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EXAMINING THE LINK BETWEEN RESILIENCE, BURNOUT
AND STRESS

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Abstract

The ability of resilience may help us to face every day difficult situations and bounce back from life's obstacles or adversities. The failure to develop it or a defective performance may evolve in some negative psychophysical condition among which stress and burnout are worth mentioning. University students have to deal with stress and burnout from the beginning of their degree to even years after their finalization in their future working lives. It is intended to describe and relate gender with resilience, stress and burnout levels. To gather information, 116 college students from Granada have been used through a self-recording sheet and the Spanish version of Connor and Davidson's Resilience Scale, a Student Burnout One-Directional scale and the Perceived Stress Scale. Findings bring to light that almost all students presented a normalized levels stress and burnout, as well as high levels of resilience, being women who show higher levels of stress and moderate burnout levels while men shown a trend to develop severe burnout. However, men demonstrated higher levels of resilience than women. This rehearsal shows the importance and need of developing intervention programs to increase resilience levels between students and to teach them to deal with stress and burnout in a constructive way.

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1. Introduction

Our society has decided to carry on studying a wide variety of scientific topics thanks to diverse factors such as recent technological advances, our cultural desire for further developing the various existent sciences, human being inherent curiosity and its thirst for knowledge (Greenhill, Fielke, Richards, Walker, & Walters, 2015). This need for “Knowing beyond knowledge” has seems to be the central core for educative research evolution just as the main incentive for focussing researcher’s attention on academic processes and its various components (Denovan and Macaskill, 2017). This fact-finding process is one of the main sources available in the present situation in order to facilitate and to offer inter alia new social and cultural growth prospects, the ability to self-adaptation and to maintain a lifelong learning, and open new windows to make progress toward a literate world (Sharp & Jennings, 2016). However, positive aspects of education are not sufficient on its own to give rise to researching new trends throughout the teaching-learning process but negative aspects which sown the seeds of doubts and make us deal with educational reality, making them look for answers to different problems with the intention of improving or avoiding them (Meiklejohn et al., 2012).

By focussing our attention on the different sectors within the educational system, university environment (with particular emphasis on students and teachers) has generated a great interest in terms of negative factors as a result of coming together since social, personal and work life of students - at certain points during their professional training, friends and family relationship, etc.- and teachers -due to work factors, demands and social contact, etc.- have a greater influence in both groups, which could result in serious health consequences, poor academic-job performance and worse quality of life (Asencio et al., 2016). While it may be true that this situation can be extrapolated to other aspects of human life, we must bear in mind that universities play a greater role in determining the balance of positive and negative patterns and its influence on students and teachers life on account of the large number of hours they dedicate to activities related with this entity, bringing to light the necessity to promote the welfare of all the members from university policies and practices (Meda, Blanco, Moreno, Palomera, & Herrero, 2016). As may be seen, the vast majority of researches undertaken in educational issues revolve around the improvement of the quality of life of people at different levels (physical, social, psychological, occupational, academic, etc.) (Cook et al., 2017). Thus, it is not surprising the increasing of both, a broad range of views about the link between stages of the human well-being chains, and the number of factors connected with the comfort of the people (Houpy, Lee, Woodruff, & Pincavage, 2017). Worthy of special mention among those factors is the resilience for being one of the psychological constructs whose investigative interest has a significant increase within recent years, as it is related to the development of human strengths and, therefore, an element that "is able to encourage healthy behaviours" (García, Ríos, Carrillo, & Sabuco, 2017).

The definition of resilience is established by English Oxford dictionary as the “capacity to recover quickly from difficulties”. However, keeping different researches on focus, resilience has not had a universal definition due to its versatility of use (Pinto-Cortez, 2014). Hence, many authors have created their own definition of the concept taking it as the ability to overcome and deal with adverse situations (Denovan and Macaskill, 2017). Regardless of individual peculiarities, anyone can be resilient as it can be learned and internalized throughout the whole life-cycle (Moreno and Saiz, 2014) but we must bear in mind that its degree of development can vary depending on elements such as personal attributes, personal and

