

Generalized Anxiety Symptoms and Identity Processes in Cross-Cultural Samples of Adolescents from the General Population

Elisabetta Crocetti · William W. Hale III · Radosveta Dimitrova ·
Amina Abubakar · Cheng-Hai Gao · Ivan Jacob Agaloos Pesigan

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Abstract

Background Approximately 20 % of adolescents around the world experience mental health problems, most commonly depression or anxiety. High levels of anxiety disorder symptoms can hinder adolescent development, persist into adulthood, and predict negative mental outcomes, such as suicidal ideation and attempts.

Objectives We analyzed generalized anxiety disorder (GAD) symptoms in cross-cultural samples from the general population. We sought to examine cultural and gender differences, and correlates of GAD symptoms in samples of adolescents from six countries located in three different continents (Europe: Bulgaria, Italy, the Netherlands; Africa: Kenya; Asia: China and Philippines).

Methods Participants were 3,445 (51 % male) adolescents aged between 14 and 18 years old. They filled self-report measures of GAD symptoms and identity.

E. Crocetti (✉) · W. W. Hale III · A. Abubakar
Research Centre Adolescent Development, Utrecht University, Martinus J. Langeveldgebouw,
Heidelberglaan 1, 3584CS Utrecht, The Netherlands
e-mail: e.crocetti@uu.nl

R. Dimitrova
Stockholm University, Stockholm, Sweden

A. Abubakar
Tilburg University, Tilburg, The Netherlands

C.-H. Gao
Northwest Normal University, Lanzhou, China

I. J. A. Pesigan
Ateneo de Manila University, Quezon City, Philippines

I. J. A. Pesigan
Miriam College, Quezon City, Philippines

I. J. A. Pesigan
De La Salle University, Manila, Philippines

Results First, it was found that the scores on GAD symptoms varied significantly across countries, with Dutch respondents reporting the lowest levels whereas Filipino participants exhibited the highest levels of GAD symptoms. Second, gender differences (i.e., girls reported more GAD symptoms than boys) were significant in each country (as well as in the total sample), with the only exception being that of Kenya. Third, GAD symptoms were significantly related to identity processes and similarities and differences across countries were examined.

Conclusions This study highlighted that prevalence, gender differences, and correlates of GAD vary across countries. Therefore, it is important when researching GAD symptoms to examine one's research findings within a global perspective.

Keywords Generalized anxiety disorder symptoms · Adolescence · Gender · Identity · Cross-cultural

Abbreviation

GAD Generalized anxiety disorder

Introduction

Approximately 20 % of adolescents around the world experience mental health problems, most commonly depression or anxiety (World Health Organization 2012). High levels of anxiety disorder symptoms can hinder adolescent development, persist into adulthood (Roza et al. 2003), and predict negative mental outcomes, such as suicidal ideation and attempts (Boden et al. 2007). Therefore, it is of utmost importance to detect anxiety symptoms early and to promote resources that could reduce the symptom severity.

Generalized Anxiety Disorder Symptoms

In this study, we examined Generalized Anxiety Disorder (GAD) symptoms in a cross-cultural perspective. The focus on GAD as a prototypic anxiety disorder was due to the fact that GAD is one of the most commonly occurring anxiety disorders in adolescents (Angst et al. 2006; Hunt et al. 2002). The core symptom of GAD is excessive, persistent, and uncontrollable worry (American Psychiatric Association 2000). GAD is a severe disorder that many times has an early and gradual onset, which can lead to a chronic course (Dugas 2000). Additionally, sufferers of GAD place a strong burden on the primary care setting (Wittchen 2002). Prospective, longitudinal studies of the developmental trajectories of GAD symptoms of adolescents from the general population have found that GAD symptoms are not something that adolescents simply “outgrow”, but instead continue on into early adulthood (Hale et al. 2008; van Oort et al. 2009). Therefore research into factors that contribute to the development of adolescent GAD is needed to gain more insight into the nature of this pathology.

Several researchers have noted that referral bias may limit the generalizability of research findings from clinical samples to the general population (Birmaher et al. 1997, 1999; Hale et al. 2005) and that studies of the general population may better reflect the developmental course of adolescent anxiety disorders (Pine et al. 1998). It is for these reasons that research on the developmental course of anxiety symptoms in children and

adolescents from the general population is necessary and has recently received greater recognition.

