of the same length (one year between the first phase and the second phase, and two years between the second phase and the third phase). Only linear growth functions were examined. The growth models for each of the four SCARED factors and the total SCARED scores were analysed on the basis of several goodness of fit indices: the comparative fit index (CFI), where values > 0.90 indicate a satisfactory fit and values > 0.95 indicate a good fit; the root mean square error of approximation (RMSEA), where values ≤ .08 indicate an acceptable fit and values ≤ .05 indicate a good fit; and the 90% confidence interval (CI) of the RMSEA (Kline, 2005; Nelemans et al., 2014). Gender differences in the developmental trajectories of early adolescent anxiety scores were examined using multigroup LGM analyses. The same LGM model was applied to boys and girls separately to allow comparisons to be made between them.

Results

Descriptive data

Table 1 shows descriptive data (mean and standard deviation) of the SCARED factors and total scores by phase and gender.

Correlations between successive study phases ranged from .35 to .45 for S/P, from .41 to .52 for SP, from .28 to .41 for GAD, from .40 to .48 for SAD, and from .40 to .48 for total anxiety. Within phases, correlations between different anxiety symptoms ranged from .32 to .85 in phase 1, from .38 to .83 in phase 2, and from .28 to .80 in phase 3. Anxiety symptoms showed a moderate-to-high rank-order stability.

Evolution of the SCARED scores: gender differences

Figure 1 represents the developmental trajectories of the four SCARED factors and the total SCARED scores for the three phases of the study. Results from LGM showed the best-fitting growth models for SP and GAD. Models for S/P, SAD, and total SCARED did not show a good fit despite presenting an acceptable CFI (see the fit statistics in Table 2). The SP and GAD scores remained fairly stable from the first phase to the third.

When we tested the same LGM model for boys and girls separately, we found that, for girls, the models for S/P factor, SAD factor and total anxiety scores did not show a good fit. As the results have already shown, the best fitting growth models were for

Table 1
SCARED mean scores by gender and the three phases of the study

	Phase 1	Phase 2	Phase 3
	720 boys/794 girls	254 boys/308 girls	95 boys/147 girls
Factor 1: S/P			
Boys	3.84 (3.56)*	4.02 (3.43)	2.67 (3.17)
Girls	4.10 (3.51)	4.21 (3.68)	3.67 (3.35)
Factor 2: SP			
Boys	5.54 (2.97)	5.73 (3.14)	5.29 (3.33)
Girls	6.30 (2.85)	6.45 (2.94)	5.40 (3.25)
Factor 3: GA			
Boys	5.92 (3.08)	6.33 (3.15)	5.91 (3.53)
Girls	6.37 (3.02)	6.91 (3.13)	6.62 (3.42)
Factor 4: SA			
Boys	7.94 (4.23)	7.74 (4.33)	4.84 (3.30)
Girls	8.56 (3.98)	7.92 (4.24)	5.60 (3.86)
Total SCARED			
Boys	23.25 (10.67)	23.81 (10.96)	18.71 (10.36)
Girls	25.33 (9.94)	25.38 (10.32)	21.29 (10.34)

SD, Standard deviation; S/P, Somatic/Panic; SP, Social Phobia, GA, Generalized Anxiety; SA, Separation Anxiety; SCARED, Screen for Childhood Anxiety and Related Emotional Disorders; * Mean (Standard Deviation)

SP and GAD factors. Results from the multigroup LGM analyses indicated that there were statistically significant differences between boys and girls in the developmental trajectories of the S/P factor (χ^2 (4) = 14.99, $p<.002$), SAD factor (χ^2 (4) = 22.44, $p<.001$), and SCARED total scores (χ^2 (4) = 17.38, $p<.004$) over the three phases of the study (see figure 2). For S/P, SAD, and total SCARED scores, in the first phase, boys presented higher scores than girls. Along the trajectory, this initial trend changed, and at the end of the study, girls presented higher scores than boys.

