

Competence in Coping with Stress in Adolescents from Three Regions of the World

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Abstract The ways adolescents develop and use strategies to cope with stress vary according to cultural scripts and values. This cross-sectional study tested the impact of region and gender on adolescents' stress perceptions and coping styles. A total sample of 10,941 adolescents (51.3% female) from 20 countries completed questionnaires on stress and coping behaviors in four domains (school, parents, peers, and romantic relationships). Standardized samples of $n = 200$ were drawn from each country, resulting in a sample of $N = 4,000$ adolescents (mean age 15.18, $SD = 1.76$, balanced gender distribution). Based on the results of discriminant analysis, the adolescents could be grouped into three world regions (Western, Eastern/Asian, and Southern). Results revealed that levels of perceived stressfulness of issues in different domains were universally similar among adolescents from all three regions. Parent- and school-related stress received the highest rankings, and peer- and romance-related stress the lowest. Differences emerged with respect to coping style, depending on region and gender. Coping styles characterized by negotiating, seeking support, and emotional outlet were used more often by adolescents from the Western region than those from the Eastern/Asian or Southern regions. Females in all regions had higher rates in the use of negotiating and seeking support than males did. Adolescents from all countries, despite regional variations, exhibited more emotional outlet in response to conflicts with parents than with peers or romantic partners. Overall,

adolescents from all regions of the world demonstrated an impressive level of coping competencies, as only about one fifth of all coping responses involved the use of withdrawal and denial. The findings are discussed with respect to how the effects of globalization and changing societal expectations may have contributed to similar levels of perceived stressfulness and increased coping agency in adolescents in different parts of the world.

Keywords Relationship stress · Academic stress · Coping · Cross-cultural comparison

Introduction

After studying ethnographic data from 140 cultures, Schlegel (2001) concluded, that in almost all societies around the globe, adolescence is marked by stressful experiences and cumulative changes. The ability to cope with different types of stressors is critically important for the adolescent's psychological health, as studies on adolescents in different cultures have shown that coping deficits are among the main factors contributing to the development of psychopathology (Auerbach et al. 2010). In recent years, more research has been devoted to understanding what kinds of stress are experienced by ethnic minority and immigrant youths (Fisher et al. 2000; Hughes et al. 2006; Romero et al. 2007). Despite the increasing interest in the coping behaviors of youths with various ethnic backgrounds, little is known about how adolescents living in different cultures, in different regions of the world, perceive stressful events and situations in their everyday lives and whether they exhibit similar competencies in coping with these stressors.

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These lacunae are even more conspicuous given that cross-cultural differences in stress perception and coping style are to be expected. The dramatic increase in globalization in recent years has not only spurred worldwide economic interdependence but also advanced connections among different cultures and geographical areas. In particular, new cultural values and lifestyle practices are being introduced into more traditional societies, particularly those found in developing countries. As a result, many adolescents in these countries must deal with having to choose between traditional and more Western ways of living (Chen and Farruggia 2002). The confrontation between divergent cultural practices and values may occur in various domains of adolescents' everyday lives and, in many cases, create conflicts in close interpersonal relationships. Second, societal changes in many industrialized countries have prompted young people to achieve higher levels of education, without the guarantee of job security. As a consequence, young people are experiencing more stress in the academic domain (Arnett 2002; Bynner 2000).

Although overall stress levels for adolescents may be increasing, culture-dependent differences in certain stress domains may exist. In addition, owing to prevailing cultural values and scripts, adolescents in different regions of the world may exhibit quite different ways of coping with elevated stress levels. It is important to note that there is not only a substantial diversity of cultural values, traditions, and behaviors within most national boundaries. As well, many cultural similarities may exist across national boundaries. Thus, aggregating adolescents across countries according to certain criteria might be a useful approach for comparative analyses of adolescent coping around the world as it can render a bigger picture. This study aimed to analyze how young people from three regions of the globe, the Western, the Southern, and the Eastern region, cope with age-specific stressors during the adolescent period.

Minor Stressors and Coping Behavior in Adolescence

Adolescence is a particularly challenging developmental period because it bears many types of stressors. This study focuses on age-specific, minor stressors, which include everyday hassles and problems (Seiffge-Krenke 1995). In adolescence, minor stressors in the domain of relationships occur quite frequently (Seiffge-Krenke 2011). These relationship stressors are embedded in normative developmental changes, and they usually pertain to conflicts with family members, peers, close friends, and romantic partners (Bowker et al. 2000; Laursen and Collins 1994; Nieder and Seiffge-Krenke 2001). For example, stress with family members often occurs when adolescents strive to establish more mature, egalitarian relationships with their parents and expand their social networks to include friends and

romantic partners. With respect to relationships with peers, adolescents are eager to maintain their status in the peer group. Failure to be accepted by peers has been associated with emotional and behavioral maladjustment (Sentse et al. 2010). Further, adolescents experience stress in their close friendships (Hand and Furman 2009), especially when they begin to invest more time in romantic relationships (Kuttler and La Greca 2004). Increased time spent with a romantic partner may come at a cost to the adolescent's relationships with friends, and more conflicts and jealousy in both kinds of relationship may occur (Roth and Parker 2001). These stressors may add to the stress experienced in parent-adolescent relationships, in which negotiations about adolescent's autonomy issues typically spark conflict (Laursen et al. 1998). Research also has shown that many adolescents report stress in the academic domain. In many countries, adolescents are becoming increasingly concerned about school performance and gaining entry into higher educational programs (McAndrew et al. 1998). Concerns about poor academic achievement are typical for adolescents in many European countries, especially in the southern regions, where youth unemployment is high (Gelhaar et al. 2007). Of the broad domains of stressors outlined above, the present study focuses on relationship stress (i.e., that experienced with parents, peers and romantic partners) and school-related stress.

Although age-specific stressors may be common and ubiquitous among many adolescents, the ways adolescents cope with them may be critically important for their adjustment (Auerbach et al. 2010; Frydenberg et al. 2003). During the last decade, a great deal of theoretical and empirical attention has been devoted to how adolescents cope with stress (see reviews by Compas et al. 2001; Seiffge-Krenke 2011; Skinner and Zimmer-Gembeck 2007). The transactional theory of coping (Lazarus and Folkman 1984) suggests that coping is an active, purposeful process by which an individual responds to stimuli appraised as taxing or exceeding his or her resources. It includes behavioral, emotional, and cognitive attempts to manage the demands imposed by such stressors (Lazarus 1998). Analyses of coping strategies on adolescent samples have revealed several higher-order coping categories, such as seeking support (Seiffge-Krenke 1995), information seeking (Skinner and Zimmer-Gembeck 2007), negotiating (Seiffge-Krenke et al. 2010; Skinner et al. 2003), emotion regulation and escape (Skinner and Zimmer-Gembeck 2007), or withdrawal (Compas et al. 2001; Seiffge-Krenke and Klessinger 2000).

Previous research has shown that when adolescents are confronted with age-specific stressors, they typically employ adaptive modes of coping (e.g., they seek support and information or negotiate issues with the concerned individual) and seldom resort to withdrawal (Compas et al.

2001; Gelhaar et al. 2007; Seiffge-Krenke 1995, Skinner et al. 2003). Some studies have shown that adolescent coping is dependent on the type of stressor at hand. For example, more support seeking is made to deal with stressors in the academic and peer domains (Seiffge-Krenke et al. 2009), whereas more withdrawal is used when coping with stress in the parental domain (Sentse et al. 2010).

It has been frequently found that females exhibit higher rates in seeking support than males do (Compas et al. 2001; Rudolph 2002; Seiffge-Krenke et al. 2009; Skinner et al. 2003). However, there is also evidence that females exhibit a more ambivalent coping pattern marked by similarly high levels of seeking support, avoidance, and withdrawal coping (Seiffge-Krenke and Stemmler 2002). Past research has substantiated gender differences in measured stress levels. Compared to males, females experience more relationship stress, especially with peers (Noakes and Rinaldi; 2006; Wasburn-Ormaechea et al. 2004) and romantic partners (Nieder and Seiffge-Krenke 2001) and parents (Laursen et al. 1998; Seiffge-Krenke 1995). The findings on gender differences with respect to academic stress are inconclusive (Compas et al. 1988).

