URBAN LIFE STRESS IN PREADOLESCENTS: A LONGITUDINAL ASSESSMENT IN LIMA

ESTRÉS DE LA VIDA URBANA EN PREADOLESCENTES: UNA EVALUACIÓN LONGITUDINAL EN LIMA

Liliana Casuso*, Rafael Gargurevich**, Wim Van den Noortgate*** y Omer Van den Bergh****
University of Leuven, Bélgica.
Universidad Peruana de Ciencias Aplicadas, Perú.

Recibido: 11 de julio de 2012 Aceptado: 21 de agosto de 2012

ABSTRACT

This study has the aim to longitudinally explore stressors and perceived stress in several domains in preadolescents in the urban area of Lima. A non-clinical sample (N = 170, 9-11 years) from low and high socioeconomic status (SES) was investigated in four waves of data collection across two subsequent years. A multilevel analysis revealed that the intensity of perceived life stress decreased across the two years. Results further showed that preadolescents from low SES were more stressed about themselves and family than those from high SES. Regarding gender, girls were more stressed about their family and friends than boys. Finally, a list of the most frequent stressors in preadolescents living in the urban area of Lima is described.

Key words: Stress, Gender, Family Relationships, peer/friends, Socioeconomic Status

RESUMEN

Este estudio tiene como objetivo explorar longitudinalmente los eventos estresantes en preadolescentes de una zona urbana de Lima. Una muestra no clínica (N = 170, 9-11 años) proveniente de niveles socioeconómicos (SES) alto y bajo en la zona urbana de Lima, fue evaluada en cuatro momentos a lo largo de dos años. El análisis multinivel mostró que la intensidad de estrés percibido disminuyó durante los dos años. Los preadolescentes de SES bajo, mostraron más estrés sobre sí mismos y sobre sus familia en comparación con los de SES alto. Las niñas se estresaban más por sus familias y amigos que los niños. Finalmente se describen los estresantes más frecuentes encontrados en este grupo de preadolescentes limeños que viven en una zona urbana.

Palabras clave: Estrés, género, relaciones familiares, pares/amigos, nivel socioeconómico.

Stressful life events play a key role in the mental and physical health of young people, in interaction with multiple types of vulnerability factors such as genetic, biological, cognitive, interpersonal, and personality traits (Furniss, Beyer & Müller, 2009; Loman & Gunnar, 2010; McLaughlin & Hatzenbuehler, 2009; Oliva, Jiménez, Parra & Sánchez-Queija, 2008; Willemen, Koot, Ferdinand, Goossens & Schuengel, 2008). In the last decades, the topic of stress has been studied extensively in children, adolescent and adult populations, but relatively less emphasis has been put on preadolescents, the stage after childhood but before adolescence. This age, between approximately 9 and 12, is typically characterized by important changes in the cognitive, social, physical, and self-esteem domains and has been claimed to be a unique developmental stage that neither fits with the existing theories for children nor for adolescents (Thornburg, 1983). A few studies suggest an important role for stress in this age group (Csorba, Rozsa, Vetro, Gadoros, Makra & Somogyi, 2001; Yeaworth, York, Hussey, Ingle & Goodwin, 1980).

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

A *stimulus-based* perspective assessing the occurrence and intensity of actual stressors seems the best model for stress research in preadolescents, because they may not be able to fully understand and verbally report on stressful events, their appraisal processes nor on their coping skills (Flouri & Tzavidis, 2008; Grant & McMahon, 2005; Van der Heijden, Suurland, Swaab & de Sonneville, 2011). However, because preadolescence is in-between childhood and adolescent age, it is a priori not clear how to investigate stress in this age group. On the one hand, adults -such as parents, teachers and child-care professionals - tend to be poor estimators of stress levels in children (Anderson & Jimerson, 2007; Yamamoto & Mahlios, 2001) and this may be particularly true for preadolescents. On the other hand, self-report data in preadolescents have been found reliable and valid (Kostenius & Öhrling, 2009; Markey, Markey, Tinsley & Ericksen, 2002).

In Perú, investigations on sources and experience of stress is oriented mainly to adolescents and the early adult population (Cassaretto, Chau, Oblitas, & Valdez, 2003; Martínez & Morote, 2001; Mendoza, 2005; Moreano, 2006; Tapia, 2004) and, overall, little longitudinal stress research exists. For children, the family is the primary context but peers become increasingly important when they enter preadolescence (Anderson & Jimerson, 2007; Washington, 2009). Also some sources of stress characterizing adolescent life become increasingly more important in preadolescents. Seiffge-Krenke (1995) found in adolescents that 80% of all stressful everyday events pertain to interpersonal relationships as well as identity and future (Seiffge-Krenke, Aunola & Nurmi, 2009). Gender differences also appear: adolescent boys tended to report more stressors related to school, while girls reported more interpersonal concerns such as conflicts with parents, peers, and boyfriends (Phelps & Jarvis, 1994). Additionally, SES may strongly influence the number and intensity of stressful events. DeCarlo, Wadsworth and Stump (2011) found that preadolescents are particularly harmed by stress caused by of poverty-related stress in a sample of 300 family members (136 adults, 82 preadolescents and 82 adolescents).

Moreover, specific Peruvian factors may play a role. In 2010, The Information and Education Center for the Prevention of Drug Abuse (CEDRO) published that Perú was going through a deep moral, economic and ethical crisis that affected the majority of the population. As a result, hopelessness regarding the present and future discomfort due to political instability and desperation to cover basic needs may ensue.

The present research, have been performed in order to answer the following questions (a) Which stressors are the most frequent and how intense are they in preadolescents living in the urban area of Lima? (b) Does the level of perceived stress change during preadolescence? (c) Does preadolescent stress perception depend on gender? (d) Do preadolescent stress perceptions vary depending on SES (school type)?

