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Relationships between academic stress, social support, optimism-pessimism and self-esteem in college students

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Abstract

Introduction. This research aims to analyse how optimism, self-esteem and social support help to predict academic stress.

Method. The sample consisted of 123 students aged 20 to 31 years old, from the 3rd Year in the Psychology Degree.. Students completed the Rosenberg Self-esteem Scale, the Life Orientation Optimism Questionnaire (LOT-R), the Frequency and Satisfaction with Social Support Questionnaire and the Student Stress Inventory - Stress Manifestation (SSI-SM). Three linear regression analyses were conducted, each on a different variable: manifestations of physiological, behavioral and emotional stress. The predictor variables were: optimism, pessimism, self-esteem and frequency and satisfaction with social (emotional, instrumental and informational) support.

Results. Results showed that the physiological manifestations of stress are not predicted by the used predictor variables, while there is significant proof that the behavioral manifestations of stress are predicted by satisfaction with instrumental social support and optimism. There is significant proof that the emotional manifestations of stress are predicted by optimism and pessimism. As for self-esteem, it did not prove to be significant. Finally, a MANOVA analysis was conducted, showing the main effects to be optimism, satisfaction with instrumental support, age and gender.

Discussion. The hypotheses of the study have been partially met.

Key words: Self-esteem, optimism, social support, academic stress and university students.

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Relaciones entre estrés académico, apoyo social, optimismo-pesimismo y autoestima en estudiantes universitarios

Resumen

Introducción. El objetivo de la presente investigación fue analizar de la manera en la cual variables como el optimismo, el pesimismo, la autoestima y el apoyo social tienen un efecto sobre el estrés académico en estudiantes universitarios.

Método. La muestra estuvo constituida por 123 estudiantes de 3º de Psicología con edades comprendidas entre los 20 y 31 años. Los estudiantes cumplimentaron la escala de autoestima de Rosenberg, el cuestionario de optimismo Life Orientation Test (LOT-R), el cuestionario de frecuencia y satisfacción con el apoyo social y el Student Stress Inventory, Stress Manifestation (SSI-SM). Se realizaron tres análisis de regresión lineal, en cada análisis se empleó una variable dependiente distinta: manifestaciones de estrés fisiológicas, conductuales o emocionales; y como variables predictoras: optimismo, pesimismo, autoestima y satisfacción con el apoyo social (emocional, instrumental e informacional).

Resultados. Los resultados de cada uno de los análisis muestran que, en primer lugar, las manifestaciones fisiológicas del estrés no son predichas por las variables predictoras utilizadas, en segundo lugar, las manifestaciones conductuales de estrés han obtenido resultados significativos en relación con la satisfacción con el apoyo social instrumental y el optimismo. En tercer lugar, tomando las manifestaciones emocionales de estrés como variable dependiente, se observan resultados significativos respecto al optimismo y el pesimismo. En cuanto a la autoestima no ha resultado ser significativa. Finalmente se ha realizado un MANOVA que muestra efectos principales del optimismo, la satisfacción con el apoyo instrumental, la edad y el sexo.

Discusión. Las hipótesis previstas en el estudio se han cumplido parcialmente.

Palabras clave: Autoestima, optimismo, apoyo social, estrés académico y estudiantes universitarios.

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Introduction

In this day and age, we are aware of the fact that people in today's society suffer from stress in a wide range of situations. Stress is present in people's lives and is believed to be the cause of psychopathologies, diseases and the inability to adapt to any given environment or to work (Feldman, Goncalves, Chacón-Puignau, Zaragoza, Bagés and de Pablo, 2008). However, students at university may be one of the least studied samples in terms of stress (Martín 2007). University students are likely to experience what can be described as academic stress (De la Fuente et al, 2014). Academic stress may be related to frequent examinations and evaluations, the pressure of daily class work and tasks, economic difficulties that have an impact on the quality of study, family issues or any other situation that students may experience on their patch to academic success (Martín, 2007). Students can also show other types of stress, such as emotional, psycho-physiological or behavioural stress (Maldonado, Trianes, Cortés, Moreno and Escobar, 2009; Muñoz, 1999).

