

# Resilience and Coping Strategy Profiles at University: Contextual and Demographic Variables

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## Abstract

**Introduction.** In the past two decades, increased attention has been given to the importance of non-cognitive factors in learning, and in academic, social and professional success. There are two quite interrelated variables that influence behavior when facing stress in the academic context, resilience and coping strategies, and only recently have they received attention in the university context.

**Method.** A total of 117 university students took part in the research, which used the EEC coping and CD-RISC resilience scales. Descriptive and association analyses as well as MANOVAs were performed in order to confirm students' profile of resilience and strategies for coping with stress, to observe the type of relationship between the two constructs, and to analyze the possible effect of *gender* and *type of university* on their resilience and coping strategy profile.

**Results.** The research reveals medium-high scores in resilience, and general use of *problem-focused* coping strategies. Not only is the connection between variables important, but *gender* and *type of university* were shown to have effects on *tenacity*, *spirituality*, *self-instructions*, *action directed at the causes*, *positive re-appraisal and firmness*, and *religious support*.

**Discussion and conclusions.** The research provides evidence that there is a connection between resilience and coping strategies, and offers important information about how some indicators of the two can be influenced by gender and context, such as the type of university. Further inquiry into these questions is needed, and they may be especially interesting for university admission and guidance departments.

**Keywords:** non-cognitive skills, resilience, coping strategies, college, gender

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# Perfiles de Resiliencia y Estrategias de Afrontamiento en la Universidad: Variables Contextuales y Demográficas

## Resumen

**Introducción.** En las dos últimas décadas y en relación con la educación de las llamadas competencias del S.XXI se está prestando una atención creciente al papel desempeñado por *los factores no cognitivos* en el aprendizaje, el éxito académico, social y profesional. En este marco hay dos variables muy interrelacionadas, *resiliencia* y *afrontamiento* que son determinantes de la conducta frente al estrés en contextos académicos y sólo recientemente han empezando a ser objeto de atención en el ámbito universitario.

**Método.** Un total de 117 alumnos universitarios participaron en este estudio en el que se aplicó la escala de afrontamiento EEC y la escala de resiliencia CD-RISC. Se realizaron análisis descriptivos, de asociación y MANOVAS para comprobar el perfil resiliente y de estrategias de afrontamiento ante el estrés de los alumnos, observar el tipo de relación entre ambos constructos y analizar el posible efecto de las variables *sexo* y tipo de *universidad* sobre su perfil resiliente y de estrategias de afrontamiento.

**Resultados.** Se destaca una puntuación media-alta en resiliencia y un uso general de estrategias de afrontamiento *centradas en el problema*. Se resalta la relación positiva y significativa entre las variables analizadas y se confirman efectos del sexo y tipo de universidad sobre factores como *tenacidad, espiritualidad, autoinstrucciones, acción dirigida a las causas, reevaluación positiva y firmeza y apoyo religioso* entre otros.

**Discusión y conclusiones.** Los resultados proporcionan evidencia acerca de las conexiones entre resiliencia y las estrategias de afrontamiento en este ámbito y ofrecen información de interés sobre cómo algunos indicadores de ambas variables son sensibles a la influencia del género y del contexto (tipo de universidad). Se destaca la necesidad de seguir profundizando en estas cuestiones y se apunta su interés para los servicios de admisión y orientación universitarios.

**Palabras Clave:** resiliencia, estrategias de afrontamiento, universidad, género.

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## Introduction

Current discussions within the political, economic, social, educational and research spheres are addressing *21st Century skills* (Suto, 2013; Costa & Kallick, 2014), or key competencies for this century, with constant references to the need to strengthen a set of dispositional variables that come under the rubric of “non-cognitive factors”. They have also been referred to by other names, such as *life skills*, *soft skills*, *personal skills*, *character skills/strengths*, dispositions, mindset, socio-emotional learning, and so on (Conley, 2013; Dweck, Walton, & Cohen, 2011; Egalité; Mills & Greene, 2014; Gutman & Schoon, 2013; Heckman & Rubinstein, 2001; Rosen, Glennie, Dalton, Lennon & Bozick, 2010).

