LIFE EVENTS, DEPRESSION AND GENDER: THEIR RELATION WITH SCHOOL ADAPTATION

Patrícia Ruivo¹, Ana Paula Matos¹, Sara Oliveira¹

¹ Faculty of Psychology and Educational Sciences, Research Centre of the Cognitive and Behavioural Studies and Intervention, University of Coimbra, (PORTUGAL)

Abstract

The presence of depressive symptoms in adolescence may have adverse effects with an impact on several areas and teenage life contexts, affecting their school performance as well. In addition to depressive symptoms, school environment and negative reactions from teachers and peers, can cause problems in learning [1]. Research has demonstrated that female gender has a higher number of negative life events and higher levels of depressive symptoms. Empirical evidence suggests that girls are more likely to depress when they are confronted with negative life events of interpersonal content ([2], [3]).

The participants were 319 adolescents (217 girls and 102 boys) aged between 13 and 15 years old, attending the 8th and 9th grade in public schools, who participated in a Portuguese study about prevention of adolescent depression. Self-report questionnaires were used to assess negative life events by DHMS - Daily Hassles Microsystem Scale [4] and depressive symptoms measured by CDI - The Childhood Depression Inventory [5].

Results showed that the female gender had higher values on negative life events, particularly in problems with peers and school hassles. Older adolescents had higher values on school hassles as well. Besides, adolescents with separate parents had higher values in problems with peers. Additionally, it was found that adolescents with low socioeconomic status experienced more negative life events compared with adolescents whose socio-economic level is high. Concerning academic performance, higher levels of depressive symptoms were associated with lower academic achievement and higher levels of experienced negative life events were, also, associated with lower academic performance. Furthermore, these negative life events were predictors of depressive symptoms and no moderating effect of gender on the relationship between negative life events and depressive symptoms was found. Gender was significantly associated with depression, girls showing higher levels of depressive symptoms.

In conclusion, relations between negative life events, gender, age, marital status of parents and socioeconomic status were found. Negative life events and gender were significantly related with depressive symptomatology in adolescents. The results also revealed that negative life events were predictors of depressive symptoms, however, no moderation effect of gender was found. These findings highlight the impact of the negative life events on depression and the importance of variables associated with school adaptation.

Keywords: School adaptation, negative life events, depressive symptoms, gender, adolescence

1 INTRODUCTION

Adolescence is a developmental period marked by changes at various levels. In this life cycle stage, transformations occur at the physical level (e.g. pubertal changes), cognitive level (e.g. self-assessment is carried out based on social comparison, self-concept is built on characteristics and attributes either stable or abstract), social level (e.g. changes in social roles in family and peer group) and emotional level (e.g. romantic love) ([6], [7], [8]).

The challenges in this period require an adaptation by adolescents. Research in this area has emphasized that most young people go through this phase without significant difficulties. However, it has been found that, among other factors associated with the experience of life events, vulnerabilities for the development of internalizing and externalizing problems may arise, affecting adolescents' adaptation in various contexts (e.g. school, family, social) ([9], [6], [8]).

In this regard, negative life events construct (i.e. those that change, threaten, undermine or challenge the physical, psychological and social abilities of humans) has been widely studied [10]. In childhood,

life events, processed and assessed as negative, tend to be associated with an inability to regulate emotions, a lack of social competence and poor academic performance [11]. In adolescence, it has been found that exposure to negative life events tends to increase during this developmental period. Older adolescents tend to report more negative life events than younger adolescents [12].

The experience of negative life events has been studied within the scope of family life [13] and, considering that a major portion of time is spent performing school-related activities, school context has been also considered as a relevant domain. Recent research has assessed the impact of a range of negative life events during high school, such as changes in familiar, social, or romantic relationships, on students' academic achievement at the end of high school. These findings suggest that such events had a negative influence on young's secondary school exit scores [14]. School problems have been reported to be the most common source of stress for students [15], and have been linked to negative out-comes, such as poor academic performance [16], and depression [15]. In turn, other research pointed the hypothesis that depression is associated with difficulties in concentration and self-reliant school performance (i.e. difficulties doing homework, difficulties preparing for examinations, difficulties finding personal learning strategies and difficulties in activities requiring initiative) [17]. Similarly, various studies have found a significant, negative relationship between depression and academic performance ([18], [19], [20]).