Method

Participants

The initial sample was a convenience sample drawn from two schools in Lima, Perú, a private school and a public one. We used school type as a proxy for socioeconomic status (SES) in accordance with Matos (2005): in Perú, pupils attending public schools predominantly come from disadvantaged families with low SES and have parents with lower education levels than pupils attending private schools.

Four data collection waves were run during two consecutive years: June and November 2006, (N = 214; 102 girls; mean age = 9.7, *SD* = 0.7; frequency high SES = 121) and June and November 2007 (N = 170; 79 girls; mean age = 10.7, *SD* = 0.7; frequency high SES = 110). Ethnicity (mostly mestizo) was representative for the Peruvian population.

Instrument

The adapted Stressful Events Inventory for Preadolescents was administered (see Appendix A).

Procedure

At start, pupils and parents were invited separately to a meeting at school informing them about the study. Later, letters explaining the study and consent forms were sent to parents via their children for all 4th to 5th grades. Since the beginning the anonymity of the tests and confidentiality of the interviews was assured to the children as well to the parents. Only pupils for whom written permission was obtained were included and all questionnaires were administered in the classrooms. The (Spanish) instructions

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

were as follows «A list of situations is presented below and it is possible that some of them have happened to you in the last 12 months. Please answer either YES or NO in the first column. After that, think about how upsetting each event was for you and give it a rating in the second column. If the event disturbed you very much, circle 4 (*very bad*). If it didn't upset you, circle 1 (*didn't affect me*). If it is somewhere in between, circle 2 (*regular*) or 3 (*bad*)». Every child had an additional personal meeting after the first application of the adapted questionnaire in order to have the opportunity to add events that did not appear in the questionnaire. This was done because some relevant items were deleted from the questionnaire consistent with the advice of the teachers or parents (see Appendix A).

Data Analysis

To explore the intensity of the stress, we analyzed the scores indicating how much the event affected the student. This is marked only if the child had experienced a stress event, otherwise both answers were scored zero (*NO* and *didn't affect me*). The domain score was calculated by the sum of the scores of all the items that belong to the domain. Cronbach's alpha's for the four domains (see Appendix A: Self, Family, Friends and School) were not considered appropriate because the different items (stress events) in a domain are not alternative expressions of one underlying dimension (Cleary, 1981; Pugh, Erickson, Rubin, Gunderson, & Rahe, 1971).

By mean of an exploratory visual analysis of the data, we noticed that the relationship between time and the occurrence and intensity of stress is clearly not linear, and therefore we decided to use a multivariate model approach, considering the level of stress for each moment as a separate dependent variable. This analysis can be considered as a multilevel analysis, with measurement occasions the units at the first level, and pupils the units at the second level. Indicators for the measurement moment, the gender, and school, as well as all corresponding interaction terms are included.

Results

Descriptives

Pupils of private school had much higher SES than those from public schools ($M = 36.3$, $SD = 2.10$; $M = 23.19$, $SD = 4.77$, respectively; $t = -24.70$, df = 119.51, $p < 0.001$) meaning that using school type (private, public) as a proxy for SES (high, low) was warranted. In the personal meeting, no additional stressful situations other than the ones provided in the questionnaire were pointed out and none of the pupils mentioned sexual abuse, family violence or maltreatment in school.

The total of items are presented (see Appendix A) and ranked according to their frequency as well perceived intensity in the first wave. The most frequent stressful stressors found were: «You hurt yourself and got a scar», «You were thinking of your future», «You were punished at home» and «You were thinking of your future», respectively in each of the four moments. The least frequent stressful situations in most moments were «somebody offered you drugs», «you quit studying because you didn't have enough money» and «you ran away from school».

Regarding the stress intensity, the higher means of their ratings were in most of the moments: «someone you know died» and «you were punished at home» meanwhile the least impacting events were «somebody offered you drugs» and «you quit studying because you didn't have enough money» for the most of the moments (Appendix A). The general domain means for the perceived intensity of the life event during the four waves of evaluation are described in Table 1.

Comparing the means on the different moments yields significant differences (see Table 1). Regarding the means in the «self» domain there were significant differences between the mean of moment 1 and the other three moments. Also the mean of moment 2 was significant higher than moment 3 and 4. No significant differences were found between moments 2 and 4, as neither between 3 and 4. About «friends» domain: moment 1 had a significant higher mean in comparison to the rest of the moments. In the same manner the mean of moment 2 was significantly higher than moment 3 and 4. Likewise in the «family» domain there were significant differences between moment 1 and the rest of the four moments. Moment 1 had a significant higher mean in comparison to the means of moments 2, 3 and 4. Also the mean of moment 2 was significant higher than moment 3 and 4. In the case of «school» domain, only in moment 1 the mean is significant higher than at moment 2, 3 and 4.

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

Table 1
General and conditional Means and corresponding SE of stress intensity at each moment by specific domains. Pair-wise comparisons

Moment	General mean	Self		Friends		Family		School	
		M	*SE*	*M*	*SE*	*M*	*SE*	*M*	*SE*
Moment 1 ; N=214	53.57, ±30.84	20.43	.98	12.80	.83	18.48	.99	3.44	.28
Moment 2 ; N=214	34.8, ±27.71	13.53	.86	8.05	.72	12.53	.81	2.52	.25
Moment 3 ; N=170	25.04, ±20.13	10.49	.67	5.43	.52	8.996	.62	1.85	.20
Moment 4 ; N=169	27.50, ±22.70	11.28	.73	6.02	.62	8.994	.71	2.01	.21
Difference in means for each pair of moments									
1-2		6.91*	.95	4.75*	.72	5.95*	.90	0.92*	.31
1-3		9.95*	.89	7.37*	.79	9.48*	.86	1.59*	.27
1-4		9.16*	.89	6.77*	.77	9.48*	.86	1.43 *	.26
2-3		3.04*	.79	2.62*	.67	3.53*	.73	0.67	.27
2-4		2.25	.89	2.03*	.69	3.53*	.86	0.51	.26
3-4		-0.79	.62	-0.59	.48	0.002	.58	-0.16	.20

Gender means by domains	self	friends	family	school
Boy	13.52	6.38	10.66	2.79
Girl	14.35	9.77	13.84	2.12
School (SES) means by domains	self	friends	family	school
Low SES	15.67	7.04	14.47	2.39
High SES	12.19	9.11	10.03	2.52

* The mean difference is significant at the level .05 (Adjustment for multiple comparisons: Sidak)

Multilevel analysis

There is a clear decrease in the four domains of stress from moment one to two and from moment two to three (see Table 1). The drop of the means in the different moments are similar except for the domain «School», where the mean is relatively low and remains stable. In none of the stress domains, significant differences were found between moments three and four. Table 1 further reveals that, the highest mean is found in the domain about «Self», followed by the domain «Family».