Stress is considered a complex construct that develops in two stages: during the first stage individuals assess the stressor and the demands stemming from it, and during the second stage they evaluate whether or not they have enough resources to meet the stressor demands (Lazarus and Folkman, 1986). The latter stage draws attention to the individual's subjective assessment of the stressor, which conditions their reaction to it. Events that cause stress are called stressors (Holmes and Rahe, 1967). Different people may react differently to the same stressor (Arribas, 2013). The stress response refers to body reactions, which can either be physiological reactions (Selye, 1978) or emotional or behavioural reactions to stimuli that cause stress (Blanca, Fernández-Baena and Trianes, 2011; Fimian, Fastenau, Tashner and Cross, 1989). The current approach to stress considers it to be the result from an individual's reaction to the environment (Escobar, Blanca, Fernández-Baena and Trianes, 2011). This approach integrates considerations of stress both as a stimulus and as a response. Stress ultimately emerges when an individual assesses an event from within their environment and believes it to be threatening because it risks their well being, and because they do not have enough resources to deal with it (Lazarus and Folkman, 1986).

Academic Stress

Academic stress involves stressors and responses within the educational sphere. In their research, Feldman et al. (2008) observed that the intensity of academic stress decreases as social support increases. Further research has found that university students experience high levels of stress, especially at the beginning of their degree and before examinations (Muñoz, 1999), whereas stress decreases in the last academic years. The main academic stressors are considered to be final grades, too much homework, exams and studying to pass exams (Kohn and Frazer, 1986; Misra and McKean, 2000).

Some research studies demonstrate that some health problems are caused by academic stress (Fernández, Siegrist, Rödel and Hernández, 2003). Hernández, Pozo and Polo (1994) examined how changes in daily life made by students coming up to the exam period can affect them. They discover an increase in adverse health habits during this period (such as too much caffeine, tobacco and psychoactive substances). Further research (Smith and Ellsworth [1987, cited by Muñoz, 2003]) proved that emotional assessment and the assessment of reality in students varied between the pre-examination period and their delivery of grades.

Stress is also apparent at a psycho-physiological level. There are hormones linked to the experience of stress, such as Cortisol, as well as other reactions of the parasympathetic nervous system that have been associated with the experience of stress (Maldonado, Trianes, Cortes, Moreno and Escobar, 2009). Some research studies even show health problems caused by academic stress. Kiecolt, Glaser, Strian, Stout, Tarr, Holliday and Speicher (1986) conducted a study on medical students, which proved that certain cells in the immune system are eliminated during the exam period, hence making the body more prone to diseases.

Self-esteem

Given the fact that it affects academic performance, self-esteem has been selected as an element of the relevant pattern in the present study. Moreover, it can help explain quality of life in university students. Self- esteem is defined as a favourable or unfavourable attitude toward the self (Rosenberg, 1965). In the academic field, Self-esteem is a relevant variable that is associated with good academic results and intrinsic motivation to learn (Navarro, Thomas and Oliver 2006). Likewise, low self-esteem is linked to peer rejection (Murray, Griffin, Rose and Bellavia, 2003), internalised psychopathology (González-Fortaleza and Ruiz, 1993), school failure and dropout (Navarro et al., 2006). There is a relationship between

self-esteem and psychological well being in undergraduate students (Diener and Diener, 1995; Paradise and Kernis, 2002; Kang, Shaver, Sue, Min and Jing, 2003; Reid, 2004). What is more, self-esteem has proven to have more impact on psychological well being than perceived social support (Barra, 2012).

One of the most widely used self-esteem measures in social science research is the Rosenberg Self-Esteem Scale (Rosenberg, 1965; Schmitt and Allik, 2005). It was designed to be a uni-dimensional measure of global self-esteem, in line with other studies (Martín, Núñez, Navarro, and Grijalvo, 2007). Conversely, it has proven to be multidimensional (Manso, 2010). The conclusion is that it depends on the population where it is applied, as well as on the way some of the items are written (in affirmative or negative clauses) (Goldsmith, 1986).

Optimism / Pessimism

Optimism/pessimism have also been selected as variables in this research, as part of the set of relevant variables for the psychological well being of university students. Optimism can be defined as the individual's predisposition to believe that he/she can achieve the pursued results without major difficulties. At the other extreme of optimism we find pessimism (Ferrando, Chico and Tous, 2002). In contrast to optimism, pessimism is defined as the belief in obtaining negative results or encountering additional difficulties (Londoño, 2009). Optimism can play an important role when it comes to using the coping mechanism of adaptation (Scheier and Carver, 1985), as it has an impact on psychological and physical well being (Chang, D'Zurilla and Maydeu-Olivares, 1994) and is crucial in reducing the risk of physical and psychological diseases (Peterson, Seligman and Vaillant, 1988). It is also related to positive results in people's physical and psychological health (Remor, Amoros and Carboles, 2006). In university students, optimism has been proven to enhance students' ability to stick to their studies, to predict the failing of subjects and to reduce the risk of dropping certain subjects (Londoño, 2009).