In order to better understand the cross-cultural phenomenology of GAD symptoms, in this study we examined cultural and gender differences, and correlates of GAD symptoms in samples of adolescents from the general population. Specifically, we considered adolescents from six countries located in three different continents (Europe: Bulgaria, Italy, the Netherlands; Africa: Kenya; Asia: China and Philippines). We focused both on countries in which there is a rich tradition of research on adolescent anxiety symptomology (e.g., Italy and the Netherlands) as well on countries in which there is a dearth of studies on this topic (e.g., Bulgaria, Kenya, and Philippines) in order to examine if results obtained in Western countries can be replicated in non-Western countries (cf. Arnett 2008).

Prevalence of GAD Symptoms: A Cross-Cultural Perspective

The cross-cultural literature on the prevalence of mental health problems in the general population highlights that both socioeconomic indicators (e.g., affluence, gross national product, stability of democracy) and cultural values (e.g., individualism) typical of each country can explain differences in the prevalence rates of these problems (e.g., Veenhoven 1995). Most of the available evidence is derived from studies conducted with college students or adults and indicate that people living in wealthy, egalitarian, individualistic, and politically stable countries tend to have better mental health scores (van Hemert et al. 2002). In a meta-analysis in which cultural differences on anxiety were examined, Fischer and Boer (2011) found that individualism could mediate the positive relationship between wealth and mental health. It appears plausible that increased wealth in a society may reduce anxiety symptoms primarily allowing adult citizens to experience greater autonomy and freedom in their daily life (Diener et al. 1995).

On the basis of these findings, in this study we expected to find differences on GAD symptoms in adolescents living in Western (the Netherlands), Southern (Italy), and Eastern (Bulgaria) European countries, in Africa (Kenya), and in Asia (China and Philippines). These countries differ both on objective indicators of wealth and equality and on cultural values (Hofstede 1993, 2001). In particular differences in individualism and in power distance might impact the prevalence of GAD symptoms across adolescent samples.

People from individualistic cultures value uniqueness and individual autonomy, strive to hold positive views of themselves (Markus and Kitayama 1991; Mezulis et al. 2004) and their accomplishments, and doing so is a sign of good mental health. In collectivistic cultures, people socialize in a strict interdependence of the group, and exhibit moderate emotional expression; therefore feeling good about oneself may be a sign of maladjustment (Diener and Diener 1995). Italian and Dutch cultures score high on individualism (see Table 1) with emphasis on values of assertiveness and self-expression, whereas Bulgarian, Kenyan, Filipino, and Chinese cultures represent collectivist cultures, which emphasize self-restraint and cooperation (Hofstede 1993).

Power distance refers to the degree to which power is distributed unequally within a society and is correlated with income inequality (Hofstede 1993; Hofstede et al. 2010). In societies with high power distance the hierarchical structure is strong and difficult to change, whereas in societies with low power distance people strive to equalize the distribution of power. In this respect, levels of power distance are low in the Netherlands and very high in the Philippines (see Table 1).

Table 1 Country scores on individualism and power distance

	Europe			Africa	Asia	
	Bulgaria	Italy	Netherlands	Kenya	China	Philippines
Individualism	30	76	80	25	20	32
Power distance	70	50	38	70	80	94

Source The Hofstede Centre, online database available at <http://geert-hofstede.com/countries.html>

Similarly to what was found in studies conducted with adult populations (for reviews see Fischer and Boer 2011; van Hemert et al. 2002), we expected that adolescents living in countries characterized by a combination of high individualism and low power distance would report less GAD symptoms than their counterparts living in contexts characterized by low individualism and high power distance. In fact, for adolescents living in the latter contexts the pressure to adherence to others' expectations combined with the perceptions of barriers to social mobility might increase GAD symptoms in a phase of life in which individuals need to find out which is their place and role in the society. Thus, we expected rank ordering levels of GAD symptoms reported by adolescents from the participating countries that we would find this hypothetical order (from low anxiety to high anxiety): respondents from the Netherlands, Italy, Bulgaria/Kenya, China, and Philippines (*Hypothesis 1*).