Stress Perception, Coping Style, and Culture

Although cultural influences have become important considerations in adolescent research (Brown et al. 2002; Larson 2011), the vast majority of studies on stress and coping have been conducted on white, middle-class adolescents in North America and Europe. The contextual model of development by Lerner and Castellino (2002) clearly outlines how all developmental processes are affected by the interaction between individual capacities and sociocultural factors. Each culture has its own traditional customs, religious orientations, values, and types of educational, political, and economical systems (Kagitcibasi 1996). The specific features of each cultural context may determine what is perceived as stressful in one culture as compared to another. Similarly, differences in coping styles may be related to the type of cultural scripts used to solve conflicts (Heppner 2008) or ethnic differences in emotion-regulation strategies (Rushton 1999).

As many cultural and economic similarities may exist across national boundaries, cross-cultural comparative studies can often benefit from aggregating populations across countries. For example, some developing countries, particularly in the Asian region, have achieved dramatic increases in economic growth and made enormous progress in improving their educational systems (International Monetary Fund 2008). Further, differences between industrialized countries have decreased. For example, the relaxation of border controls between European countries,

the introduction of a free labor market within the European Union (EU), and an increased demand for students to obtain international experience have increased the likelihood that more people interact with others from different cultural backgrounds in their daily lives (Eurostat 2008). European and other countries are becoming more culturally diverse. In addition, the new media (e.g., the internet) have made it possible for individuals living in different countries and regions of the world to communicate with one another and share information. These trends might foster the development of a shared cultural identity. As well, the coping styles of adolescents with previously different cultural backgrounds may also become more similar. However, it is equally possible that these trends could reinforce the desire to uphold national identity and preserve culturally-specific traditions.

Previous research has not been based on global approaches to study the influence of culture on stress perception and coping style in adolescence. Instead, most studies have compared populations in only two different countries, usually those sharing common borders (e.g., Poland and Germany; Schönplflug and Jansen 1995), or those with specific political or economic relations (e.g., Russia and the United States; Jose et al. 1998). Multi-national empirical research involving more than five countries currently accounts for only 5% of all cross-cultural studies (Brouwers et al. 2004). Gibson-Cline's (1996) study represents a milestone in cross-cultural research on stress and coping in adolescent populations. The analysis of semi-structured self-reports obtained from young people living in 13 nations revealed that adolescents' ways of coping were quite similar, echoing findings based on questionnaire data reported by Sinha et al. (2000). However, these earlier studies suffer from inadequate sampling methods (e.g., comparison of unequally sized groups of adolescents, with large age spans and variations in SES and level of schooling). Further, many studies assessed stress globally or failed to systematically differentiate coping styles according to the specific stressor at hand.

In summary, previous investigations of cross-national and cross-cultural differences in dealing with stress have not adequately taken the effects of increased globalization and related societal changes into account. Owing to the fact that interaction among geographically proximal countries has increased so dramatically in recent years, it is reasonable to go beyond mere comparisons of individual countries by aggregating globally-obtained data. For example, adolescent populations can be aggregated by building groups according to the criteria that are important indicators of current living circumstances (e.g., gross domestic product (GDP), family size, unemployment rate, and proportion of adolescents in the overall population; see Hofstede and Bond 1988).

It is important to consider that the prevailing cultural approach in dealing with stress may differ according to overall value orientation. Cross-cultural research has offered various classifications of culture (Hofstede and Bond 1988; Triandis 1995), whereby most studies distinguish between more individualistic Western cultures (e.g., as they exist in the US, Canada, and Western Europe) and more collectivistic Eastern cultures (e.g., present in most Asian and some Eastern European countries). Whereas individualistic cultures promote an independent self, support children's autonomy, and focus on individual achievements, collectivistic cultures promote an interdependent self and commitment to the family. However, individualism and collectivism are not necessarily mutually exclusive concepts, but can rather be considered as representing endpoints of a continuum along which a specific culture or an individual is nested (Oyserman et al. 2002). There are also obvious within-culture variations between countries with a prevailing individualistic versus a more collectivistic orientation (Galini and Avraham 2009; Herman et al. 2008). Despite these caveats, we chose to incorporate this distinction in the first and preliminary approach for this study, because it seemed quite plausible that the overall predominance of collectivistic or individualistic cultural attributes in a particular society or nation would have the greatest bearing on how adolescents cope with stress.

Aims of the Study and Expectations

The aim of the present study was to compare how adolescents from many different countries around the world perceive minor stressors occurring in the domains of relationships and school life and how these adolescents cope with these stressors. In order to rule out the possibility of tapping differences related to rural and urban developmental contexts, we decided to carefully select subsamples and then form larger groups based on considerations of geographical proximity and the criteria described by Hofstede and Bond (1988). As well, we wanted to incorporate the dimension of overall sociocultural orientation in a particular country (i.e., individualistic or collectivistic) in forming aggregate groups. As little research has included many countries and organized cultural differences into overarching patterns, this study is mainly exploratory. However, we had some expectations to guide our research.

We first anticipated that in individualistic cultures (e.g., as found in European countries and North America), as adolescents negotiate with their parents about autonomy, they would experience more conflicts with their parents (Laursen et al. 1998). As collectivistic cultures (e.g., as found in Asian countries) promote social interdependency and commitment to the family (Chen and Farruggia 2002),

we expect to find lower perceived stressfulness in the family domain. In contrast, we thought that, because youths in individualistic cultures focus more strongly on personal achievements (Nurmi 2005), they would experience greater school-related stress. In addition, because parents are typically concerned with regulating the adolescent's daily life, monitoring his or her activities with friends, setting curfew rules, etc., we expected that adolescents in all regions would perceive problems in the parental domain to be more stressful than those arising in the peer domain. Further, as peers are equally important for adolescents across the globe (Brown et al. 2002), we did not expect to find major differences in perceived stressfulness in the peer domain across regions. As regards the romantic domain, problems in individual choice and the importance of romantic involvement for peer status (Seiffge-Krenke et al. 2010) may result in higher perceived stressfulness in adolescents from regions with a more individualistic orientation. In contrast, different models for romantic relationships in collectivistic cultures, which strive to maintain harmony with the family, may potentially result in less romantic stress.

Overall, we expected to find that the ways adolescents deal with stress in the domains of parents, peers, and romantic relationships would also be shaped by cultural scripts (Heppner 2008). However, because peer relationships are universally more egalitarian, we expected that culture-specific differences in coping with peer-related stress would be less prominent than for coping with parent-related stress. More specifically, we reckoned that adolescents from countries that share individualistic orientations would deal with parent-related stress by using more approach-oriented coping strategies, such negotiating with concerned individuals and seeking support (Gelhaar et al. 2007; Skinner and Zimmer-Gembeck 2007). In contrast, we expected that adolescents from more collectivistic-oriented regions of the world, who have been taught to seek harmony with others and take the perspectives of others into account in dealing with interpersonal conflict, would show higher withdrawal rates when coping with stress in the parental domain. Based on the premise of more egalitarian relationships with peers (Collins et al. 2009), we expected all adolescents to exhibit more approach-oriented coping behaviors (e.g., negotiating and seeking support) when dealing with peer-related stressors. As the parental regulation of adolescents' romantic relationships varies according to culture, we expected to observe great differences in adolescents' coping styles depending on region. In contrast, we expected all adolescents to exhibit high levels in the use of approach-oriented coping strategies and low levels of withdrawal when dealing with academic stressors.

Consistent with previous research, we posited sex differences. Females should report higher levels of stress

occurring in their relationships than males would (Seiffge-Krenke et al. 2009). We also expected that, in accordance with Compas et al. (2001), females would seek support to deal with relationship stressors more than males would.

