

A Comparison of Anxiety Symptoms in Community-Based Chinese and Italian Adolescents

Elisa Delvecchio · Diana Mabilia · Daniela Di Riso ·
Diana Miconi · Jian-Bin Li

Published online: 14 September 2014
© Springer Science+Business Media New York 2014

Abstract Anxiety symptoms are one of the most common diseases in youth worldwide. However, there is still scant literature on the role that cross-cultural factors may play in the expression and development of anxiety. Our study is aimed to compare anxiety symptoms in community based Chinese and Italian adolescents using the Spence Children’s Anxiety Scale (SCAS). In addition to the SCAS, the 3416 adolescents (13–18 years old) involved in the study, filled in the strengths and difficulties questionnaire (SDQ). A multi-group factor analysis confirmed the adequacy of a 6-factor inter-correlated model across the countries. Results supported the convergent validity between the SCAS and the internalizing behaviours and the divergent validity between the SCAS and the externalizing problems, as measured by the SDQ. Chinese adolescents reported higher anxiety symptoms than Italian ones and girls scored higher than boys. No age differences were found. In addition, a comparison between the current research and previous studies conducted in China and Italy was carried out, showing few significant differences among the studies concerning the Italian samples. However, our Chinese adolescents reported greater anxiety symptoms compared to previous studies. Results support the use of the SCAS as a potentially valuable tool for assessing anxiety symptoms in both countries. The discussion highlighted the importance to consider cultural, as well as sub-cultural issues as to promote the understanding and prevention of anxiety symptoms in adolescence.

Keywords Spence Children’s Anxiety Scale · Anxiety · Adolescent · China · Italy

Introduction

Anxiety disorders are one of the most common forms of psychopathology in childhood and adolescence (Beesdo et al. 2010). They are linked to impairment in several areas of life and may represent a risk factor for other psychiatric disorders (Antony and Stein 2009). The prevalence estimates, ranging from 5 to 25 %, show a high change rate worldwide (Brown and Barlow 2009). Reasons for this variability might lie in differences in the age groups, in the definition of the diagnostic criteria used, in the high comorbidity that anxiety symptoms share with other psychological disorders (e.g. depression) or in the assessment measures considered (Beesdo et al. 2009).

The Spence Children’s Anxiety Scale (SCAS; Spence 1997) is one of the most used self-report measures devised to assess multiple symptoms of anxiety in nonclinical children and adolescents following the criteria of the DSM-IV (American Psychiatric Association 1994) (Li et al. 2011). The SCAS was validated and used across several different settings and cultures (Essau et al. 2012). It showed good to excellent psychometric properties in many countries (e.g., the US, Australia, UK, Netherlands, Germany, Italy, Cipro, Greece, Spain, China, Japan, Brazil, Iran, Nigeria) (Delvecchio et al. 2010; Essau et al. 2011, 2004; Ishikawa et al. 2009; Mellon and Moutavelis 2007; Muris et al. 2002, 2000; Spence 1998; Spence et al. 2003; Tortella-Feliu et al. 2005; Whiteside and Brown 2008). The SCAS has been found to be reliable in terms of internal consistency and test–retest reliability (Di Riso et al. 2013; Essau et al. 2011; Mellon and Moutavelis 2007). Several

E. Delvecchio (✉) · D. Mabilia · D. Di Riso · D. Miconi ·
J.-B. Li
Department of Developmental Psychology and Socialization,
University of Padova, c/o LIRIPAC, Via Belzoni, 80,
35100 Padua, Italy
e-mail: elisa_delvecchio@libero.it

studies were carried out to test its convergent and discriminant validity, showing good results (Essau et al. 2002; Spence 1998; Whiteside and Brown 2008). A number of studies was devoted to assess the SCAS factorial structure using confirmatory factor analysis (CFA). Most of them supported a model that involved six discrete but correlated factors (e.g. Di Riso et al. 2013; Essau et al. 2011; 2012; Zhao et al. 2012). However, some evidence suggested that the factorial structure of SCAS may vary to some extent across cultures (Essau et al. 2008; 2004; Ishikawa et al. 2009; Muris et al. 2002).

Literature reports that cultural factors may play a key role also for the variability of anxiety symptoms (Baxter et al. 2013). However, there is still scarce literature on the role of cross-cultural factors in the expression and development of anxiety disorders (Heinrichs et al. 2006; Hudson and Rapee 2009; Schreier et al. 2010). There is some cross-cultural evidence of the existence of differences in the distribution of anxiety disorders in individualistic and collectivistic cultures (Hofstede 2001; Pina et al. 2009; Schreier et al. 2010).

Individualistic cultures value the expression of autonomy and individual desires, whereas in collectivistic cultures the achievement and maintenance of social order and interpersonal harmony are primary concerns (in this paper, the terms “collectivistic” and “individualistic” are used in a broad manner. The authors are aware that diversity within these groups may be as high as diversity among them) (Delvecchio et al. 2014; Triandis 1995).

There is a shared belief that collectivistic cultures show higher levels of anxiety disorders than individualistic ones (Baxter et al. 2013; Hudson and Rapee 2009). Lan (2002) suggested that dealing with collective norms (e.g. the filial piety, obedience) may lead to higher stress and levels of anxiety for members of collectivistic communities. For example, Mainland Chinese and Singapore Chinese community adolescents showed significantly higher levels of total anxiety when compared to American norms (Li et al. 2008). In a recent study, Zhao et al. (2012) found that Chinese adolescents displayed higher levels of anxiety symptoms when compared to Dutch (Muris et al. 2000) and German adolescents (Essau et al. 2008), and explained this trend suggesting that adolescents from collectivistic cultures may be more affected by cultural socialization practices characterized by high levels of self-control, emotional restraint and obedience to authority (Zhao et al. 2012; Xie and Leong 2008). By contrast, socialization practices in individualistic cultures encourage autonomy and independence (Essau et al. 2008), which may contribute to the lowering of anxiety problems in adolescents. Nevertheless, it is still unclear if these findings represent a true cultural difference in estimates and prevalence or if they may be due to a limited cross-cultural equivalence of the diagnostic

measures (Baxter et al. 2013; Hinton et al. 2009; Steel et al. 2009; Tanios et al. 2009).

To the best of our knowledge no studies so far explored these issues among Chinese and Italian adolescents. According to Hofstede’s individualism–collectivism model (<http://geert-hofstede.com>), China is a typical collectivistic country (the Individualism score is 15), whereas Italy can be categorized as individualistic (the Individualism score is 76). Literature suggests that Chinese socialization practices concern being restrictive, overprotective, encouragement of self-control, high emphasis on opinions of others and academic excellence in school (Chen et al. 1997; Dong et al. 1994; Li et al. 2008), which may contribute to a high level of anxiety symptoms among Chinese adolescents. On the other hand, Italian parenting practices show some specificities that may differ from other individualistic countries. They are characterized by encouragement of individualism as well as high levels of overprotection, control and intrusiveness (Hsu and Lavello 2005; Raudino et al. 2013; Wood et al. 2006). Furthermore, Italian parenting practices are not very restrictive, parents do not encourage self-control, and finally they do not emphasize the importance of academic excellence at school and others’ opinions (Chen et al. 2004; Casiglia et al. 1998; Delvecchio et al. 2013). In addition, the national school system may play a role for the exacerbation of anxiety symptoms in adolescence. Specifically, the Chinese school system with its “High School Entrance Exam”, that allows students to enter in the top ranking Chinese high schools, and the “National Higher Education Entrance Examination”, that entitles students to enter into almost all the higher education institutions, deciding for their future, may both amplify anxiety symptoms during this stage of life (Li and Prevatt 2008; Zhao et al. 2012). Conversely, although also the Italian school system comprehends exams to enter high schools as well as college, there is no such a strict and competitive cut-off test, resulting in a more flexible and relaxed school enrolment (Bertola and Checchi 2002).

Previous works validated the SCAS in both countries reporting good results. For instance, focusing on adolescence, Essau et al. (2011) recruited a school sample in the northern part of Milan, whereas Essau et al. (2008) assessed a sample from Hong Kong and Zhao et al. (2012) measured anxiety symptoms in mainland Chinese adolescents. Structural analysis of the SCAS was carried out in both countries. More specifically, the use of CFA on Italian children and adolescents supported the six correlated factor model, with only minor differences compared to the original work by Spence (1997) (Di Riso et al. 2013, 2014; Essau et al. 2011). However, mixed results came up for the Chinese factor structure. Specifically, Essau et al. (2008) carried out an explorative factor analysis (EFA) on Hong Kong adolescents (12–17) and found five interpretable

factors (panic disorder, separation anxiety, obsessive-compulsive disorder, and physical injury fears/specific phobia), whereas, more recently, Li et al. (2011) on Hong Kong children (6–11) and Zhao et al. (2012) on a Mainland Chinese community sample of adolescents (13–15) confirmed the six factor structure. However, no studies were found on the comparison of the factor structure of SCAS in Chinese and Italian adolescents, which underlines the importance of the current study.