Gender Differences in GAD Symptoms

In respect to anxiety disorder symptoms in general, consistent evidence suggests that female adolescents report more anxiety symptoms than male adolescents (Birmaher et al. 1997, 1999; Muris et al. 2002; Ollendick and King 1994). The female preponderance emerges early in life, and retrospective data indicate that at age 6, females are already twice as likely to have experienced an anxiety disorder as are males (Lewinsohn et al. 1998). Specifically regarding GAD, it has been found that adolescent GAD symptoms are more common in girls than in boys (Hale et al. 2005; Crocetti et al. 2009a; Essau et al. 2013; Zhao et al. 2012). One reason for these gender differences is that GAD is strongly focused on interpersonal difficulties (Rapee 2001), and previous studies have shown that interpersonal difficulties are associated specifically with GAD symptoms in adolescent girls (Hale et al. 2006). Gender differences on GAD symptoms have been documented in various Western and non-Western countries and tend to increase with age (Hale et al. 2011). Thus, we expected to find gender differences (with girls reporting more GAD symptoms than boys) in all the countries examined in this study (*Hypothesis 2*).

Correlates of GAD: Identity Processes

It is of utmost importance to shed light on correlates of GAD symptoms in order to individuate protective and risk factors that are related to the decrease and increase of anxiety levels. In adolescence, overall adjustment and anxiety issues are likely to be connected to identity dynamics (e.g., Berman et al. 2006; Ferrer-Wreder et al. 2008).

The development of a coherent and organized sense of identity is one of the primary developmental tasks of adolescence (Erikson 1968). Adolescents who optimally face the identity formation task are those who are able to achieve their own identity, combining and integrating relevant earlier identifications into a unique and personal mold. Inversely, those who are not able to cope effectively with this task remain in a condition of role confusion, moving superficially from one identification to another since they have not yet made their own commitments (Erikson 1968).

This dynamic between identity achievement and role confusion can be captured by the interplay of three identity processes (Crocetti et al. 2008; Meeus et al. 2010): commitment, in-depth exploration, and reconsideration of commitment. *Commitment* represents enduring choices that individuals have made with regard to various developmental domains and to the self-confidence they derive from these choices; it serves as an indicator of identity consolidation and of successful identity development. *In-depth exploration* represents the extent to which individuals think actively about the commitments they have enacted (e.g., reflecting on their choices, searching for additional information, talking with others about their commitments); it is a double-edged sword, associated with curiosity but also with confusion and distress. *Reconsideration of commitment* represents the comparison of present commitments with possible alternative commitments because the current ones are no longer satisfactory; it is intertwined with disequilibrium and maladjustment, assuming the character of an identity crisis.

In respect to specific associations between identity and anxiety symptoms, previous cross-sectional (Crocetti et al. 2008, 2010) and longitudinal (Crocetti et al. 2009b) studies conducted with Western European samples have highlighted that anxiety symptoms go together with a condition of low commitment, high in-depth exploration, and high reconsideration of commitment. However, in light of the potential role cultural differences can play in anxiety (e.g., Fischer and Boer 2011) it is also necessary to further replicate these aforementioned findings of identity and anxiety symptoms in non-Western countries.

Building upon the analysis of the cultural differences (e.g., Hofstede et al. 2010) among the countries examined in this study we can expect some differentiations in the pattern of associations between GAD symptoms and identity processes. In particular, in countries with higher levels of individualism and lower power distance adolescents may feel overwhelmed by alternatives among which to choose (Schwartz 2000). In this context, finding meaningful commitments might have a more beneficial effect on anxiety than in countries in which adolescents perceive to have fewer alternatives among which to choose. In contrast, in countries in which adolescents have a limited array of possibilities, reconsidering an existing commitment might be particularly distressing, especially if it implies questioning family and group norms to which adolescents are expected to stick. On the basis of this knowledge, we expected to find stronger negative linkages between commitment and GAD symptoms in the Netherlands and in Italy, and stronger positive associations between reconsideration of commitment and GAD symptoms in Bulgaria, Kenya, China, and the Philippines (*Hypothesis 3*).

The Present Study

In summary, in this study we sought to shed light on GAD symptoms in adolescents from the general population across different cultural contexts. First, we sought to compare levels of GAD symptoms reported by adolescents living in Western (i.e., the Netherlands), Southern (i.e., Italy), and Eastern (i.e., Bulgaria) European countries, in Africa (i.e.,

Kenya), and in Asia (i.e., China and Philippines). Second, we unraveled gender differences in GAD symptoms across these cross-cultural groups. Third, we disentangled associations between GAD symptoms and identity processes (i.e., commitment, in-depth exploration, and reconsideration of commitment) across the cross-cultural groups.