In general, there are several studies that prove the relationship between negative life events (NLE) and behavioral and emotional problems in adolescence ([21], [22]). More specifically, in what concerns the relation between NLE and depressive symptomatology, several researchers suggest the existence of a consistent association between exposure to a NLE and the onset of depressive symptoms in adolescents. Thus, a greater number of NLE in childhood or adolescence is considered a predictor of Major Depressive Disorder in adolescents and adults [23]. Several studies also indicate that significant NLE precede major depressive episodes, with at least one occurrence of a NLE being registered in the month before the onset of the depressive clinical picture ([24], [25]). In fact, literature has reported NLE as a risk factor for the development and recurrence of depression in adolescence, along with other variables [24]. In addition to being identified as a risk factor, NLE have also been studied in the way they might be related to gender differences in depression [26].

Some studies of gender differences in depression highlight the period between 13 and 15 years ([27], [26]). However, the largest increase in this difference occurs between 15 and 18 years [28]. Some authors state that both genders are vulnerable to the same risk factors. Even so, when the same predictors for depression are present in both genders, the impact, frequency and stability of the risk factors is higher for females [29]. In girls the predominant symptoms are: body image distortion, loss of appetite, weight loss, negative mood, anhedonia, more concern with popularity among peers, greater conscientiousness, lower self-esteem, presence of feelings of emptiness, boredom and anger expressed with greater severity (higher frequency and intensity). Whereas in boys, depressive symptoms relate to: irritability, changes in school performance, social isolation, behavior problems, changes in sleep patterns, feelings of contempt and disdain [20]. Girls are also more likely to have recurrent episodes of depression, as well as more likely that depression perpetuates in adulthood [30].

Similarly, gender studies have revealed that the relationship between NLE and depressive symptoms in girls is stronger ([31], [8]), with females having a greater propensity to evaluate Life Events as negative [32]. A possible explanation, consensual among many authors, relates to the number of NLE that they experience during childhood, which are higher than for boys ([33], [26]). Therefore, within the NLE common in adolescents, girls have a higher susceptibility and probability of experiencing more traumatic major NLE [34] and are more likely to depress when confronted with NLE of interpersonal content [2]. Thus, girls have more interpersonal problems at the level of their closest relationships (e.g. disruption of friendships and breakup) by cultivating greater intimacy in their relationships, while boys exhibit more problems in school ([34], [35]). In short, gender differences found in depression are similar to gender differences found for NLE, with girls being more likely to have higher levels of either NLE or depressive symptoms. Additionally, the occurrence of NLE is significantly associated with the increase of depressive symptomatology in adolescents, particularly in females [33].

2 METHODOLOGY

2.1 Participants and procedure

The sample of this study comprised 319 adolescents from community population (102 boys - 32% and 217 girls - 68%) aged between 13 and 15 years old (M = 13.94; SD = .69), attending the 8th and 9th

grade in public schools from the centre region of Portugal. These participants were part of a broader research project entitled "Prevention of depression in Portuguese adolescents: study of the efficacy of an intervention with adolescents and parents".

Initially, review and approval of the research project were requested to the responsible entities that regulate research and afterwards those schools were contacted in order to request their participation. In schools which approved the research project, the executive board and teachers were contacted to schedule the presence of the researchers in order to inform students about the purpose of the study, their role as participants, the voluntary nature of their participation, the confidentiality of data and its single use for research purposes. The adolescents who were willing to take part in this research project gave their inform consent as well as their parents.

The self-report inventories were administered in classrooms with the presence of the researchers to clarify doubts and ensure independent and confidential responses. The lack of informed consent of the adolescent and/or their parents and the lack of complete filling of questionnaires were considered exclusion criteria. For this study, participants with ages that were not between 13 and 15 years were also excluded.

2.2 Measures

Children's Depression Inventory (CDI). The CDI was used to assess depressive symptoms. This instrument is a 27-item self-report inventory that assesses depressive symptoms in children and adolescents aged between 6 to 18 years old. Each item has three response alternatives rated on a scale from 0 (no symptoms) to 2 (definite symptom) and the individuals must select the answer that best describes how they have felt during the last two weeks. In the original version of this inventory Kovacs [5] reported a good internal consistency (Cronbach's alpha between .83 and .94) as well as good test-retest reliability. The unifactorial structure have been found in the Portuguese version [39] of this inventory and showed good internal consistency ($\alpha = .80$ for the total scale). Cronbach's alpha in this study for the *CDI total* was .90, which is a good internal consistency.