### *Importance of motivational-affective factors in learning*

Authors use the term *non-cognitive factors (soft skills)* to refer to a set of attitudes, behaviors, strategies, values, beliefs, and personality traits that contribute to success at school, at university, or in the work world, and that encompass a variety of aspects not easily differentiated from each other (Heckman & Rubinstein, 2001), such as motivation, perseverance, optimism, self-control, tenacity, diligence, delayed gratification, self-discipline, resilience, will power, social skills, and so on. Although interest in these factors has burgeoned in recent years, the concept is not a new one, it was introduced by sociologists Bowles and Gintis in 1976 (Gutman & Schoon, 2013), and is opposed to the so-called *hard skills*, referring to cognitive skills which are conventionally measured on cognitive or academic achievement tests.

There are numerous studies from different disciplines that have demonstrated the association of soft skills with academic achievement, interpersonal success and success in the work world (DeRidder, Lensvelt-Mulders, Finkenauer, Stok & Baumeister, 2012; Duckworth & Seligman, 2005; Durlak, Weissberg, Dymnicki, Taylor, Schellinger, 2011; Heckman, Stixrud, & Urzua, 2006; West, Kraft, Finn, Duckworth, Gabrieli & Gabrieli, 2014).

For many, these skills are as important as or even more important than cognitive skills or IQ (Duckworth & Seligman, 2005; Heckman & Rubinstein, 2001), even though the topic continues to be controversial, as well as the term “non-cognitive factor”. A false dichotomy between cognitive skills and these psycho-social variables (soft skills) seems unfortunate, given that, as Borghans, Duckworth, Heckman and ter Weel (2008) point out, few aspects of

human behavior are free of cognition. The notion of *non-cognitive factors* (Conley, 2013; Gutman & Schoon, 2013) should be reconsidered, and more progress is needed in developing rigorous measures of these variables so that they may be as powerful as cognitive skill measurements and their use will spread, that we may better understand what the student learns and how it is learned. According to Conley, better information about this “non-cognitive domain” will help students to manage and take charge of their own learning.

Many quite diverse lists of non-cognitive factors have been developed (Costa & Kallick, 2014), and many factors have a high degree of overlap. The present study will address resilience and coping strategies in university students. Before delving further into this question, we wish to take note of certain studies and lines of research as examples that emphasize the importance of investing in the educational context to develop these and other closely related non-cognitive variables.

One of the authors that has most popularized the term “non-cognitive” is Economics Nobel prize winner, James Heckman (Heckman & Rubinstein, 2001). Heckman considers that, beyond academic and technical knowledge and skills, factors such as motivation, time management and self-regulation are critical for accomplishments in life, including success in the labor market.

Duckworth and colleagues have dedicated years to the study of self-control (synonym of self-discipline/willpower) and the construct called *grit* (perseverance/courage) (Duckworth & Carlson, 2013; Duckworth & Seligman, 2005; Duckworth, Peterson, Matthews, & Kelly, 2007). Duckworth and Carlson (2013), in their review of self-control and school success, conclude from the empirical evidence that learning, application of cognitive skills and knowledge, staying in school and graduating from secondary education and from university depend to a large degree on this voluntary control of attentional, emotional and behavioral impulses in the service of one’s goals and personal values standards. Dweck (2006), well known for his studies on the role of the *concept of fixed or malleable intelligence* in motivation and learning, has developed the broad concept of “academic tenacity” (Dweck, Walton & Cohen, 2011) and has also taken interest in analyzing the impact of the incremental/stable view of intelligence on students’ resilience when facing academic and social challenges (Yeager & Dweck, 2012).

Farrington & Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson & Beechum (2012) carried out a broad-ranging review sponsored by the *The University of Chicago Consortium on Chicago School Research (CCSR)*, where, based on examination of hundreds of studies on non-cognitive factors linked to academic success, they establish a categorization of these factors, indicating their importance for success in post-secondary education and university training. From among these factors, we turn our attention to *academic perseverance*, which has to do with resilience, and includes a whole body of psychological concepts such as those proposed by Duckworth and Dweck. In the review, they define academic perseverance as “the student’s ability to remain focused and involved in their work despite distractions, setbacks or obstacles”. They emphasize that this is particularly important in the university context.

Gutman and Schoon (2013) presented a review in the University of London *Institute of Education* on the impact of non-cognitive skills on achievement in children and young people. One of their objectives was to identify key competencies that are flexible and malleable, and they propose 8 factors. One of these factors they name *resilience and coping*. In Spain, De la Fuente and his team (De la Fuente, 2014a & 2014b; De la Fuente, Solinas, Fadda, & Zapata, *in review*) have been working for several years on a research project on motivational-affective strategies that encourage personal self-regulation and coping within the university teaching-learning process, from which they have created an online self-assessment platform for students and a guide for learning, studying and performing under stress.