Method

Participants

Procedure of Data Collection

Earlier cross-cultural studies suffered from comparing samples with varying socioeconomic status, thus confounding country and SES (Berry et al. 2002). Although we were aware that the number of adolescents who have access to higher education varies from country to country, we decided to investigate adolescents with comparable academic embedding (e.g., adolescents who were attending high school), even if this might limit the representativeness of the samples. In order to keep the educational level constant and limit variance caused by different levels of urbanization, all assessments were conducted in university cities, where more adolescents have access to higher education (Ankara, Bordeaux, Brno, Cape Town, Costa Rica, Glamorgan, Groningen, Islamabad, Leonia, Lima, Mainz, Malaga, Mexico City, Naples, Rijeka, Seoul, St. Petersburg, Tallin, Tampere, and Warsaw). All participants were high school students. Written consent to participate in the study was provided by 94% of the adolescents' parents. All assessments were conducted for whole class levels. The native cooperation partner and his or her research assistant remained in the classroom during the time of assessment to answer questions; teachers were not present. Participant anonymity was ensured by the use of coded questionnaire packets. In addition to the data obtained from participants' responses to the questionnaires, we also gathered demographic data for each participant (e.g., gender, age, socioeconomic status (SES, estimated from the self-reported household income of parental families), family structure and size, and type of school attended).

Selection of Standard Samples and Determining Regions

Following the procedure described above, we obtained data for a sample of 10,941 adolescents (aged 11–19 years) from 20 countries. To balance samples with respect to size and distribution of gender and age, we defined a reference sample with an equal gender ratio and an age structure reflecting the average age distribution across all participants from all countries. Standardized samples of size $n = 200$ were then compiled for each country from the full data set, employing an iterative Monte-Carlo procedure to

most closely approximate the gender and age distributions of the reference sample. All analyses reported here were based on the standardized sample of $N = 4,000$ adolescents from Costa Rica, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Great Britain, Italy, Korea, Mexico, the Netherlands, Pakistan, Peru, Poland, Russia, South Africa, Spain, Turkey, and the United States.

We used a three-step process to group countries into larger entities, based on the criteria of (a) geographical location (proximity), (b) indicators describing a country's living circumstances (Hofstede and Bond 1988), and (c) suggestions on the prevalence of more collectivistic or individualistic cultural orientations in a respective region (Triandis 1995). The first region, which we termed *Western*, included Finland, France, Germany, Great Britain, Italy, the Netherlands, Spain, and the United States, countries located in the Western region of the globe and whose cultures are thought to show more individualistic tendencies. The *Southern* region included Costa Rica, Mexico, Pakistan, Peru, South Africa, and Turkey. The majority of countries in this group were located in the southern regions of the globe, and the prevailing cultures in all of them are thought to have a predominantly collectivistic value orientation. The remaining countries (Croatia, the Czech Republic, Estonia, Korea, Poland, and Russia), located in the Eastern and Asian areas of the globe, were assigned to the *Eastern/Asian* group. These countries show a variety of cultural orientations, whereby collectivism generally outweighs individualism. This initial assignment of countries to one of these three regions was then validated by a discriminant analysis based on four socioeconomic indicators for each country, as suggested by Hofstede and Bond (1988): (a) youth unemployment rate, (b) birth rate, (c) the proportion of adolescents in the country's population, and (d) gross domestic product (GDP). Discriminant analysis results were highly significant, Wilk's $\lambda = .019$, $F(8, 28) = 22.249$, $p \leq .000$, with two discriminant functions required to yield perfect classification of countries into the predefined groups.

Table 1 provides a summary of the sample's demographics. Mean age and age variance were well balanced among the three regions, $M = 15.18$, $SD = 1.76$, and gender distribution was almost perfectly balanced, with 49.8% female ($N = 1,990$) and 50.2% male ($N = 2,010$) adolescents. Most adolescents (88.2%) lived in middle- or upper-class households. There were, however, pronounced differences in family structure and size across regions. Two-parent families were highly prevalent in countries in the Southern group. Alternative configurations (e.g., single-parent families) accounted for about 25% of family structures in countries in the Western and Eastern/Asian groups. The number of siblings per family, which varied across regions, was about twice as large for countries in the

Table 1 Sample descriptives for all participants from three geographic regions

	Age		Gender		2-Parent families (%)	Siblings		Socioeconomic class		
	<i>M</i>	<i>SD</i>	Female (%)	Male (%)		<i>M</i>	<i>SD</i>	Upper (%)	Middle (%)	Lower (%)
Southern (<i>N</i> = 1,200)	15.54	1.82	50.8	49.3	95.2	2.99	1.86	15.6	72.4	12.0
Eastern/Asian (<i>N</i> = 1,200)	15.09	1.75	50.0	50.0	79.8	1.23	0.99	35.6	52.6	11.8
Western (<i>N</i> = 1,600)	15.03	1.65	50.1	49.9	73.7	1.60	1.30	32.7	55.8	11.5

Means and standard deviations for age and the number of siblings in the participant's family, distributions of gender, and socioeconomic class are summarized

Southern group than for those in Western and Eastern/Asian groups.

Instruments

Stress Perception

Problem Questionnaire

Adolescent stress was measured by the Problem Questionnaire (PQ; Seiffge-Krenke 1995), which assesses minor stressors in various domains. This instrument consists of 64 items that had been frequently named as typical and salient everyday stressors in earlier studies. The adolescents were asked to indicate the stressfulness of a specific problem, ranging from 1 = *not stressful at all* to 5 = *highly stressful*. Earlier factor analysis revealed the following seven domains: (a) problems with school, (b) problems with future, (c) problems with parents, (d) problems with peers, (e) problems with leisure time, (f) self-related problems, and (g) problems related to romantic relationships. Cronbach's alphas for the subscales ranged from $\alpha = .72$ to $.84$ (Seiffge-Krenke 1995). For this study, we used items pertaining to the four problem domains of (a) school (sample items: "There is great pressure to get the best marks in school," "The school's prescribed curriculum material is difficult," $\alpha = .81$), (b) parents (sample items: "My parents don't let me make my own decisions," "I can't talk with my parents," $\alpha = .85$), (c) peers (sample items: "I'm unsure whether the others will accept me," "It's difficult for me to approach others," $\alpha = .79$), and (d) romantic relationships (sample items: "I feel insecure in dealing with the opposite sex," "I'm afraid of losing contact with my friends if I pair up with a boyfriend/girlfriend," $\alpha = .84$).

Coping Style

Coping Across Situations Questionnaire

Coping behavior was measured with the Coping Across Situations Questionnaire (CASQ; Seiffge-Krenke 1995),

which assesses 20 coping strategies across eight possible problem domains: (a) romantic relationships, (b) school, (c) teachers, (d) parents, (e) peers, (f) self, (g) leisure time, and (h) future. For this study, four domains (school, parents, peers, and romantic relationships) were selected to match the stress domains. Participants were requested to mark all the coping strategies they used to deal with a stressor in one of the particular domains. Based on an earlier factor analysis on the same cross-cultural sample (Seiffge-Krenke et al. 2010), coping strategies were subdivided into three scales. Negotiating and Seeking Support contained items such as "I try to talk with the person concerned" or "I try to solve the problem with the help of my friends" (Cronbach's $\alpha = .89$). Emotional Outlet included items like "I let out my anger or desperation by shouting, crying, slamming doors" or "I try to let out my aggression by listening to loud music, riding my motorbike, dancing wildly, doing sports" ($\alpha = .87$). Withdrawal and Denial contained items such as "I withdraw because I cannot change anything anyway" or "I behave as if everything is all right" ($\alpha = .83$). Due to the dichotomous response scheme, possible scale means in the CASQ range from 0.0 to 1.0, with 0.0 indicating no use of any of the coping strategies belonging to the scale, and 1.0 the use of all coping strategies constituting the scale.