Optimism is even considered to be a dispositional characteristic of personality that mediates between external events and personal interpretation thereof (Seligman, 1990). In addition, Seligman (2003) argues that this construct can be explained as an individual predisposition to attribute negative events to external, unstable and specific causes. On the other hand, pessimism is defined as a predisposition to explain negative events in terms of internal, stable and global causes. Both optimism and pessimism are considered to be

(positive and negative) systematised approaches to life events (Scheier and Carver, 1985), which is why some authors refer to them as "dispositional optimism/pessimism".

Social Support

Another variable used in this research was social support. This is one of the most widely investigated factors of protection. It has had favourable results in terms of increasing individual resistance to life changes, stressful situations, personal crises and coping with disease, especially chronic diseases (Feldman et al., 2008). Social support can be defined as both real and perceived support from the community, social networks and close friends, whether it is instrumental or emotional support (Hombrados, Gómez, Domínguez, García and Castro, 2012). Instrumental support involves behaviours that directly help those in need, such as looking after someone, whereas emotional support refers to showing care, love or trust (Hombrados, García and Gómez, 2013). The present research deals with informational, instrumental and emotional social support.

In the academic field, social support is given by people who are close to the students using the available resources, which makes it a safe emotional support as well as an opportunity for students to share their interests and to feel understood and respected (Feldman et al., 2008). Some authors have found that this construct can encourage students to achieve good academic results (Román and Hernández, 2005) and can also help them cope with stressors successfully (Martín, 2007).

Objectives and Hypotheses

This research aims to analyse how a number of variables - that have separately shown to be related to quality of life in students - interact among themselves. In particular, it aims to test whether academic stress can be predicted based on social support plus self-esteem, optimism and pessimism in university students. The expected outcome is that optimism, pessimism, social support and self-esteem significantly predict academic stress in university students.

Method

Participants

Participants in this study consisted of 118 students at the University of Malaga (Spain) (93 women and 25 men), aged between 20 and 31 years (Mean= 21.4 years, SD= 0.41), from the 3rd Year of the Degree in Social Psychology. Data were collected during the academic year 2012-13. Students were verbally asked to take part voluntarily and none of them refused to do so. As future psychologists, they are likely to participate in research.

Instruments

To measure self-esteem, we used the *Rosenberg Self-Esteem Scale* (Rosenberg, 1965; Schmitt and Allik, 2005). We used the original scale translated into Spanish by *Esperanto Translations* (www.esperantotraducciones.com). An adaptation in Spanish (Baños and Guillén, 2000) is also available, according to reviewers of this paper. The scale contains 10 items with a Likert-response format of 4 options ranging from 'strongly disagree' (1) to 'strongly agree' (4). To reduce acquiescence, five items were written affirmatively and five negatively. Given that high and low scores obtained the same result, scores obtained in the negative items were statistically converted to affirmative items. Thus, the total score obtained in the scale ranges from 10 to 40, where 10 indicates low self-esteem and 40 high self-esteem. The questionnaire showed an appropriate Cronbach's Alpha coefficient (Alpha= 0.83). Reviewers indicate that the Spanish adaptation of the scale (Baños and Guillén, 2000) shows an alpha coefficient of 0.88.

Optimism was assessed through the Spanish adaptation (Ferrando, Chico and Tous, 2002) in the revised edition of the *Life Orientation Test* (LOT-R) (Scheier, Carver and Bridges, 1994). The test contains 10 items in a Yes/No answer format. Six of them aim at measuring the dimension of dispositional optimism, while the remaining four aim at making the content of the test less obvious. From the aforementioned six items, three are presented in affirmative clauses (optimism-directed) and three in negative clauses (pessimism-directed). The items that were negatively worded were inverted, making it possible to obtain a total optimism-oriented score. Scores range from 'strongly disagree' (1) to 'strongly agree' (5). According to the authors, the scale reports acceptable levels of reliability and validity.

To assess social support, the *Frequency and Satisfaction with Social Support Questionnaire* (Hombrados et al., 2012) was used. The questionnaire measures the frequency

and level of satisfaction with social support. It shows the different sources of support (father, mother, classmates and teachers) and the type of support (emotional, instrumental and informational support). In addition, the questionnaire assesses the frequency of support received from social networks and the degree of satisfaction with it. It is a Likert-response format scale with five response options on the frequency of received support and the satisfaction with it, ranging from 'never' (1) to 'always' (5) (for frequency) and from 'unsatisfied' (1) to 'very satisfied' (5) (for satisfaction). The Cronbach's Alpha coefficient found in this questionnaire was 0.91. Additionally, alpha coefficients for the different types of support have also been found in this instrument: in the emotional support (Alpha= 0.780), instrumental support (Alpha= 0.763) and informational support (Alpha= 0.795). In terms of frequency and satisfaction, the Cronbach Alpha coefficients were: Alpha= 0.840 for frequency and Alpha= 0.867 for satisfaction.