By further exploring differences between students by including predictors in the model, the following findings (see Table 2) emerged: 1) for stress about themselves -«Self» domain- the variable school type (SES) makes a significant difference, F (1, 165) = 7.46, p < .05. In Table 1 we see that pupils in low SES reported higher mean stress about themselves than pupils from high SES; 2) For stress in the «Friends» domain, gender made a significant difference, $F(1, 165) = 10.11$, $p < .01$. Girls are more stressed about friends than boys (see Table 1). There is an interaction between moment and the school type (SES) in this «Friends» domain (see Table 2). High SES pupils are more stressed about friends than their low SES peers during the fourth moment, while for the other moments, the difference is smaller. 3) For stress in the family domain, gender $F(1,164.9) = 6.60$, $p < .05$ and school $F(1,164.9) = 12.87$, $p < .001$, emerged as significant variables. Table 1 shows that girls were more stressed about family than boys, and pupils from low SES school were more stressed than the ones from the high SES; 4) For stress in the «School» domain, no significant differences emerged.

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

Table 2
Multilevel Analysis of the Intensity of the Stress (F-values and corresponding degrees of freedom)

	Self			Friends			Family			School		
	F	*Ndf*	*Ddf*	*F*	*Ndf*	*Ddf*	*F*	*Ndf*	*Ddf*	*F*	*Ndf*	*Ddf*
Moment	43.91(3;37.88) ***			30.79(3;28.63) ***			45.97(3;34.49) ***			13.33(3;58.80) ***		
Gender	0.43(1;165)			10.11(1;165) **			6.60(1;164.98) *			3.63(1;164.88)		
School type(SES)	7.46(1;165)*			3.79(1;165)			12.87(1;164.98)***			0.15(1;164.88)		
Gender x School	0.01(1;165)			2.03(1;165)			0.34(1;164.98)			0.001(1;164.88)		
Moment x Gender	0.30(3;37.88)			0.42(3;28.63)			0.85(3;34.49)			0.24(3;58.80)		
Moment x School type(SES)	1.07(3;37.88)			3.4(3;28.63) *			0.07(3;34.49)			1.23(3;58.80)		
Moment x Gender x School	1.86(3;37.88)			1.61(3;28.63)			0.49(3;34.49)			1.21(3;58.80)		

Note: Moment = moment of Measurement, Ndf = numerator df, Ddf = denominator df
The mean difference is significant at the level ***p < .001; **p < .01;*p < .05.

Discussion

The present research is aimed at studying experienced stress in preadolescents in an urban area. We explored stressful experiences across four data waves during a period of two years in a preadolescent group. For the first three domains, but not for stressors regarding school, we found differences over time. In general, there was a decreased tendency across time. Domains 'Self' and 'family' were higher than that of 'friends' domain; meanwhile 'School' domain seems the least stressing situation for this group. This reflects the transition age of preadolescences that still strongly value themselves and their family. At the same time, they start to be aware of their relationships.

Significant differences between SES groups emerged in the domains 'Self', 'Family' and 'Friends'. Low SES preadolescents were more stressed about themselves and family, while high SES preadolescents were more worried about friendships. In Perú low SES families have poor economic resources, informal employments, low levels of education, and high rates of abandonment by fathers, single motherhood, and family violence as well as a poor health insurance system. Differences in family stability between low and high SES in Perú may be responsible for this finding: the highest mean levels are in the family domain. Low SES preadolescents were more stressed about family compared with their high SES peers, as well as about their own safety and health. These findings suggest that children may benefit from programs enhancing their skills to cope with the harmful effects of poverty-related stress in the preadolescent population.

Results showing girls being more stressed about their friends than boys are consistent with findings that girls tend to invest more in social networks (Nolen-Hoeksema, Girgus & Seligman, 1991). As a result, threats to the availability of support are more stressful for them.

With respect to the interaction between moment and SES in the friends domain (see Table 2), it is important to consider that the fourth moment was at the end of the academic year right before a vacation of three months. This is consistent with the relatively stronger increase in stress level at the end (Peruvian academic year ends in December) of the second year (moment four) than at the end of the first year (moment two). Apparently, the role of friends becomes more significant as they grow older.

The higher stress levels in the family domain that girls experience compared with boys may reflect family practices in Perú. When both parents are working, the older daughter typically learns very early to attend and protect their brothers in both SES levels. Therefore, it is understandable that girls tend to be more preoccupied by their families.

The effect of SES remained significant during the two years, suggesting that the risk to develop a chronic stress is higher for the low SES group. This is consistent with

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

findings in a two year longitudinal study with subjects from 9 to 18 years (Chen, Cohen & Miller, 2010).

Because the four waves of data have been collected under the same conditions, the present study shows that the overall level of perceived stress declines over time in preadolescence. Indeed, when we compare testing moments one and three (which are separated by 12 months) we see a noticeable drop in the mean of the number of life events (M = 20.86 decreases to M = 10.68) and the same with the mean of perceived intensity of stress (M = 53.57 decreases to M = 25.00). But interestingly, when we compare testing moment two and four (which also has 12 months in between) the means drop less strong (M = 34.8 decreases to M = 27.5). In fact, other findings about children also suggest that many negative events are seen as less stressful as age increase (Gullone, King & Ollendick, 2001; Muldoon, 2003). In the same way, Seiffge-Krenke et al. (2009) found the same decrease effect in stress perception during a longitudinal study in adolescents at the beginning and end of this stage. We need to consider that our sample has been longitudinally evaluated during the course of two years, precisely in the transition from preadolescence to early adolescence. However, it may also represent a gradual loss of motivation to respond thoughtfully to the questionnaires.