Procedure for Determining Cultural Validity and Equivalence

The PQ and CASQ were originally developed on a German sample and published in English (Seiffge-Krenke 1995). Both instruments have been widely used in diverse cross-cultural samples such as Finland (Seiffge-Krenke 1992), Israel (Seiffge-Krenke and Shulman 1990), Switzerland (Steinhausen and Winkler-Metzge 2001), Hong Kong (Tam and Lam 2005), Portugal (Cleto and Costa 1996) as well as in a cross-cultural study including many countries (Seiffge-Krenke et al. 2010). In order to ensure cross-cultural validity and equivalence in the cross-cultural research reported here, collaborators, senior, and junior researchers from all 20 countries met regularly during and in between

international conferences. In these meetings, the items were translated into the official language for each country and then translated back into English. In addition, the item contents were checked for cross-cultural appropriateness and applicability for each country. Discrepancies between the different versions were reconciled in a stepwise process before the instruments were finally applied. The list of 20 coping strategies was supplemented with some new items (e.g., “I seek religious guidance”), which were later omitted because they were found to be non-applicable in all cultures as an important coping means. Similarly, additional stressors suggested by some collaborators were not included, because other collaborators did not find them relevant or applicable for their country or because they were major (not everyday) stressors (e.g., parental divorce or unemployment). After considering all stressors and strategies, the original lists of 64 minor stressors and 20 coping strategies were accepted for study in all countries. After data collection, measurement invariance was successfully verified on participant level data for both the Problem Questionnaire (PQ) and the Coping Across Situations Questionnaire (CASQ) in a procedure adopted from Widaman and Reise (1997). As a beneficial side effect of the measurement invariance analysis, the proposed latent structure of the instruments was validated by confirmatory factor analysis. Model fits were satisfactory for the PQ ($\chi^2_{(48)} = 627.693$, RMSEA = 0.042, CFI/IFI = 0.984, TLI = 0.978) as well as the CASQ ($\chi^2_{(102)} = 2,305.640$, RMSEA = 0.057, CFI/IFI = 0.907, TLI = 0.927), where a probit model was used for estimation due to the binary response scheme.

Plan of Analyses

First, we tested for the effects of geographical region and gender as between-subject factors on the level of perceived stressfulness of problems in four different domains (school, parents, peers, and romantic relationships) using a three-way, mixed, between-subjects, repeated measures ANOVA (RM-ANOVA). Second, using a four-way, mixed, between-subjects RM-ANOVA, we explored the effects of the two between-subject factors (region and gender) on the use of three different coping styles (Negotiating/Seeking Support, Emotional Outlet, and Withdrawal/Denial), separately for the stress domains school, parents, peers, and romantic relationships. In order to maintain reasonable levels of statistical power, analyses were conducted on the mean responses for each country and not on the individual data level for all $N = 4,000$ participants. Differences between level means were tested by pair-wise Fisher LSD Tests. In addition, Cohen’s d was computed for all reported mean differences as an effect size measure.

Results

Effects of Problem Domain, Region, and Gender on Perceived Stressfulness

Our first research question was concerned with the effects of region (Western, Eastern/Asian, or Southern) and gender on the levels of perceived stressfulness for problems in four different domains (school, parents, peers, romantic relationships). An RM-ANOVA was conducted with stress levels in the four problem domains as the dependent variable, and region and gender as independent predictors. Table 2(I) provides an overview of the means and standard deviations for levels of perceived stressfulness, as reported in the PQ.

The results of the RM-ANOVA for perceived stressfulness are provided in Table 3a. A Huynh–Feldt correction was applied to the degrees of freedom to counter bias in the F statistic due to sphericity violations (Huynh and Feldt 1976; rectified by Lecoutre 1991). Neither gender nor the region of participants exerted a significant main effect on the overall stress level. A strong main effect, however, emerged for stressor domain. The highest levels of perceived stressfulness were associated with problems in the domains of school and parents. Perceived stressfulness of problems in the domains of peers and romantic relationships ranked third and fourth, respectively. All pair-wise differences proved statistically significant in Fisher LSD tests, except for the difference between school- and parent-related stress (see Fig. 1). Effect sizes for the significant differences were moderate to high.

Effects of Problem Domain, Region, and Gender on Coping Style

The adolescents’ preferred use of the respective coping styles (Negotiating and Seeking Support, Emotional Outlet, Withdrawal and Denial) in dealing with stressors in the four domains was tested by means of an RM-ANOVA (Table 3b), with region and gender serving as independent variables. Table 2(IIa–c) provides an overview of the level means and standard deviations for the use of different coping styles, as assessed by the CASQ. Figure 2 illustrates the main effects. A significant effect emerged for coping style. The highest level of coping activities were found for dealing with parent-related stressors. Coping levels for dealing with school-related stressors, peer-related stressors, and romantic-relationship stressors ranked second, third, and fourth, respectively. Effect sizes were medium to large for all pair-wise comparisons of coping with romantic stress, and small to moderate for comparisons of coping with peer stress. Strong effect sizes were also found for the three coping styles. Adolescents used negotiating and

Table 2 Means and standard deviations of stress levels (measured by the PQ) and coping style (measured by the CASQ)

Region	Southern		Eastern/Asian		Western	
	Male	Female	Male	Female	Male	Female
(I) PQ: Stress level						
School	2.596 (.176)	2.538 (.288)	2.440 (.181)	2.522 (.141)	2.448 (.203)	2.553 (.273)
Parents	2.614 (.137)	2.691 (.241)	2.510 (.264)	2.513 (.278)	2.436 (.225)	2.572 (.405)
Peers	2.450 (.176)	2.506 (.120)	2.295 (.164)	2.473 (.196)	2.310 (.376)	2.477 (.493)
Romantic	2.419 (.060)	2.362 (.115)	2.317 (.233)	2.327 (.198)	2.290 (.365)	2.357 (.512)
(IIa) CASQ: Negotiating and seeking support						
School	.316 (.107)	.367 (.153)	.328 (.067)	.379 (.099)	.363 (.094)	.439 (.102)
Parents	.321 (.089)	.353 (.092)	.268 (.039)	.342 (.070)	.336 (.093)	.417 (.076)
Peers	.345 (.059)	.411 (.105)	.329 (.065)	.486 (.061)	.379 (.126)	.479 (.130)
Romantic	.263 (.105)	.302 (.129)	.259 (.061)	.356 (.133)	.333 (.100)	.440 (.086)
(IIb) CASQ: Emotional outlet						
School	.211 (.102)	.245 (.126)	.239 (.080)	.213 (.077)	.273 (.066)	.339 (.078)
Parents	.246 (.090)	.324 (.075)	.226 (.067)	.345 (.069)	.333 (.101)	.481 (.067)
Peers	.226 (.071)	.237 (.071)	.159 (.053)	.224 (.038)	.229 (.100)	.280 (.108)
Romantic	.169 (.086)	.204 (.104)	.131 (.067)	.209 (.083)	.200 (.076)	.307 (.089)
(IIc) CASQ: Withdrawal and denial						
School	.236 (.060)	.258 (.075)	.222 (.047)	.204 (.042)	.270 (.084)	.268 (.105)
Parents	.248 (.056)	.249 (.071)	.190 (.033)	.195 (.027)	.252 (.102)	.257 (.122)
Peers	.217 (.072)	.218 (.063)	.171 (.041)	.189 (.046)	.222 (.094)	.230 (.104)
Romantic	.181 (.055)	.161 (.089)	.135 (.033)	.172 (.045)	.197 (.077)	.209 (.084)

Standard deviations are in parentheses. PQ values range between 1 and 5, with 1 denoting the lowest possible perceived stress level. CASQ values vary between 0 and 1, with 0 indicating no use of the respective coping style, and 1 extensive use. Means and standard deviations are provided separately for problem domain, region, and gender

support-seeking strategies most often and emotionally expressive strategies significantly less frequently. Withdrawal from or denial of stressors turned out to be the least preferred coping style. In addition, a significant main effect of gender was found. Females exhibited significantly more overall coping behavior than males did, again with a small to moderate effect size. The gender difference in coping styles is noteworthy, because females did not differ significantly from males with respect to perceived stressfulness across domains (see Table 3a). Finally, a significant main effect emerged for region, with adolescents from the Western region reporting overall higher levels of coping styles than adolescents from the Southern and Eastern/Asian regions. Cohen's *d* for the statistically significant level differences were small to moderate.