More specifically, the present paper had three purposes. The first one was to assess the factor structure and the psychometric properties of the SCAS in a wide community sample of Italian and Chinese adolescents. According to previous theoretical and empirical research on SCAS, the six factor model was hypothesized to better represent the factorial structure in both countries. Good internal consistency was expected for the SCAS total and subscales. SCAS convergent and divergent validity were assessed by correlating it with the strength and difficulties questionnaire (SDQ; Goodman 1997). Higher correlations were expected between SCAS subscales and the Internalizing factor than the Externalizing one. The second aim of this study was to investigate and compare levels of anxiety symptoms in Mainland Chinese youth to a sample of Italian adolescents. Anxiety symptoms were expected to be determined to some extent by cultural factors associated with social values and socialization practices. Thus, a lower level of anxiety symptoms was expected in Italian adolescents than in Chinese adolescents. Furthermore, gender and age differences were taken into account. Higher levels of anxiety were expected in girls than in boys, together with a decreasing trend of anxiety symptoms from early to mid-adolescence. Last but not least, we aimed to compare the anxiety levels reported by Italian and Chinese students from the current research to the results showed in previous studies with similar characteristics (i.e., same country and age range). No significant differences were expected among the Italian samples, whereas differences were hypothesized among the Chinese ones. Although the considered Chinese samples shared the same cultural background (i.e. collectivistic culture), the vastness of China and the presence of various sub-cultures were hypothesized to contribute differently to anxiety symptoms.

Method

Participants

Participants were 1687 Chinese (866 boys and 821 girls; $M_{\text{age}} = 14.78$ years, $SD = 1.84$), and 1,729 Italians (860 boys and 869 girls; $M_{\text{age}} = 14.59$ years, $SD = 2.01$). Both

samples included individuals attending middle or high schools (grades 7th–12th) located in Guangzhou, one of the largest cities in Southern China, and in Northern-Central Italy. The selected schools served mainly middle-class families (absolute SES), with approximately similar basic quality of life, within urban and suburban school districts (SES, Hollingshead 1975). Specifically, 50.3 % of the Chinese students belonged to the early adolescents group (13–15, $M_{\text{age}} = 13.26$; $SD = 1.00$) and 49.7 % to mid adolescents (16–18; $M_{\text{age}} = 16.32$; $SD = 1.03$), while 55.3 % of the Italian students were early adolescents (13–15; $M_{\text{age}} = 13.06$; $SD = 1.08$) and 44.7 % mid adolescents (16–18; $M_{\text{age}} = 16.49$; $SD = 1.05$). In both countries more than 90 % of the participants came from two-parent households and more than 70 % (mostly Chinese) were the only child in their families. Approximately 94 % of the families who received the leaflet agreed to participate. Those who declined adduced reasons such as lack of interest and concerns about sharing personal information.

Exclusion criteria included psychiatric hospitalization, psychological treatment or testing within the past 2 years.

Procedure

This study was conducted in compliance with the ethical standards for research outlined in the *Ethical Principles of Psychologists and Code of Conduct* (American Psychological Association 2010). Approval by the Ethical Committee for Psychological Research was obtained from both Universities. Participation in the study was solicited via leaflets. School approval and parents written signed informed consent to participate in the study were obtained before data collection. Adolescents were asked to provide their own oral consent. No incentives were awarded and voluntary participation was emphasized. Administration was proposed during scheduled classes, according to the standard administration procedures. Confidentiality was assured by replacing adolescent's personal information with a numeric code.

Measures

The (SCAS; Spence 1997, 1998; Spence et al. 2003) consists of 44 items, 38 of which reflect specific symptoms of anxiety, while six are positively-worded filler items ignored in the scoring process. The 38 anxiety items comprise six different subscales: panic and agoraphobia (e.g., item 21–“I suddenly start to tremble or shake when there is no reason for this”), separation anxiety (e.g., item 8–“I worry about being away from my parents”), fears of physical injury (e.g., item 23–“I am scared of going to the doctors or dentists”), social phobia (e.g., item 35–“I feel afraid if I have to talk in front of my class”), obsessive–

compulsive problems (e.g., item 42—“I have to do some things in just the right way to stop bad things happening”), and generalized anxiety/overanxious symptoms (e.g., item 1—“I worry about things”). Each item was scored on a four-point Likert-type response scale (zero = *never*, one = *sometimes*, two = *often*, and three = *always*) with the aim of assessing how often children experience each symptom with no reference to any specific timeframe. All anxiety items can also be summed in order to compute a total score (maximum = 114). The Italian as well as the Chinese version of the SCAS were already available (for further information see www.scaswebsite.com).

The (SDQ; Goodman 2001). The SDQ is a screening tool used to assess psychological adjustment in children and adolescents aged 11–18. The SDQ measures 25 attributes, both positive and negative, on a three-point Likert-type response scale—zero = *not true*, one = *quite true*, and two = *certainly true*. Past research supported a five-factor model consisting of four subscales designed to capture adjustment difficulties (i.e., emotional symptoms conduct problems, hyperactivity-inattention, and peer problems), and one for prosocial behaviors (Hankin et al. 2010). However, a number of studies supported a three-factor model consisting of broad externalizing and internalizing problem behaviors and one prosocial behavior (Dickey and Blumberg 2004; Di Riso et al. 2010; Essau et al. 2012; Hankin et al. 2010). Higher scores indicate more problematic attributes. The Italian and Chinese translations were retrieved from <http://www.sdqinfo.org>. Several studies support good psychometric properties of the SDQ (Capron et al. 2007; Di Riso et al. 2010; Essau et al. 2012; Goodman 2001).

Data Analysis

Before running the analyses, data normalization and imputation of missing values for all variables were performed for both samples using the PASW Statistics, Release Version 18.0 (SPSS Inc., 2009). Cases were eliminated when 10 % or more of the items of one measure did not receive an answer (Muris et al. 2006). The missing values were imputed based upon values observed in other cases that had a similar response pattern over a set of matching variables.

To evaluate whether the original 6-correlated factor model reported by Spence (1998) and confirmed also in other countries in further studies (Essau et al. 2011; Zhao et al. 2012) was adequate for both the Chinese and Italian samples, a multi-group CFA was performed using LISREL 8.80 for Windows (Jöreskog and Sörbom 2006). Since the observed variables included in the models were ordinal, an asymptotic un-weighted least square (ULS) robust method based on polychoric correlations was used (Satorra and

Bentler 1994). Specific factor loadings and inter-factor correlations were estimated freely (configural invariance). A variety of indices as indicators of the model’s overall goodness of fit were compared: the root mean square error of approximation (RMSEA), the normed fit index (NFI), the non-normed fit index (NNFI), and the comparative fit index (CFI) were used as goodness-of-fit indices (Hu and Bentler 1999). RMSEA of .08 or lower is considered as indicative of an adequate fit (Schermelleh-Engel et al. 2003). Values of NFI higher than .90 indicate adequate fit, as well as NNFI and CFI higher than .95 (Schermelleh-Engel et al. 2003). The internal consistencies (Cronbach’s alpha) of the SCAS (total score and subscales) were then calculated. The zero order correlations between SCAS total and subscales and SDQ internalizing and externalizing factors were carried out. In order to establish if correlations between SCAS total score and subscales and SDQ internalizing behaviour were significantly stronger (convergent validity) than the correlations between SCAS total score and subscales and SDQ externalizing behaviour problems (divergent validity), the Steiger’s Z test (Steiger 1980) was carried out in line with Meng et al. (1992) suggestion for interpretation.