other people's experiences, their own environment or circumstances, etc., thereby making each individual to reflect a different resilient response or behaviour to overcome misfortunes (Palomar and Gómez, 2010). In the case of college students, different analyses which focus on changes in resilient responses have been found, with possible inequalities in self-esteem, self-confidence, social competence or gender, etc. (Thompson, Fiorillo, Rothbaum, Ressler, & Michopoulos, 2018). One of the clearest examples is the differences between men and women where variances in almost all aspects of health and well-being can be noticed that are determined not only due to their biological differences but also by social roles, personality or even behaviour and functions they perform from the earliest age depending on the social structure they belong to (Hirani, Lasiuk, & Hegadoren, 2016). This opens the door to the possibility of finding differences between men and women in the building of resilience and makes interesting its comparative study in order to determine specific aspects that influence positively this ability.

Against this protective background that resilience creates, we can find the so-called risk factors, individuals' traits and characteristics of their immediate environment that may make them more vulnerable to adverse events (Moreno and Saiz, 2014; Soler, Meseguer, & García, 2016). Setting our sights back on the university sector, stress and burnout syndrome stand out as two of the most frequent mood state throughout the entire vocational training process affecting both men and women (Cazan, 2015; Farid, 2016). Although it is difficult to find these two concepts together in tune with resilience in academic environments, there are several articles that attempt to connect them separately as they are considered to be dependent on each other (Chunming, Harrison, MacIntyre, Travaglia, & Balasooriya, 2017). Thus, stress is a characteristic that accompanies most students throughout their careers, especially in those grades whose career prospects are related to high levels of stress such as medicine or education (Gallego, Aguilar, Cangas, Rosado, & Länger, 2016; Fawzy and Hamed, 2017).

Stress is considered a state of mental and physical fatigue caused by high demands that require upper levels of performance than normal (Herrera et al., 2017). The numerous academic activities that students have to face on a daily basis may be causing them to often overload themselves and even leave aside other types of healthier activities or lifestyles (such as the minimum amount of physical exercise recommended or the following of a balanced diet), degenerating into a lack of well-being or health problems such as anxiety, depression, reduced immune function, somatization, etc. (Stanley, 2017). On other occasions, stress is generated by a lack of self-confidence when pupils have to face new situations undertaken autonomously, or they are exposed to experiences the subject considers negative (such as the increase of exams and text difficulties) without taking into account that those "challenges" are part of the development process in which they are currently involved on and that they will lead them to improve his knowledge and skills (Draper & Edwards, 2016; Meda et al., 2016). Women are usually the most related sector to this concept since their levels of stress are usually higher than those of men, often due to characteristics similar to those mentioned in the resilient response development (Turel, 2017). The inverse relationship which exist between the capacity of resilience and stress development is perceptible. As a rule, those students with a greater capacity to generate a resilient response are being considered those who are more capable of withstanding a situation of stress, and therefore, have fewer levels of stress in the studies (Stanley, 2017). This situation can be also observed in burnout evolution, where those students with higher levels of

resilience claim to be less burned by the tasks or jobs they are performing or, at least, those who face it in a more positive way (Franco-Justo, 2010; Lee, Kang, & Kim, 2017).

If we take a look at the first references to the term "burnout", we can find a literary novel, not a research paper, entitled "A Burn-out case" written by Graham Greene, in which a famous architect leaves his work in the peak of his professional career because he is "burned". The construct of burnout was lately introduced into medicine and psychology thanks to Freudenberg (1974), who coined it to refer to a person's state of frustration and physical and mental exhaustion due to the demands of his lifestyle (Nakamura, Miguez, & Arce, 2014). Today, this term is intertwined with all kinds of variables and subjects, but the most significant study in our society has focused on its relationship with stress, as it is considered one of the triggers of this psychopathy (Arís-Redó, 2012; Villwock, Sobin, Koester, & Harris, 2016). This construct is normally associated with the workplace, but the study of the burnout in academic domains has been widely accepted and diffused, especially in association with school problems, school dropout and academic stress (Casanova, Benedicto, Luna, & Maldonado, 2016). In terms of gender, there is a great controversy regarding the prevalence of burnout because of the opposite results and in dissonance with the stress that the person presents, which may be the result of the intervention of other elements in the person's life, such as the levels of resilience itself (Arís-Redó, 2012).