Discussion

This is a follow-up study of the developmental trajectories of self-reported anxiety symptoms in a community sample of school-age children at the beginning of the adolescence. The results show that SP and GAD scores remained fairly stable, whereas S/P, SAD, and total scores decreased slightly over the period studied. However, the models for these three factors did not show a good fit and, for this reason, the data are difficult to interpret. These results are partially consistent with the developmental theory put forward by Weems (2008) and with the findings of Weems et al. (2013). As in that study, in our sample, GAD remained stable; however, contrary to expectations, SP remained also stable. This may be due to our respondents' age (9 to 12 years); that is, some concerns relating to social evaluation may begin at a later stage of development. In
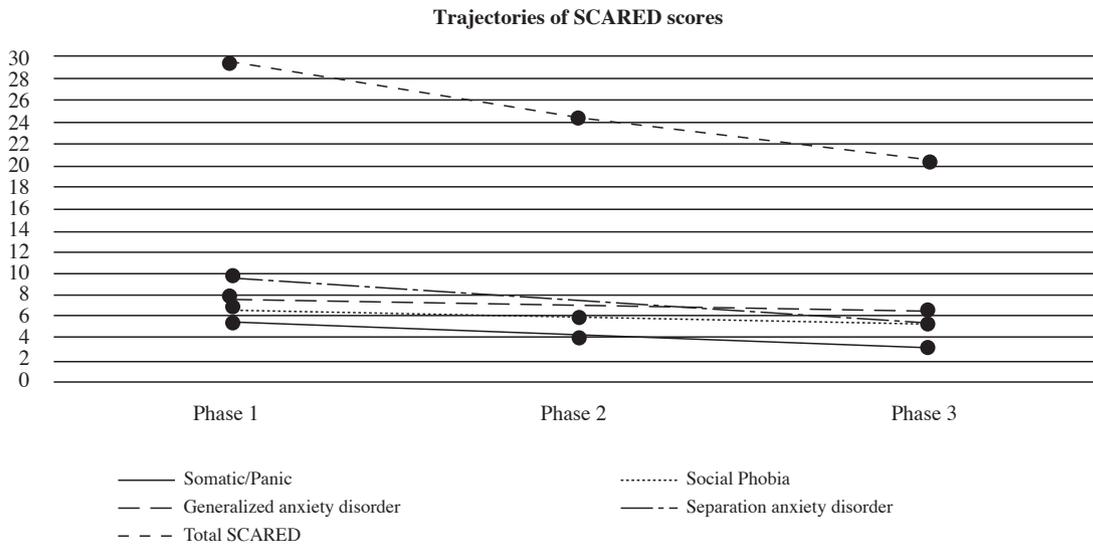

Trajectories of SCARED scores

Somatic/Panic
Social Phobia
Generalized anxiety disorder
Separation anxiety disorder
Total SCARED

Figure 1. Developmental trajectories of SCARED scores resulting from latent growth modeling

Table 2
Model fit statistics for the linear growth model of anxiety symptomatology

	Chi-square	df	p	Chi-square/df	CFI	RMSEA (90%CI)	Intercepts (SE)	p
FACTORS								
S/P	13.92	2	.001	6.96	.846	.157 (.086 - .239)	4.461 (.52)	.001
SP	2.99	2	.224	1.50	.992	.045 (.000 - .144)	6.833 (.42)	.001
GAD	2.02	2	.364	1.01	1.000	.007 (.000 - .128)	6.478 (.44)	.001
SAD	16.84	2	.001	8.42	.886	.175 (.104 - .257)	9.521 (.61)	.001
Total SCARED	11.24	2	.004	5.62	.911	.138 (.068 - .222)	27.359 (1.45)	.001