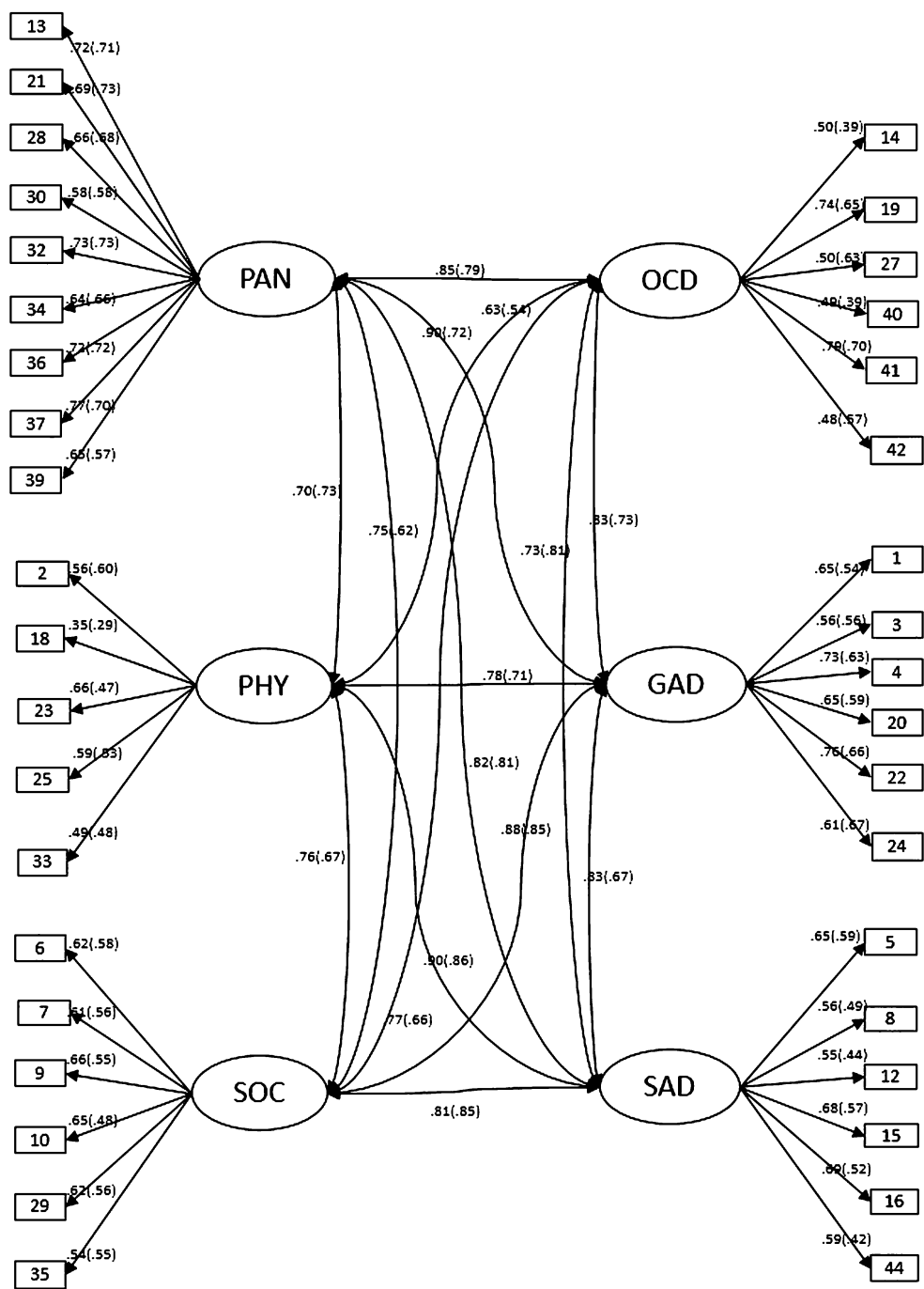
Univariate (ANOVAs) and multivariate analyses of variance (MANOVAs) were conducted to determine if country (China–Italy), age (early adolescence—mid adolescence), and gender (male–female) have a significant effect on anxiety symptoms. Effect size was measured using partial eta-squares, in which small, medium, and large effects were .0099, .0588, and .1379, respectively (Cohen 1988, p. 283; Snyder and Lawson 1993; Stevens 1992). In order to compare SCAS scores from the current study to the scores found in previous ones considering samples of the same nationality and similar age range, a series of *t* test was carried out.

Results

The model showed good fit (RMSEA = .050, CFI = .979, NFI = .975, and NNFI = .978) confirming that the 6-factor model adequately fits for Chinese and Italian data. Factor loadings and inter factor correlations are displayed in Fig. 1 (Italian values are showed in brackets).

All factors displayed adequate loadings (>.30) for both samples. The only exception was found for the Italian sample where the item 18 (“I am scared of dogs”—fears of physical injury) showed a factor loading of .29. This item reported a low factor loading also in Di Riso et al. (2013) study. Moreover, item 18 showed the lowest factor loading (.35) also in the Chinese sample. The inter-factor correlations between the latent variables were high (Cohen 1988) in both samples ranging from .54 ($p < .001$) to .90 ($p < .001$).

Fig. 1 The 6 Correlated factor model. Note Italian values in brackets



Cronbach’s Alpha and 90 % confidence interval (CI) for the SCAS total score were excellent for both the Chinese ($\alpha = .93$, CI .92–.93) and the Italian ($\alpha = .90$, CI .89–.90) samples. Internal consistency was good for most of the subscales belonging to the Chinese sample, whereas Italian coefficients ranged from good to acceptable, with the exception of the fears of physical injury that showed poor internal consistency. Cronbach’s alpha coefficients were: panic and agoraphobia (China = .83, CI .82–.85; Italy = .81, CI .79–.82), separation

anxiety (China = .71, CI .69–.74; Italy = .62, CI .59–.66); fears of physical injury (China = .59, CI .56–.62; Italy = .50, CI .45–.53); social phobia (China = .74, CI .72–.76; Italy = .67, CI .65–.70); obsessive–compulsive problems (China = .72, CI .70–.74; Italy = .66, CI .63–.68), and generalized anxiety/overanxious symptoms (China = .77, CI .76–.79; Italy = .73, CI .71–.75).

The validity of the SCAS was assessed in both samples correlating it with the SDQ. In the present study the

Table 1 Correlations between SCAS and SDQ in the Chinese and in the Italian samples

	SCAS							SDQ	
	Total	PAN	PHY	SOC	OCD	GAD	SAD	Internalizing	Externalizing
SCAS									
Total	1	.87**	.69**	.81**	.77**	.86**	.80**	.51**	.32**
PAN	.81**	1	.47**	.59**	.64**	.73**	.62**	.49**	.30**
PHY	.64**	.45**	1	.51**	.39**	.51**	.56**	.25**	.16**
SOC	.73**	.42**	.37**	1	.55**	.67**	.59**	.39**	.29**
OCD	.73**	.54**	.30**	.43**	1	.60**	.51**	.40**	.24**
GAD	.80**	.54**	.43**	.59**	.49**	1	.61**	.49**	.32**
SAD	.71**	.53**	.41**	.42**	.44**	.45**	1	.38**	.20**
SDQ									
Internalizing	.61**	.52**	.35**	.49**	.46**	.49**	.37**	1	.52**
Externalizing	.32**	.34**	.12**	.22**	.29**	.24**	.16**	.43**	1

** $p < .01$

Intercorrelations presented above the diagonal are for Chinese adolescents

Intercorrelations presented below the diagonal are for Italian adolescents

PAN panic and agoraphobia, PHY fears of physical injury, SOC social phobia, OCD obsessive–compulsive problems, GAD generalized anxiety/overanxious symptoms, SAD separation anxiety

internal consistency (Cronbach’s alpha) for the internalizing and externalizing problem behaviors was .81 and .78 respectively, for China, and .78 and .73 respectively, for Italy.

As Table 1 shows, higher levels of anxiety symptoms were significantly associated ($p < .01$) with both the internalizing and externalizing behaviour factors. The SCAS total score and its subscales showed medium to high effect size correlations with the internalizing factor of SDQ, suggesting a good convergent validity of the SCAS in both the Chinese as well as the Italian samples. However, as expected, lower effect size correlations came up between anxiety symptoms and externalizing behaviour problems.

Table 2 Steiger’s Z to test correlated correlations between SCAS and SDQ

	Steiger’s Z	
	SDQ internalizing/externalizing	
	China	Italy
SCAS total	6.48	11.17
PAN	6.51	6.44
PHY	2.82	7.24
SOC	2.99	9.19
OBS	5.10	5.87
GAD	5.78	8.55
SAD	5.60	6.68

PAN panic and agoraphobia, PHY fears of physical injury, SOC social phobia, OCD obsessive–compulsive problems, GAD generalized anxiety/overanxious symptoms, SAD separation anxiety

Z scores comparing SDQ internalizing and externalizing behaviour problems highlighted that correlations between SCAS total score and subscales and SDQ internalizing behaviour problems were significantly greater than those between SCAS total score and subscales and SDQ externalizing behaviour problems (all $Z \geq 2.58$, $p < .01$) (Table 2) in both countries. Thus, these findings support the convergent validity between SCAS and internalizing behaviour problems and the divergent validity with externalizing problems.

A $2 \times 2 \times 2$ Anova and Manova were performed on the SCAS total score and subscales, respectively, with country, gender, and age as independent variables. The means, standard deviations and results from the analysis of variance are presented in Table 3.