Daily Hassles Microsystem Scale (DHMS). The DHMS is a self-report instrument consisting of 28 items that evaluate minor daily events, perceived as negative (daily hassles), which occurred in the last month. This scale assesses five factors involved in the occurrence of minor negative life events: a) school hassles (4 items); b) family hassles (4 items); c) neighborhood hassles (5 items); d) peers hassles (items 3) and e) resources hassles (items 5) [4]. Each item consists of five choices of response ranging from 1 ("not at all a hassle") to 4 ("a very big hassle"). However, before signaling the severity of the problem, the teenager indicates whether the situation has occurred or not during the last month.

In the present study, in addition to the 28 items of the original scale, was included 15 items that assess dimensions similar to the original scale [36]. However, for data treatment, we maintained the factor structure of DHMS for the 28 items proposed by Seidman et al. [4] as suggested by Paiva [36].

In the original version, internal consistency obtained for the *DHMS total score* was .89, which is considered good. In the Portuguese version [36], the *total score* presented a Cronbach's alpha of .82 (good) and the factors school hassles (α = .69) and family hassles (α = .62) achieved a low internal consistency. The factor peers hassles (α = .72) revealed a reasonable internal consistency. The factors resources hassles (α = .48) and neighborhood hassles (α = .50) presented an unacceptable internal consistency, thus they were not studied in this investigation.

In this study, the Cronbach's alpha for the *DHMS total score* was .94 (very good internal consistency), the factors school hassles (α = .68), neighborhood hassles (α = .65) and resources hassles (α = .66) held values considered weak. The factor family hassles (α = .71) had a reasonable consistency and the factor peers hassles (α = .85) revealed a good internal consistency.

According to the purpose of this study, only three negative life events factors were considered: *school hassles*, *family hassles* and *peers hassles*.

2.3 Data analysis

Data analyses were performed, in this study, using Statistical Package for Social Sciences (SPSS), version 20.0 for Windows.

A cross-sectional study, based only on self-reporting measures, was carried out. Normal distribution of the sample was analyzed by *Kolmogorov-Smirnov* normality test. No serious normality deviations were found when analyzing *Kurtosis* and *Skewness*.

A hierarchical multiple regression was used to test the moderating effect of gender (moderator) in the relationship between negative life events (each DHMS's factor and *DHMS total score* as an independent variable) and depressive symptoms (*CDI total* as a dependent variable). A moderation occurs when the nature of the relationship between the predictor variable (X) and the criterion variable (Y) differs in its strength or sign, in the presence of a third variable, the moderator (M). Statistically, a moderating effect would be seen if any regression coefficient of the interaction term was statistically significant [37].

3 RESULTS

3.1 Relationship between negative life events and gender, age, parent's marital status and socioeconomic status

3.1.1 Gender

Student's t-test for independent samples for the *DHMS total score* and the three negative life events factors showed significant gender differences in the variables *school hassles*, t (317) = -2.39, p =.017 and *peers hassles*, t (317) = -2.69, p =.007. Girls reported higher scores on *school hassles* ($M_{\rm girls}$ = 1.7, SD = .85; $M_{\rm boys}$ = 1.5, SD = .74) and *peers hassles* ($M_{\rm girls}$ = 1.3, SD = .95; $M_{\rm boys}$ = .95, SD = .86). No significant differences were found on *family hassles* ($M_{\rm girls}$ = 1.1, SD = .76; $M_{\rm boys}$ = 1.1, SD = .78; t (317) = -8.65, p =.388) and neither with *DHMS total score* ($M_{\rm girls}$ = 37.6, SD = 23.1; $M_{\rm boys}$ = 33, SD = 26.6; t (317) = -1.67, p =.096).

3.1.2 Age

In order to analyze the influence of adolescents' age on the experiences of negative life events, Pearson correlations were performed. Results for age were significantly and moderately correlated with *school hassles* (r = .43, p = .010) and significant but weakly correlated with *DHMS total score* (r = .123, p = .028). Despite these results, the correlations suggest that older adolescents can experience a greater number of negative life events than younger adolescents, in total and in particular, in the school hassles dimension.

3.1.3 Parents' Marital Status

This variable was reorganized in two groups, dividing adolescents as follows: those living with their parents (married or in union) (n = 244) and those with only one parent in their household (whether by reason of divorce or widowhood or because they are single parents) (n = 74). To analyse differences between these two groups in the scores obtained in the DHMS scale, a Student's t-test was performed. There were statistically significant differences in scores on *DHMS total score*, t (316) = -2652, p = .011) and in the factor *peers hassles*, t (316) = -2240, p = .026) according to the marital status of adolescents' parents. Thus, adolescents who have divorced parents show higher scores on the experience of negative life events. Within these, specifically, they experience problems in their relationships with peers.