Assessment of academic stress has been conducted by using the Spanish adaptation (Escobar, Blanca, Fernández-Baena and Trianes, 2011) of the *Stress Manifestations Scale of the Student Stress Inventory* (SSI-SM) (Fimian et al., 1989). It consists of 22 items with a Likert-response format of 5 options ranging from (1) 'not at all' to (5) 'definitely', and relate to three areas where stress is manifested: emotional (10 items), physiological (6 items) and behavioural (6 items) areas. The Cronbach's Alpha Coefficient for internal consistency was 0.79 for emotional manifestations, 0.62 for physiological manifestations and 0.66 for behavioural manifestations. The highest value refers to the total test score: 0.86.

Procedure

The first step to conduct this research was to contact teachers of the subjects "Learning Difficulties in School" and "Community Psychology" from the Degree in Psychology at the University of Malaga (UMA), in order to administer questionnaires in their class groups. Once granted permission, tests were applied one morning on A and B groups in "Community Psychology" and then on two afternoons on C and D groups in "Learning Difficulties in School". Before being given the tests, all groups were briefly told about the reason for this research and how to fill in the questionnaires. They were then asked for their voluntary participation in the research. Students took approximately 20 minutes to complete all the instruments without any difficulties.

Data Analysis and Design

Three linear regression analyses were conducted (introduction method: step-by-step), each on a different variable: manifestations of physiological, behavioural and emotional stress. The predictor variables were as follows: optimism, pessimism, self-esteem and frequency and satisfaction with social support (emotional, instrumental and informational).

Additionally, a multivariate analysis with the following dependent variables was performed during the course of this research: manifestations of (emotional, physiological and behavioural) stress, satisfaction with emotional support, satisfaction with instrumental support and satisfaction with informational support. As for covariates, the following were introduced: sex, age, optimism, pessimism, self-esteem, as well as frequency and satisfaction with emotional, instrumental and informational support.

Results

Regression

Regression Analysis no.1: When introducing physiological stress as the dependent variable, results show a non significant model ($p>.05$). Physiological manifestations of stress are not predicted by the independent variables used in the study.

Regression Analysis no.2: When introducing behavioural stress as the dependent variable, results show two significant models: the former includes satisfaction with informational social support as the predictor variable: $F (1.116)= 12.762$, $p= .001$; whereas the latter includes both satisfaction with instrumental social support as well as optimism: $F (2.115)= 10.012$, $p= .000$ (see Table 1 for coefficients).

Regression Analysis no.3: When introducing behavioural stress as the dependent variable, results show two significant models: the former includes satisfaction with informational social support as the predictor variable: $F (1.116)= 34.423$, $p= .001$; and the latter includes both optimism and pessimism: $F (2.115)= 19.726$, $p= .000$ (see Table 1 for coefficients).

Table 1. **Analysis of Regression Coefficients no.2**

Modelo		Coeficientes no estand.		Coeficientes stand.	t	Sig.
		B	Error típ.	Beta	B	Error típ.
1	(Constante)	15,606	1,547		10,088	,000
	SAT.AP.INFORM	-,348	,098	-,315	-3,572	,001
2	(Constante)	18,174	1,810		10,043	,000
	SAT.AP.INFORM	-,297	,097	-,269	-3,058	,003
	OPTIMISMO	-,313	,122	-,227	-2,577	,011

Dependent variable: Academic Stress

Table 2. **Analysis of Regression Coefficients no.3**

Modelo		Coeficientes no estand.		Coeficientes stand.	t	Sig.
		B	Error típ.	Beta	B	Error típ.
1	(Constante)	40,620	2,875		14,129	,000
	OPTIMISMO	-1,540	,262	-,478	-5,867	,000
2	(Constante)	33,073	4,682		7,064	,000
	OPTIMISMO	-1,222	,303	-,380	-4,033	,000
	PESIMISMO	,615	,304	,191	2,026	,045

Dependent variable: Emotional Stress

Inferentials

Results show a marginally significant effect of sex F (6.107)= 2.081, p= .061; and significant effects of age F (6.107)= 2.352 and optimism F (6.107)= 3.541, p<.05. Sex has an effect on emotional manifestations of stress (women show more than men) and on hysiological manifestations of stress (women show more than men). The main effect of age was on satisfaction with instrumental support (figure 3). In general, the older the participants, the lower the satisfaction with instrumental support.