A significant main effect of country was found on the SCAS total score [$F(1,3408) = 217.57$, $p < .001$, $\eta^2 = .60$] with Chinese adolescents ($M = 35.07$, $SD = 18.15$) reporting more anxiety symptoms than Italians ($M = 27.41$, $SD = 13.00$). Moreover, a significant effect of gender emerged [$F(1,3408) = 190.32$, $p < .001$, $\eta^2 = .53$] showing higher scores in girls ($M = 34.78$, $SD = 15.74$) than in boys ($M = 27.66$, $SD = 15.90$) (Table 4). No significant interpretable differences emerged considering either the age or the interactions (Table 5).

Results of the Manova (Table 4) pointed out that Chinese adolescents showed significant higher scores than Italian youth on all the subscales (see Table 3). Furthermore females reported significant higher scores than males, with the exception of the obsessive–compulsive problem subscale, in which no significant differences emerged.

Table 3 Means and standard deviations of the SCAS for the total sample, the Chinese and the Italian samples

SCAS	Total (n = 3,416)		China (n = 1,687)		Italy (n = 1,729)	
	M	SD	M	SD	M	SD
SCAS total						
Total	31.19	16.22	35.07	18.15	27.41	13.00
Boys	27.66	15.90	32.23	18.10	23.05	11.62
Girls	34.80	15.74	38.06	17.73	31.72	12.87
Early adolescents	31.37	16.31	35.35	18.42	27.84	13.22
Mid-adolescents	3.99	16.11	34.79	17.89	26.87	12.72
PAN						
Total	4.44	4.62	5.75	5.10	3.15	3.66
Boys	3.82	4.54	5.28	5.10	2.35	3.31
Girls	5.06	4.61	6.24	5.05	3.95	3.82
Early adolescents	4.56	4.71	5.83	5.26	3.43	3.81
Mid-adolescents	4.30	4.51	5.67	4.92	2.81	3.45
PHY						
Total	3.67	2.88	4.50	3.11	2.87	2.38
Boys	2.95	2.68	3.84	2.95	2.05	2.02
Girls	4.42	2.89	5.21	3.12	3.67	2.43
Early adolescents	3.64	2.89	4.52	3.14	2.86	2.39
Mid-adolescents	3.72	2.87	4.49	3.08	2.88	2.37
SOC						
Total	6.91	3.41	7.43	3.70	6.41	3.03
Boys	6.22	3.36	6.85	3.77	5.58	2.75
Girls	7.63	3.32	8.04	3.53	7.23	3.06
Early adolescents	6.86	3.51	7.36	3.86	6.41	3.10
Mid-adolescents	6.98	3.31	7.50	3.53	6.41	2.94
OCD						
Total	5.64	3.48	6.64	3.66	4.67	2.99
Boys	5.57	3.53	6.72	3.69	4.42	2.96
Girls	5.71	3.42	6.55	3.64	4.91	3.00
Early adolescents	5.72	3.50	6.66	3.70	4.89	3.08
Mid-adolescents	5.55	3.46	6.61	3.62	4.39	2.84
GAD						
Total	6.46	3.36	5.91	3.50	7.00	3.13
Boys	5.56	3.04	5.27	3.35	5.85	2.66
Girls	7.38	3.42	6.58	3.53	8.15	3.13
Early adolescents	6.35	3.44	5.84	3.67	6.81	3.16
Mid-adolescents	6.58	3.26	5.98	3.33	7.24	3.06
SAD						
Total	4.06	3.03	4.84	3.47	3.31	2.30
Boys	3.54	2.93	4.28	3.42	2.80	2.09
Girls	4.60	3.04	5.43	3.42	3.81	2.38
Early adolescents	4.24	3.11	5.14	3.59	3.45	2.35
Mid-adolescents	3.87	2.92	4.54	3.31	3.13	2.22

PAN panic and agoraphobia, PHY fears of physical injury, SOC social phobia, OCD obsessive–compulsive problems; GAD generalized anxiety/overanxious symptoms, SAD separation anxiety

Although age turned out to be significant for most subscales, with early adolescents reporting higher values than mid-adolescents, the partial eta-squared estimates were low. Thus only trivial effects, mainly due to the large sample size, can be hypothesized. No significant interpretable interactions were found (Table 5).

The *t* test, carried out to compare the current sample to previous research, showed that Chinese adolescents from the present study reported higher levels of anxiety than adolescents from both Essau et al. (2008) and Zhao et al. (2012) studies (Table 6). Focusing on Italian adolescents, levels of anxiety were similar to Essau et al. (2011) Italian sample. Differences emerged only in two of the subscales with Italian adolescents scoring higher on social phobia and lower on fears of physical injury in the current study than adolescents enrolled in Essau et al. study (2011).

Discussion

The present study aimed to assess anxiety symptoms in a cross-cultural perspective focusing on community samples of Chinese and Italian adolescents. A first purpose was to examine the factorial structure, reliability and validity of the SCAS across the samples. A second aim was to compare the levels of anxiety symptoms reported by Chinese and Italian adolescents. A last goal was to compare the levels of anxiety observed in the current research to those reported in previous studies concerning Chinese and Italian adolescents (Essau et al. 2008, 2011; Zhao et al. 2012).

As hypothesized, the 6-correlated factor model showed adequate fit for both Chinese and Italian samples, in line with the existing CFA findings (Di Riso et al. 2013; Essau et al. 2011; Li et al. 2011; Zhao et al. 2012), as well as with previous international studies on SCAS (Essau et al. 2011, 2012; Mellon and Moutavelis 2007; Spence et al. 2003). Furthermore, the multi-group CFA established the configural invariance of the six-correlated factor model, suggesting that the hypothetical dimensions of SCAS are also equally conceptualized across the countries. The strong correlations found in both samples among the six subscales confirmed the high comorbidity of anxiety disorders (Whiteside and Brown 2008). As suggested by Di Riso et al. (2013), from a methodological point of view, these strong correlations advocate for the existence of a high-order anxiety factor. The item 18, belonging to the fears of physical injury subscale and referring to dogs fear, showed the lowest loading in both models. As suggested by Bruce and Sanderson (1998), animal fears are mostly age-related and they mainly affect toddlers and children. Thus, item 18 may poorly represent the fears experienced in adolescence, regardless of culture.

Table 4 Analysis of variance for effects of Country, Gender and age on SCAS total and subscales

	Country			Gender			Age		
	<i>F</i> (1,3408)	<i>p</i>	η^2p	<i>F</i> (1,3408)	<i>P</i>	η^2p	<i>F</i> (1,3408)	<i>p</i>	η^2p
SCAS total	217.57	<.001	.060	190.32	<.001	.053	.92	.337	.000
PAN	307.64	<.001	.083	70.10	<.001	.020	5.33	.021	.002
PHY	323.32	<.001	.087	273.39	<.001	.074	.27	.607	.000
SOC	83.27	<.001	.024	157.92	<.001	.044	1.05	.305	.000
OCD	304.31	<.001	.082	1.62	.203	.000	5.03	.025	.001
GAD	103.06	<.001	.029	281.61	<.001	.076	10.92	.001	.003
SAD	249.07	<.001	.068	119.66	<.001	.034	18.59	<.001	.005

PAN panic and agoraphobia, PHY fears of physical injury, SOC social phobia, OCD obsessive–compulsive problems, GAD generalized anxiety/overanxious symptoms, SAD separation anxiety

Table 5 Interactions between country, gender and age on SCAS total and subscales

	Country × gender			Country × age			Gender × age			Country × gender × age		
	<i>F</i> (1,3408)	<i>p</i>	η^2p	<i>F</i> (1,3408)	<i>p</i>	η^2p	<i>F</i> (1,3408)	<i>p</i>	η^2p	<i>F</i> (1,3408)	<i>p</i>	η^2p
SCAS total	7.55	.006	.002	.06	.804	.000	1.19	.276	.000	4.92	.027	.001
PAN	4.18	.041	.001	1.17	.279	.000	1.77	.183	.001	3.28	.070	.001
PHY	2.47	.116	.001	.86	.353	.000	.59	.441	.000	3.91	.048	.001
SOC	4.24	.039	.001	.00	.956	.000	2.33	.127	.001	1.52	.219	.000
OCD	7.29	.007	.002	3.21	.073	.001	1.83	.176	.001	1.30	.254	.000
GAD	23.27	<.001	.007	4.76	.029	.001	.20	.658	.000	3.94	.047	.001
SAD	.56	.454	.000	3.39	.066	.001	.47	.496	.000	5.33	.021	.002

PAN panic and agoraphobia, PHY fears of physical injury, SOC social phobia, OCD obsessive–compulsive problems, GAD generalized anxiety/overanxious symptoms, SAD separation anxiety