From England, Guy Claxton is another author who has been done a great deal to draw attention to the role of virtues, dispositions, habits, mental qualities in learning and young people’s full development, through his books, articles, lectures, and his organization ([www.buildinglearningpower.co.uk](http://www.buildinglearningpower.co.uk)). In his book, *The Learning Powered School*, Claxton, Chambers, Powel and Lucas (2011) propose a taxonomy of 17 dispositions that act as muscles for learning, classifying them into four categories in their model, the *4 Rs of Learning Power*: Resilience, Resourcefulness, Reflectiveness, and Reciprocity. Another example that spans both research and scientific dissemination is the book by Tough (2013), *How Children Succeed: Grit, Curiosity and the Hidden Power of Character*, which has had significant repercussions in scientific and social spheres, and even in the educational policy of the US (Costa & Kallick, 2014).

Undoubtedly, this rebirth of interest in non-cognitive factors has been highly fostered by important lines of research with a long tradition, such as research from Project Zero at Harvard's Graduate School of Education, on *dispositions of thought* and *intellectual character* (Perkins & Tishman, 2001; Ritchhart, 2001), contributions from Costa and Kallich (2000 & 2014) on the *16 habits of the mind*, research in the field of self-regulated learning on the *affective-motivational-volitional (will)* dimension, and studies on motivational and volitional control strategies (Wolters, 2003; González-Torres, 2012). Elsewhere, the long research tradition on resilience and its optimistic view that every individual has possibilities of successfully facing adversity, has joined forces with Positive Psychology and its research studies, objectives and goals (Chung, 2011; Masten, 2004; Vargas & González-Torres; Yates, 2009). Chung (2011) indicates that the virtues and character strengths proposed by Positive Psychology may be the basis of resilience.

#### *Resilience and its relevance to the general educational context, and particularly at university*

Resilience is a complex construct. It is not a new reality; scientific research from the sphere of psychology began to appear in the 1950s, and initial findings were presented in the 1980s (Smith Osborne, 2007).

The different definitions of resilience underscore that it is the skill, or rather, the processes that enable individuals to successfully face stressful or adverse events in life in such a way that they grow in the process, becoming more competent (enrichment of resilient qualities or protection factors) and better adapted (Artuch, 2013; Luthar, Cicchetti & Becker, 2000; Luthar, Sawyer & Brown, 2006). In order to speak of resilience, then, Masten and Coatsworth (1998) remind us that these two aspects are necessary: the presence of a threat, risk or adversity in the individual's life, and 2) a positive evaluation of his or her adaptation in the face of that risk or adversity.

The educational value of resilience is enormous in that it encourages pedagogical optimism. As research has shown, this is not the exclusive domain of a few "invincible, invulnerable persons" as was thought during the first phase of research on this construct (Werner & Smith, 1982); instead, we are all *robust-yet-fragile*, RYF (Zolli & Healy, 2012). Masten (2001) refers to resilience as "ordinary magic". The study of resilience in the educational sphere, and especially in regard to children and adolescents, has increased in recent years (Artuch, 2013; Doll, Zucker & Brehm, 2014; Goldstein & Brooks, 2013;

González-Torres, 2011; Jordan, 2010, Martin & Marsh, 2006; Prince-Embury & Saklofske, 2013; Waxman, Gray & Padrón, 2003).

Given that resilience is not the special quality of a few individuals, but we all have the potential to be resilient, much research has been dedicated to understanding the internal and external protection factors that favor resilience. One well-known list of protection factors in the educational context was proposed by Benard (1991). This author's studies, corroborated by many others (Artuch, 2013), found that at-risk children and youths who were resilient showed the following internal characteristics: social competence (flexibility, empathy, caring, communication skills, sense of humor); problem-solving skills (planning, help-seeking, critical and creative thinking), autonomy (sense of identity, self-efficacy, self-awareness, sense of mastery and distancing themselves from negative messages and conditions), a sense of purpose and belief in a positive future (educational aspirations, optimism, faith and spiritual connection). As external protection factors, she indicated: the care and affective involvement of adults, high expectations and community participation and contribution.