Method

Participants

A total of 3,445 (51 % male) adolescents aged between 14 and 18 years old ($M_{\text{age}} = 16.07$; $SD_{\text{age}} = 1.49$) participated in this study. The characteristics of the six cross-cultural samples are reported in Table 2. A comparison of age differences across samples yielded significant results, $F(5, 3,444) = 146.17$, $p < .001$, $\eta^2 = .18$ (see Table 2 for post hoc findings). There were also slight gender differences across samples, $\chi^2(5, N = 3,445) = 24.52$, $p < .001$, Cramér's $V = .08$, $p < .001$. An inspection of standardized residuals indicated that the gender composition was balanced in each sample, with the only exception being the Kenyan sample that was characterized by a predominance of boys. In each country sample, all respondents were autochthonous and were attending public, urban, and non-religious affiliated high schools. In order to obtain country samples diverse in terms of socioeconomic status (SES), students attending various types of schools (academic oriented or technical/vocational schools) were involved in the study (i.e., students enrolled in academic oriented schools have overall higher SES than students attending technical/vocational schools).

Procedure

This study was conducted in accordance with the ethical standards laid down in the American Psychological Association (APA) Ethical Principles of Psychologists and Code of Conduct and its later amendments and with respect to the legal requirements of each participating country. Data were collected in the school setting by trained research assistants, after having obtained permission from the school principals to administer questionnaires during class time. Participants received information about the study (research goals, duration, and procedures used) specifying that data were collected solely for research purposes, that participation was voluntary and withdrawal from the research could be undertaken at any time. Thus, participants could voluntarily decide whether to participate in the study filling out anonymous self-report measures. Participants gave their informed consent prior to the inclusion in the study and did not receive any compensation for their participation. All the students present in class the day of the administration accepted to participate in the study.

Measures

Generalized Anxiety Disorder Symptoms

GAD symptoms were measured by means of the GAD subscale from the *Screen for Child Anxiety Related Emotional Disorders* (SCARED; Birmaher et al. 1997; for a meta-analysis on the cross-cultural properties of the SCARED, see: Hale et al. 2011). Specifically, participants from the Philippines and Kenya filled the original English (Birmaher et al.

Table 2 Sample characteristics

	Europe			Africa	Asia	
	Bulgaria	Italy	Netherlands	Kenya	China	Philippines
<i>N</i>	369	836	712	331	295	902
Gender: % female	51.5	51.6	52.2	38.4	51.5	53.8
Age: <i>M</i> ¹ (<i>SD</i>)	16.85 ^c (1.05)	16.01 ^b (1.50)	15.04 ^a (1.51)	16.90 ^c (1.23)	16.71 ^c (.96)	16.11 ^b (1.37)

N = sample size; *M* Mean; *SD* standard deviation

¹ Means with a different superscript are significantly different from each other ($p < .05$)

1997) version of the GAD subscale of the SCARED; participants from Italy, the Netherlands, and China filled the validated Italian (Crocetti et al. 2009a), Dutch (Hale et al. 2005), and Chinese (Su et al. 2008) versions, respectively. Since the Bulgarian version of the SCARED was not available, the original English version of the GAD was translated into Bulgarian by a team of three bilingual translators following the recommended procedures for the establishment of linguistic equivalence (van de Vijver and Leung 1997). The GAD subscale consists of 9 items scored on a three-point scale: 1 (*almost never*), 2 (*sometimes*), and 3 (*often*). A sample item is: “I worry about whether others will like me”. Cronbach’s alpha in the overall sample was .89.