Table 6 *T* test between the current and previous adolescent samples

	Italian (Essau et al. 2011)		Chinese (Essau et al. 2008)		Chinese (Zhao et al. 2012)	
	<i>t</i> (2,226)	<i>p</i>	<i>t</i> (2,113)	<i>p</i>	<i>t</i> (2,567)	<i>p</i>
SCAS total	.43	.664	3.68	<.001	11.66	<.001
PAN	.16	.872	4.17	<.001	1.50	<.001
PHY	5.84	<.001	6.34	<.001	5.94	<.001
SOC	5.45	<.001	7.33	<.001	14.07	<.001
OCD	1.95	.051	.10	.917	9.21	<.001
GAD	.12	.903	1.71	<.001	5.67	<.001
SAD	.83	.409	.70	.482	9.37	<.001

PAN panic and agoraphobia, PHY fears of physical injury, SOC social phobia, OCD obsessive–compulsive problems, GAD generalized anxiety/overanxious symptoms, SAD separation anxiety

In line with previous studies, the SCAS appeared as a reliable tool, with high levels of internal consistency for the total score, and adequate levels for the subscales (Di Riso et al. 2013; Essau et al. 2011; Spence et al. 2003; Zhao et al. 2012). The fears of physical injury subscale showed

the lowest internal consistency in both Chinese and Italian samples. Possible explanations may lie both on the fact that this subscale comprehends different kinds of fears that are only weakly related to one another, as well as on the low number of items it includes ($n = 5$) (Ollendick et al. 2010; Whiteside and Brown 2008).

The validity of the SCAS was assessed via the internalizing and externalizing subscales of SDQ. Positive correlations were found between levels of anxiety symptoms and maladaptive behaviors. As hypothesized, in both samples the SCAS correlated stronger with SDQ internalizing behavior problems than with the SDQ externalizing disorders. These results supported the convergent validity between the SCAS and the SDQ internalizing problems (i.e., emotional problems and peer related problems) and, at the same time, the divergent validity with externalizing behavior problems (i.e., conduct problems, hyperactivity-inattention) (Di Riso et al. 2013; Essau et al. 2012). The link between internalizing disorders and anxiety in adolescence is well-known, whereas co-occurrence of externalizing disorders and anxiety was studied in a less systematic way (Knappe et al. 2012). Findings from the current study shed light on the significant correlation

between those constructs. As suggested by Knappe et al. (2012) externalizing behaviors in adolescence may predispose to anxiety symptoms. Hence, externalizing disorders, as well as internalizing ones, appear as relevant indicators of at risk adolescents and represent key factors for prevention and early intervention (Knappe et al. 2012).

Shifting to the cross-cultural comparison, results showed that Italian adolescents report lower anxiety symptoms than Chinese ones. Cultural as well as environmental reasons support these findings. A first explanation may be found in cultural stressors related to anxiety. For example, several authors explained Chinese adolescents' anxiety symptoms referring to the "three bastions of Chinese culture", (1) educational achievement, (2) collectivism, and (3) filial piety (Dello-Iacovo 2009; Lee et al. 2006; Quach et al. 2013; Tsui and Rich 2002), which, on the contrary, are not perceived as fundamental values to pursue by Italian parents or adolescents (Pearlin and Kohn 1966; Rabaglietti et al. 2012). Moreover, the One Child Policy adopted by the Chinese Government may exacerbate parents' academic pressure and, at the same time, increase levels of filial piety in adolescents, due to the responsibilities they have to face being the only one child able to represent their parents' wishes and expectations. Although in the last decades a decrease in birth-rate was observed, leading to a large amount of family with only one child, there is not such a restrictive policy in Italy and the number of children is mainly a private decision (ISTAT 2014). In addition, as suggested by past research concerning Chinese adolescents, higher levels of anxiety may be affected by *Taijin Kyofusho* (fear of interpersonal relations), a collectivistic culturally specific fear of offending others with inappropriate attitudes, behaviors or offensive appearances (Cohen et al. 2013; Kirmayer 1991; Nakamura et al. 2002; Zhong et al. 2008). Feelings of anxiety, fear, shame, embarrassment, exclusion and rejection by others are often experienced by people who are suffering from this syndrome (Lim 2013). A recent study by Essau et al. (2012) reported that high levels of fear of interpersonal relations in Japanese adolescents were significantly correlated with high levels of anxiety symptoms, especially with social phobia.

Looking at gender differences, findings from the current study are in line with a large amount of previous studies, with girls reporting higher levels of anxiety than boys (Craske 2003; Crocetti et al. 2009; Di Riso et al. 2013; Essau et al. 2011; Hale et al. 2011; Su et al. 2008; Visani et al. 2011; Wren et al. 2007). In line with previous findings, the only exception was found for the obsessive-compulsive symptoms which showed similar results for both genders (Di Riso et al. 2014; Essau et al. 2012; Orgilés et al. 2012). However, reasons for this gender differences are still unclear. A possible explanation may be that girls perceive psychological and social challenges as

more demanding than boys, experiencing higher levels of anxiety (Essau et al. 2012; Hale et al. 2005; Hewitt et al. 1997; Ogliari et al. 2006). Moreover, girls' tendency to have a stronger interpersonal orientation than boys may lead to more anxiety symptoms (Hankin and Abramson 2001). Denmark (1999) suggested that the pubertal changes may more strongly affect girls' self-identity and self-perception than boys'. In addition, genetic predispositions may also make adolescent girls more susceptible to develop anxiety symptoms (Silberg et al. 2001). From a qualitative perspective, although scores showed a decreasing trend with early adolescents scoring qualitatively higher than mid-adolescents, unexpectedly, no significant age-related differences were found on anxiety symptoms (Crocetti et al. 2009; Hale et al. 2011). A first explanation could be found in the small age span considered for the study. Most research found age differences comparing primary school children to secondary and/or high school adolescents, but only few studies focused on a smaller age-range showing stability of anxiety. Woodworth and Fergusson's (2001) results showed quite similar levels of anxiety between 14 and 16 years old and between 16 and 21 years old. Furthermore, as suggested by Van Oort et al. (2009), since the comorbidity of anxiety and depression is very high, this finding could be due to the effects of co-occurring depressive symptoms on age patterns of anxiety symptoms.

The comparison of results from the current study with previous research using SCAS in Chinese and Italian adolescents findings showed a high discrepancy between the current Chinese sample and Essau et al. (2008) and (Zhao et al. 2012) samples. The adolescents involved in the present study reported higher levels of anxiety compared to the previous studies. Two main explanations may be considered to clarify these findings: (1) China is one of the largest countries and several sub-cultures might coexist (Martinsons and Ma 2009), (2) Guangzhou is a key national transportation hub and one of the biggest cities in China. It is a relatively more modernized and civilized city than several other Chinese cities. For these reasons, adolescents from Guangzhou may experience higher pressure about school achievement and the future than students from other different areas in China, and this, in turn, may exacerbate anxiety symptoms. In other words, adolescents need to learn more socialization rules and norms to live up with the social standards (Nie, personal communication, January 03, 2014). Looking at the Italian sample, the current data appeared in line with Essau et al. (2011) data in most of the subscales. The only two differences were found for the social phobia and the fears of physical injury subscales. Compared to previous research, adolescents from the present study reported higher and lower results, respectively. Essau et al. (2011) sample was collected in

the northern part of Milan, whereas the current participants were recruited from several regions located in Northern and Central Italy, considering both urban and suburban areas. Hence, differences may be due to geographical issues. More specifically, adolescents from the current sample often need to move to another city to enroll in high schools and this is experienced as a big life change life. This variation involves also a new environment and new friendships beside the new school and it may lead to greater levels of symptoms of social anxiety. On the other hand, living in Milan offers more opportunity to find a school where adolescents may feel more familiar and maintain their friends. Moreover, Milan is one of the most populated city of Italy, with a high rate of anonymity among people. Thus, Essau's et al. (2011) adolescents may feel less worried about what other people think of them and at the same time they could be more used to interact and express their feelings or opinions in public. Since fears of physical injury contains fears elicited by objects and events that are among the most common objects of specific phobias in children (Mellon and Moutavelis 2007), a possible explanation about the lower fears of physical injury reported by the current adolescents may lie on the slightly different age-target considered (12–17 in Essau et al. study, 13–18 in the current one). Furthermore, adolescents collected for the current study lived both in suburban and rural areas and therefore may be more familiar to some of those objects (i.e. animals such as dog, spiders and insects). However, reasons for this difference remain unclear.