Werner (2007) suggests that the protection factors of resilience seem to be universal throughout all cultures, races and socioeconomic strata; however, since it is more of a process than a trait, the effectiveness of these factors and the behavior and resilient response are specific. For example, a resilient response given by adolescents may vary, as Fergus and Zimmerman (2005) indicate, depending on the type of risk factors they are facing, how these factors are interpreted, their place of residence (urban/rural setting), which stage of adolescence they are in, whether male or female.

Patterson (2002) recognizes that, with the proliferation of research studies on resilience and their applications to practice, a certain confusion has arisen regarding its definition and deciding on who is resilient, which depends on the nature and extent of what one considers to be an adverse or risk situation. This author distinguishes two perspectives on resilience. From one perspective, exposure to high risk situations (involving *significant risk*) would be a prerequisite to being considered resilient, if one's adaptation is positive; from another perspective, the term could be applied to all who develop strengths and function competently in many life circumstances, given that life in generally is already sufficiently challenging so as to create exposure to risk (*life-as-risk perspective*).



While research in the field of education initially focused on studying high risk students (e.g., risk of failure and social exclusion; children with severe disabilities or learning problems; children in very adverse family or social situations), the second view, indicated by Patterson, seems to have taken the lead in this controversy (Martin & Marsh, 2008). From this perspective, a traumatic event is not a necessary requirement for resilient behavior (Davino, 2013). Thus, we can speak of resilience when facing the challenges that are typical of different moments in human development (e.g., transitions from childhood to puberty and youth), and challenges that are found in school or university learning.

As indicated, there is plentiful research on resilience in children and adolescents, but studies with a university population are still rare (Davino, 2013; Hassim, Strydom & Stridom, 2013; Johnson, 2011; McCann & Hicks, 2011; McLafferty, Mallet & McCauley, 2012; Munro & Pooley, 2009; Prynyapol, 2003; Terzi, 2013); and yet, university life is an important context of stress, where students face many changes and challenges different from other groups (Steinhart & Dolbier, 2008), all of which may create vulnerability and affect their adaptation and academic success (De la Fuente, 2014a and 2014b). Thus, in addition to the challenges of transitioning from adolescence to early adulthood (the struggle for greater independence, shaping one's personal and professional identity, moving forward in one's search for meaning in life), they have to adapt to new structures and a culture with very different academic and social demands from what they had been accustomed to. They must face a set of very diverse stressors: intrapersonal (changes in sleeping and eating habits, new responsibilities), interpersonal (social activities, romantic relationships and their conflicts), academic (exams, excessive class load, study, labwork), and environmental (university facilities, problems with ICTs) (Davino, 2013; Dziegielwski, Turnage & Roest-Marti, 2004; Ross, Niebling & Heckert, 1999; Steinhart & Dolbier, 2008).

### *Resilience and coping in the university setting*

It has been suggested that adjustment and academic success at university require high levels of resilience (Munro & Pooley, 2009) and therefore, more attention is being given to the study of factors that protect and help foster resilience throughout university life (De la Fuente, Cardelle-Elawar, Matinez-Vicente, Zapata & Peralta, 2013).

Many internal protection factors of resilience have been indicated; among these we wish to highlight its close connection with coping strategies (Glennie, 2010; Guttman &

Shoon, 2013). Few studies have investigated the relations between coping styles and resilience in a university population (De la Fuente, Cardelle-Elawar, Martínez-Vicente, Zapata & Peralta, 2013; Orozco, 2007; Li, *in press*; Terzi, 2013).

On the other hand, there is still little known about how the “campus climate” (Orozco; 2007; Terzi, 2013) and gender differences influenced by cultural and socialization processes lead to differences in indicators of resilience and coping, although the literature has postulated that resilience is a multi-dimensional, specific characteristic that varies as a function of population characteristics, the type of content, age, gender, context, stage of development and other variables (Connor, Davidson & Lee, 2003; De la Fuente & colls. 2013; Fergus & Zimmerman, 2005; Luthar, Cicchetti & Becker, 2000; Werner, 2007; Zolkoski & Bullock, 2012). Whereas men and women share many environmental influences, they are socialized along different patterns that may affect how they address stressful experiences, and their use of coping resources (Johnson, 2011).