2. Problem Statement

After reviewing multiple analyses, the scarcity of researches that intertwine these three notions within a college students sample stands out, particularly among teaching students and future professors. In the same vein, the insufficiency of data that relate them to the gender of people prompts us to examine this area, hypothesizing the existence of significant differences between men and women. Hence, the aim of this research paper is to define teacher student resilience, stress and burnout and to determine the relationship between student gender and the prevalence of resilience, stress and burnout levels.

3. Research Questions

This is a descriptive-exploratory and cross-sectional work, which included a sample comprised of 116 university students from Granada belonging to the first, second and third academic year (39.7%, N=46; 27.6%, n=32; 32.8%, n=38 respectively). Most of them were women (80.2%, n=93, with an average age of M=19.74 (DT=2.42). Concerning current and common home during academic course, 44.8% (n=52) of the students lived with relatives during the academic year while the remaining (55.2%, n=64) were living alone or with people that are from outside their households. 48.3% (n=56) of them came from the city of Granada and 51.7% (n=60) indicated they came from outside this city.

3.1. Assessment tools

The most suitable instruments were selected to collect the data needed for this work after a literature search. Thus, the scales used are briefly described below: Self-recording sheet with which the socio-demographic variables such as gender, age, course, origin and data about current home were collected. The Spanish version of Connor and Davidson's CD-Risc (2003) Resilience Scale was used to measure resilience

levels in university students. This scale has 25 sentences with an answering system composed by a Likert scale ranged from 1 to 4 where 1 is "Totally disagree" and 4 is "Totally agreement". We can find resilience divided into 5 dimensions with the following division of questions: Control (21, 4, 19, 22, 17); positive acceptance of change and secure relationships (2, 13); personal competence, high standards and tenacity (7, 10, 16, 24, 11, 5, 15, 18, 25); Trust in one's instincts, tolerance of negative affect and strengthening effects of stress (1, 6, 8, 12, 14) and Spiritual influences (3, 9, 20). The complete range of scores is therefore from 0 to 100, where the larger the score, the higher the resilience levels. It has been decided to also include the study of the dimensions to check their possible variances, which will be counted from 1 to 4 to make a fair comparison. The alpha coefficient obtained in the original study was $\alpha=0.89$, having reached a similar value in this study ($\alpha=0.782$).

Student Burnout One-Directional scale of Barraza (2008). Students' levels of emotional exhaustion were measured with this test. It consists of 15 items whose answers are presented on a likert scale from 1 "never" to 5 "always". Like resilience, this scale divides the burnout into two dimensions with the following combination of questions: Behavioural (1,2,3,4,5,7,9,11,14 and 15) and Attitudinal (6, 8, 10, 12 and 13). Spanish version of the Perceived Stress Scale by Cohen, Kamarck, & Mermelstein (1983) adapted to Spanish by Dr. Eduardo Remor. It measured the stress presented by the participants through 14 items with answers from 0 to 4 points. The final results are obtained through the addition of questions 4, 5, 6, 7, 9, 10 and 13; and the addition of the inverted values of the rest of questions (where 0 would be 4, 1 would be 3 and so on). The final score could display a range between 0 as minimum value and 56 as maximum one. The higher the final score is, the greater the stress perceived by the student. The alpha coefficient of this questionnaire in this study was $\alpha=0.732$.

3.2. Data collection and analysis

In the first instance, tutors and students were contacted and informed about the main purpose of the work, the process to be carried out, the instruments to be used and the time to be spent. The participants were recruited on a voluntary and anonymous basis and they gave their prior informed consent, meeting the ethical requirements of the Declaration of Helsinki (1975). Subsequently, a place and a schedule for each group of people was determined, taking into account changes between classes to avoid confusion or repetition of cases. We agreed with teachers who gave their consent to use the last few minutes of the theoretical classes to avoid breaking into the middle of practical lessons or interruptions from other groups who also needed those classrooms.