3.1.4 Socioeconomic status

The *MANOVA* was performed to compare the means obtained in experience of negative life events regarding socioeconomic status, divided into three levels (low, medium and high) [38]. Results obtained enabled us to verify that the sample homogeneity of variances assumption was violated. *Pillai's Trace* was used to evaluate the multivariate significance of the *MANOVA*. Since Pillai's Trace test statists was significant V = .078, F = (3,205), p = .001, *post hoc* comparisons were conducted to determine the differences, through the *Tukey HSD* test. Results revealed that in the factor *peers hassles* there are statistically significant differences (p = .021) between low and high socioeconomic status (M = 1.30, SD = .97 vs. M = .95, SD = .91). Thus, it was found that adolescents with low

socioeconomic status have higher values in relation to *peers hassles* comparing with adolescents whose socioeconomic level is high. Additionally, in *DHMS total score*, statistically significant differences (p = .001) between low socioeconomic status and high socioeconomic status were observed (M = 41.5, SD = 26.98 vs. M = 29.39, SD = 20.1). Results suggest that adolescents inserted in a low socioeconomic level report experiencing more negative life events than their peers belonging to a high socioeconomic level.

3.2 Relationship between negative life events, depressive symptoms and academic performance

In order to perform this analysis *Spearman Correlation* was used. This test was chosen over others because of the characteristics of the construct in analysis. That is, the variable under study is not truly continuous, but a variable with an interval / ratio: 1 - insufficient 2 - sufficient, 3 - satisfactory, 4 - good, 5 - very good. Results showed that the factors *school hassles* (r = -.334, p < .001) and *family hassles* (r = -.124, p < .05) correlated negatively and significantly with school performance, similarly to what happens with the *DHMS total score* (r = -.174, p < .001). These results suggest that a greater experience of NLE - either in a general view or particularizing to school and family context - is associated with lower school performance in adolescents. In turn, the result obtained for *CDI total* (r = -.252; p < .001) have a significantly negative and low correlation to the variable under study. These data is an indicator that higher levels of depressive symptoms are associated with lower school performance.

3.3 The relationship between gender and depressive symptomatology

Student's t-test for independent samples was used in order to study gender differences in depressive symptoms. Results showed significant gender differences for *CDI total*, t (230.941) = -5.30, p < .001, with female gender obtaining higher scores than male gender (M_{girls} = 13, SD = 7.6; M_{boys} = 8.7, SD = .6.4).

3.4 Study of the relationship between exposure to NLE (DHMS total score and factors) and the presence of depressive symptoms (total CDI)

Pearson's correlation coefficients (2-tailed) were conducted to examine the associations among *CDI* total score and *DHMS* total score and its factors. Results showed that the factors school hassles (r = .538, p < .001), family hassles (r = .491, p < .001) and peers hassles (r = .554, p < .001) correlated moderately positively and significantly with *CDI* total, similarly to what happens with the *DHMS* total score (r = .568, p < .001). These results are indicators that the experience of NLE – either in general view or particularly in school context, family and relationship with peers – is related to the presence of higher levels of depression in adolescents. In short, the two constructs are related in a positive and statistically significant way.

3.5 Study of NLE (DHMS total score and factors) as predictors of depressive symptomatology (total CDI) in adolescents

In order to investigate how negative life events behave as predictors of depressive symptomatology two linear regressions were held. The first, multiple regression with DHMS's three factors in study, and the second with *DHMS total score* only as predictor variable, in order to avoid multicollinearity. Initially, the analysis was performed for the total sample. As shown in Table 1, results of the multiple regression analysis revealed that the predictor variables produced a significant model (R^2 = .409, F (3, 309) = 72.809), $p \le .001$), significantly predicting 40.9% of the variance in depression. Additionally, these results demonstrated that the three factors studied for negative life events, show a significant and independent contribution to the prediction of depression. Thus, *peers hassles* emerge as best overall predictor (β = .337, $p \le .001$), followed by *school hassles* (β = .296, ρ ≤ .001). In the same way (Table 2), the *DHMS total score* as a predictor variable produced a significant model (R^2 = .323; F (1, 311) = 151.232), ρ ≤ .001), significantly predicting 32.3% of the variance in depression. Thus, it

appears that the model of the three factors belonging to the DHMS scale is a higher predictor for depression than the full scale of negative life events.