*Coping* and *resilience* have been used interchangeably although they are different constructs: *resilience* refers to positive results in response to a stressful situation while *coping* has to do with the strategies used for managing the effects of a stressful situation (Glennie, 2010; Guttman & Shoon, 2013; Orozco, 2007). According to Lazarus and Folkman (1984), coping responses are the cognitive and behavioral efforts that individuals use in order to master, tolerate or reduce the effects of stressful life events. The literature distinguishes two types of coping: *problem-focused* and *emotion-focused*, although this distinction has been questioned (De la Fuente & colls., 2013). In problem-focused (or active) coping, which may be cognitive or behavioral, individuals attempt to manage or modify the sources of stress, and this includes establishing a plan of action, looking for new resources, seeking help, reappraising the meaning of a failure, and so on. In emotion-focused coping, the individual uses strategies to manage or reduce his or her emotional distress associated with the stressful situation. People tend to make more use of problem-focused strategies when the situation is perceived to be changeable, and more use of the emotion-focused when it is perceived as unchangeable (Peralta, 2013).

In the limited literature related to resilience and coping in the university setting, studies indicate that resilience is significantly related to the use of active (problem-focused) coping, that emotion-focused coping is more associated with high levels of stress, and that the

avoidance style is most characteristic of non-resilient students (De la Fuente & colls. 2013; Li, 2008, Li, *in press*; Orozco, 2007; Sagone & De Caroli, 2014; Steinhart & Dolbier, 2008; Terzi, 2013). However, it has also been noted that there is no single coping style that is functional and effective in all situations (Orozco, 2007). Elsewhere, Campbell-Sills, Cohan, and Stein (2006) found that both emotion-focused and problem-focused strategies were significant predictors of resilience.

Gender differences in resilience and coping have been studied more in compulsory secondary education, and less in primary education or at university (De la Fuente & colls., 2013). Regarding gender differences in coping, results are inconsistent (Zapata, 2013). Some find no differences (McLafferty, Mallet & McCauley, 2012), while other studies indicate that there are no clear, general differences, but that girls seem to make more use of problem-focused coping strategies (De la Fuente & colls., 2013; Zapata, 2013). Other studies find differences indicating that girls tend to make more use of seeking social support and emotion-focused strategies, such as communicating their feelings (Sagone & De Caroli, 2014).

On the other hand, there are studies indicating that women show higher levels of stress and lower levels of resilience than men (Li, 2008; Li, *in press*; Johnson, 2010; McLafferty & colls., 2012). However, other studies find no general gender differences (De la fuente & colls., 2013; Leary & DeRosier, 2012; McLafferty, Mallet & McCauley, 2012). As we see, results are inconsistent and more research is required.

### *Objectives and hypotheses*

The purpose of this study was to examine resilience in the context of higher education and its relationship to coping strategies. Data will be presented that confirms the relationship between persons' resilient capability and their coping strategies in stressful life situations, in this case, in the university context. Toward this end, we wish to observe: a) the general coping strategies and resilience profile of our sample; b) the relationship between resilience and its factors and the two types of coping strategies; c) the effect of context variables such as the *type of university* (public secular vs. private religious) (IV) and personal variables such as *gender* (male, female) (IV) on resilience (DV) and on strategies for coping with stress (DV). Consequently, the hypotheses of this study were:

H1: Students' will have a medium score in resilience and coping strategies, as in studies carried out with similar populations. H2: Problem-focused coping strategies will have a positive, significant relationship with the resilience scale, given that *coping* forms part of the array of resilience protection factors, as indicated in former research. H3: There will be an effect from gender and from university type on resilience and coping strategies that students adopt in different situations of academic stress.

## Method

### *Participants*

Out of a total of 176, the final sample consisted of 117 students, who correctly completed all the scales. The students came from one secular university (66.7%; n=78) and another religious university (33.3%; n=39), from the first years of undergraduate programs in Education and Psychology. Participants' mean age was 20.55 (SD=4.52), with a range of 18-60 years, though most students were 19- and 20-year-olds (56.4%). The participants included women (62.4%; n=73) and men (33.3%; n=39) who were taking courses in Educational Psychology at the respective universities.

### *Instruments*

Resilience was assessed with the *CD-RISC Scale* (Connor & Davidson, 2003) in its Spanish translation (Bobes, Bascarán, García-Portilla, Bousoño, Saiz, Wallace & Hidalgo, 2001 and 2008). This scale, one of the most common in studies on resilience (Windle, Bennett & Noyes, 2011) contains 25 items structured in a Likert-type, summative scale composed of 5 factors: F1: tenacity and personal competence, F2: confidence in one's intuition and tolerance to stress, F3: positive acceptance of change, F4: perceived control and F5: spirituality. The questionnaire presents a *Cronbach alpha* reliability of .89.