Once the necessary data for this work had been collected, they were interpreted and analysed through the statistical software SPSS Statistic in its version 20.0. A descriptive study (averages and frequencies) and a correlated study (crosstabs) were carried out to analyse the relationship between gender and burnout; and the non-parametric Mann-Whitney U test for two independent samples was used to determine the relationship between gender, resilience and stress. Fisher's exact test and Pearson's chi-squared test established for $p \leq 0.05$ were used to determine significance

As may be seen in table 2, the mean of general resilience was quite high ($M=75.87$; $SD=7.53$). The mean of each dimension are also high. The highest mean can be found in the magnitude of "Positive acceptance of change and secure relationships" with $M=3.3$ ($SD=0.63$), followed by "Personal competence,

high standards and tenacity" (M=3.2; DT=0.36). On the other hand, the stress presented by the students has an intermediate score (M=25.75; DT=5.73). When it comes to the different dimensions of burnout, the 66.4% of the subjects had minor behavioural burnout (N=77); 52.6% of the participants did not have attitudinal burnout (N=61) and finally, 68.1% (N=79) of the students showed minor levels of general burnout.

Table 01. Description of the main variables

Resilience Dimension	Min.	Max.	Mean	S.D.
Control (C)	1,6	4	2,96	0,46
Positive acceptance of change and secure relationships (PAC)	1	4	3,3	0,63
Personal competence, high standards and tenacity (PCT)	2,22	4	3,2	0,36
Trust in one's instincts, tolerance, strengthening effects of stress (TTS)	1,8	3,8	2,98	0,42
Spiritual influences (E)	1	4	2,58	0,57
Resilience general levels (RGL)	55	93	75,87	7,53
Stress	12	45	25,75	5,73
Burnout	Normal	Minor	Moderate	Severe
Behavioural Burnout	9,5% (n=11)	66,4% (n=77)	23,3% (n=27)	0,9% (n=1)
Attitudinal Burnout	52,6% (n=61)	41,4% (n=48)	4,3% (n=5)	1,7% (n=2)
General Burnout	16,4% (n=19)	68,1% (n=79)	13,8% (n=16)	1,7% (n=2)

As regards findings concerning links between gender and resilience, the mean rank difference between the two variables in some of the dimensions of resilience was statistically significant as show in table 3. Thus, men mean rank have significantly higher levels in "control" (U Mann Whitney $z = -2,35$; $p = .019$) than women. These significant differences can be also seen in the dimensions of "personal competence, high standards and tenacity" (U Mann Whitney $z = -2,53$; $p = .011$), with a higher mean in the male sector compared to the female sector; as well as in "Trust in one's instincts, tolerance of negative affect and strengthening effects of stress" dimension (U Mann Whitney $z = -2,39$; $p = .017$) where boys have higher mean rank than girls. In terms of general resilience levels, a similar and significant situation can be observed (U Mann Whitney $z = -2,36$; $p = .018$), where men show higher levels of resilience and women lower levels.

Table 02. Resilience by gender

Resilience by gender		Mean rank	Umw	Z	p
C	Male	73,13	733	-2,35	.019*
	Female	54,88			
PAC	Male	61,41	1002,5	-,48	.629
	Female	57,78			
PCT	Male	74,33	705,5	-2,53	.011*
	Female	54,59			
TTS	Male	73,35	728	-2,39	.017*
	Female	54,83			
E	Male	48,33	835,5	-1,65	.100
	Female	61,02			
RGL	Male	73,30	729	-2,36	.018*
	Female	54,84			

With reference to the relationship between stress and gender, results were significant (U Mann Whitney $z = -2,37$; $p = .018$). In this case, women shown higher levels of stress as compared with men who obtained lower level of stress

Table 03. Stress by gender

Stress by gender		Mean rank	Umw	Z	p
Stress	Male	43,67	728,5	-2,37	.018*
	Female	62,17			

The data presented when comparing burnout levels with gender showed statistically significant changes in attitudinal burnout levels ($p = .036$) and general burnout levels ($p = .03$). In the first case, 83.6% (N=51) of women have normal attitudinal burnout compared to 16.4% (N=10) of men who presented such a low level. Furthermore, subjects with severe burnout were 100% male (N=2). On the other hand, and mentioning general burnout levels, we find similar values with a significance of $p = .03$. Hence, 83.5% of women (n=66) showed a minor burnout compared to 16.5% (n=13) of men. As with the attitudinal, in the general burnout it is striking that 100% of men have a severe level of general burnout (n=2) while no woman has such high levels of burnout, being at minor or moderate levels.