df, degree of freedom; CFI, comparative fit index; RMSEA, root mean square error of approximation; CI, confidence interval; S/P, Somatic/Panic; SP, Social Phobia, GA, Generalized Anxiety; SA, Separation Anxiety; SCARED, Screen for Childhood Anxiety and Related Emotional Disorders
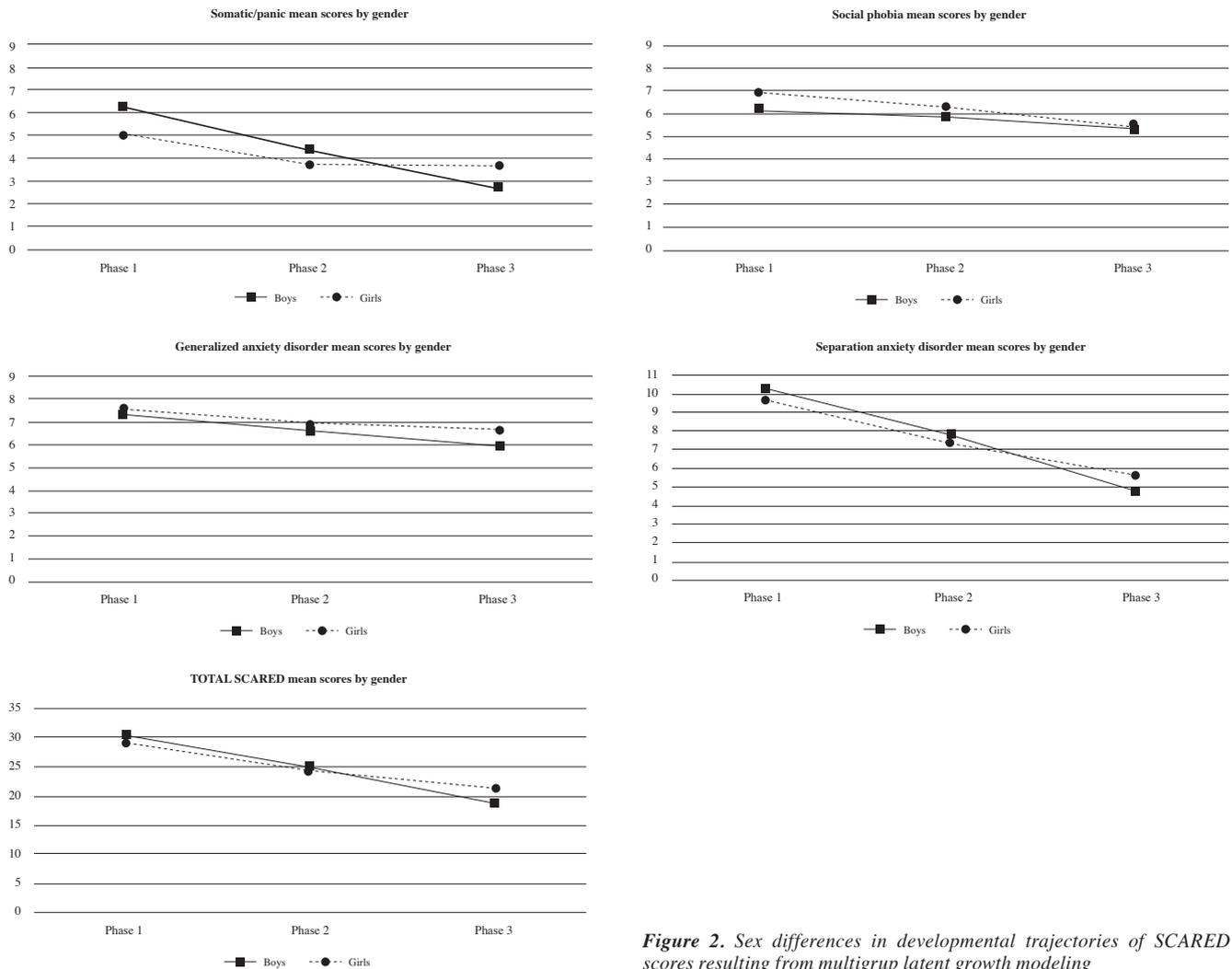
Somatic/panic mean scores by gender