Coping strategies were assessed with the *Escala de Estrategias de Coping, EEC* [Coping Strategies Scale] (Chorot & Sandín, 1993), in its version adapted for university students and professional examination candidates (De la Fuente, 1994, 2011). The scale is based on the Lazarus and Folkman model (1984), and was adapted to measure university students' coping strategies in stressful situations. It comprises a total of 90 items grouped into 13 factors that are structured in two dimensions: *emotion-focused strategies*, containing 7

factors – F1. Fantasy distraction; F4. Religious support; F6. Help for taking action; F7. Reducing anxiety and avoidance; F8. Preparing oneself for the worst; F9. Emotional venting and isolation; F11. Resigned acceptance – and *problem-focused strategies*, containing 6 factors – F2. Help seeking; F3. Actions directed at the causes; F5. Self-instructions; F10. Positive reappraisal and firmness; F12. Communicating one's feelings and social support; F13. Seeking alternative reinforcement. The complete scale obtained a reliability of 0.93 (*Cronbach alpha*).

### *Procedure*

The students, whose participation was voluntary and who were guaranteed confidentiality of their answers, completed the tests through an online platform called *e-Coping with Academic Stress* (de la Fuente, 2014) and on paper. Data was collected during the 2013-2014 academic year.

This study forms part of the R&D Project *Motivational-affective strategies of personal self-regulation and coping with stress in the teaching-learning process at university (EDU2011-24805)*, such that students were administered other tests in addition to those described in this article.

### *Data analysis*

An ex post-facto design was used. Association analyses with Pearson bivariate correlations were performed, as well as univariate ANOVAS and multivariate MANOVAs, with Scheffé post hoc and effect size. The analyses for meeting the proposed objectives and for testing the hypotheses were performed using statistical package SPSS version 21.0 for Windows.

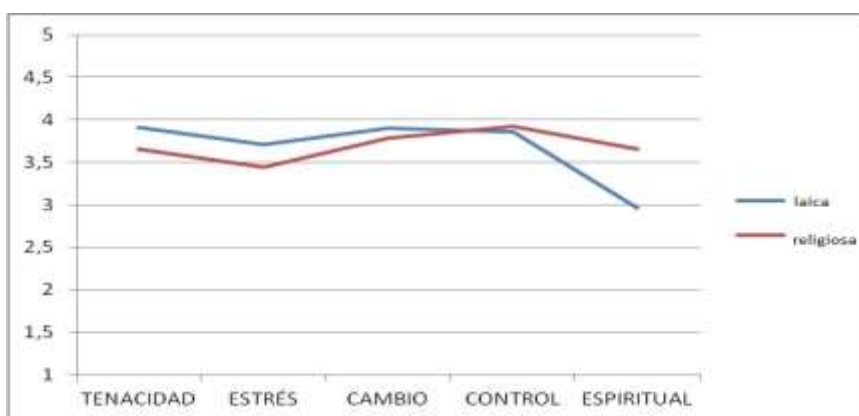
## **Results**

### *Profile of coping strategies and resilience in university students*

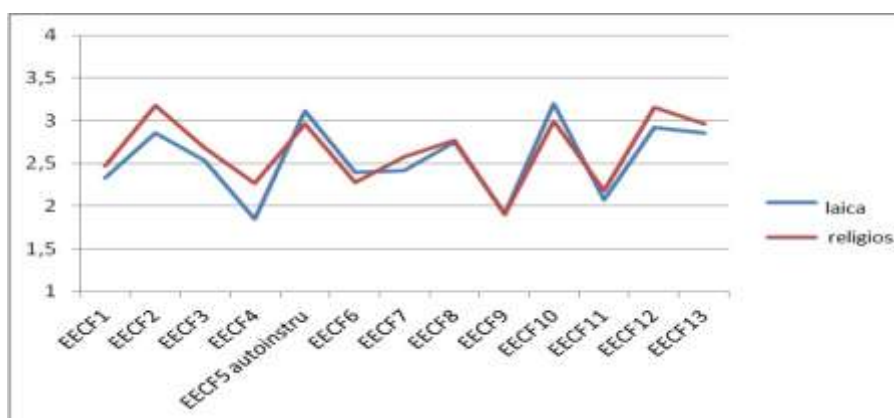
The mean total score on the resilience scale was  $M=3.67$  ( $SD=0.43$ ) out of 5, while the means of the emotion-focused coping and problem-focused coping dimensions were  $M=2.28$  ( $SD=0.33$ ) and  $M=2.93$  ( $SD=0.37$ ), out of 4, respectively.