Optimism has an effect on emotional manifestations. In general, as optimism increases, less emotional manifestations occur. There is also an effect on behavioural manifestations: in general, the higher the optimism the fewer behavioural manifestations of stress occur.

Discussion and Conclusions

The hypotheses of the study have been partially met. From the variables involved, self-esteem has not shown any significant results, perhaps because it is an internal variable evaluated in the medium and long term (Barra, 2012). It may also be because self-esteem is only marginally dependent on situational changes and only slightly permeable to the impact of some stressors that seem to have major consequences on the emotional level.

The first regression analysis on physiological stress did not show significant results. Perhaps because the variables used in this study do not belong to the psycho-physiological field, although the emotional area does relate to physiological variables. When the sample is divided by sex, results of physiological manifestations (associated to women) are obtained, which will be discussed below.

Results from the second regression analysis show that, in the second regression model selected, behavioural stress is predicted by satisfaction with social support and optimism. Instrumental social support refers to receiving support so as to cope with difficulties, which has proven to be effective in managing stress. Optimist people can see the positive aspects of life. Behavioural stress refers to behaviours shown by individuals to cope with stressor demands. Having an optimist temperament can facilitate coping with stressor demands, as well as receiving support to better manage anxiety or stressor demands. All these variables go in the same direction, which is why they are interrelated. Further research shows that stress to meet stressor demands is reduced when individuals receive relevant support (Polo, Hernández and Pozo, 1996) and when they show optimism (Martínez, Reyes del Paso, García and González, 2006).

Data from the third regression analysis performed show that emotional stress is predicted by two partly emotional variables: optimism and pessimism. Nowadays, optimism is regarded almost as a personality variable (Ferrando, Chico and Tous, 2002), so that an optimistic person has effective protection against stress and against physical and

psychological diseases (Peterson, Seligman and Vaillant, 1988). As a conclusion, it is important to teach optimism, especially in young people with temperamental pessimism. Such education could be taught in university degrees. It is also noteworthy that the fact that emotional support is predicted by optimism and pessimism may allude to the importance of emotional aspects. In the MANOVA analysis, optimism has the effect of reducing emotional manifestations of stress, as the latter decrease when optimism increases. Today, the importance of emotional aspects is acknowledged, both in terms of emotional intelligence (Shapiro, 1997; Goleman, 1996) and in terms of emotional competence (Saarni, 1999). It is therefore not surprising that these results are polarised when it comes to the emotional field.

As for age, the MANOVA results show that, the older the students, the lower their satisfaction with instrumental support. This may be due to the fact that age gives more self-confidence, so people can act with more autonomy, without relying on instrumental support (Musitu and Cava, 2003).

Other results refer to sex, where women score higher than men both in emotional and physiological manifestations of stress. This result is in line with further studies on women's socialization, which, unlike that of men, gives them more permissiveness to show emotional manifestations and makes them more vulnerable to feelings that prevent them from responding to stress. As women score high on physiological manifestations, it can be attributed to their physiology, which makes them more vulnerable to experiencing diseases and stress symptoms (Escobar, Blanca, Fernández-Baena and Trianes, 2011). Indeed, other studies have demonstrated women's high level of stress and emotional symptoms in healthcare-related occupations, especially at primary and secondary health levels (Roman, 2003) and in education occupations (Matud, García and Matud, 2002). During adolescence, women also report more perceived stress and more depressive moods than men (Barra, Cerna, Kramm, and Véliz). In university students, the higher level of stress in women was associated with loss of social support from friends (Feldman et al., 2008).

In conclusion, it is important to emotionally educate children and adolescents, as well as university students. There is a current interest in courses on "emotional intelligence" and "emotional competencies" at university. The Faculty of Psychology at the UMA offers "emotional intelligence" courses for students, which are full year after year. There are also subjects on "emotional intelligence" in postgraduate courses at the UMA. Results from this research suggest that this initiative could be extended to compulsory secondary education and

high school, as they represent crucial periods during which students suffer from academic stress (Escobar et al., 2011).

Teaching optimism is also important. Optimism is currently acknowledged as a main variable in physical and mental health, due to the positive effects it has if adapting to a new environment and as it offers a shield against tensions and frustrations related to adversity and life problems.

A limitation of this study is failing to administer more tests on emotionality and quality of life. Therefore, the present research can be improved by including more variables of an emotional nature, such as emotional self-regulation, life satisfaction, etc. rather than internal variables such as self-esteem, which does not offer results.

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