Finally, if we consider longitudinally the total items (see Appendix A), it can be observed that the most frequent stressful situations not always were rated as the most impacting situation among the children reported. This could confirm the necessity to measure the type of stressful events and the intensity of such stressful situation on the preadolescent, if we want to be more accurate about the perceived stress experienced.

Some limitations are important to remark. First, the questionnaire used in this study asks about stressors that the preadolescents experienced in the last 12 months, but the duration between each moment of measurement was not exactly 12 months. Therefore, stressors suffered in the 12 months prior to testing at moment two and four overlapped with those suffered prior to testing moment one and three.

Another limitation is that fewer items were used to measure stressful situations at school than in the other domains. This could have reduced in some way the representativeness of the stress data related to school. In addition, in the questionnaire used to measure perceived stress, stressors like rape and physical abuse were deleted upon request of teachers and parents (see Appendix B); asking the children directly about it in a personal interview may have been too embarrassing. Even though we had a personal meeting with each student to ask for others stressors, trying to collect this type of data in another way might be valuable.

The findings of the present study, document stressors in specific domains in preadolescents living in an urban area with 28% of poverty prevalence in Lima (Fondo de Cooperación para el Desarrollo Social [FONCODES], 2011). As such, our findings are relevant to design prevention programs for risk population and developing resilience in this sensitive stage of their lives.

References

Anderson, G. & Jimerson, S. (2007). Stressful life experiences of children: The correspondence between professional judgments of teachers-in-training and children's perceptions. *Psychology in the Schools, 44,* 807-821. doi: 10.1002/pits.20267

Cassaretto, M., Chau, C., Oblitas, H. & Valdez, N. (2003). Estrés y afrontamiento en estudiantes de Psicología. *Revista de Psicología de la PUCP, 21,* 364-392.

Chen, E., Cohen, S. & Miller, G. (2010). How low socioeconomic status affects 2-year hormonal trajectories in children. *Psychological Science, 21,* 31-37. doi: 10.1177/0956797609355566

Cleary, P. (1981). Problems of internal consistency and scaling in life events schedules. *Journal of Psychosomatic Research, 25*, 309-320. doi:10.1016/0022-3999(81)90008-8

Csorba, J., Rozsa, S., Vetro, A., Gadoros, J., Makra, J. & Somogyi, E. (2001). Family –and school- related stresses in depressed Hungarian children. *European Psychiatry, 16*, 18-26.

DeCarlo, C., Wadsworth, M. & Stump, J. (2011). Socioeconomic status, neighborhood disadvantage, and poverty-related stress: Prospective effects on psychological syndromes among diverse low-income families. *Journal of Economic Psychology, 32,* 218-230. doi:10.1016/j.joep.2009.10.008

Flouri, E. & Tzavidis, N. (2008). Psychopathology and prosocial behavior in adolescent from socio-economically disadvantaged families: The role of proximal and distal adverse life events. *European Child & Adolescent Psychiatry, 17,* 498-506. doi: 10.1007/s00787-008-0693-9

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

Fondo de Cooperación para el Desarrollo Social (FONCODES). (2011). Modulo Perú: Herramienta de lucha contra la pobreza. Retrieved from http://www.foncodes.gob.pe/documentos/mperu/modulo_peru_tecnico.pdf

Furniss, T., Beyer, T. & Müller, J. (2009). Impact of life events on child mental health before school entry at age six. *European Child & adolescent Psychiatry, 18,* 717-724. doi: 10.1007/s00787-009-0013-z

Grant, K. & McMahon, S. (2005). Conceptualizing the role of stressors in the development of psychopathology. In B. Hankin and R. Abela, (Eds.), *Development of psychopathology: A vulnerability-stress perspective.* (pp. 3-31). London: SAGE Publications.

Gullone, E., King, N. & Ollendick, T. (2001). Self-Reported anxiety in children and adolescents: A three-year follow-up study. *Journal of Genetic Psychology, 162*(1), 5-19.

Kostenius, C. & Öhrling, K. (2009). Being relaxed and powerful: Children´s lived experiences of coping with stress. *Children & Society, 23,* 203-213. doi:10.1111/j.1099-0860.2008.00168.x

Loman, M. & Gunnar, M. (2010). Early experience and the development of stress reactivity and regulation in children. *Neuroscience and Biobehavioral Reviews, 34,* 867-876. doi:10.1016/j.neubiorev.2009.05.007

Markey, P., Markey, C., Tinsley, B. & Ericksen, A. (2002). A preliminary validation of preadolescents' self-reports using the Five-Factor Model of Personality. *Journal of Research in Personality, 36*(2), 173-181.

Martínez, P. & Morote, R. (2001). Preocupaciones de adolescentes en Lima y sus estilos de afrontamiento. *Revista de Psicología de la PUCP, 19*, 212-236.

Matos, L. (2005). School culture, teachers' and students' achievement goals as communicating vessels: A study in Peruvian secondary schools. Unpublished doctoral dissertation Katholieke Universiteit Leuven, Belgium.

McLaughlin, K. & Hatzenbuehler, M. (2009). Stressful life events, anxiety sensitivity, and internalizing symptoms in adolescents. *Journal of abnormal psychology, 118,* 659-669. doi: 10.1037/a0016499

Mendoza, N. (2005).*Características socio demográficas y estresores percibidos en un grupo de adolescentes trabajadoras del hogar en Lima Metropolitana.* Unpublished master´s thesis, Universidad Católica del Perú, Lima, Perú.