Table 1. Regression analysis of NLE (*DHMS factors*) as predictors of depressive symptomatology (CDI total criterion variable) (n = 319)

Predictors	R²	F	β
Model 1	.409	72.809	
School hassles			.296**
Family hassles			.129*
Peers hassles			.337**
* n = 05 ** n = 001			

Table 2. Regression Analysis of NLE (*DHMS total score*) as a predictor of depressive symptomatology (CDI total criterion variable) (n = 319)

Preditor	R²	F	β
Model 1	.323	151.232	
DHMS total score			.568*

^{*} p < .001

3.5.1 Study of NLE as predictors of depressive symptoms in males

When analyzed separately, (n=102), results for masculine gender showed that the predictor variables produced a significant model ($R^2=.347$, F (3, 100) = 17.350, $p \le .001$), explaining 34.7% of the variance in depression. These data also demonstrates that *peers hassles* have a significant independent contribution to the prediction of depression ($\beta=.325$, p=.001). Again, the model using the full scale ($R^2=.298$; F (1, 102) = 42.368, $p \le .001$) has a smaller predictor effect than the three factors model.

3.5.2 Study of NLE as predictors of depressive symptoms in females

When analyzed separately, (n=217), results for females showed that the predictor variables produced a significant model $(R^2=.416,\ F\ (3,\ 206)=50.616,\ p\le.001)$, explaining 41.6% of the variance in depression. These data further demonstrated that *peers hassles* $(\beta=.317,\ p\le.001)$, along with school problems $(\beta=.307,\ p\le.001)$ and family hassles $(\beta=.146,\ p=.039)$ showed a significant independent contribution to the prediction of depression. Again, the model using the full scale $(R^2=.336;\ F\ (1,208)=108.894,\ p\le.001)$ has a smaller effect as a predictor than the three factors model.

3.6 Study of the moderating effect of gender (DHMS total score and factors) in the relationship between NLE and depressive symptoms (total CDI) in adolescents

Since the moderator variable of this study is categorical (gender), a dummy variable was created in order to take the two possible values of 0 and 1 (female - 1; male - 0), to perform the moderation analysis. Then, variables that correspond to the multiplicative term between the independent variables (each DHMS factor) and the moderator variable (gender) were created. Thus, three terms were obtained: dhms factor; gender (dummy) and the multiplicative term (each DHMS factor x gender). Hierarchical multiple regression analyses were conducted separately for the DHMS factors that were predictors of depressive symptoms in previous analysis (emotional abuse and emotional neglect). Each DHMS factor was inserted as predictor of depression on the first step of the regression; gender was inserted as a moderating variable (dummy) on the second step; the interaction between the factor and the moderating variable DHMS was entered on the third step.

After analyzing the results, no significant moderating effects were found on the interactions between gender and factors school hassles (β = .118, p = .392), family hassles (β = .066, p = .559) and peers hassles (β = -.072, p = .504), as occurred in the DHMS total score (β = .167, p = .106).

Observing the results and taking into account the previously developed analysis, we conclude that NLE (as DHMS' factors in this study and its total) are predictors of depressive symptoms. However, when placed under the influence of gender as a moderator, the relationship of prediction that NLE have on depressive symptoms remains, since the gender has no impact on the variables in study.

4 DISCUSSION

Over the past several decades several studies have emerged on risk factors (e.g. negative life events, gender) associated with specific disorders (e.g. depression) and on the multiple problems on different contexts (academic, family and social) that are associated with exposure to specific risk factors [9].

The analysis of gender differences in the present study showed that girls have higher rates of experiencing NLE, specifically, in the school context and peer relations, supporting the investigations so far carried out in the area [2]. However, despite expectations of higher results for females in the interpersonal domain, it was not expected a similar result in the school context, since previous studies showed a higher association between school and NLE for the male gender ([34], [35]). Similarly, girls revealed higher levels of depressive symptoms than boys, which is consistent with previous research ([26], [8]).

Regarding age, it was found that there are significant differences in the factor problems in school, as well as in the general range of NLE. Thus, the number of NLE tends to be higher as age increases. That is, older adolescents seem to experience more NLE than younger, especially in schools. These data is consistent with results obtained in the investigation of [12].

Concerning adolescents' family context, there was a higher experience of NLE in adolescents whose parents are separated. In terms of NLE, its expression occurs mostly in terms of adolescents' relationship with peers, contrary to expectations. However, an explanatory hypothesis might be that the manifestation of negative feelings originating from family problems can be somehow channeled for peers, causing conflict situations with them. From the analysis of family socioeconomic context, it was noted that adolescents from low socioeconomic status had more NLE, particularly at the level of their relationship with peers, compared to adolescents inserted in a high socioeconomic context. To advance an explanatory hypothesis, it is important to study whether these adolescents from a lower socioeconomic level are integrated into their peer group or not. The possibility of non-integration due to lack of social status, lack of resources, bullying issues, maladaptive behaviors and/or intentional isolation from peers, among other hypothesis, may be the cause or serve as an explanation for why low socioeconomic level is associated with problems in the relationship with peers. In addition, as regards to the relationship between negative life events and school performance, it is concluded that a greater experience of negative life events, with emphasis on school and family contexts, is associated to a lower school performance, which support previous findings ([16], [14]).