Interpretation of main effects should be undertaken cautiously whenever significant interaction effects are present. Hence, in what follows, we strive to put the main effects reported before into the context of interaction effects as indicated by the RM-ANOVA (Table 3b).

A highly significant second-order interaction emerged for coping style \times gender, the origins of which can be grasped from Fig. 3. Females engage significantly more in negotiating and support seeking than males across all

problem domains. This difference between females and males narrows for emotional outlet and vanishes completely for withdrawal and denial. As stated for main effects, however, the interpretation of the second-order interaction in the presence of significant third-order interactions should be done in light of the significant third-order interaction gender \times stress domain \times coping style (see Fig. 3).

The interaction predominantly results from females leaning heavily towards emotionally expressive coping strategies when problems with romantic partners and parents come about, whereas boys show the same pattern as in the other three domains. Effect sizes are high, particularly for the parents domain.

Finally, the RM-ANOVA revealed a highly significant third-order interaction stress domain \times coping style \times region, as illustrated by the interaction plots in Fig. 4. No significant differences in coping level were obtained between the Southern and Eastern/Asian regions for any of the stressor domains or coping styles ($p > .114$ for all pairwise Fisher LSD tests). Hence, in order to simplify the analysis, level means from the Southern and Eastern/Asian regions were pooled and tested against the Western region by Fisher LSD post-hoc comparisons. The resulting pattern

Table 3 RM-ANOVA results for stress level and coping style

Factor	(a) RM-ANOVA results for stress level					(b) RM-ANOVA results for coping style				
	Var	df	F	p	η^2	Var	df	F	p	η^2
Region	.109	2	.453	.640	.031	.202	2	3.893	.030	.186
Gender	.132	1	.548	.465	.019	.283	1	5.462	.025	.138
Region × gender	.034	2	.139	.871	.010	.012	2	.238	.790	.014
Error	.241	28				.052	34	.000	.000	.000
Domain	.292	3	9.942	.000	.262	.092	3	21.713	.000	.390
Domain × region	.004	6	.140	.990	.010	.005	6	1.154	.338	.064
Domain × gender	.023	3	.790	.503	.027	.006	3	1.409	.247	.040
Domain × region × gender	.006	6	.219	.970	.015	.004	6	1.047	.397	.058
Residual	.029	84				.004	102	.000	.000	.000
Style						.879	2	98.522	.000	.743
Style × region						.015	4	1.732	.153	.092
Style × gender						.057	2	6.425	.003	.159
Style × region × gender						.003	4	.381	.822	.022
Residual						.009	68	.000	.000	.000
Domain × style						.051	6	43.703	.000	.562
Domain × style × region						.004	12	3.024	.001	.151
Domain × style × gender						.007	6	6.178	.000	.154
Domain × style × region × gender						.000	12	.425	.936	.024
Residual						.001	204	.000	.000	.000

Given are estimated population variances (*Var*), degrees of freedom (*df*), the *F* statistic (*F*), significance level (*p*) and the explained variance for each independent and repeated measurements factor, as expressed by partial η^2 values. Degrees of freedom were Huynh–Feldt corrected before computing *p* values

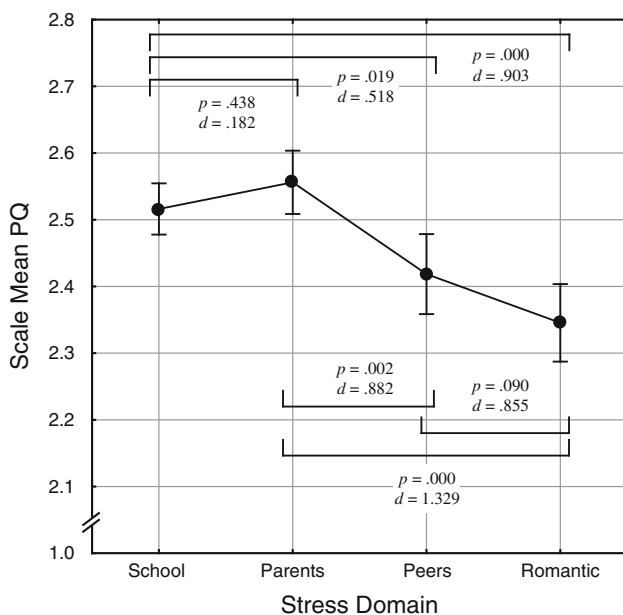


Fig. 1 Main effects of stress domain on perceived stress. Depicted are level means across all regions and both genders, together with their 95% confidence intervals. The *p* values from Fisher LSD tests and Cohen’s *d* were computed for all pair-wise comparisons among level means

of significances is straightforward. The use of emotionally expressive coping strategies is more pronounced in adolescents from the Western region for all stressor types, except those in the peer domain. They also employ negotiating and seeking support to deal with romantic relationship stressors much more often than adolescents from Southern and Eastern/Asian regions did. Effect sizes are large for all significant differences.

A closer inspection of the results reveals a striking asymmetry. For three problem domains (school, peers, and romantic relationships), we found no significant differences between the prevalence of emotional outlet and withdrawal/denial for any of the regions (all $p > .144$ in post-hoc Fisher LSD comparisons). Hence, the significant mean effect between emotional outlet and withdrawal/denial, as reported in Fig. 2, appears to be primarily rooted in the marked use of emotionally expressive coping strategies to deal with parent-related stressors, especially in adolescents from the Western region. We tested this by contrasting results for coping with stressors in the parent domain with those for the joint domains of school, peers, and romantic relationships. Testing the contrasts comprised three steps. First, we pooled scores for coping in the school, peer, and romantic relationship domains by computing a single mean

Fig. 2 Main effects of region, gender, stressor domain, style on different coping styles. Depicted are level means together with their 95% confidence intervals. The *p* values from Fisher LSD tests and Cohen’s *d* were computed for all pair-wise comparisons among level means

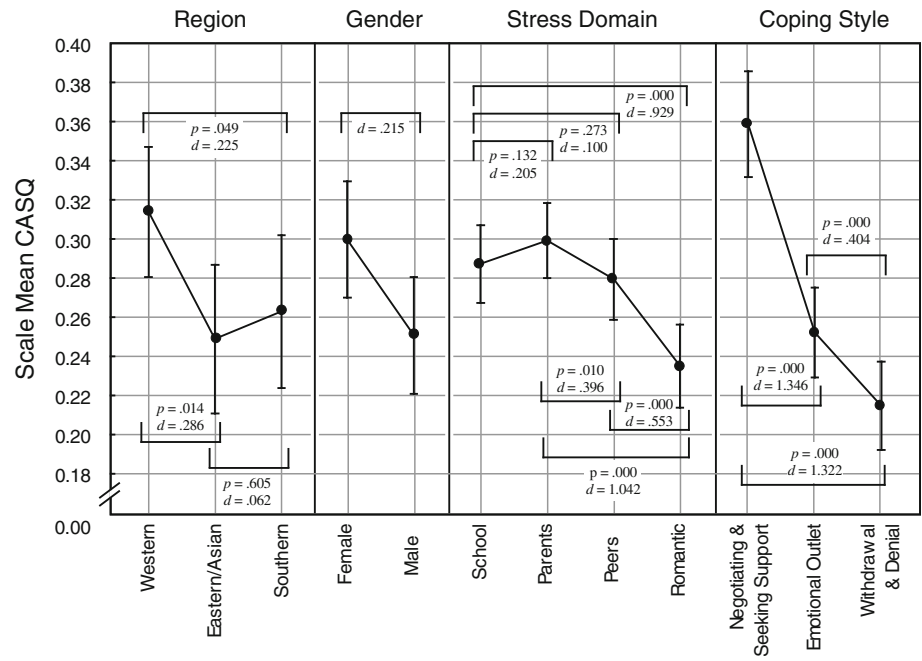
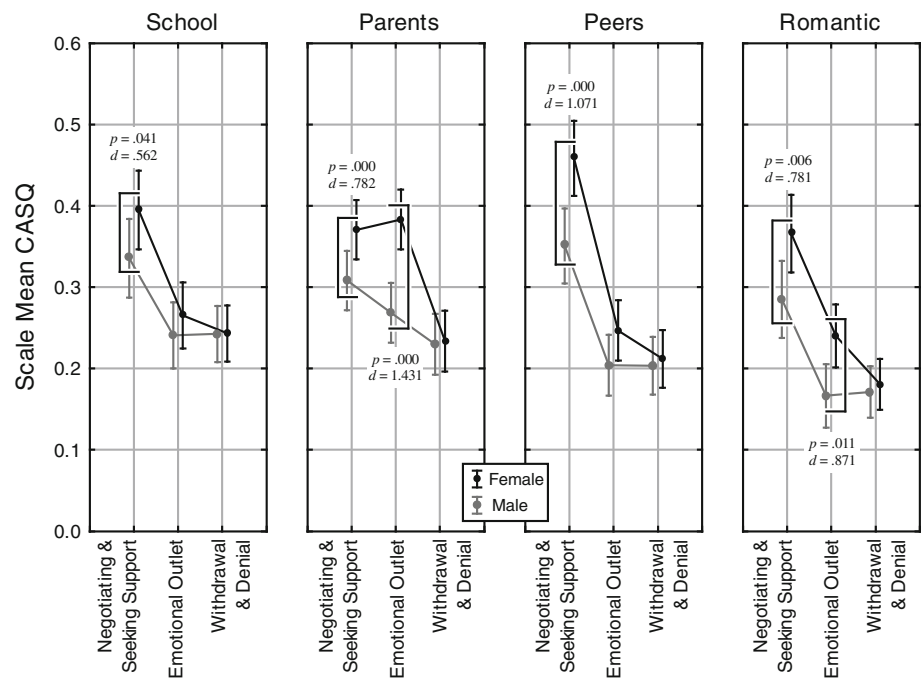