Table 04. Burnout by gender

Burnout by gender		Gender		X2	p
		Male	Female		
Behavioural Burnout	Normal	27,3% (n=3)	72,7%(n=8)	4,59	.205
	Minor	18,2% (n=14)	81,8% (n=63)		
	Moderate	18,5% (n=5)	81,5% (n=22)		
	Severe	100% (n=1)	0% (n=0)		
Attitudinal Burnout	Normal	16,4% (n=10)	83,6% (n=51)	8,57	.036*
	Minor	20,8% (n=10)	79,2% (n=38)		
	Moderate	20% (n=1)	80% (n=4)		
	Severe	100% (n=2)	0% (n=0)		
General Burnout	Normal	21,1% (n=4)	78,9% (n=15)	8,94	.03*
	Minor	16,5% (n=13)	83,5% (n=66)		
	Moderate	25% (n=4)	75% (n=12)		
	Severe	100% (n=2)	0% (n=0)		

4. Discussion and conclusion

The levels of general resilience were above average, this being PAC and PCT the most outstanding dimensions. Authors such as Thompson et al. (2018) mention protective factors similar to the dimensions of this study. Among them we can highlight the ability to resist being ill and self-efficacy as two of the elements considered most important in various researches, which state that those people with greater resistance to being ill and self-efficacy generally tend to be more resilient. On the other hand, PAC dimension is often linked to people with initiative and confidence in the elaboration and performance of their future plans, which leads them to successfully complete them (Cazan and Truta, 2015). This potential can be tied to university students by the fact that they have begun to study something that really excites

them, their vocation, and the illusion of becoming involved in working life as teachers. The male sector has demonstrated a greater tolerance of negative, obtaining higher mean than women, not only in terms of general resilience, but also with respect to C, PCT and TTS. Most researches show no differences between men and women resilience (Palomar and Gomez, 2010), but more recent university studies have shown that male sector is more likely to score higher on different resilience scales than women because of variations in their personality and in the reinforcement of certain factors such as resistance or strength, characteristics which are considered as protective factors (Stanley, 2017). However, there are conflicting results, with women having the higher means in resilience (Young, Greenbaum, Dormady, 2017).

Stress conditions are maintained at moderate levels, with women foremost the higher levels of stress. Several studies state that university students generally tend to have acceptable stress levels as it shows in this rehearsal (Herrera et al., 2017). However, there have also been cases where stress levels are high in university students, having established a negative relationship between these levels and the resilience capacity of the students (Denovan and Macaskill, 2017). Although there are oscillations in the results, we must bear in mind that the stress levels may vary depending on the stage in which students are, they may be low at the beginning of the course and reach upper grades if there are deadlines, exams or works to do (Turel, 2017). The prevalence of the female gender to suffer can also be found in other studies such as those carried out by Fawzy and Hamed (2017), where they reiterate that, in addition to stress, they are also more likely to suffer from depression and anxiety due to their greater concern for being effective in their studies and having greater expectations and demands than men. As regards general burnout, seven out of ten students show minor levels while a focus on attitudinal burnout reveals a lack of this syndrome in more than half of the students. More than one-third of women suffer from minor to moderate burnout and only a minimal rate of men suffers severe levels, results similar to other studies such as those of Asencio et al. (2016) or Casanova et al. (2016) which also show a tendency of university students to suffer moderate burnout and with a 10% of people with severe burnout. Although most researches has found no significant differences in gender groups, authors such as Arís-Redó (2012) show lower levels of general burnout in women than in men, stating that attitude and personal commitment can be two key elements in the adaptation to unforeseen events.

This study highlights the need for further research into the domains of university resilience, not only of students but also of teachers. Although the term is becoming increasingly popular, most people still do not know what the exact causes of their decline might be or how to increase it. On the other hand, it is necessary to analyse other university sectors, since most of the studies found focus on medical or nursing students. If we take this into account, education is another area of stress in large measure, showing the need to focus on this community in relation to this issue.

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