As to the relationship between school performance and depressive symptoms, results of the present study, results are in light of previous studies stating that depressive symptoms are often associated with lower school performance ([18], [19], [20]).

Correlation analysis indicated a statistically significant relation in regard to experiencing NLE and depressive symptoms. Thus, the results suggest that adolescents who experience more NLE in total, and more specifically, in the school sphere, in the family context and in their relationship with peers, tend to have higher levels of depressive symptomatology. Thus, the results corroborate the widely publicized within the scientific community, which state that there is an association between exposure to NLE and vulnerability to depression ([23], [24]). Other studies suggest that exposure to NLE leads to major depressive episodes or subclinical manifestation of depressive symptoms ([24], [25]). In addition, other studies indicate that a greater number of NLE in childhood or adolescence appear to be associated with an increased likelihood of developing depression, not only during adolescence but also in adulthood [23]. It should be noted that the relationship between NLE and depression is not at all a one-way relationship: if NLE predict depression, personality traits, cognitive vulnerabilities and/or depressive behaviors can also contribute, or even generate, adverse situations, which in turn tend to aggravate or induce higher levels of depressive symptoms [40].

Additionally, all study variables related to NLE revealed to be predictors of depressive symptomatology for the total sample, despite NLE in family context having a smaller focus. For girls, specifically, problems in the relationship with peers, school problems and problems in the family were found to have a significant and independent contribution to the prediction of depression, making them more vulnerable to the development of depressive condition. Whereas only problems in the

relationship with peers revealed to be a significant independent predictor of depressive symptomatology for boys.

Given that literature review raises the hypothesis that gender as a moderator variable may affect the relationship between NLE and depressive symptoms, it was important to verify whether such impact was found in the sample of this study. From observation of the data it was found that the behavior of Negative Life Events' predictive effect on depressive symptoms, when exposed to the influence of gender, remains unchanged, with gender having no impact on the variables in study.

Results of this study may contribute with relevant data to futures studies around the prevention of depression in school environment. Firstly, it provides further evidence for the importance of assessing negative life events among adolescents who tend to show vulnerability to depressive symptoms, for both genders. Secondly, this study highlights different types of negative life events that are commonly found in a life stage characterized by changes of stress inducing and negative affect, and if not adaptively integrated, they will tend to become risk factors for the development of psychopathology. In turn, it will cause impairment in school adjustment and in other important contexts.

According to the report *Task Force on Education of Young Adolescents* developed by Carnegie Council on Adolescent, Empirical studies have consistently recognized the epidemic proportions of children and adolescents who experience serious problems in school adaptation. In fact, psychological and emotional problems, behavioral problems at home and school, and low academic performance were associated with chronic, daily stress [16].

The current work may have important clinical and educational implications. A better understanding of the risk factors for depression, the impact of daily hassles, the existence of gender differences, the family context, relationships with peers, adaptation to school environment, the importance of school achievement and the interaction of social and economic factors, may contribute to design more effective strategies for assessment, intervention and prevention of depression, and to improve parental and scholar outcomes.

This study does have limitations. Most significantly, the cross-sectional design does not allow causal interpretations of the data, which was obtained using only self-reported measures. The sample was not composed by the same number of girls and boys, which could have caused some bias and only evolves non-clinical population. The results also have some limits to external validity, not being generalizable.

Future research in this area should include investigation with a larger and more equal sample in terms of number of girls and boys. The inclusion of coping measures would also be useful to explore whether a particular style of coping is more associated with depression, in a major and minor life events context. Longitudinal studies with clinical and non-clinical population would also be helpful.

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to all the participants in this study. This work is funded by ERDF – European Regional Development Fund through the COMPETE Program (operational program for competitiveness) and by National Funds through the FCT – Fundação para a Ciência e a Tecnologia (Portuguese Foundation for Science and Technology) within project <<PTDC/MHCPCL/4824/2012>>.