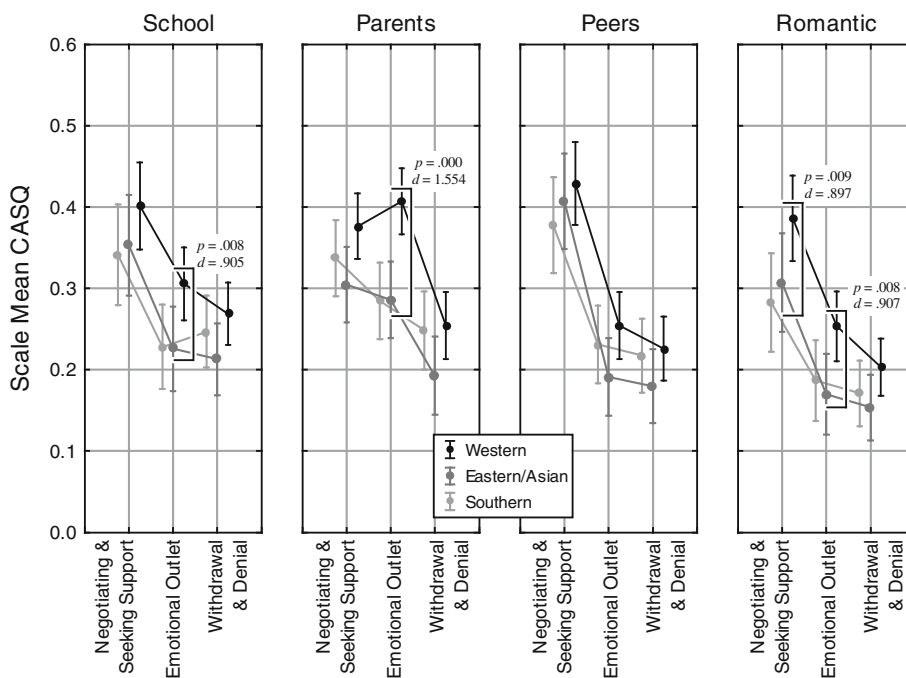
Fig. 3 Interaction effects of region, stressor domain, and coping style on coping behavior. Depicted are level means together with their 95% confidence intervals. The *p* values from Fisher LSD tests and Cohen’s *d* are given only for statistically significant ($p < .05$) comparisons among level means. Differences were computed from the mean of the Western group against the pooled mean of the Southern and Eastern/Asian groups (see text)



score. Then, we calculated difference values (Δ) as the difference between the level mean in the parents domain against the pooled mean from the other three domains. This was done separately for each coping style and region, the results of which are summarized in Fig. 5. Finally, in order to provide a coarse statistical assessment of the difference values (Δ), we constructed the 95% confidence interval around zero, based on the critical Scheffé distance. Interpretation of the Δ values is straightforward. A value above zero indicates that emotionally expressive coping behavior

is more often used to deal with parent-related stressors than with stressors in the domains of peers, school, or romantic relationships; conversely, a value below zero indicates the opposite. Two important conclusions can be drawn from the difference values. First, adolescents from all three regions displayed an emotionally expressive coping style in dealing with parent-related stressors significantly more often than for stressors in the other domains. Second, whereas adolescents from Eastern/Asian countries reported using more negotiating and support-seeking behaviors to

Fig. 4 Differences between coping with parent-related stressors and coping with stressors in other problem domains. *Points* represent Δ values computed as the arithmetic difference between level means in the parents' domain minus the pooled mean of the remaining three problem domains. *Error bars* are 95% confidence intervals for the mean difference. The *shaded area* marks the critical Scheffé distance at $\alpha = .05$ for comparisons with a fixed value. Mean differences outside this area deviate significantly from zero



deal with parent-related stressors than with those in the other domains, adolescents from Southern regions appeared to use withdrawal and denial strategies more often. For all other combinations of region and coping style, the domain of parent-related stressors did not differ significantly from the other three domains with respect to preferred coping styles.

Discussion

The study of adolescents' coping with stress has a long tradition in developmental research (Compas et al. 2001; Seiffge-Krenke 2011; Skinner and Zimmer-Gembeck 2007). Yet, past studies failed to acknowledge that competence in coping with stress is strongly bound to cultural backgrounds. Cognizant of cultural influences, we have to consider that developmental contexts for many adolescents in the world have changed over the last decade. Due to the current global recession, concerns among adolescents about academic achievement and future unemployment have become high in many countries (Gelhaar et al. 2007). In addition, as family relationships have changed during the last decades, autonomy from parents and increasing investment in extra-familial relationships may be of concern for adolescents in industrialized and developing countries (Kagiticbasi 1996). Thus, adolescents around the globe potentially increasingly share the same problems and need to develop competencies in order to navigate in an adult world that is complex and disorderly (Larson 2011). Given the strong impact of maladaptive coping styles on

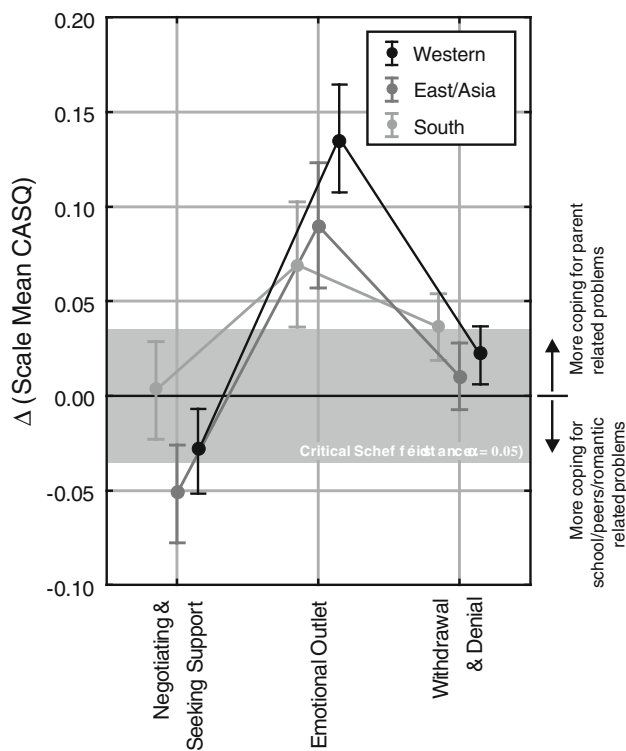


Fig. 5 Interaction effects of gender, stressor domain, and coping style on coping behavior. Depicted are level means together with their 95% confidence intervals. The *p* values from Fisher LSD tests and Cohen's *d* are given only for statistically significant ($p < .05$) comparisons among level means

health (Rudolph 2002), these issues are of interest in order to design effective prevention and intervention programs across countries.