Identity

Identity commitment, in-depth exploration, and reconsideration of commitment were measured using the *Utrecht-Management of Identity Commitments Scale* (U-MICS; Crocetti et al. 2008). More specifically, participants from the Philippines and Kenya filled the English version of the U-MICS, while participants from Italy, the Netherlands, Bulgaria, and China filled the validated Italian (Crocetti et al. 2010), Dutch (Crocetti et al. 2008), Bulgarian (Dimitrova et al. 2014a, b), and Chinese (Crocetti et al. 2014) versions, respectively. The U-MICS consists of 26 items with a response scale ranging from 1 (*completely untrue*) to 5 (*completely true*). Thirteen items index the target processes in one ideological domain (education), and 13 items index the target processes in one interpersonal domain (friendship). Sample items include: “My education/best friend gives me certainty in life” (commitment; 10 items), “I think a lot about my education/best friend” (in-depth exploration; 10 items), and “I often think it would be better to try to find a different education/best friend” (reconsideration of commitment; 6 items). Although the U-MICS assesses identity in different domains, the instrument can be employed to measure overall identity, combining responses across the two domains (Crocetti et al. 2008, 2010). In this study we used this approach to focus on overall identity. In the total sample Cronbach’s alphas were .87 for commitment, .82 for in-depth exploration, and .82 reconsideration of commitment.

Results

Differences in GAD Symptoms Across Countries

Our first aim was to compare prevalence of GAD symptom scores across countries. To reach this goal we conducted a Univariate Analysis of Covariance (ANCOVA) on GAD

symptoms with the country as the independent variable controlling for gender and age. Results indicated a significant and large effect of country, $F(5, 3444) = 513.00, p < .001, \eta^2 = .43$. Estimated marginal means (obtained controlling for gender and age effects) are displayed in Fig. 1, along with results of pairwise contrasts conducted with the Bonferroni correction for multiple comparisons. As can be seen, Dutch respondents reported the lowest levels of GAD symptoms whereas Filipino participants exhibited the highest levels. In ascending order, adolescents from Italy, Bulgaria, China, and Kenya reported intermediate scores (with the note that Italian reported less severe GAD symptoms than Kenyan participants).

Gender Differences in GAD Symptoms Across Countries

The second purpose of this study was to examine gender differences in GAD symptoms across the cross-cultural samples under investigation. To reach this goal we computed for each country (as well as for the overall sample) an index of the effect size of gender differences (Cumming 2012; Kline 2013). Specifically, we computed Cohen's d (standardized mean difference) effect sizes from means, standard deviations, and sample sizes of boys and girls. Positive values of the Cohen's d are indicative of girls scoring higher than boys on GAD. According to Cohen's (1988) criteria, $ds < .20$ are considered small effects, ds of about .50 moderate effects, and ds of about .80 large effects. For each effect size, we also computed its 95 % confidence interval (CI). A CI including the zero value is indicative of a non-significant gender effect (Cumming 2012).

The results are displayed in Fig. 2. As can be seen, gender differences were significant in each country (as well as in the total sample), with the exception of Kenya that was the only country in which we found similar levels of GAD symptoms for girls and boys. In all the other countries (and in the total sample), girls consistently reported higher GAD symptoms than boys. The magnitude of these effects ranged from small to moderate.

Associations Between GAD Symptoms and Identity across Countries

The final aim of this study was to examine associations between GAD symptoms and identity processes (i.e., commitment, in-depth exploration, and reconsideration of commitment). In order to reach this goal, we performed regression analyses on GAD symptoms with identity processes entered in blocks as predictors. In this way, it was possible to examine the relationship between each identity process and GAD symptoms by controlling for inter-correlation among identity processes.

These results are reported in Table 3. As can be seen, identity processes explained significant portions of variance (R^2) in GAD symptoms in every country. Nonetheless, the portions of explained variance were lower in Filipino and Kenyan groups than in the other country samples. Standardized regression coefficients indicated a number of significant relations between identity processes and GAD symptoms. More specifically, commitment was negatively associated with GAD symptoms in the Italian, Dutch, and Chinese samples. In-depth exploration was positively related to GAD symptoms in all countries except for Kenya. Reconsideration of commitment was positively related to GAD symptoms in Bulgarian, Kenyan, and Filipino samples.