There are several limitations in the present study that should be taken into account when interpreting the results. A first limitation is that this study focuses exclusively on the Guangdong province and on the Northern-Central part of Italy. Thus, as previously discussed, results may not be well representative of the whole selected countries. Second, the cultural fairness of the SCAS was not examined in this study. Although the SCAS was administered in the participants' mother tongue, slight differences in item meanings across cultures could exist (Berry et al. 2002). Furthermore, since only community based adolescents were enrolled in the current research, findings cannot be extended to clinical populations. Future studies should deepen on this issue. In addition, another limitation arises from the use of self-report measures that introduces issues of potential reporter-bias and shared method variance. Additional assessment modalities (e.g., structured interviews) together with self-report measures, can contribute to a more objective and accurate understanding of the phenomena (Lee and Hankin 2009; Silverman and Ollendick 2005). Moreover, this study enrolled only adolescents' point of view. A multiple-informant perspective may add relevant information about youths' symptom levels (Karver

2006; Grills and Ollendick 2002). For example, parents, peers, and teachers could be included in future research. Last but not least, additional variables should be considered to better understand anxiety symptoms in adolescence. Recently, parenting styles and relationship with parents emerged as two meaningful variables for the understanding of anxiety symptoms in adolescence (Mellon and Moutavelis 2011). Both an authoritative parenting style and warmth and supportive parenting were linked to lower levels of child's psychological distress (Quach and Harnek Hall 2013). Considering the key role that parents might assume, especially where the filial piety is a central value, future studies should enlarge the focus and deepen on this issue too. In addition, especially following a cross-cultural perspective, future studies should pay greater attention to the specific cultural values and descriptors that characterize China and Italy (e.g. familism, individualism/collectivism, perception of social norms), that could influence levels of anxiety in adolescence.

However, findings from this cross-cultural study revealed that the SCAS is a valid and suitable tool for the screening of anxiety symptoms both with Chinese and Italian adolescents. Moreover, in line with expectations, results confirmed that anxiety symptoms are affected to some extent by cultural issues, showing the importance to consider prevalence of anxiety as well as adolescents' feelings and psychological adjustment in Chinese and Italian adolescents. In line with previous research, youth from collectivistic cultures showed higher levels of anxiety than in individualistic ones (Essau et al. 2008; Pina et al. 2009). Finally, these findings highlighted important within-group differences that may be as high as across-group differences, underling the importance of considering sub-cultural differences within the same country (Bennett and Kahn-Harris 2004; Shildrick 2006).

Implications of the current study may suggest to professionals that the SCAS is a useful and easy tool for psychological assessment and treatment planning within specific cultures. Furthermore, considering the increasing migratory flow of Chinese people that currently characterizes Italy (ISTAT 2014), extending knowledge on the cross-cultural nature of anxiety may represent a fundamental starting point to extend professional knowledge and to implement training programs devoted to the promotion of psycho-social adjustment in immigrant populations. Policy and program initiatives which will promote a positive public attitude toward immigrants are needed. Hence, results from the current study could inform this area of intervention delineating school programs and educational support for native and immigrant adolescents' needs accounting for their specific cultural background.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.
- American Psychological Association. (2010). Ethical principles of psychologists and code of conduct. <http://apa.org/ethics/code/index.aspx>.
- Antony, M. M., & Stein, M. B. (2009). *Oxford handbook of anxiety and related disorders*. New York: Oxford University Press.
- Baxter, A. J., Scott, K. M., Vos, T., & Whiteford, H. A. (2013). Global prevalence of anxiety disorders: A systematic review and meta-regression. *Psychological Medicine*, *43*, 897–910. doi:10.1017/S003329171200147X.
- Beesdo, K., Knappe, S., & Pine, D. S. (2009). Anxiety and anxiety disorders in children and adolescents: Developmental issues and implications for DSM-V. *The Psychiatric Clinics of North America*, *32*, 483–524.
- Beesdo, K., Pine, D. S., Lieb, R., & Wittchen, H. U. (2010). Incidence and risk patterns of anxiety and depressive disorders and categorization of generalized anxiety disorder. *Archives of General Psychiatry*, *67*, 47–57.
- Bennett, A., & Kahn Harris, K. (2004). *After subculture: Critical studies in contemporary youth culture*. Basingstoke: Palgrave.
- Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (2002). *Cross-cultural psychology: Research and applications* (2nd ed.). Cambridge: Cambridge University Press.
- Bertola, G., & Checchi, D. (2002). Sorting and private education in Italy. CEPR Discussion Papers 3198, C.E.P.R. Discussion Papers. <http://www.cepr.org/pubs/dps/DP3198>.
- Brown, T. A., & Barlow, D. H. (2009). A proposal for a dimensional classification system based on the shared features of the DSM-IV anxiety and mood disorders: Implications for assessment and treatment. *Psychological Assessment*, *21*, 256–271. doi:10.1037/a0016608.
- Bruce, T. J., & Sanderson, W. C. (1998). *Specific phobias: Clinical applications of evidence-based psychotherapy*. Northvale, NJ: Jason Aronson.
- Capron, C., Therond, C., & Duyme, M. (2007). Brief report: Effect of menarcheal status and family structure on depressive symptoms and emotional/behavioral problems in young adolescent girls. *Journal of Adolescence*, *30*, 175–179.
- Casiglia, A. C., Lo Coco, A., & Zappulla, C. (1998). Aspects of social reputation and peer relationships in Italian children: A cross-cultural perspective. *Developmental Psychology*, *34*(4), 723–730. doi:10.1037/0012-1649.34.4.723.
- Chen, X., Rubin, K. H., & Li, D. (1997). Relation between academic achievement and social adjustment: Evidence from Chinese children. *Developmental Psychology*, *33*, 518–525. doi:10.1037/0012-1649.33.3.518.
- Chen, X., Zappulla, C., Lo Coco, A., Schneider, B., Kaspar, V., De Oliveira, A., et al. (2004). Self-perception of competence in Brazilian, Canadian, Chinese and Italian children: Relations with social and school adjustment. *International Journal of Behavioral Development*, *28*, 129–138.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Cohen, J. R., Berkman, E. T., & Lieberman, M. D. (2013). Intentional and incidental self-control in ventrolateral PFC. In D. T. Stuss & R. T. Knight (Eds.), *Principles of frontal lobe function* (2nd ed., pp. 417–440). New York: Oxford University Press.
- Craske, M. G. (2003). *Origins of phobias and anxiety disorders: Why more women than men?*. Amsterdam: Elsevier.
- Crocetti, E., Hale, W. W., I. I. I., Fermani, A., Raaijmakers, Q., & Meeus, W. (2009). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED) in the general Italian adolescent population: A validation and a comparison between Italy and the Netherlands. *Journal of Anxiety Disorders*, *23*, 824–829.
- Dello-Iacovo, B. (2009). Curriculum reform and quality education in China: An overview. *International Journal of Educational Development*, *29*, 241–249.
- Delvecchio, E., Di Riso, D., Chessa, D., Salcuni, S., Mazzeschi, C., & Laghezza, L. (2013). Expressed emotion, parental stress, and family dysfunction among parents of nonclinical Italian children. *Journal of Child and Family Studies*. doi:10.1007/s10826-013-9754-x.
- Delvecchio, E., Di Riso, D., Chessa, D., & Lis, A. (2010). The Spence Children's Anxiety Scale in Italian children aged 8–10. *Bollettino di Psicologia Applicata*, *261*–262, 117–123.
- Delvecchio, E., Mabilia, D., Micconi, D., Chirico, I., & Li, J. (2014). Self-Consciousness in Chinese and Italian Adolescents: An exploratory cross-cultural study using the ASC. *Current Psychology*. doi:10.1007/s12144-014-9247-0.
- Denmark, R. L. (1999). Enhancing the development of adolescent girls. In N. G. Johnson, M. C. Roberts, & J. Worell (Eds.), *Beyond appearance: A new look at adolescent girls* (pp. 337–404). Washington, DC: American Psychological Association.
- Di Riso, D., Bobbio, A., Chessa, D., Lis, A., & Mazzeschi, C. (2014). Analysis of the interplay between depression, anxiety and psychological resources using self-report measures. *International Journal of Psychiatry in Clinical Practice*. doi:10.3109/13651501.2014.890227.
- Di Riso, D., Chessa, D., Bobbio, A., & Lis, A. (2013). Factorial structure of the SCAS and its relationship with the SDQ: A study with Italian children. *European Journal of Psychological Assessment*, *29*, 28–35. doi:10.1027/1015-5759/a000117.
- Di Riso, D., Salcuni, S., Chessa, D., Raudino, A., Lis, A., & Altoè, G. (2010). The strengths and difficulties questionnaire (SDQ). Early evidence of its reliability and validity in a community sample of Italian children. *Personality and Individual Differences*, *49*, 570–575.
- Dickey, W. C., & Blumberg, S. J. (2004). Revisiting the factor structure of the strengths and difficulties questionnaire: United States, 2001. *Journal of the American Academy of Child and Adolescent Psychiatry*, *43*, 1159–1167.
- Dong, Q., Yang, B., & Ollendick, T. H. (1994). Fears in Chinese children and adolescents and their relations to anxiety and depression. *Journal of Child Psychology and Psychiatry*, *35*, 351–363.
- Essau, C. A., Anastassiou-Hadjicharalambous, X., & Munoz, L. C. (2011a). Psychometric Properties of the Spence Children's Anxiety Scale (SCAS) in Cypriot children and adolescents. *Child Psychiatry and Human Development*, *42*, 557–568. doi:10.1007/s10578-011-0232-7.
- Essau, C. A., Leung, P. W., Conradt, J., Cheng, H., & Wong, T. (2008). Anxiety symptoms in Chinese and German adolescents: Their relationship with early learning experiences, perfectionism, and learning motivation. *Depression and Anxiety*, *25*, 801–810.
- Essau, C. A., Muris, P., & Ederer, E. M. (2002). Reliability and validity of the Spence Children's Anxiety Scale and the Screen for Child Anxiety Related Emotional Disorders in German children. *Journal of Behavior Therapy and Experimental Psychiatry*, *33*(18), 1–18.
- Essau, C. A., Olaya Guzmán, B., Pasha, G., O'Callaghan, J., & Bray, D. (2012a). The structure of anxiety symptoms among adolescents in Iran: A confirmatory factor analytic study of the Spence

