Chapter 07

Perseverative Thinking, Anxiety and Emotional Coping Effects on Determinants of Academic Success

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Abstract

Educational success can be influenced in several ways, including through anxiety which has a negative impact in several specific situations affecting well-being. Students are specially affected due to the high level of demands to which they are exposed and, sometimes, the most effective emotional coping is not used. The aim of this study is to correlate anxiety, academic success determinants, ruminative thoughts and emotional coping, and provide predictive models of determinants of success. 180 college students from the Northern region of Portugal composed the sample. The mean age was 20.04 years old (*SD*=2.12). A sociodemographic characterization of the sample was carried out, and five instruments were used: Academic Experiences Questionnaire - Reduced Version (QVA-r), Coping Through Emotional Approach (CTEA), Zung Self-Rating Anxiety Scale (ZRAS), Perseverative Thinking Questionnaire (PTQ) and Emotional Regulation of Others and Self scale (EROS). Results show the effect that anxiety, coping, emotional processing and repetitive negative thoughts have on the well-being of college students as well as in the study and involvement dimensions of the academic experience. We discuss how well-being, study skills and involvement in college students could improve in future programs addressing the underlying factors.

Introduction

University is an important context that can promote many changes in the life of students. In higher education, young people are subjected to specific tasks and experiences, such as more intimate relationships, becoming more autonomous in relation to the family, managing time and money, and enabling a wider social contact [1]. University can challenge the coping strategies of students, namely the tendency to interpret life events in ways that can generate worry, anxiety, and stress [2]. Naturally, all of these experiences give rise to some change-making challenges, which makes young people feel pressured to adapt. Thus, the difficulties to overcome the problems presented to

it are quite common, where depression is highlighted [3], that many of these students are unsuccessful at school and that many of them end up leaving the educational system. This changes can entail great amounts of anxiety [4] that can benefit or harm academic success.

Academic success is associated not just to the obtained classifications but also to the academic experiences as they help the student to deal with emotions and to adapt to a new environment and can also be affected by anxiety. Anxiety is a vague and unpleasant feeling of fear, apprehension, characterized by tension or discomfort that derives from the anticipation of danger from something unknown or strange [4]. Frequently, anxiety is accompanied with perseverative thinking that is defined as ruminative thoughts which aim to ameliorate perceived discrepancies in different contexts [5].

Emotional coping is relevant to deal with emotions and achieve perceived success. Thus, emotional coping is connected to the processing of anxiety. Coping strategies, as reported by some authors (e.g., Folkman, [6]) can be guided by two distinct objectives consisting of problem solving and controlling emotions. The individual guides his efforts to solve the problems that induces stress while seeking to reduce the state of emotional tension. There are several forms and coping strategies that people choose to deal with situations. These are grouped in varying dimensions and people tend to use more than others. The most appropriate coping strategies are the most effective ones, that is, those that reduce the impact of stress and anxiety, for that person, in that situation, at that moment. The effectiveness of the strategies employed by individuals during stressful episodes also vary. In this way, a coping strategy cannot be considered intrinsically as good or bad, adaptive or maladaptive.

In the scope of this chapter, emotion regulation was used in three senses: the regulation of the emotions by an external regulator; the emotions as regulators of an external construct (cognitions); the emotion as a qualitative descriptor of the regulation, being some regulation non emotional and some emotional [7].

In addition, perseverative thinking is defined as a style of thinking about one's problems (current, past, or future) or negative experiences (past or anticipated), that shows three key characteristics: the thinking is repetitive, it is at least partly intrusive, and it is difficult to disengage from [8], is a symptom that can cause extreme malaise in students and that also has an important part in the development of anxiety.

Therefore, the aim of the present study is to correlate anxiety, academic success determinants, ruminative thoughts, and emotional coping and to provide predictive models of academic success determinants.