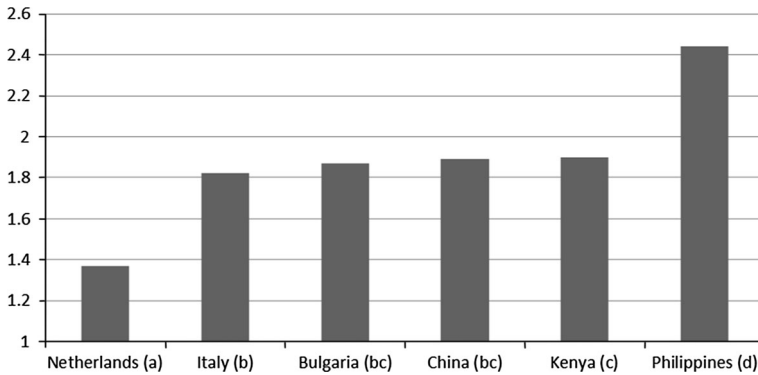


Fig. 1 Estimated marginal means for GAD symptoms (*Different letters indicate means that are significantly different from each other, $p < .05$*). GAD symptom scores ranged from 1 (*low*) to 3 (*high*)

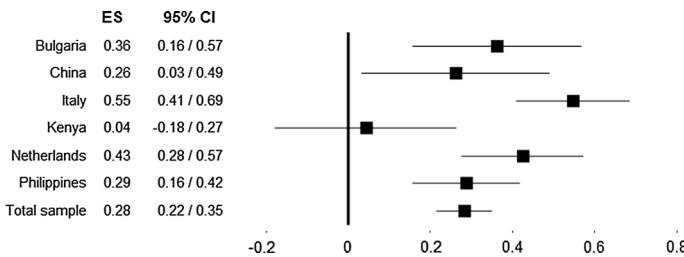


Fig. 2 Effect sizes (Cohen's d) of gender differences on GAD symptoms. Positive effect sizes indicate that girls scored higher than boys. *Error-bars* represent 95 % confidence intervals (CIs)

Discussion

In this study, we focused on adolescent GAD symptoms in adolescents from the general population with a cross-cultural perspective. We sought to examine cultural and gender differences, and identity correlates of GAD symptoms in adolescent samples from six different countries located in Northern (i.e., Netherlands), Southern (i.e., Italy), and Eastern (i.e., Bulgaria) Europe, in Africa (i.e., Kenya), and in Asia (i.e., China, Philippines). We included countries, such as Bulgaria, Kenya, and Philippines, in which research on this topic is scarce. We will now discuss the main results of the study in terms of similarities and differences across countries.

Cultural Differences in GAD Symptoms

The first purpose of this study was to compare levels of GAD symptoms reported by adolescent samples from six countries. In line with our first hypothesis, findings pointed out large differences across these countries. In particular, Dutch and Filipino respondents reported the most extreme scores: Dutch adolescents reported the lowest levels of GAD symptoms, whereas their Filipino counterparts reported the highest levels of GAD symptoms. Adolescents from Italy, Bulgaria, China, and Kenya scored between the two extremes. More specifically, Italian reported lower levels of GAD symptoms than their

Table 3 Standardized betas and portion of explained variance for the regression analyses of identity processes on GAD symptoms

Identity processes	Europe			Africa	Asia	
	Bulgaria	Italy	Netherlands	Kenya	China	Philippines
Commitment	−.07	−.14***	−.23***	−.07	−.28***	−.04
In-depth exploration	.22***	.37***	.22***	.04	.17**	.11*
Reconsideration of commitment	.14**	.03	.04	.18**	−.04	.09**
R ²	.06***	.11***	.07***	.04**	.08***	.02**

* $p < .05$; ** $p < .001$; *** $p < .001$

Kenyan peers, while Bulgarian and Chinese adolescents did not differ significantly from the Italian or the Kenyan participants. Overall, these findings confirm that adolescents living in countries characterized by a combination of high individualism and low power distance (Hofstede et al. 2010) report lower GAD symptoms than their peers growing up in countries characterized by a combination of low individualism and high power distance.

More specifically, our results that demonstrated that Dutch adolescents had the lowest level of GAD symptoms are consistent with findings of other cross-cultural comparisons. For instance, Dutch adolescents reported the highest levels of satisfaction with life in the 2009/2010 edition of the Health Behavior in School-Aged Children (HBSC) study, a cross-national, school-based research survey conducted in collaboration with the WHO Regional Office for Europe every 4 years in 43 countries and regions across Europe and North America (Currie et al. 2012). Additionally, in the HBSC study Dutch adolescents also reported warm and supportive family and school climates, characterized by very high levels of good communication with both parents, low pressure of schoolwork, and good support by schoolmates (Currie et al. 2012). It is quite conceivable that this cluster of positive family and school climates provides a protective factor against the core symptom of GAD, namely worry. However, since these specific variables were not collected in the present study, it is not possible to definitively say if this is in fact the case. Future studies could further address this issue of the relationship between adolescent GAD symptomology and family and school climate across cultural groups.