This study represents a first approach towards understanding how adolescents from different regions of the world, who are moving towards adulthood, perceive and cope with stress in their everyday lives. We investigated midadolescents attending high schools in large university cities around the world. As a preliminary approach for this study, we used the concept of culture based on a continuum of collectivism-individualism (Hofstede and Bond 1988; Triandis 1995). Most of the studies based on this paradigm have relied on moderately sized student populations or compared ethnic minority groups in the US and Europe; little data has been generated for populations in other parts of the world, with the exception of Asia (Oyserman et al. 2002). The collectivism-individualism paradigm allowed us to organize cultural differences into overarching patterns. It seemed plausible to us that adolescents' coping strategies in dealing with stress would be influenced by whether overall more collectivistic or individualistic attitudes prevailed in the region of the world where they were growing up.

Our starting point was the exploration of how 10,941 adolescents living in 20 different countries perceived minor stressors in the domains of school and relationships and how they coped with these stressors. Standardized subsamples with a mean age of 15 years and an equal gender distribution were drawn from each country, resulting in a standardized sample of 4,000 adolescents upon which all further analyses were based. A discriminant analysis confirmed that adolescents from the 20 countries could be grouped into three regions that differed with respect to geographic location, youth unemployment rate, birth rate, proportion of adolescents in the overall population, and gross domestic product. Adolescents from the Western region (Finland, France, Germany, Great Britain, Italy, the Netherlands, Spain, and the United States) were characterized by features which are typical for families in Western industrialized nations (74% came from two-parent families with a mean of 1.6 children per family, and 56% had middle-class socioeconomic backgrounds). The countries in this region are generally believed to share predominantly individualistic cultural orientations. Adolescents from the Southern region (Costa Rica, Mexico, Pakistan, Peru, South Africa, and Turkey) resided in countries with a lower level of industrialization and lower GDP. Most of the adolescents were being raised by two parents (95%), but their family sizes were larger (mean of 2.9 children per family). Only 15% had affluent socioeconomic backgrounds. Collectivistic cultural orientations are more likely to prevail in these countries (Brown et al. 2002). Adolescents from the Eastern/Asian region (Croatia, the Czech Republic, Estonia, Korea, Poland, and Russia) were living in countries with variable levels of industrialization. Although family structure, family size, and

socioeconomic status were similar to that found for adolescents in the Western region (79% came from two-parent families with 1.2 siblings per family, 53% had middle-class SES), greater importance is assigned to family values (Stetsenko 2002). Taken together, the three regions show substantial differences in family structure variables but are similar in other socioeconomic variables.

Universality in the Basic Rankings of Everyday Stressors

This study analyzed the perceived stressfulness of problems in the domains of school, parents, peers, and romantic relationships. Across all regions, adolescents perceived problems experienced in the domains of parents and school to be the most stressful. Considerably less stress was experienced in the domains of peers and romantic relationships. However, the overall level of perceived stressfulness was moderate, suggesting that the study successfully tapped everyday, minor stressors. We cannot rule out the possibility that the moderate levels of perceived stressfulness were related to the sampling procedure, because we selected adolescents from comparable socioeconomic backgrounds. Thus, the findings might not be representative for adolescents with lower socioeconomic backgrounds or for younger adolescents, who generally experience much more stress than midadolescents do (Seiffge-Krenke et al. 2009). In addition, the low level of perceived stressfulness might be related to the coping competencies of all adolescents, which we discuss below. The finding of moderate stress levels for adolescents in all regions seems to suggest that the lifestyles of youths living in regions once characterized as having socially interdependent or collectivistic cultures have changed (Arnett 2002; Ataca 2006) and that age-specific stressors have become increasingly more similar for youths in all regions of the world. As Larson and Mortimer (1999, p. 1) noted: "As a result of globalization, middle-class adolescents across the world are increasingly attending to the same media sources, buying clothes from the same companies, and, possibly, arguing with their parents over the same issues".

Global social and economic changes and the introduction of new technologies and Western individualistic values not only may have changed lifestyles (and thus contributed to the finding of similar mean levels of perceived stressfulness of everyday problems) but may also have contributed to the similarity in basic rankings of stressfulness, depending on domain. Adolescents in all three regions perceived school-related problems to be the most stressful, which is in accordance with earlier studies showing that the pressure to achieve good grades

in school is experienced as being quite stressful among adolescents from different countries in Europe (Gelhaar et al. 2007), North America (McAndrew et al. 1998), the Far East (Nastisa et al. 2007; Tam and Lam 2005) and in Russia (Stetsenko 2002). Considering the fact that we sampled adolescents from university towns across the world, school-related stress (e.g. related to concerns about grades and competition for entry into higher educational institutions) seems to have become quite universal in an urban developmental context. This finding is alarming insofar as high stress levels in the academic domain are considered as a major factor contributing to the development of psychopathological symptoms (Natwig et al. 1999) and school burnout (Salmela-Aro et al. 2008).

In this study, adolescents perceived problems with parents to be as equally stressful as school-related ones. Parenting styles are thought to be quite different across regions (Chen and Farruggia 2002; Kagitcibasi 1996), with potentially stronger emphasis on family obligations in countries belonging to the Southern and Eastern/Asian regions (Hardway and Fuligni 2006). However, our findings of equally high levels of perceived stress in the parental domain across regions do not support this notion. These equally high levels could, however, have different origins. It is plausible that adolescents living in the Western region experience less conflict with parents because the latter grant their children more autonomy (Laursen et al. 1998). In contrast, adolescents growing up in more collectivistic cultures (e.g., as potentially found in the Southern and Eastern/Asian regions) may perceive interactions with parents as being less stressful, because interdependence and commitment to the family are highly valued (Chen and Farruggia 2002). We would like to note that adolescents in our study frequently named the stressors “My parents don’t let me make my own decisions” and “My parents are only interested in my getting good grades at school.” This suggests that negotiating with parents about autonomy issues were issues for adolescents in all regions of the world, and not just in North America and Europe (Harkness and Super 2002). Some support for this speculation comes from findings that parents’ socialization practices in ethnic minority families show increasing similarity to those of parents belonging to the host culture (Hughes et al. 2006). Further, adolescents experienced stress stemming from high parental pressure to get good grades, as substantiated by a correlation of $r = .41$ between levels of perceived stressfulness for parent- and school-related problems. Thus, our findings may reflect a change towards more autonomy-oriented parental behaviors and universal parental concerns about their children’s futures. However, this must be corroborated by further research.

It is interesting that adolescents from all parts of the world reported low levels of perceived stressfulness in the peer and romantic domain. We expected to find low peer-related stress, because adolescents across countries ascribe high importance to belonging to and having high status in a peer group (Brown et al. 2002; Claes 1998) and pursue egalitarian interactions, which may reduce stress (Bowker et al. 2000). In contrast, the universally low levels of perceived stressfulness reported for problems experienced in the romantic domain were unexpected. How can we explain this finding? Adolescents from more individualistic cultures, such as seen in countries in the Western region, may experience more freedom to seek partners without parental interference, which may offset stress resulting from individually made choices and social comparison with peers (Connolly et al. 2004; Dion and Dion 1993; Hand and Furman 2009) and result in low perceived stressfulness. The comparably lower romance-related stress experienced by adolescents from the Southern and Eastern/Asian regions could be related to a less individualistic focus and a greater concern for harmony with the extended family. In addition, clear family rules might offer the adolescent more guidance in the romantic area (Milbrath et al. 2009). Thus, less stress may be perceived in the domain of romantic relationships.