Method

Participants

The sample was composed by 180 college students, 41 males and 139 females, mostly from *Instituto Universitário de Ciências da Saúde.* The mean age was 19.94 years old (*SD*=2.04) in female students, and 20.41 years old (SD=2.36) in male students. The most represented courses were Nursing (43%), Psychology (22%), Physiotherapy (15%), and Pharmaceutical Sciences (7%).

Measures

Academic Experiences Questionnaire – Reduced Version (QVA-r; [9]). This is a self-report instrument, composed by 60 items on a 5-point Likert scale, with 1 being 'totally disagree', 2 'strongly disagree', 3 'sometimes agree/disagree', 4 'strongly agree', and 5 'fully agree'. This version is composed of 5 dimensions: personal well-being, interpersonal, career involvement, study skills, and institutional appraisal. For the full scale, the Cronbach's Alpha was .92. The total variance explained by the five factors were 42.86%. The authors just included the personal well-being (inverted), career involvement, and study skills in this design.

The *Coping Through Emotional Approach* (CTEA; [10]) consists of 15 items on a 4-point Likert scale, 1 corresponds to 'I never do it', 2 corresponds to 'I usually do not do this', 3 corresponds to 'I do this' and 4 corresponds to 'I do this many times'. It consists of nine dimensions: emotional processing, emotional expression, coping associated with distress, seeking social support, problem-focused coping, alcohol and drug use, avoidance, humor, and religion. However, we only included the first two components. Cronbach's Alphas of the emotional processing was .54, and for emotional expression was .83. After exploratory factor analysis, we found a two-way model that explained 42.77% of scale variance.

The Zung Self-Rating Anxiety Scale (ZRAS; [11]; Portuguese version by Vaz-Serra, Ponciano, & Relvas, [12]) was used to evaluate anxiety symptoms. This scale identifies state-anxiety levels (cognitive, motor, vegetative, and Central Nervous System - CNS), and is composed of 20 items on a 4-point Likert scale, of which 1 corresponds to 'none or rarely', 2 to 'sometimes', 3 to 'a good part of the time' and 4 corresponds to 'most of the time'. The Portuguese version has a reliability research with internal consistency Cronbach alpha of .61.

The *Perseverative Thinking Questionnaire* (PTQ; [8]; Portuguese version by Chaves, Pereira, & Castro, [13]) is an instrument with 15 items on a 5-point Likert scale, with 0 being 'never', 1 'rarely', 2 'sometimes', 3 'many times' and 4 corresponds to 'almost always'. The instrument aims to assess repetitive negative thinking and is composed of 3 dimensions: central characteristics of repetitive negative thinking (repetitiveness, intrusiveness, difficulties with disengagement), perceived unproductiveness of repetitive negative thinking, and capturing mental capacity. The Cronbach's alphas ranged between .88 and .93. It has validity, based on confirmatory factor analysis.

The *Emotion Regulation of Others and Self Scale* (EROS; [14]; Portuguese version by Teixeira, Pereira, & Chaves, [15]) evaluate the use of emotional regulation strategies, of oneself and others, in four factors: improvement of the intrinsic and extrinsic affect-worsening,

and intrinsic and extrinsic affect-improving. Those four subscales showed reliability results between .74 and .82.

Procedure

In order to apply the questionnaires, it was requested an institutional authorization from the ethical committee. We included an informed consent procedure, with a specific document informing about the research objectives and how important participant collaboration was, also that the participants were free to withdraw at any time, and that the data was confidential and anonymous. Data was collected online using LimeSurvey and the results were transferred to IBM Statistics SPSS database.

Results

Anxiety showed effects on students' general quality of life. Based on the correlations, QVA-r less well-being showed a statistically significant positive correlation with all domains (see Table 1). The QVA-r study dimension and QVA-r involvement dimension showed statistically significant positive correlations with the domains of the CTEA processing, as well as with the EROS intrinsic affect-improving and extrinsic affect-improving dimensions. There was also an important statistically significant negative correlation between the QVA-r study dimension and the perceived unproductiveness of the PTQ. The CTEA processing showed an effect on the QVA-r involvement. Finally, in most PTQ components there were significant positive correlations with anxiety (Table 1).