Social phobia mean scores by gender

Generalized anxiety disorder mean scores by gender

Separation anxiety disorder mean scores by gender

TOTAL SCARED mean scores by gender

Figure 2. *Sex differences in developmental trajectories of SCARED scores resulting from multigrup latent growth modeling*

relation to GAD, also Leikanger, Ingul, and Larsson (2012) and Van Oort et al. (2009) found that GAD symptoms increased or did not decrease during adolescence, whereas other anxiety subtypes showed a general reduction. Moreover, our findings agree with previous studies that have found that SP was highly prevalent in early adolescence and could significantly interfere in important areas of children's lives such as academic achievement and social relationships (Beesdo-Baum et al., 2012; Gren-Landell et al., 2009).

With regard to gender, our results coincide with other studies, which have shown that girls generally present higher rates of anxiety than boys (McLaughlin & King, 2015; Orgilés et al., 2012). The evolution of the SCARED scores by gender in our study showed that girls obtained higher scores than boys in the third phase (see Figure 2). We can thus suggest that 13-year-old girls present higher levels of anxiety than 13-year-old boys. In this regard, the findings showed that girls presented higher S/P and SAD symptoms than boys, as in other studies (Orgilés et al., 2012; Ruchkin & Schwab-Stone, 2014). Girls may report more somatic symptoms than boys because girls may be more willing to report these types of complaint. Another explanation may be the different physiological changes in boys and girls during the

study period (Barsky, Peekna, & Borus, 2001). The results also showed differences between boys and girls in the developmental trajectories of S/P, SAD and SCARED total scores. In contrast, in a recent study McLaughlin and King (2015) did not find variation between genders in symptom trajectories. Specifically, our results showed that the scores for S/P, SAD and total SCARED were higher for boys than for girls in the first phase but that this changed in the third phase. In this regard, the increased anxiety symptoms among girls in early adolescence may reflect a heightened sensitivity among girls in this age group that professionals must take into account, as suggested by Leikanger et al. (2012).

This study has several limitations. One limitation is that we did not control whether the participants had been treated at any of the three phases or whether their demographic data had changed over the three years. On another hand, in relation to the observed results, unfortunately, not all the developmental trajectories showed a good fit. The main limitation, however, is the high rate of attrition in the third phase despite our efforts to ensure maximum participation. The analyses were adjusted for SES to control for the significant differences related to the SES factor between children who participated in the final phase and those who did not. Furthermore, our three-phase study examined

a limited period of development compared with other studies such as Nelemans et al. (2014), who examined the entire period of adolescence. Consequently, the study would need to include more phases to demonstrate significant changes in the evolution of anxiety scores.

In conclusion, our results indicate that anxiety symptomatology is an important clinical phenomenon in school-age children that does not increase throughout early adolescence. Specifically, during the study period, children showed stable levels of SP and GAD symptoms, and a trend to decrease in S/P and SAD. In the study's last phase, girls showed higher levels for all anxiety subtypes than boys. Girls may be predisposed towards presenting anxiety symptoms throughout adolescence and into adulthood, and this could have negative outcomes in later stages. As in Nelemans et al. (2014), the present results suggest that it is important to examine all the anxiety symptom dimensions, particularly in relation to possible gender differences. The developmental course of anxiety symptoms needs to be better understood to increase chances of early detection and thus enable appropriate treatments to be adopted in order to prevent serious problems later in life.

Acknowledgements

References

Allan, N. P., Felton, J. W., Lejuez, C. W., Macpherson, L., & Schmidt, N. B. (2015). Longitudinal investigation of anxiety sensitivity growth trajectories and relations with anxiety and depression symptoms in adolescence. *Development and Psychopathology, 26*, 1-11.

Barsky, A. J., Peekna, H. M., & Borus, J. F. (2001). Somatic symptom reporting in women and men. *Journal of General Internal Medicine*, *16*, 266-275.