We also were surprised to find a lack of gender differences in stress perception, which have been reported in earlier studies (Compas et al. 1988; Seiffge-Krenke 1995). This seems to suggest that gender differences have narrowed, possibly due to globalization, equal access of females to education (Dasen 2000), or that parents may increasingly be treating daughters and sons alike (Hardway and Fuligni 2006; Shanahan 2000), at least in urban areas. However, these speculations need to be supported by further research, ideally using other instruments (e.g., interviews) that permit a deeper analysis of gender differences in perceived stressfulness of different everyday problems and hassles.

Coping Style Across Domains and Cultures: What is Similar and What is Different?

Among the gender differences in coping during adolescence reported in earlier studies, a consistent finding has been that, compared to males, females generally show higher levels of seeking support and talking about the problem with others (Frydenberg et al. 2003; Seiffge-Krenke et al. 2009; Tamres et al. 2002). Our findings expand on these studies by showing that females from all three regions exhibited higher levels in all three coping styles, irrespective of the stressor at hand. More specifically, compared to males, females used negotiating and

seeking support more often to deal with stressors in the domains of relationships and school, but they also exhibited greater use of emotional outlet and withdrawal, albeit with a moderate effect size. This finding is noteworthy, because males' and females' levels of perceived stressfulness were similar for all domains. More important, not all coping means may lead to an adaptive outcome in the long run. For example, higher levels of using withdrawal and denial may warrant concern. Although withdrawal is suggested to have positive functions in the face of uncontrollable stress, a consistent use of withdrawal in response to different stressful situations may put females on a less favorable developmental pathway leading to symptomatology (Rudolph 2002; Seiffge-Krenke and Stemmler 2002). Future studies should analyze the characteristics of the stressful situation in more detail and determine whether this coping style was used because the situation was perceived as uncontrollable, or because cultural scripts prescribed it.

Irrespective of existing gender differences in coping style, adolescents from all regions of the world used negotiating and seeking support much more frequently than emotional outlet and withdrawal to deal with stressors. The strong effect size (Cohen's $d = 1.3$) highlights the agentive role of all adolescents in dealing with age-specific encounters (Lerner and Castellino 2002). Indeed, the most impressive finding of our study is the high coping competence of adolescents from 20 countries from different regions of the world, which represents "a positive development in a disorderly world" (Larson 2011, p. 314). Only about one fifth of all adolescents' coping responses involved withdrawal behaviors. Because the consistent use of withdrawal coping has been linked with psychopathology (Seiffge-Krenke and Klessinger 2000; Seiffge-Krenke and Stemmler 2002), the positive implications of our findings for health and overall adaptation are noteworthy.

We think it is interesting that culture had an impact on coping styles used to deal with stressors in all four domains. For example, adolescents from the Western region scored higher than those from the Eastern/Asian or Southern regions with respect to the use of negotiating and seeking support and emotional outlet. In Western countries, negotiation and the open expression of emotions are typical and valued approaches used to resolve conflicts (Seiffge-Krenke et al. 2010). Although we expected to find more evidence of emotion regulation reported for Asian cultures (Kan et al. 2009) in our adolescents from the Eastern/Asian region, this was an unexpected finding for adolescents from countries in the Southern region, which are stereotypically thought to tolerate, even value, emotionality. If we consider, however, that adolescents from the Southern region might be more collectivistic-oriented, then a stricter control of negative emotions in relationship conflicts is

understandable. The importance of social relations and the striving for harmony in all close relationships might also explain why adolescents from the Southern region used negotiating less frequently, compared to adolescents from Western countries. Further work may demonstrate whether the open expression of emotions is truly viewed as socially unacceptable in collectivistic cultures.

Another interesting finding was that adolescents from all cultures, despite regional variations, exhibited more use of emotional outlet in conflicts with parents than with peers or romantic partners. This may be reflective of an increasing similarity in parenting styles across nations (Brown et al. 2002; Shanahan 2000), such that the use of emotional outlets in parent-adolescent conflicts has become permissible, compared to earlier decades. In addition, it signals the increasing importance of egalitarian relationships with peers and romantic partners for youths and a tendency show stronger emotion regulation in order to maintain the integrity of these voluntary relationships (Collins et al. 2009). That much of the interaction between gender and culture in our study was due to adolescent females' use of emotional outlet in parent-related conflicts underscores the speculation of females' more emotionally toned negotiations with parents in all regions of the world.

Limitations and Suggestions for Further Research

The nature of our study leads us to propose several caveats. We investigated midadolescent high school students in large university, most of whom came from middle-class families. Whether our findings are also valid for other adolescents, for example, those who are younger or older, having predominantly lower socioeconomic backgrounds, or living in rural areas, must be borne out by further research. In addition, the concept of culture based on a dimension of collectivism-individualism has been criticized for being not dynamic enough to accurately mirror cultural orientations in different countries (Triandis 1995) and has been only unsystematically validated by empirical research (Oyserman et al. 2002). We also must point out that the cross-sectional nature of our data prevents us from making any causal conclusions. It is unclear, for example, whether an increase in stress levels leads to an increase in coping efforts. Longitudinal studies may help to clarify this issue and illustrate how these reciprocal relationships are shaped by culture. Another limitation was that the data were based on adolescents' self-reports and, therefore, only describe how adolescents perceived and coped with stressors in the four domains. Since the perspectives of different interaction partners might diverge or with some adolescents being reluctant to report stress, it also would be important to continue research using different kinds of respondents.

Future research should be devoted to pursuing a more in-depth exploration of stress perception and coping processes in order to counter methodological shortcomings of this research, which was singularly based on questionnaire data (Berry et al. 2002). It is necessary to conduct in-depth interviews in the respective regions in order to understand what issues are perceived as stressful and what coping options are possible. In addition, it would be advisable to assess potential differences in parenting styles and the relative weighting of individualistic or collectivistic attitudes in different countries (Thayer et al. 2008). In this regard, it should be noted that evidence shows that individualism and collectivism may not necessarily be considered as opposing value systems (Oyserman et al. 2002), which should be validated by closer inspection of adolescents from the Eastern/Asian region. It might be important to analyze, on the total sample, the between-region and within-region variances, in order to determine whether adolescents in different countries in one region are more alike with respect to their perceptions of stress perception and coping styles than adolescents in different regions.

Future research may conceptually clarify the different ways of coping. For example, it might be advisable to differentiate between seeking support and negotiating (Skinner et al. 2003), as both may have different functions in different cultural contexts. It also would be relevant to explore if and how the coping strategies used by adolescents with different cultural backgrounds contribute to their overall adaptation. As withdrawal can have different meanings in different cultures, this coping style may be, as a consequence, differently linked to adaptation.

Taken together, the results obtained in our study have several notable implications. First, the high coping competencies of adolescents living in a disorderly world (Larson 2011) were impressive and should be considered as serving a protective function against developing psychopathology (Auerbach et al. 2010; Romero et al. 2007). Second, if adolescents from different regions in this study experience similar levels of stressfulness with minor events but differ in their ways of dealing with them, this might represent a trend that young people from different countries as well as immigrant, ethnic minority, and native youths in one country might experience similar everyday stressors, but react differently due to different cultural scripts. Third, it is important for those who work with ethnic minority youths in a given country to develop culturally-relevant intervention approaches (Saraswathi and Larson 2002). Our findings suggest that programs designed to promote optimal outcomes for youths by helping them to reduce stress and improve their coping abilities should be sensitive to independent and interdependent values (Herman et al. 2008), and to interpersonal bonding (Hardway and Fuligni 2006). Fourth, intervention approaches should incorporate

a special focus for immigrant and ethnic minority youths, for example, by offering alternatives to withdrawal coping. Overall, increased globalization and modernization has resulted in increasing similarity in stress perception and coping style, while still preserving cultural distinctiveness, a finding that should be taken into account when working with adolescents and their families.

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