



WCES 2014

Risk Factors For Depressive Symptomatology Among Higher Education Students

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Abstract

Higher education students experience high rates of mental health problems, and depression is one of the most common mental illnesses referred. The identification of modifiable risk factors for the development of depressive symptomatology is crucial. The current study was designed to examine the associations among vulnerability to stress, pessimism, dysfunctional attitudes and personality with depressive symptomatology in a sample of higher education students. A total of 257 higher education students completed an online questionnaire, which assessed: depressive symptomatology (BDI-II; Beck, Steer, & Brown, 1996), vulnerability to stress (QVS; Vaz Serra, 2000), pessimism (LOT-R; Scheier, Carver, & Bridges, 1994), dysfunctional attitudes (DAS; Weissman & Beck, 1978) and personality (NEO-FFI; McCrae & Costa, 2004). The main results indicated that vulnerability to stress, pessimism, dysfunctional attitudes and neuroticism were positively associated with depressive symptomatology. Multiple regression analysis was used to test if the vulnerability to stress, neuroticism and pessimism predicted participants' ratings of depressive symptomatology. The results of the regression indicated the three predictors explained 58% of the variance ($R^2 = .58$, $F(3, 226) = 103.98$, $p < .001$). Vulnerability to stress ($b = .28$, $p < .001$) and neuroticism ($b = .54$, $p < .001$) are significantly predicted by depressive symptomatology. Findings suggested that the risk factors considered, particularly vulnerability to stress and neuroticism, may be crucial to the comprehension of vulnerability to depressive symptomatology among higher education students. Implications of these results on future prevention programs are discussed.

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Selection and peer-review under responsibility of the Organizing Committee of WCES 2014

Keywords: Risk factors, depressive symptomatology, higher education students

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1. Introduction

According to the World Health Organization (WHO) depression is the leading cause of disability worldwide (Murray & Lopez, 1996). A recent study supported by the WHO revealed that around 5% of people in the community had depression during the last year (WHO, 2012). Thus, depression emerges as a priority public health issue as a result of its direct and indirect costs. Although it is a disorder that is not unique to adulthood, it is only recently that high levels of depression in young adults were considered (Kessler et al., 1994). Young adults with depression demonstrate academic problems and disabling interpersonal relationships (Kessler & Walters, 1998) as well as a greater likelihood of adopting risky behaviours (Pedersen, 2013; Pereira et al., 2013). The growing recognition of depression as a recurrent condition that should be treated as a chronic illness (APA, 2000) makes this an even more important issue, given that an initial episode of depression is often a precursor of future depressive episodes (Lewinsohn, Rohde, Klein, & Seeley, 2000). Regarding the prevalence of this disorder in university students, recent studies suggest very significant percentages, ranging between 8 % and 33 % (Dahlin, Joneborg & Runeson, 2005; Peluso, Carleton, & Asmundson, 2011). The causes of depression are complex, thus, the identification of protective and risk factors, and understanding the processes through which these factors operate is crucial (Burns, Andrews, & Szabo, 2002). There is evidence that both the negative attributional style and dysfunctional attitudes may be risk factors for the development of depression (Abramson et al., 2002; Ingram, Miranda, & Segal, 1998). For example, the negative attribution style can predict the duration of clinical depression (Haefffel et al., 2003) and prospective increases in depressive symptoms (Scher, Ingram, & Segal, 2005). A recent study by Monteiro, Tavares and Pereira (2008), conducted with first-year students of higher education, found that optimism was not only associated with lower values of depression as well as higher levels of psychological wellbeing, and better academic achievements. Furthermore, neuroticism has also been positively associated with depression (Kendler, Gatz, Gardner, & Pedersen, 2006) and to the cognitive vulnerability for depression (Hankin & Abramson, 2001). Another variable that often appears associated with depression is the occurrence of life events that generate stress (Frost, Reinherz, Pakiz-Camras, Giaconia, & Lefkowitz, 1999). In this context, this study aims at examining the role that the variables vulnerability to stress, pessimism, neuroticism and dysfunctional attitudes, play as risk factors for the development of depressive symptoms in a sample of higher education students. The identification of risk factors and the consequent signalling of young adults at risk are strongly recommended by recent studies reporting the maximum effectiveness of targeted depression prevention interventions compared to universal interventions (Horowitz & Garber, 2006; Spence & Shortt, 2007).

2. Method

2.1. *Participants and procedure*

Data for the present analysis were collected through a Web-based survey of higher education students' mental health and risk factors for the development of depressive symptomatology. A detailed explanation of the research objectives was given to all participants and informed consent was obtained. The sample consisted of 257 university students, 193 females and 64 males, with ages ranging between 18 and 47 years ($M = 23.81$, $SD = 5.23$), the majority were single (90.3%). Regarding the area of study, students were distributed by the areas of social sciences, business and law (43.2%), engineering, manufacturing and construction (31.9%), education (14.0%), health and protection social (8.2%), and arts and humanities (2.3%). Most of these students attended the 1st cycle (60.7%), with the remaining distributed by the 2nd and 3rd cycles (34.2% and 3.5%, respectively), and post-graduations (1.6%).

2.2. *Measures*

The instruments used were a socio-demographic questionnaire, the Beck Depression Inventory [BDI-II] (Beck, Steer, & Brown, 1996), the Questionnaire of Vulnerability to Stress [23-QVS] (Vaz Serra, 2000), the Life Orientation Test - Revised [LOT-R] (Scheier, Carver, & Bridges, 1994), the Dysfunctional Attitudes Scale [DAS] (Weissman & Beck, 1978) and the Neo-Five Factor Inventory [NEO-FFI] (McCrae & Costa, 2004).

3. Results

Correlations for the main variables are presented in Table 1.