Becker, E. S., Rinck, M., Türke, V., Kause, P., Goodwin, R., Neumer, S., & Margraf, J. (2007). Epidemiology of specific phobia subtypes: Findings from the Dresden Mental Health Study. *European Psychiatry, 22*, 69-74.

Berg, C. Z., Whitaker, A., Davies, M., Flament, M. F., & Rapoport, J. L. (1988). The survey form of the Leyton Obsessional Inventory Child Version: Norms from an epidemiological study. *Journal of the American Academy of Child and Adolescent Psychiatry, 27*, 759-763.

Bettge, S., Wille, N., Barkmann, C., Schulte-Markwort, M., & Ravens-Sieberer, U. (2008). Depressive symptoms of children and adolescents in a German representative sample: Results of the BELLA study. *European Child & Adolescent Psychiatry, 17*, 71-81.

Birmaher, B., Brent, D. A., Chiappetta, L., Bridge, J., Monga, S., & Baugher, M. (1999). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): A replication study. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 1230-1236.

Bosquet, M., & Egeland, B. (2006). The development and maintenance of anxiety symptoms from infancy through adolescence in a longitudinal sample. *Development and Psychopathology, 18*, 517-550.

Canals, J., Hernández-Martínez, C., Cosi, S., & Domènech, E. (2012). Examination of a cutoff score for the Screen for Child Anxiety Related Emotional Disorders (SCARED) in a non-clinical Spanish population. *Journal of Anxiety Disorders*, *26*, 785-791.

Canals, J., Martí-Henneberg, C., Fernández-Ballart, J., & Domènech, E. (1995). A longitudinal study of depression in urban Spanish puberal population. *European Child & Adolescent Psychiatry, 4*, 102-111.

Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Consulting and Clinical Psychology, 70*, 6-20.

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60*, 837-844.

Côté, S. M., Boivin, M., Liu, X., Nagin, D. S., Zoccolillo, M., & Tremblay, R. E. (2009). Depression and anxiety symptoms: Onset, developmental course and risk factors during early childhood. *Journal of Child Psychology and Psychiatry, 50*, 1201-1208.

Coughlan, H., Tiedt, L., Clarke, M., Kelleher, I., Tabish, J., Molloy, C., & Cannon, M (2014). Prevalence of DSM-IV mental disorders, deliberate self-harm and suicidal ideation in early adolescence: An Irish population-based study. *Journal of Adolescence*, *37*, 1-9.

Duchesne, S., Larose, S., Vitaro, F., & Tremblay, R. E. (2010). Trajectories of anxiety in a population sample of children: Clarifying the role of children's behavioral characteristics and maternal parenting. *Development and Psychopathology, 22*, 361-373.

Fergusson, D. M., Horwood, J., Ritter, E. M., & Beautrais, A. L. (2005). Subthreshold depressive symptoms in adolescence and mental health outcomes in adulthood. *Archives of General Psychiatry, 62*, 66-72.

Georgiades, K., Lewinsohn, P. M., Monroe, S. M., & Seeley, J. R. (2006). Major Depressive Disorder in Adolescence: The Role of Subthreshold Symptoms. *Journal of the American Academy of Child & Adolescent Psychiatry, 45*, 936-944.

Gren-Landell, M., Tillfors, M., Furmark, T., Bohlin, G., Andersson, G., & Svedin, C.G. (2009). Social phobia in Swedish adolescents. *Social Psychiatry and Psychiatric Epidemiology, 44*, 1-7.

Hale III, W.W., Raaijmakers, Q., Muris, P., Van Hoof, A., & Meeus, W. (2008). Developmental trajectories of adolescent anxiety disorder symptoms: A 5-year prospective community study. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*, 556-564.

Hollingshead, A. B. (2011). Four Factor Index of Social Status. *Yale Journal of Sociology, 8*, 21-52.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62*, 593-602.