Moreano, L. (2006). *Estilos de personalidad y estrategias de afrontamiento en adolescentes universitarios.* Unpublished master´s thesis, Universidad Católica del Perú, Lima, Perú.

Muldoon, O. (2003). Perceptions of stressful life events in Northern Irish school children: a longitudinal study. *Journal of Child Psychology and Psychiatry, 44*(2), 193-201. doi: 10.1111/1469-7610.00113

Nolen-Hoeksema, S., Girgus, J. & Seligman, M. (1991). Sex differences in depression and explanatory style in children. *Journal of Youth and Adolescence, 20*(2), 233-245.

Oliva, J., Jiménez, J., Parra, A. & Sanchez-Queija, I. (2008). Acontecimientos vitales estresantes, resiliencia y ajuste adolescente. *Revista de Psicopatología y Psicología Clínica, 13*(1), 53-62.

Phelps, S. & Jarvis, P. (1994). Coping in adolescence: Empirical evidence for a theoretically based approach to assessing coping. *Journal of Youth and Adolescence, 23*(3), 359-371.

Pugh, W., Erickson, J., Rubin, R., Gunderson, E. & Rahe, R. (1971). Cluster analyses of life changes. II. Method and replication in Navy subpopulation. *Archives of General Psychiatry, 25*, 330-332.

Seiffge-Krenke, I., Aunola, K. & Nurmi, J. (2009). Changes in stress perception and coping during adolescence: the role of situational and personal factors. *Child development, 80*, 259-279. doi: 10.1111/j.1467-8624.2008.01258.x

The Information and Education Center for the Prevention of Drug Abuse. (2010). El problema de las drogas en el Perú. Retrieved from http://www.cedro.org.pe/ebooks/EPD_2010.pdf

Thornburg, H. (1983). Is early adolescence really a stage of development? *Theory Into Practice, 22*(2), 99-84.

Van der Heijden, K., Suurland, J., Swaab, H. & de Sonneville, L. (2011). Relationship between the number of life events and memory capacity in children. *Child Neuropsychology, 30*, 1-19. doi**:**10.1080/09297049.2011.554391

Washington, T. (2009). Psychological stress and anxiety in middle to late childhood and early adolescence: Manifestations and management. *Journal of Pediatric Nursing, 24*, 302-313. doi:10.1016/j.pedn.2008.04.011

Willemen, A., Koot, H., Ferdinand, R., Goossens, F. & Schuengel, C. (2008). Change in psychopathology in referred children: The role of life events and perceived stress. *The Journal of Child Psychology and Psychiatry, 49,* 1175-1183. doi:10.1111/j.1469-7610.2008.01925.x

Yamamoto, K. & Mahlios, M. (2001). Home is where it begins: Parents, children, and stressful Events. *Journal of Child Psychology & Psychiatry & Allied disciplines, 42*(4), 533-537.

Yeaworth, R., York, J., Hussey, M., Ingle, M. & Goodwin, M. (1980). The development of an adolescent life change event scale. *Adolescence, 15*(57), 91-98.

Acknowledgements:
The research reported here was supported by a grant from the Interfaculty Council for Development Cooperation (IRO, programme of K.U. Leuven, 44038) to the first Author.

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

APPENDIX A

Table A

The 78 selected items from the Stressful Events Inventory for Adolescents (SEIA), the domain they belong to, frequency of the events and the means of their intensity (ordered by their frequency on the first moment)

	Items	Domain	Moment 1		Moment 2		Moment 3		Moment 4	
			Freq	Mean	Freq	Mean	Freq	Mean	Freq	Mean
59.	You hurt yourself and got a scar	Self	105	1.51	70	0.91	56	0.72	67	0.73
63.	A friend misbehaved at school	School	99	1.12	60	0.61	62	0.60	69	0.62
68.	You were thinking of your future	Self	99	0.82	79	0.67	67	0.51	86	0.75
5.	You were punished at home (couldn't go out, they gave you chores)	Self	97	1.44	78	1.06	69	1.01	62	0.89
15.	A close family member moved away or went on a trip	Family	97	1.27	78	1.07	64	0.38	68	0.79
74.	A friend moved away or changed school	Friends	97	1.36	51	0.68	54	0.70	48	0.61
43.	You were blamed for something you didn't do	Self	93	1.55	55	0.91	50	0.79	54	0.84
71.	Your family took care of you or protected you too much	Family	92	0.81	62	0.58	55	0.48	39	0.36
7 .	There were arguments between family members	Family	90	1.48	73	1.15	54	0.75	59	0.93
10.	Someone you know died (neighbour, teacher, etc.)	Self	86	1.61	69	1.32	55	0.90	58	1.07
20.	A family member gave you a nickname or performed a bad joke on you	Family	78	0.97	61	0.36	37	0.43	43	0.53
51.	You argued with a friend	Friends	78	1.19	54	0.78	40	0.54	51	0.76
26.	A close family member died	Family	73	1.45	51	1.08	35	0.70	32	0.69
34.	A family member became seriously ill	Family	70	1.34	43	0.85	31	0.61	36	0.74
2.	A friend deceived you or was hypocrite towards you	Friends	68	1.15	63	1.01	41	0.58	52	0.83
14.	You moved to another home	Self	66	0.62	49	0.49	28	0.30	30	0.25
52.	A friend gave you a nickname or performed a bad joke on you	Friends	65	0.89	41	0.58	30	0.35	34	0.49
55.	There were arguments between your friends	Friends	65	0.88	43	0.54	40	0.52	38	0.49
65.	Your pet died	Self	59	1.18	36	0.70	26	0.49	30	0.62
3.	Your friends ignored you or left you out	Friends	58	1.02	37	0.65	30	0.48	40	0.64
49.	Something you really wanted didn't happen	Self	58	0.85	40	0.64	23	0.35	44	0.67
77.	You didn't feel comfortable about your size, weight or something about your body	Self	55	0.85	48	0.80	43	0.67	46	0.77
58.	You got beaten at home	Self	51	0.84	27	0.42	19	0.26	15	0.25
12.	A new person came to live in your house	Family	51	0.47	41	0.43	29	0.25	36	0.31
19.	Your friends rejected you or criticized you	Friends	50	0.82	38	0.69	20	0.34	23	0.34
21.	You didn't feel good about your haircut, or your clothes, etc.	Self	50	0.65	43	0.51	37	0.58	43	0.64