A very different picture characterized Filipino adolescents, who displayed very high levels of GAD symptoms. The necessity to attend and do well in school and to help the family after schooling can be a source of difficulty for Filipinos. Furthermore, despite modernization and urbanization in the Philippines in recent years, poverty is still a major concern among Filipino youth (Lanuza 2004) and high levels of power distance may threaten adolescents' attempts to improve their condition. Often, education is perceived as a way out of poverty and this places tremendous pressure on adolescents to perform well in school. In a poverty assessment by the World Bank (2001), the educational attainment of the head of the family was positively related to the household welfare. Filipinos value the interdependence in their families (Alampay and Jocson 2011; Chao and Tseng 2002) and they feel a certain sense of obligation to help their families financially after schooling (Fulgini and Pedersen 2002). The sense of family obligation from the cultural importance of collectivism and interdependence can go counter the growing influence of individualism and independence. This can create tension in the individual as to his or her personal trajectory and the needs of the family.

Gender Differences in GAD Symptoms

The second purpose of this study consisted in examining gender differences in GAD symptoms. In line with our second hypothesis, findings highlight straightforward similarities across countries. In fact, in each country, with the only exception being Kenya, girls were found to report more anxiety symptoms than boys. These findings are consistent with a wide body of literature documenting that internalizing problem behaviors, such as anxiety and depression, mainly affects girls, whereas externalizing problem behaviors, such as delinquency and aggression, are more typical of boys (Rescorla et al. 2007). The effect sizes of gender differences on adolescent GAD symptoms were found to be small or moderate, in agreement with previous meta-analytic studies of adolescent anxiety in which GAD was also included (e.g., Hale et al. 2011). As noted earlier, an important reason for these gender differences is that GAD is strongly focused on interpersonal difficulties (Rapee 2001), since the core symptom of GAD is excessive, persistent, and uncontrollable worry (American Psychiatric Association 2000), and previous studies have shown that interpersonal difficulties are associated specifically with GAD in adolescent girls (Hale et al. 2006).

Kenya was the only country where we did not find a significant GAD gender difference. A further inspection of the literature revealed that other studies reported similar levels of overall anxiety (Mitchell and Abbott 1987) and GAD (Ndeti et al. 2008) for Kenyan boys and girls. Interestingly, Venier et al. (1998) compared levels of HIV/AIDS-related social anxieties in adolescents from three African countries, including Kenya, and found both gender similarities and differences. Specifically, Venier et al. (1998) reported that in Kenya boys and girls had the same levels of anxiety about general social interactions, while they differed on anxiety related to condom interactions (boys exhibited higher anxiety than girls) and on anxiety about confiding in significant others (in this case girls displayed slightly higher anxiety than boys). Taken together, this evidence suggests that in Kenya boys and girls show more similarities in anxiety levels, which is different to what is found in other countries. Furthermore, in Kenya when gender differences in anxiety emerge, they are not unilateral (with girls being more anxious than boys), but they appear to show a more differentiated pattern (boys can be more anxious for some HIV/AIDS-related anxieties perceived as less threatening by girls and vice versa; Venier et al. 1998). Hence, further research is warranted to examine mental health outcomes in Kenya and explain this general lack of expected gender differences that occurs in other countries.

Identity Correlates of Anxiety

The third aim of this study consisted in examining identity correlates of anxiety symptoms. Meaningful associations among identity processes and GAD symptoms were found in each country, with a pattern of interesting similarities and differences. The main similarity concerned the relationships between in-depth exploration and GAD symptoms, which were positive and significant in each country (with the exception of Kenya, in which this relationship was positive but non-significant). These findings further indicate that in-depth exploration of identity issues is a double-edged sword, associated with conscientiousness, openness to experience, social responsibility, but also with distress (e.g., Crocetti et al. 2012; Schwartz et al. 2009).