- Children's Anxiety Scale. *Journal of Anxiety Disorders*, 26, 871–878.
- Essau, C. A., Sakano, Y., Ishikawa, S., & Sasagawa, S. (2004). Anxiety symptoms in Japanese and in German children. *Behaviour Research and Therapy*, 42, 601–612.
- Essau, C. A., Sasagawa, S., Anastassiou-Hadjicharalambous, X., Olaya Guzmán, B., & Ollendick, T. M. (2011b). Psychometric properties of the Spence Child Anxiety Scale with adolescents from five European countries. *Journal of Anxiety Disorders*, 25, 19–27.
- Essau, C. A., Sasagawa, S., Ishikawa, S., Okajima, I., O'Callaghan, J., & Bray, D. (2012b). A Japanese form of social anxiety (taijin kyofusho): Frequency and correlates in two generations of the same family. *The International Journal of Social Psychiatry*, 58, 635–642. doi:10.1177/0020764011421099.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire (SDQ). *Journal of the American Academy of Child and Adolescent Psychiatry*, 40, 1337–1345.
- Grills, A. E., & Ollendick, T. H. (2002). Issues in parent-child agreement: The case of structured diagnostic interviews. *Clinical Child and Family Psychology Review*, 5, 57–83.
- Hale, W. W., Crocetti, E., Raaijmakers, Q., & Meeus, W. (2011). A meta-analysis of the cross-cultural psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED). *Journal of Child Psychology and Psychiatry*, 52, 80–90.
- Hale, W. W., Raaijmakers, Q., Muris, P., & Meeus, W. (2005). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED) in the general adolescent population. *Journal of the American Academy of Child and Adolescent Psychiatry*, 44, 283–290.
- Hankin, B. L., & Abramson, L. Y. (2001). Development of gender differences in depression: An elaborated cognitive vulnerability-transactional stress theory. *Psychological Bulletin*, 127, 773–796. doi:10.1037/0033-2909.127.6.773.
- Hankin, B. L., Stone, L., & Wright, P. A. (2010). Corumination, interpersonal stress generation, and internalizing symptoms: Accumulating effects and transactional influences in a multi-wave study of adolescents. *Development and Psychopathology*, 22, 217–235. doi:10.1017/S0954579409990368.
- Heinrichs, N., Rapee, R. M., Alden, L. A., Bögels, S., Hofmann, S. G., Oh, K. J., et al. (2006). Cultural differences in perceived social norms and social anxiety. *Behaviour Research and Therapy*, 44, 1187–1197.
- Hewitt, J. K., Silberg, J. L., Rutter, M., Simonoff, E., Meyer, J. M., Maes, et al. (1997). Genetics and developmental psychopathology: Phenotypic assessment in the Virginia twin study of adolescent behavioral development. *Journal of Child Psychology and Psychiatry*, 38, 943–963.
- Hinton, D., Hsia, C. L., Rasmussen, A., & Pollack, M. (2009). Cultural anthropology and anxiety diagnoses. In D. McKay, J. Abramowitz, S. Taylor, & G. Asmundson (Eds.), *Current perspectives on the anxiety disorders: Implications for DSM-V and beyond* (pp. 245–274). New York: Springer.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, CA: Sage.
- Hollingshead, A. B. (1975). Four factor index of social status. (Unpublished working paper) New Haven, CT: Yale-University.
- Hsu, H., & Lavelli, M. (2005). Perceived and observed parenting behavior in American and Italian first-time mothers across the first three months. *Infant Behavior and Development*, 28, 503–518.
- Hu, L., & Bentler, P. M. (1999). Cut-off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, 6, 1–55.
- Hudson, J. L., & Rapee, R. M. (2009). Familial and social environments in the etiology and maintenance of anxiety disorders. In A. Martin & M. Stein (Eds.), *Handbook of anxiety and anxiety disorders* (pp. 173–189). New York: Oxford University Press.
- Ishikawa, S., Sato, H., & Sasagawa, S. (2009). Anxiety disorder symptoms in Japanese children and adolescents. *Journal of Anxiety Disorders*, 23, 104–111.
- Istituto Nazionale di Statistica (ISTAT) (2014). Resident population structure: Italian population and resident foreigners by age, sex, marital status and citizenship at 1 January 2012–2013. <http://www.istat.it/en/archive/106642>.
- Jöreskog, K. G., & Sörbom, D. (2006). LISREL 8.80 for Windows [Computer Software]. Lincolnwood, IL: Scientific Software International, Inc.
- Karver, M. S. (2006). Determinants of multiple informant agreement on child and adolescent behavior. *Journal of Abnormal Child Psychology*, 34, 251–262.
- Kirmayer, L. J. (1991). The place of culture in psychiatric nosology: Taijin Kyofusho and DSM-III-R. *Journal of Nervous and Mental Disease*, 179, 19–28. doi:10.1097/00005053-199101000-00005.
- Knappe, S., Beesdo-Baum, K., Lieb, R., & Wittchen, H. U. (2012). Externalizing disorders and anxiety disorders in adolescents and young adults. *Status Report 2010-2012 Institute of Clinical Psychology and Psychotherapy, Technische Universität Dresden*. Retrieved from http://www.psychologie.tu-dresden.de/2/klinische/aktuelles/Statusbericht_2010-2012.pdf.
- Lan, P. (2002). Subcontracting filial piety: Elder care in Ethnic Chinese immigrant families in California. *Journal of Family Issues*, 23, 812–835.
- Lee, A., & Hankin, B. L. (2009). Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *Journal of Clinical Child and Adolescent Psychology*, 38, 219–231.
- Lee, S., Chiu, A., Tsang, A., Chow, C. C., & Chan, W. B. (2006). Treatment-related stresses and anxiety-depressive symptoms among Chinese outpatients with type 2 diabetes mellitus in Hong Kong. *Diabetes Research and Clinical Practice*, 74, 282–288.
- Li, H., & Prevatt, F. (2008). Fears and related anxieties across three age groups of Mexican American and White children with disabilities. *The Journal of genetic psychology*, 168, 381–400.
- Li, H., Ang, R., & Lee, J. (2008). Anxieties in Mainland Chinese and Singapore Chinese adolescents in comparison with the American norm. *Journal of Adolescence*, 31, 583–594.
- Li, J. C., Lau, W. Y., & Au, T. K. (2011). Psychometric properties of the Spence Children's Anxiety Scale in a Hong Kong Chinese community sample. *Journal of Anxiety Disorders*, 25, 584–591.
- Lim, L. (2013). Taijin-Kyofu-Sho: A subtype of social anxiety. *Open Journal of Psychiatry*, 3, 393–398. doi:10.4236/ojpsych.2013.34042.
- Martinsons, M. G., & Ma, D. (2009). Sub-cultural differences in information ethics across China: Focus on Chinese management generation gaps. *Journal of the Association for Information Systems*, 10, 11. Retrieved from <http://aisel.aisnet.org/jais/vol10/iss11/2>.
- Mellon, R. C., & Moutavelis, A. G. (2007). Structure, developmental course, and correlates of children's anxiety disorder-related behavior in a Hellenic community sample. *Journal of Anxiety Disorders*, 21, 1–21. doi:10.1016/j.janxdis.2006.03.008.
- Mellon, R.C., & Moutavelis, A.G. (2011). Parental educational practices in relation to children's anxiety disorder-related behavior. *Journal of Anxiety Disorders*, 25, 829–834. doi:10.1016/j.janxdis.2011.04.003.