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

39.	A family member insulted you or looked at you meanly	Family	50	0.77	28	0.37	14	0.20	12	0.19
42.	A family member had a serious accident (broken bone, run over by a car, etc.)	Family	49	0.95	36	0.64	36	0.59	32	0.58
61.	You argued with a family member	Family	49	0.84	27	0.35	18	0.28	22	0.31
40.	You got seriously ill	Self	48	0.89	35	0.65	15	0.29	18	0.33
47.	A family member was assaulted or robbed	Family	48	0.83	24	0.44	21	0.35	16	0.29
16.	A new brother/sister was born in your home	Family	47	0.38	32	0.28	16	0.12	14	0.09
4.	A family member was attacked by a gang	Family	46	0.80	42	0.66	35	0.58	21	0.36
64.	Your friends spoke badly of you	Friends	45	0.75	29	0.47	23	0.34	28	0.43
30.	Someone cheated on you or deceived you	Self	44	0.68	21	0.31	12	0.21	9	0.12
76.	A friend had a serious accident (broken bone, run over by a car, etc.)	Friends	44	0.70	30	0.45	25	0.39	26	0.34
41.	You lost or broke something important for you or your family	Self	43	0.81	18	0.28	13	0.08	13	0.20
27.	You lost a large amount of money	Self	40	0.68	25	0.42	15	0.25	20	0.34
33.	Your pet got lost or stolen	Self	40	0.84	29	0.56	23	0.42	26	0.47
38.	You didn't have the money to buy something you needed	Self	40	0.50	19	0.26	16	0.23	16	0.22
44.	Your friends got into your personal things	Friends	40	0.71	27	0.46	14	0.24	19	0.33
45.	A friend insulted you or looked at you meanly	Friends	40	0.64	30	0.42	19	0.24	25	0.33
46.	A friend became seriously ill	Friends	40	0.70	14	0.08	11	0.14	11	0.21
48.	You misbehaved at school	School	39	0.60	34	0.41	35	0.35	28	0.36
69.	Someone in your family hit you	Self	39	0.64	19	0.29	15	0.18	11	0.17
18.	You didn't pass your exams or your report card	School	37	0.61	26	0.40	28	0.41	36	0.58
32.	A friend was assaulted or robbed	Friends	37	0.52	25	0.34	15	0.19	10	0.13
53.	A friend died	Friends	36	0.72	25	0.46	10	0.14	8	0.16
56.	You changed classroom or school	School	36	0.46	28	0.32	19	0.19	16	0.15
57.	Somebody insisted that you do things you didn't want to do	Self	36	0.58	16	0.22	10	0.13	7	0.11
1.	A member of my family lost a large amount of money	Family	35	0.61	35	0.52	27	0.40	21	0.31
29.	A person you like didn't notice you	Self	34	0.49	24	0.31	24	0.32	40	0.59
37.	You were punished at school (told off, expelled)	School	33	0.44	38	0.49	24	0.25	23	0.30
6.	Your parents separated or divorced	Family	29	1.56	27	0.45	22	0.41	21	0.40
72.	You had a serious accident (broken bone, run over by a car, etc.)	Self	29	0.51	23	0.35	14	0.29	14	0.21
8.	Your family spoke badly about you	Family	27	0.44	17	0.29	13	0.19	9	0.18
78.	Someone lost or broke something important for you or your family	Family	27	0.54	13	0.21	8	0.14	11	0.17

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

24.	You were assaulted or robbed	Self	26	0.44	16	0.26	12	0.21	10	0.20
28.	A family member lost confidence in you	Family	24	0.38	17	0.27	9	0.15	13	0.20
35.	A friend took advantage of your confidence	Friends	23	0.38	20	0.29	8	0.14	13	0.19
54.	Your family got into your personal things	Family	20	0.32	13	0.21	6	0.09	7	0.12
66.	A friend lost confidence in you	Friends	20	0.35	8	0.14	8	0.11	13	0.21
11.	A family member deceived you or was hypocritical towards you	Family	19	0.32	10	0.16	8	0.09	6	0.08
73.	You had to work to help at home	Self	19	0.15	9	0.08	5	0.06	3	0.04
25.	A family member took advantage of your confidence	Family	18	0.30	6	0.10	5	0.08	5	0.10
36.	You broke up with your boy/girlfriend	Self	17	0.22	20	0.22	14	0.14	9	0.09
31.	Somebody offered you liquor	Self	16	0.16	11	0.14	10	0.06	9	0.09
67.	Your family didn't have money for food or to pay the bills	Family	16	0.28	13	0.15	8	0.12	10	0.13
70.	There was a disaster in your house or neighborhood (collapse due to earthquake, fire, age etc.)	Self	15	0.22	10	0.12	7	0.11	9	0.11
62.	Your family ignored you or left you out	Family	14	0.26	5	0.09	4	0.04	3	0.05
22.	A person who provided money to your house lost his/her job	Family	12	0.19	12	0.07	9	0.14	6	0.11
13.	A family member entered a gang	Family	11	0.06	13	0.21	4	0.05	9	0.09
75.	Your family rejected you or criticized you	Family	11	0.18	6	0.09	4	0.05	4	0.06
50.	You repeated a year	School	7	0.13	6	0.11	4	0.08	5	0.09
9.	There was a disaster at school (collapse due to earthquake fire, age etc.)	Self	4	0.05	5	0.06	0	0.00	4	0.05
23.	You ran away from school	School	3	0.04	5	0.04	4	0.02	2	0.01
17.	You quit studying because you didn't have enough money	School	2	0.02	7	0.12	0	0.00	1	0.01
60.	Somebody offered you drugs	Self	1	0.02	5	0.05	1	0.01	1	0.01

Note: The items are ranked according to frequency of events occurred in the first moment and the means reflect the perceived intensity of the events in the preadolescents.