Table 1. Correlations among main measures

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Vulnerability to stress [23-QVS]	-	-.63**	.61**	-.61**	-.39**	-.39**	-.79**	-.18**	.72**
2. Optimism [LOT-R]		-	-.45**	.56**	.27**	.28**	-.61**	.26**	-.59**
3. Dysfunctional attitudes [DAS]			-	-.39**	-.40**	-.23**	.55**	-.15*	.49**
4. Extroversion [NEO-FFI]				-	.37**	.31**	-.54**	.13*	-.37**
5. Kindness [NEO-FFI]					-	.23**	-.27**	.13*	-.25**
6. Conscientiousness [NEO-FFI]						-	-.30**	.02	-.29**
7. Neuroticism [NEO-FFI]							-	-.05	.76**
8. Openness to experience [NEO-FFI]								-	.01
9. Depressive symptomatology [BDI-II]									-

* $p \leq 0.05$ ** $p \leq 0.01$

In order to identify the predictors of depressive symptoms, a multiple linear regression was performed, using the *Enter* method, in which the independent variables introduced were those that correlated significantly with the dependent variable, and revealed a moderate association, namely, equal to or greater than 0.50. The independent variables included in the model were the *vulnerability to stress*, *neuroticism* and *optimism* (Table 2). According to the results shown in Table 2, the obtained model is statistically significant, and explains 58% of the variance ($R^2 = .58$), being that the *depressive symptoms* presented a statistically significant predicting power of *vulnerability to stress* and *neuroticism*.

Table 2 - Multiple linear regression for the prediction of depressive symptoms

Variables	Non-standardized B coefficients	Standardized Beta Coefficients	R ²	F
Constant	-13.42			
Vulnerability to Stress	0.23	0.28***	0.58	103.98***
Neuroticism	0.58	0.54***		
Optimism	0.02	0.01		

*** $p \leq 0.001$

4. Discussion

The present study aimed at verifying whether the variables vulnerability to stress, pessimism, neuroticism and dysfunctional attitudes act as risk factors in the development of depression in a sample of higher education students. Indeed, the data suggested that all variables considered present positive and statistically significant associations with the depressive symptoms demonstrated (with the exception of the *optimism* variable, which according to expected presented negative and statistically significant correlation with depression). With regard to the relationship between stress and vulnerability to depressive symptomatology, the results suggest that there is a statistically significant and positive association (moderate effect) the variables. These results are in agreement with previous studies that suggest that individuals vulnerable to stress present a greater tendency to develop emotional disorders (Amaral & Vaz Serra, 2010), and that there is a direct relationship between vulnerability to stress and psychopathological and depressive symptomatology (Guedes, Gameiro, & Canavarro, 2010; Vaz Serra, 2000). As for the relationship between dysfunctional attitudes and depressive symptoms, we found a positive and statistically significant correlation between the variables, results that are consistent with those found in previous studies (Vásquez & Ring, 1993; Thomas & Altareb, 2012). Similarly, optimism presented a negative and statistically significant correlation with depressive symptoms. This result is also in agreement with what has been suggested in the literature (Abramson et al., 2002; Alloy et al., 2006). It should be highlighted that, in this study, we assessed dispositional optimism/pessimism and not the optimistic/pessimistic attributional styles. Nevertheless, it is known that there is a clear conceptual association between the two concepts, being assumed by both that the consequences of optimism

stem from differences in expectations (Scheier & Carver, 1992). Moreover there is evidence that associations between dispositional optimism and wellbeing are parallel to the existing evidence for the attributional style and wellbeing (for a review, Scheier, Carver, & Bridges, 2001). Finally and concerning the relationship between neuroticism and depressive symptomatology, the results indicate that neuroticism correlates positively and significantly with depressive symptoms, being the association found high. Neuroticism is the facet of the personality most associated with psychopathology in the literature, particularly with depression (Malouff, Thorsteinsson & Schutte, 2005; Ormel, Rosmalen, & Farmer, 2004). It is noteworthy that, although all variables considered present statistically significant associations with depressive symptoms, only the vulnerability to stress and neuroticism are predictors. Overall, the results suggest that the variables analysed, particularly vulnerability to stress and neuroticism, are risk factors for the development of depressive symptoms. In this context, we need to stress the importance of acting at the level of identified risk factors, namely through the signalling of individuals at risk for subsequent intervention. Since the 80s there has been an increase in the development and implementation of universal, selective and adequate programs, to reduce risk factors for depression, depressive symptoms and depressive disorders (Jané-Llopis, Hosman, Jenkins, & Anderson, 2003), and indeed recent studies, from independent research teams, have shown that depressive symptoms and depression can be prevented (Clarke et al., 2001; Gillham & Reivich, 1999; Muñoz, Le, Clarke, & Jaycox, 2002; Seligman, Schulman, DeRubeis, & Hollon, 1999). However, despite the fact that universal interventions are not exempt from merit, Spence and Shortt (2007) recommend focusing research efforts on targeted (i.e., selective and indicated) depression prevention interventions. Also Horowitz and Garber (2006) conducted a review of 30 programs for the prevention of depression, and found the mean effect sizes at post-intervention to be .30 for selective, .23 for indicated, and .12 for universal interventions. A similar pattern was found at follow-up with mean effect sizes of .34 for selective, .31 for indicated, and .02 for universal interventions. In this context, and given that vulnerability to stress and neuroticism are risk factors for the development of depressive symptoms, it becomes appropriate to offer programs for the prevention of depression in young adults previously, signalled based on these variables in order to increase the effectiveness of these programs.

Acknowledgements

The authors would like to thank Raquel V. Oliveira (psychologist and native speaker) for proof reading the paper prior to its submission.

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