- Meng, X. L., Rosenthal, R., & Rubin, D. B. (1992). Comparing correlated correlation coefficients. *Psychological Bulletin*, *111*, 172–175. doi:10.1037/0033-2909.111.1.172.
- Muris, P., Loxton, H., Neumann, A., du Plessis, M., King, N., & Ollendick, T. (2006). DSM-defined anxiety disorders symptoms in South African youths: Their assessment and relationship with perceived parental rearing behaviors. *Behaviour Research and Therapy*, *44*, 883–896.
- Muris, P., Schmidt, H., & Merckelbach, H. (2000). Correlations among two self-report questionnaires for measuring DSM-defined anxiety disorder symptoms in children: The Screen for Child Anxiety Related Emotional Disorders and the Spence Children's Anxiety Scale. *Personality and Individual Differences*, *28*(2), 333–346.
- Muris, P., Schmidt, H., Engelbrecht, P., & Perold, M. (2002). DSM-IV-defined anxiety disorder symptoms in South African children. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*, 1360–1368.
- Nakamura, K., Kitanishi, K., Miyake, Y., Hashimoto, K., & Kubota, M. (2002). The neurotic versus delusional subtype of Taijin-Kyofusho: Their DSM diagnoses. *Psychiatry and Clinical Neurosciences*, *56*, 595–601.
- Ogliari, A., Citterio, A., Zanoni, A., Fagnani, C., Patriarca, V., Cirrincione, R., et al. (2006). Genetic and environmental influences on anxiety dimensions in Italian twins evaluated with the SCARED questionnaire. *Journal of Anxiety Disorders*, *20*, 760–777.
- Ollendick, T. H., Raishevich, N., Davis, T. E., Sirbu, C., & Ost, L. G. (2010). Phenomenology and psychological characteristics of youth with specific phobias. *Behavior Therapy*, *41*, 133–141.
- Orgilés, M., Méndez, X., Spence, S. H., Huedo-Medina, T. B., & Espada, J. P. (2012). Anxiety disorders symptoms in Spanish children. *Child Psychiatry and Human Development*, *43*, 271–281.
- Pearlin, L. J., & Kohn, M. L. (1966). Social class, occupation and parental values: A cross national study. *American Sociological Review*, *31*, 466–479.
- Pina, A. A., Little, M., Knight, G. P., & Silverman, W. K. (2009). Cross-ethnic measurement equivalence of the RCMA5 in Hispanic/Latino and European American youth with anxiety disorders. *Journal of Personality Assessment*, *91*, 58–61.
- Quach, A., & Harnek Hall, D. (2013). Chinese American attitudes toward therapy: Effects of gender, shame, and acculturation. *International Journal of Humanities and Social Science*, *3*, 209–222.
- Rabaglietti, E., Vacirca, M. F., Zucchetti, G., & Ciairano, S. (2012). Similarity, cohesion, and friendship networks among boys and girls: A one-year follow-up study among Italian children. *Current Psychology*, *31*, 246–262. doi:10.1007/s12144-012-9145-2.
- Raudino, A., Murray, L., Turner, C., Tsampala, E., Lis, A., De Pascalis, L., et al. (2013). Child anxiety and parenting in England and Italy: The moderating role of maternal warmth. *Journal of Child Psychology and Psychiatry*, *54*, 1318–1326. doi:10.1111/jcpp.12105.
- Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von Eye & C. C. Clogg (Eds.), *Latent variables analysis: Applications for developmental research* (pp. 399–419). Thousand Oaks, CA: Sage.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Test of significance and descriptive goodness of fit measures. *Methods of Psychological Research*, *8*, 23–74.
- Schreier, S. S., Heinrichs, N., Alden, L., Rapee, R. M., Hofmann, S. G., Chen, J., et al. (2010). Social anxiety and social norms in individualistic and collectivistic countries. *Depression and Anxiety*, *27*, 1128–1134. doi:10.1002/da.20746.
- Shildrick, T. A. (2006). Youth culture, subculture and the importance of neighbourhood. *Young*, *14*, 161–174. doi:10.1177/1103308806059815.
- Silberg, J., Rutter, M., Neale, M., & Eaves, L. (2001). Genetic moderation of environmental risk for depression and anxiety in adolescent girls. *British Journal of Psychiatry*, *179*, 116–121.
- Silverman, W. K., & Ollendick, T. H. (2005). Evidence-based assessment of anxiety and its disorders in children and adolescents. *Journal of Clinical Child and Adolescent Psychology*, *34*, 380–411.
- Snyder, P., & Lawson, S. (1993). Evaluating results using corrected and uncorrected effect size estimates. *Journal of Experimental Education*, *61*, 334–349.
- Spence, S. H. (1997). Structure of anxiety symptoms among children: A confirmatory factor-analytic study. *Journal of Abnormal Psychology*, *106*, 280–297.
- Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy*, *36*, 545–566.
- Spence, S. H., Barrett, P. M., & Turner, C. M. (2003). Psychometric properties of the Spence Children's Anxiety Scale with young adolescents. *Journal of Anxiety Disorders*, *17*, 605–625.
- SPSS Inc. (2009). PASW Statistics 18, Release Version 18.0.0. Chicago: SPSS, Inc.
- Steel, Z., Chey, T., Silove, D., Marnane, C., Bryant, R., & van Ommeren, M. (2009). Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: A systematic review and meta-analysis. *Journal of the American Medical Association*, *302*, 537–549.
- Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin*, *87*, 245–251.
- Stevens, J. P. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Su, L., Wang, K., Fan, F., Su, Y., & Gao, X. (2008). Reliability and validity of the Screen for Child Anxiety Related Emotional Disorders (SCARED) in Chinese children. *Journal of Anxiety Disorders*, *22*, 612–621.
- Tanios, C. Y., Abou-Saleh, M. T., Karam, A. N., Salamoun, M. M., Mneimneh, Z. N., & Karam, E. G. (2009). The epidemiology of anxiety disorders in the Arab world: A review. *Journal of Anxiety Disorders*, *23*, 409–419.
- Tortella-Feliu, M., Balle, M., Servera, M., & García de la Banda, G. (2005). Propiedades psicométricas de la adaptación catalana de la Escala de Ansiedad en Niños/-as de Spence (SCAS). *Psicología Conductual*, *13*, 111–123.
- Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview Press.
- Tsui, M., & Rich, L. (2002). The only child and educational opportunity for girls in urban China. *Gender and Society*, *16*, 74–92.
- van Oort, F. V., 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.
- Visani, D., Albieri, E., Offidani, E., Ottolini, F., Tomba, E., & Ruini, C. (2011). Gender differences in psychological well-being and distress during adolescence. In I. Brdar (Ed.), *The human pursuit of well-being: A cultural approach* (pp. 65–70). New York, NY: Springer.
- Whiteside, S., & Brown, A. (2008). Exploring the utility of the Spence Children's Anxiety Scales Parent- and Child-Report forms in a North American sample. *Journal of Anxiety Disorders*, *22*, 1440–1446.
- Wood, J. J., Piacentini, J. C., Southam-Gerow, M., Chu, B. C., & Sigman, M. (2006). Family cognitive behavioral therapy for

- child anxiety disorders. *Journal of American Academy of Child & Adolescent Psychiatry*, 45, 314–321.
- Woodward, L. J., & Fergusson, D. M. (2001). Life course outcomes of young people with anxiety disorders in adolescence. *Journal of American Academy of Child and Adolescent Psychiatry*, 40, 1086–1093.
- Wren, F. J., Berg, E. A., Heiden, L. A., Kinnamon, C. J., Ohlson, L. A., Bridge, J. A., et al. (2007). Childhood anxiety in a diverse primary care population: Parent-child reports, ethnicity and SCARED factor structure. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46, 332–340.
- Xie, D., & Leong, F. T. L. (2008). A cross-cultural study of anxiety among Chinese and Caucasian American university students. *Journal of Multicultural Counseling & Development*, 36, 52–63. doi:10.1002/j.2161-1912.2008.tb00069.x.
- Zhao, J., Xinga, X., & Wang, M. (2012). Psychometric properties of the Spence Children's Anxiety Scale (SCAS) in Mainland Chinese children and adolescents. *Journal of Anxiety Disorders*, 26, 728–736. doi:10.1016/j.janxdis.2012.05.006.
- Zhong, J., Wang, A., Qian, M., Zhang, L., Gao, J., Yang, J., et al. (2008). Shame, personality, and symptoms in Chinese and American Nonclinical Samples: A cross-cultural study. *Depression and Anxiety*, 25, 449–460. doi:10.1002/da.20358.