In the resilience scale, higher scores were observed in the *control* and *change* factors, for which we found significantly higher scores than for the *spirituality* factor [ $t(116)=32.137, p<0.001$ ] (See Figure 1).

For the total sample of students, the factors from the EEC coping scale (see Figure 2) that received the highest scores were *positive reappraisal and firmness* and *self-instructions*. These two factors were significantly greater than the factors of *emotional venting* [ $t(116)=53.120, p<0.001$ ] and *religious support* [ $t(116)=, p<0.001$ ], which received the lowest scores. One can recognize a greater use of problem-focused coping strategies as compared to emotion-focused strategies.



**Figure 1. Resilience profile of students from the secular university and the religious university**



**Figure 2. Coping strategy profile of students from the secular university and the religious university**

*Relationship between resilience and coping strategies*

A significant, positive relationship was observed at the level  $p < .001$  between *problem-focused coping strategies* and *resilience*, except in the *spirituality* factor of the resilience scale, where a stronger relationship was found with *emotion-focused coping*.

The relationship between the religious support and spiritual factors on the two scales was the highest ( $r = .633$ ,  $p < .001$ ), followed by the factors *positive reappraisal and firmness* and *tenacity* ( $r = .535$ ,  $p < .001$ ).

All the factors of resilience (tenacity, stress, change and control), with the exception of the spiritual factor, had a positive, significant correlation with the factors *self-instructions* and *positive reappraisal and firmness*, which represent problem-focused coping (See Table 1).

**Table 1. Relationship between resilience factors and coping factors**

	TENACITY	STRESS	CHANGE	CONTROL
Self-instructions	.456**	.304**	.320**	.335**
Positive reappraisal and firmness	.535**	.437**	.286**	.323**

*Interaction between resilience and gender x university type*

The MANOVA results carried out between the total resilience score and the interaction *gender x university type* reveal that for this sample, there was no joint effect from the two independent variables on the global resilience score (DV). Neither was any effect from *gender* or *university type* observed on the global resilience score.

*Gender* was not found to have an effect on any of the resilience factors. However, an effect from *university type* (secular-religious) was observed on certain factors related to resilience, such as *tenacity* [ $F(1, 113) = 4916$ ,  $p < 0.05$ ,  $\eta^2 = .042$ ] and *spirituality* [ $F(1, 113) = 10059$ ,  $p < 0.005$ ,  $\eta^2 = .082$ ] (See Table 2).

**Table 2. Descriptive statistics of factors from the resilience scale**

FACTORS							
F. Tenacity			F. Spiritual				
	Secular	Religious	Total		Secular	Religious	Total
Man	3.95 (.66)	3.45 (.73)	3.90 (.68)	Man	2.79 (1.19)	4.10 (.82)	2.92 (1.22)
Woman	3.86 (.50)	3.68 (.49)	3.77 (.50)	Woman	3.17 (.92)	3.58 (.87)	3.38 (.91)
Total	3.91 (.59)	3.65 (.52)		Total	2.96 (1.09)	3.65 (.87)	

*Interaction between coping strategies and gender x university type*

The MANOVA performed between *university type* and *gender* and the two dimensions of *coping strategies* revealed an interaction effect of *university type x gender* on the dimension of *problem-focused coping strategies* [ $F(1, 113) = 6181, p = 0.014, \eta^2 = .052$ ].

An effect of the *gender* variable on the dimension *problem-focused coping strategies* was also observed [ $F(1, 113) = 22785, p < 0.001, \eta^2 = .168$ ] in favor of the women. An effect of *university type* (secular/religious) was observed on the dimension *problem-focused strategies* [ $F(1, 113) = 4110, p < 0.05, \eta^2 = .035$ ]. (See Table 3).