Leikanger, E., Ingul, J., & Larsson, B. (2012). Sex and age-related anxiety in a community sample of Norwegian adolescents. *Scandinavian Journal of Psychology, 53*, 150-157.

Leikanger, E., & Larsson, B. (2012). One-year stability, change and incidence in anxiety symptoms among early adolescents in the general population. *European Child & Adolescent Psychiatry, 21*, 493-501.

McLaughlin, K. A., & King, K. (2015). Developmental trajectories of anxiety and depression in early adolescence. *Journal of Abnormal Child Psychology*, *43*, 311-323.

Merikangas, K. R., He, J. P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., Benjet, C., Georgiades, K., & Swendsen, J. (2010). Lifetime prevalence of mental disorders in U.S. adolescents: Results from the national comorbidity survey replication-adolescent supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry, 49*, 980-989.

Morin, A. J. S., Maiano, C., Nagengast, B., Marsh, H. W., Morizot, J., & Janosz, M. (2011). General growth mixture analysis of adolescents' developmental trajectories of anxiety: The impact of untested invariance assumptions on substantive interpretations. *Structural Equation Modeling*, *18*, 613-648.

Muthén, B. O., & Muthén, L. K. (2010). Mplus (Version 6) Los Angeles. *CA: Muthén & Muthén*.

Myers, K., & Winters, N. C. (2002). Ten-year review rating scales. II. Scales for internalizing disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 41,* 634-659.

Nelemans, S. A., Hale III, W. W., Branje, S. J., Raaijmakers, Q. A., Frijns, T., Van Lier, P.A., & Meeus, W.H. (2014). Heterogeneity in development of adolescent anxiety disorder symptoms in an 8-year longitudinal community study. *Development and Psychopathology, 26,* 181-202.

Orgilés, M., Méndez, X., Espada, J., Carballo, J., & Piqueras, J. (2012). Anxiety disorder symptoms in children and adolescents: Differences by age and gender in a community sample. *Revista de Psiquiatría y Salud Mental, 5,* 115-120.

Romero-Acosta, K., Canals, J., Hernández-Martínez, C., Jané, M.C., Viñas, F., & Domènech-Llaberia, E. (2010). Comorbidity between SCARED anxiety factors and depressive symptomatology in 8- to 12-year-old children. *Psicothema, 22,* 613-618.

Ruchkin, V., & Schwab-Stone, M. (2014). A longitudinal study of somatic complaints in urban adolescents: The role of internalizing psychopathology and somatic anxiety. *Journal of Youth and Adolescence*, *43*, 834-845.

Van Oort, F. V. A., Greaves-Lord, K., Verhulst, F. C., Ormel, J., & Huizink, A. C. (2009). The developmental course of anxiety symptoms during adolescence: The TRAILS study. *Journal of Child Psychology and Psychiatry, 50,* 1209-1217.

Vigil-Colet, A., Canals, J., Cosi, S., Lorenzo, U., Ferrando, P. J., Hernández-Martínez, C., Jané, C., Viñas, F., & Domènech, E. (2009). The factorial structure of the 41-item version of the Screen for Child Anxiety Related Emotional Disorders (SCARED) in a Spanish population of 8 to 12 years-old. *International Journal of Clinical and Health Psychology*, *9*, 313-327.

Weems, F. C. (2008). Developmental trajectories of childhood anxiety: Identifiyng continuity and change in anxious emotion. *Developmental Review, 28,* 488-502.

Weems, C. F., Graham, R. A., Scott, B. G., Banks, D. M., & Russell, J. D. (2013). Suppressor effects and age differences in the expression of anxious emotion. *Personality and Individual Differences, 55,* 283-287.

Weems, C. F., Hayward, C., Killen, J. D., & Taylor, C. B. (2002). A longitudinal investigation of anxiety sensitivity in adolescence. *Journal of Abnormal Psychology*, *111*, 471-477.