REFERENCES

- [1] Fröjd, S. A., Nissinen, E. S., Pelkonen, M. U., Marttunen, M. J., Koivisto, A. M., & Kaltiala-Heino, R. (2008). Depression and school performance in middle adolescent boys and girls. *Journal of adolescence*, *31*(4), 485-498.
- [2] Cyranowski , J. M. , Frank , E. , Young , E. , & Shear , M. K. (2000). Adolescent onset of the gender difference in lifetime rates of major depression: A theoretical model. *Archives of General Psychiatry*, *57*, 21 27.

- [3] Safford, S. M., Alloy, L. B., Abramson, L. Y., & Crossfield, A. G. (2007). Negative cognitive style as a predictor of negative life events in depression-prone individuals: A test of the stress generation hypothesis. *Journal of Affective Disorders*, 99, 147 154.
- [4] Seidman, E., Allen, L., Aber, J., Mitchell, C., Feinman, J., Yoshikawa, H., Comtois, K., Golz, J., Miller, R., Ortiz-Torres, B. & Roper, G. (1995). Development and validation of adolescent-perceived microsystem scales: Social support, daily hassles, and involvement. *American Journal of Community Psychology*, 23, 355-388.
- [5] Kovacs, M. (1985). The Children's Depression Inventory (CDI). *Psychopharmacology Bulletin*, *21*, 995-998.
- [6] Abela, J. & Hankin, B. (2008). Cognitive vulnerability to depression in adolescents: A developmental psychopathology perspective. In S. Nolen-Hoeksema, & L. Hilt (Eds.), *Handbook of depression in adolescents* (pp. 335-376). Nova lorque: Routledge.
- [7] Rao, U. & Chen, L. (2009). Characteristics, correlates, and outcomes of childhood and adolescent depressive disorders. *Dialogues in Clinical Neuroscience*, 11, 45-62.
- [8] Rudolph, K., Hammen, C., & Daley, S. (2006). Mood disorders. In D. Wolf, & Mash, E. (Eds.), *Behavioral and Emotional Disorders in Adolescents: Nature, Assessment, and Treatment.* (pp. 300-342). New York: The Guilford Press.
- [9] Alloy, L., Zhu, L., & Abramson, L. (2003). Cognitive vulnerability to depression: implications for adolescent risk behavior in general. In D. Romer (Ed.), *Reducing adolescent risk: toward an integrated approach*. London: Sage Publications.
- [10] Grant, K. E., Compas, B. E., Thurm, A. E., McMahon, S. D., & Gipson, P. Y. (2004). Stressors and child and adolescent psychopathology: Measurement issues and prospective effects. *Journal of Clinical Child and Adolescent Psychology*, 33(2), 412-425.
- [11] Sandstrom, H., & Huerta, S. (2013). *The Negative Effects of Instability on Child Development: A Research Synthesis*. Urban Institute.
- [12] Rhode, P. (2009). Comorbilities with adolescent depression. In S. Nolen-Hoeksema & L. Hilt (Eds.), *Handbook of depression in adolescents*. New York: Routledge.
- [13] Compas, B. E., Grant, K. E., & Ey, S. (1994). Psychosocial stress and child and adolescent depression: Can we be more specific? In W. M. Reynolds & H. Johnston (Eds.), *Handbook of depression in children and adolescents* (pp. 509–523). New York: Plenum Press.
- [14] Smith, J. (2014, July). Understanding the Impact of Major Life Events on Young People's Academic Achievement and Post-Schooling Careers. In XVIII ISA World Congress of Sociology (July 13-19, 2014). Isaconf.
- [15] Aldwin, C., & Greenberger, E. (1987). Cultural differences in the predictors of depression. *American Journal of Community Psychology*, *15*(6), 789-813.
- [16] DuBois, D. L., Felner, R. D., Brand, S., Adan, A. M., & Evans, E. G. (1992). A prospective study of life stress, social support, and adaptation in early adolescence. *Child development*, *63*(3), 542-557.
- [17] Fröjd, S. A., Nissinen, E. S., Pelkonen, M. U., Marttunen, M. J., Koivisto, A. M., & Kaltiala-Heino, R. (2008). Depression and school performance in middle adolescent boys and girls. *Journal of adolescence*, *31*(4), 485-498.
- [18] Deroma, V. M., Leach, J. B., & Leverett, J. P. (2009). The Relationship between Depression and College Academic Performance. *College Student Journal*, *43*(2), 325-334.
- [19] Shafii, M. & Shafii, S. L. (2005). *Clinical guide to depression in child and adolescents*. Washington: American Psychiatric Press.
- [20] Bahls, S. (2002). Aspetos clínicos da depressão em crianças e adolescentes. *Jornal de Pediatria*, 78, 359-366.
- [21] Garnefski, N., Boon, S., & Kraaij, V. (2003). Relationships between cognitive strategies of adolescents and depressive symptomatology across different types of life event. *Journal of Youth and Adolescence*, 32(6), 401-408.