In each moment the first column (freq) is the number of students that had the life event in the last 12 months (N=170). The second column informs about the mean of the level stress that the children perceived considering a range from 0 to 4. From SEIA the deleted items were: 1) Not proper for the age (9 to 11): «You wished to have a boy/girlfriend and you had nobody», «You had trouble with the authorities or the police», «You were looking for a job to help at home», «Your boy/girlfriend deceived you or betrayed you», «You had sex», «You noticed you were going to have a child or the child was born», «You were working but got fired». 2) Due to parent´s reluctance: «You ran away from home», »Someone in your family used drugs», «You drank alcohol until you got drunk», «You went to places for adults only (movies, discotheques, etc)», »A friend got beaten», «A gang attacked a friend of yours», «A gang attacked you or molested you», «You used drugs», «Somebody offered you to smoke cigarettes», «One of your parents cheated on the other», «A friend started being involved with a gang», «Your family threw you out of home», «You were sexually abused» and «You smoked many cigarettes». 3) Due to teacher´s reluctance: «You got beaten or physically punished at school» and asking about too much homework (the latter one emerged in the focus group but did not appear in the questionnaire).

The Spanish version is available upon request for research purposes.

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

APPENDIX B

Adaptation and validation of The Stressful Events Inventory for Adolescents (SEIA; Tapia, 2004) into a preadolescent version.

Following recommendations by Turner and Wheaton (1995) to select events and items from other inventories based on their relevance and supplementing them with events reported by representatives of the target population as well as with the experience of others, we conducted a focus group study to be sure that the concept of stress is well understood and have real stressful events that the discussion evoked in the children. This would let us to determine which instrument for adolescents would be most appropriate to adapt for use with Peruvian pre-adolescents.

Method

Participants

For this study we used a convenience sampling by convenience. Fourth and fifth-grade pupils (N = 56) were recruited from three local mixed-gender schools in the urban area of La Molina and Ate (one district close to the other) in Lima, Perú. Three groups were composed, using school type as a proxy for socioeconomic status (SES) in agreement with Matos (2005). Clark (2009) found in her experience running focus group with children, around the half of the group has an active participation; therefore we invited groups from 12 to 20 participants. Group 1 (N = 3, mean age = 10.74, *SD* = 0.752) was drawn -by the school psychologist in charge- from a public school with two classrooms per grade. It had very basic material resources and was located in Ate. Group 2 (N = 20, mean age = 11.20, *SD* = 0.894) was selected by the academic coordinator among the pupils of private school SES. The school was located in La Molina, with two classrooms per grade. It had big areas for sports, laboratories and workshops. Group 3 pupils (N = 13, mean age = 10.77, *SD* = 0.927) was low SES and belonged to a public school in a small building located close to a shantytown in la Molina and with only one classroom per grade. Age, SES and geographical location of the focus group run for the validation of the questionnaire participants were equivalent to the sample that eventually participated in the study.

Instruments

Three potentially relevant instruments were considered

- Stressful Events Inventory for Adolescents (SEIA; Tapia, 2004). A Peruvian self-report instrument in which young people between 12 and 20 years old have to identify the stressors experienced in the last 12 months (occurrence: *yes, no*) and to rate their intensity (4-point scale with 1 = *not at all distressing* and 4 = *it affected me very badly*).
- Adolescent Life Change Event Scale (ALCES; Yeaworth, York, Hussey, Ingle & Goodwin, 1980). For adolescents aged 11 to 18 years old. The respondent is asked to indicate on a scale of one to five how upsetting the person believed the event was.
- Problem Questionnaire (PQ; Seiffge-Krenke, 1995). A 64-item instrument for adolescents aiming to cover different possible problem domains about self, parents, peers, opposite sex, school, leisure time, vocational goals and future. The respondent is asked to rate each item from 1 (*not at all stressing*) to 5 (*very stressing*).

Procedure

The same psychologist was the facilitator in all focus groups and they were run during the morning. **Preadolescents** and their parents were contacted through their **school** administrat**or**s. The teachers and parents were informed about the research and only the pupils whose parents agreed participated. The focus group started with a warm-up dialogue, later an explanation of the purpose of the meeting and afterward the facilitator gave a simple definition of stress adapted from Campbell and Rapee (1994): «stress is an unpleasant and nasty situation that can happen to you and make you worry» (p. 100). During the discussion, in all groups it was clear that the meaning of stress was quickly understood. Subsequently, they were asked to give some examples of stressful situations in their own life or the life of their friends. We preferred to ask them to write them on a blank paper (anonymity) since sensitive situations could emerge and finally a wrap-up period to review what happened in the discussion and thanks to the children. Due to their age the total time of the meeting lasted around 45 minutes (Nabors, Ramos & Weist, 2001). The

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

examples of all focus groups was then compared with existing assessment instruments by calculating (1) the proportion of stressors mentioned during the discussions that were included in the instruments and (2) the proportion of stressors from the instrument that were also mentioned in the focus groups.

After selecting an instrument showing most overlap with the focus group list, items were further qualitatively adapted by eight independent experts working with preadolescents. These were two social psychologists, three clinical psychologists, one educational psychologist and two teachers of preadolescents. Based on the agreement in their written opinions we decided to eliminate some items because they were not appropriate for the target sample.