In line with our third hypothesis, the main differences among countries was in regard to significant associations between commitment and reconsideration of commitment on the

one hand and GAD symptoms on the other hand. In Italy, the Netherlands, and China, commitment was negatively related to GAD symptoms, while this relationship was non-significant in Bulgaria, Kenya, and Philippines. Associations between reconsideration of commitment and GAD symptoms presented the exact opposite pattern: these relationships were significant and positive in Bulgaria, Kenya, and Philippines, whereas they were non-significant in Italy, the Netherlands, and China. The direction of these effects is consistent with the literature that has widely shown that commitment provides a sense of security that leads to higher well-being (Berzonsky 2003) while reconsideration of commitment questions this sense of security and is interwoven with maladjustment and distress (Meeus 2011). What it is of great interest is the fact that the findings of this study indicate that commitment plays a more crucial role in explaining differences in GAD symptoms in some cultures while reconsideration of commitment appears to be more important in other cultures.

In countries in which adolescents perceive to have a large array of alternatives among which to choose, finding meaningful commitments has a beneficial effect on GAD symptoms. This applied to participants from Italy and the Netherlands (as we expected), but also to respondents from China (contrary to our expectation). It could be that the extremely fast cultural and economic changes occurring in China lead Chinese adolescents to perceive their situation as more similar to that of other Western youth compared to the perception of their parents and grandparents (Arnett 2002). In this respect, future studies should analyse more in-depth how economic changes occurring in East Asia affect the mental health life of young people in these countries (Anagnost et al. 2013).

Consistently with our expectations, reconsideration of commitment was more associated with distress in Bulgaria, Kenya, and Philippines, than it was in Italy and the Netherlands, because in the former countries when adolescents wish to reconsider their commitments they might be obstructed by the lack of multiple alternatives. For example, if adolescents are unsatisfied by their current educational identity their opportunities for change could be limited by a number of factors. In Bulgaria, the difficult transition after the fall of the communism could be such a factor. In the Philippines, adolescents are heavily pressed by their parents to complete the educational degree or course they have started, also in the cases in which they might become unsatisfied with the course they have chosen and they would like to reconsider it in favour of other alternatives (Chao and Tseng 2002). Similarly in Kenya, current socioeconomic conditions with high unemployment rates and few schooling opportunities limit future prospects for adolescents, who may find themselves forced to quickly settle into one or the other choice. Thus, in these cultures reconsideration of commitment is perceived as more painful since the wish to change choices that have been enacted previously is hampered by the current lack or (social and/or family) limitation in viable alternatives.

Finally, results indicated that identity processes explained lower portions of variance in Filipino and Kenyan groups than in the other samples. It could be due to the contents of identity processes examined in this study. Indeed, we focused on personal identity processes, whereas for youth living in more collectivistic cultures collective identity (such as religious identity) might be more important (Dimitrova et al. 2014a). Thus, in future investigations it would be important to adopt a multi-faceted conceptualization of identity that pays attention to both personal and social identity (Linville 1987; Roccas and Brewer 2002).

Limitations and Suggestions for Future Research

This study should also be considered in light of two potential shortcomings. The first limitation concerns the cross-sectional design that does not allow for the examination of GAD symptom development over time or the analysis of reciprocal associations between GAD symptoms and identity processes throughout adolescence. Thus, future cross-cultural longitudinal studies are needed to unravel adolescent development of anxiety symptoms.

Second, we relied only on adolescent self-reports. Although the anxiety measure (i.e., the SCARED) employed in this study has shown very strong psychometric properties in various cultural contexts (e.g., Hale et al. 2011) it would be worth replicating findings of this study using adolescents' anxiety evaluations provided by other informants, such as parents and teachers (Achenbach et al. 2002; Verhulst et al. 1994), and diagnostic interviews for both the adolescent and his/her parents (e.g., Anxiety Disorders Interview Schedule for Children and Parents; Comer and Kendall 2004). Furthermore, in future research, it would be valuable to integrate quantitative and qualitative research methods to capture adolescent main sources of anxiety and protective factors that can buffer risk conditions in specific cultural contexts.

Conclusion

In summary, in this study we found large cultural differences in GAD symptoms, consistent gender differences, with girls reporting to be more anxious than boys, and meaningful associations between GAD symptoms and identity processes. This study was the first one comparing GAD symptoms reported by adolescents from the general population from Western (the Netherlands), Southern (Italy), and Eastern (Bulgaria) European countries; Africa (Kenya); and Asia (China and Philippines). Findings highlight the importance of cross-cultural investigation of the phenomenology of adolescent GAD symptomology.

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Conflict of interest The authors declare that they have no conflict of interest.

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