- [22] Flouri, E. & Panourgia, C. (2011). The role of non-verbal cognitive ability in the association between adverse life events and dysfunctional attitudes and hopelessness in adolescence. *Archives of Psychiatric Nursing*, 26 (5), 411-419.
- [23] Hazel, N. A., Hammen, C., Brennan, P. A., & Najman, J. (2008). Early childhood adversity and adolescent depression: the mediating role of continued stress. *Psychological medicine*, *38*(04), 581-589.
- [24] Franko, D. L., Striegel-Moore, R. H., Brown, K. M., Barton, B. A., McMahon, R. P., Schreiber, G. B., ... & Daniels, S. R. (2004). Expanding our understanding of the relationship between negative life events and depressive symptoms in black and white adolescent girls. *Psychological Medicine*, *34*(07), 1319-1330.
- [25] Williamson, D., Birmaher, B., Ryan, N., Shiffrin, T., Lusky, Y., Protopapa, J., Dahl, R., & Brent, D. (2003). The stressful life events schedule for children and adolescents: development and validation. *Psychiatry Research.* 119, 225-241.
- [26] Hilt, L., & Nolen-Hoeksema, S. (2009). The emergence of gender differences in depression in adolescence. *Handbook of depression in adolescents*, 111-135.
- [27] Twenge, J. M., & Nolen-Hoeksema, S. (2002). Age, gender, race, socioeconomic status, and birth cohort difference on the children's depression inventory: A meta-analysis. *Journal of abnormal psychology*, 111(4), 578.
- [28] Piccinelli, M., & Wilkinson, G., 2000. Gender differences in depression. Critical review. *British Journal of Psychiatry*, 177, 486-492
- [29] Lewinsohn, P. M., Clarke, G. N., Seeley, J. R., & Rohde, P. (1994). Major depression in community adolescents: age at onset, episode duration, and time to recurrence. *Journal of the American Academy of Child & Adolescent Psychiatry*, 33(6), 809-818.
- [30] Lewinsohn, P. M., & Essau, C. A. (2002). Depression in adolescents. In I. H.Gotlib & C. L.Hammen (Eds.), *Handbook of depression*. New York: Guilford Press.
- [31] Bouma, E., Ormel, J., Verhulst, F. C., & Oldehinkel, A. J. (2008). Stressful life events and depressive problems in early adolescent boys and girls: the influence of parental depression, temperament and family environment. *Journal of affective disorders*, 105(1), 185-193.
- [32] Bebbington, P. E., Wilkins, S., Jones, P., Foerster, A., Murray, R., Toone, B., & Lewis, S. (1993). Life events and psychosis. Initial results from the Camberwell Psychosis Study. *British Journal of Psychiatry*, *162*, 72 -79.
- [33] Ge, X., Conger, R. D., & Elder, G. H. (2001). Pubertal transition, stressful life events, and the emergence of gender differences in adolescent depressive symptoms. *Developmental Psychology*, 37 (3), 404-417.
- [34] Hammen, C. (2009) Stress exposure and stress generation in adolescent depression. In S. N. Hoeksema, & L. M. Hilt (Eds.) *Handbook of Depression in Adolescents*. New York Press: Routledge.
- [35] Hyde, J. S., Mezulis, S. H.; & Abramson, L. Y. (2008). The ABCs of depression: integrating affective, biological, and cognitive models to explain the emergence of the gender difference in depression. *Psychological Review, 115* (2), 291-313.
- [36] Paiva, A. (2009). O temperamento e os acontecimentos de Vida como factores de risco da depressão na adolescência. (Tese de Mestrado não publicada). Universidade de Coimbra, Portugal.
- [37] Hayes, A. (2013). Introduction to Mediation, Moderation, and Conditional Process Analysis A Regression-Based Approach. New York: The Guilford Press.
- [38] Almeida, Leandro S. 1988. O raciocínio diferencial dos jovens: Avaliação, desenvolvimento e diferenciação. ed. 1. Lisboa: INIC.
- [39] Marujo, H. A. (1994). Síndromas depressivos na infância e na adolescência. Dissertação de doutoramento. Lisboa: Universidade de Lisboa.
- [40] Hankin, B. L. (2006). Adolescent depression: Description, causes, and interventions. *Epilepsy & behavior*, 8(1), 102-114.