Results and Discussion

The stressful events that emerged from the focus group discussions are:

Table B1
Topics Emerged in the Focus Group and Comparison with ALCES, PQ and SEIA

Stressors emerged in the focus group	Proposed domains	SES				Items from		
		low n = 36		high n = 20		ALCES	PQ	SEIA
		freq	%	freq	%	S		A
1. Accidents to my relatives and to myself	Family and self	26	72			✓	—	✓
2. Not having enough time to do the school's homework	School	15	42	19	95	—	—	—
3. To fail Exams	School	17	47	12	60	—	—	✓
4. Disease of any of my relatives or to me	Family and self	15	42	2	10	✓	—	✓
5. To receive low grades in my school	School	13	36	7	35	✓	✓	✓
6. Problems in the family	Family	11	31			✓	✓	✓
7. Kidnapping	Aggression	11	31			—	—	—
8. Thinking about future	Future	9	25			—	✓	✓
9. Rape	Aggression	9	25			—	—	—
10. Economical problems at home (Not having enough food at home or even to become a homeless)	Family	8	22			—	—	✓
11. Death of any of my parents or relatives or myself	Family	7	19			✓	—	✓
12. Murders	Violence	4	11			—	—	—
13. Not to be able to go to school	School	4	11			✓	—	✓
14. Problems at school (demerit note, punish)	School	3	8	5	25	—	—	✓
15. To be punished by parents	Family and self	3	8			—	—	✓
16. Divorce of parents	Family	6	17			✓	—	✓
17. To be beaten by parents	Family/self	5	14			—	—	✓
18. To lose friends	friends	3	8			—	—	✓
19. Fight between friends	friends	3	8	1	5		✓	✓
20. Have nicknames	School	1	3			—	—	✓
Percentage of the questionnaire´s items included in the focus group list						35%	20%	80%

* lcasuso@gmail.com
**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)

The events that emerged in more than 50% of the students are related to self, family and grades at school. The low SES groups presented a wider range of stressful situations than their high SES counterparts and included situations related to violence and aggression. The percentage of overlap of the items with the focus group content is also indicated above. SEIA covered 80% of the focus group content, ALCES 35% and PQ 20%. The results of the focus groups uncovered specific aspects on the personal and socio-economic factors in the life of preadolescents in the urban area of Lima, which may not have emerged through instruments from other countries. Although we found the same areas of worries such as Self, Family, School or Friends (Seiffge-Krenke, 1995), the typical items describing many stressful situations needed to be altered as was clear from the focus groups. For example in the school domain, while PQ include competitiveness in the classroom or the lack of attention from teachers as stressful situations, our sample was more concerned about getting low grades or not being able to continue their studies for various reasons. These results confirm the cultural differences that have to be considered in selecting an instrument to evaluate stress (Sabatier & Berry, 2008). As a result, the SEIA was chosen for further qualitative evaluation.

Based on the opinion of the mentioned experts we decided to eliminate 7 items that were not proper for the age of the evaluated group (see Appendix A), 14 items in order to avoid the parents declining participation of their children in the study (see Appendix A) and two items were considered too sensitive for teachers (see Appendix A). Specifically the items about physical abuse, rape or kidnapping (the latter one emerged in the focus group but did not appear in the questionnaire) were deleted because some parents in the information meeting objected to their children being exposed to such questions.

In summary, from a total of 100 items from the SEIA, 78 were selected as pertinent for this age (see Appendix A). In agreement with the literature about stress adolescence (Gore, Aseltine & Colton, 1992; Sabatier & Berry, 2008; Seiffge-Krenke,1995) and taking in account the domains that emerged from the focus group, we sorted the items in four simple stress domains: self, family, friends and school (see Appendix A). The remaining domains proposed by Seiffge-Krenke (Stress about opposite sex, leisure time, vocational goals, and future) were considered not relevant for the age selected for the study.

References

Campbell, M. & Rapee, R. (1994). The nature of feared outcome representations in children. *Journal of Abnormal Child Psychology, 22*(1), 99-111.

Clark, L. (2009). Focus Group Research with children and Youth. *Journal for Specialists in Pediatric Nursing, 14* (2), 152-154

Gore, S., Aseltine, R. & Colton, M. (1992). Social Structure, Life Stress and Depressive Symptoms in a High School-Aged Population). *Journal of Health and Social Behavior, 33,* 97-113. Retrieved from http://www.jstor.org/stable/2137249

Matos, L. (2005). School culture, teachers' and students' achievement goals as communicating vessels: A study in Peruvian secondary schools. Unpublished doctoral dissertation Katholieke Universiteit Leuven, Belgium.

Nabors, L., Ramos, V. & Weist, M. (2001). Use of focus groups as a tool for evaluating programs for children and families. *Journal or educational and psychological consultation, 12*(3), 243-256.

Sabatier, C. & Berry, J. (2008). The role of family acculturation, parental style, and perceived discrimination in the adaptation of second-generation immigrant youth in France and Canada. *European Journal of Developmental Psychology, 5,* 159-185. doi: 10.1080/17405620701608739

Seiffge-Krenke, I. (1995). *Stress, coping, and relationships in adolescence*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Tapia, L. (2004). *Eventos de Vida estresantes e indicadores de consumo de drogas en estudiantes secundarios de Lima Metropolitana*. Unpublished master´s thesis, Universidad Católica del Perú, Lima, Perú.

Turner, J. & Wheaton, B. (1995). Checklist measurement of stressful life events. In S. Cohen, R. Kessler and L. Underwood. (Eds.), *Measuring stress: A guide for health and social scientists.* (pp. 29-58). NY: Oxford University Press.

Yeaworth, R., York, J., Hussey, M., Ingle, M. & Goodwin, M. (1980). The development of an adolescent life change event scale. *Adolescence, 15*(57), 91-98.

* Faculty of Psychology and Educational Sciences, University of Leuven, Tiensestraat 102, 3000 Leuven, Belgium.

** School of Psychology from Universidad Peruana de Ciencias Aplicadas, Perú.

Correspondence concerning this article should be addressed to Omer Van den Bergh, Research Group on Health Psychology. Department of Psychology. Tiensestraat 102. B-3000 LEUVEN (Belgium).

* lcasuso@gmail.com

**** omer.vandenbergh@ppw.kuleuven.be

ISSN: 1729-4827 (Impresa)
ISSN: 2223-7666 (Digital)