Table 1: Pearson correlations concerning academic experiences, emotion regulation, coping, perseverative thinking, and anxiety components (independent variables).

	QVA-r Less Well-Being[1]	*QVA-r Study*	*QVA-r Involvement*
ZRAS total	,585**	-,05	-,087
ZRAS cognitive	,536**	-,059	-,031
ZRAS motor	,406**	-,079	-,115
ZRAS vegetative	,438**	-,041	-,089
ZRAS CNS	,187*	,082	,023
PTQ perceived unproductiveness	,619**	-,148*	-,054
PTQ core characteristics	,614**	-,143	-,057
PTQ capturing mental capacity	,604**	-,097	-,033
CTEA expressing	-,054	,137	,125
CTEA processing	,109	,219**	,156*
EROS intrinsic affect-worsening	,584**	-,121	-,132
EROS intrinsic affect-improving	,06	,164*	,173*
EROS extrinsic affect-worsening	,229**	0	-,14
EROS extrinsic affect-improving	,106	,202**	,218**

Note. [1]Values inverted, so a higher value mean a decrease on well-being; *for significant levels inferior to 0.05; **for significant levels inferior to 0.01.

When performing three stepwise multiple linear regressions, with different dependent variables, it was possible to observe that 60.6% of QVA-r less well-being is predicted by a model with perceived unproductiveness of PTQ, PTQ capturing mental capacity, intrinsic affect-worsening from EROS, and ZRAS cognitive and vegetative dimensions. 11.2% of QVA-r study was determined by a model that only includes the core characteristics of PTQ, extrinsic affect-worsening from EROS and CTEA processing. The less powerful model is related to student's involvement prediction, 5% of QVA-r involvement is affected by extrinsic affect-improving from EROS (see Table 2).

Table 2: Regressions (stepwise method) for each component of academic experiences, with emotion regulation and coping, perseverative thinking and anxiety components as independent variables.

	Betas	*Betas*	*Betas*
	QVA-r Less Well-Being	*QVA-r Study*	*QVA-r Involvement*
PTQ perceived unproductiveness	.211	(1)	(1)
PTQ core characteristics	(1)	-.212	(1)
PTQ capturing mental capacity	.209	(1)	(1)
EROS intrinsic affect-worsening	.269	(1)	(1)
EROS extrinsic affect-improving	(1)	.180	.223
CTEA processing	(1)	.211	(1)
ZRAS cognitive	.237	(1)	(1)
ZRAS vegetative	.144	(1)	(1)
R^2	.606	.112	.05

Note. (1) Not included in the models. All other components of the instruments were not included on the models.

Discussion

This study shows that, in college students, perceived unproductiveness of repetitive negative thinking, or when this process capture mental capacity, intrinsic affect-worsening and cognitive and vegetative anxiety decrease the level of student's well-being. In turn, the study skills dimension undergoes changes in the presence of repetitive negative thoughts. Nevertheless, it can be improved on the basis of the extrinsic improvement, that is, the improvement of relations between students and others and also with better emotional processing.

It is also possible to observe that the involvement of the student's increases when there is a positive relation of the students with the colleagues, with the lecturers and other elements of the school environment, probably related to the modifiable potential of extrinsic affect improvement. These variables also have an influence on students' aca-

demic success. It is also possible to find that variables not only cause a decrease in academic success, but that there also are variables that can be worked out so that academic success is enhanced.

Regarding the limitations of this research, there is a lack of information about concomitant traumatic or stressful life events that can have effects on the academic performance. Other potentially important variables such as depression that could add more information and allow stronger and more sustained conclusions. A multiple level design with moderation-mediation analysis could clarify the cascade effects between these variables.

In the future it would be important to include life events as well as to include other psychopathological symptoms. In addition, it would also be important to develop programs that work on relationships in order to enhance the student's involvement in academic life, improve the ability to study as well as work the students' well-being. The implications of those results on new interventions and the research of evidence about the increase efficacy could close the cycle, enhancing academic success and improving student's well-being.

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