**Table 3. Descriptive statistics for university type and gender on the dimension problem-focused coping.**

Dimension: Problem-focused coping			
	<i>Secular</i>	<i>Religious</i>	<i>Total</i>
Man	2.82 (.40)	2.40 (.43)	2.77 (.41)
Woman	3.03 (.29)	3.07 (.30)	3.05 (.29)
Total	2.91 (.37)	2.98 (.39)	

An effect of *university type x gender* was detected on the factors of *action directed toward the causes* [ $F(1, 113) = 5133, p < 0.05, \eta^2 = .043$ ] and *seeking alternative reinforcement* [ $F(1, 113) = 6542, p < 0.05, \eta^2 = .055$ ]. There was also a *gender* effect on the factors *help-seeking* [ $F(1, 113) = 15029, p < 0.001, \eta^2 = .117$ ], *action directed at the causes* [ $F(1, 113) = 20567, p < 0.001, \eta^2 = .154$ ], *self-instructions* [ $F(1, 113) = 5177, p < 0.05, \eta^2 = .044$ ], *help for taking action*, [ $F(1, 113) = 6225, p < 0.05, \eta^2 = .052$ ], *preparing oneself for the worst* [ $F(1, 113) = 5158, p < 0.05, \eta^2 = .044$ ], *communicating feelings and social support* [ $F(1, 113) = 18708, p < 0.001, \eta^2 = .142$ ], and *seeking alternative reinforcement* [ $F(1, 113) = 8498, p < 0.005, \eta^2 = .070$ ].

Finally, *university type* (secular-religious) has an effect on certain factors related to coping strategies, such as *religious support* [ $F(1, 113) = 6452, p < 0.05, \eta^2 = .054$ ], *self-instructions* [ $F(1, 113) = 6873, p < 0.05, \eta^2 = .057$ ], *help for taking action* [ $F(1, 113) = 6105, p < 0.05, \eta^2 = .051$ ], and *positive reappraisal and firmness* [ $F(1, 113) = 8297, p < 0.005, \eta^2 = .068$ ]. In Table 4 we can observe the means for both genders and both university types (secular-religious).



**Table 4. Descriptive statistics of factors from the coping scale**

FACTORS				FACTORS			
F. Help seeking				F. Action directed at the causes			
	Secular	Religious	Total		Secular	Religious	Total
Man	2.67 (.74)	2.40 (.74)	2.64 (.74)	Man	2.42 (.39)	2.03 (.24)	2.38 (.40)
Woman	3.10 (.57)	3.28 (.53)	3.19 (.55)	Woman	2.67 (.46)	2.77 (.37)	2.72 (.42)
Total	2.85 (.70)	3.17 (.62)		Total	2.53 (.44)	2.67 (.43)	
F. Religious support				F. Self-instructions			
	Secular	Religious	Total		Secular	Religious	Total
Man	1.86 (.65)	2.36 (.95)	1.91 (.69)	Man	3.05 (.45)	2.62 (.57)	3 (.47)
Woman	1.82 (.63)	2.24 (.71)	2.03 (.70)	Woman	3.18 (.36)	3.01 (.42)	3.09 (.40)
Total	1.84 (.64)	2.26 (.73)		Total	3.10 (.42)	2.96 (.46)	
F. Help for taking action				F. Preparing oneself for the worst			
	Secular	Religious	Total		Secular	Religious	Total
Man	2.34 (.51)	1.76 (.36)	2.28 (.52)	Man	2.72 (.43)	2.33 (.42)	2.68 (.44)
Woman	2.45 (.50)	2.34 (.56)	2.40 (.53)	Woman	2.78 (.52)	2.83 (.42)	2.80 (.47)
Total	2.39 (.50)	2.27 (.57)		Total	2.75 (.47)	2.76 (.45)	
F. Positive reappraisal and firmness				F. Communicating feelings and social support			
	Secular	Religious	Total		Secular	Religious	Total
Man	3.22 (.51)	2.67 (.43)	3.16 (.52)	Man	2.71 (.75)	2.24 (.51)	2.66 (.74)
Woman	3.16 (.41)	3.04 (.35)	3.10 (.38)	Woman	3.19 (.61)	3.29 (.61)	3.24 (.61)
Total	3.19 (.46)	2.99 (.37)		Total	2.92 (.73)	3.15 (.69)	
F. Seeking alternative reinforcement							
	Secular	Religious	Total				
Man	2.84 (.38)	2.45 (.77)	2.80 (.44)				
Woman	2.88 (.42)	3.04 (.33)	2.96 (.38)				
Total	2.86 (.39)	2.96 (.44)					

## Discussion

The results allowed us to meet our objectives and verify the research hypotheses. As proposed, we described the students' profile in resilience and coping strategies. We underscore that the total sample of students had a medium-high score in overall resilience (Miller, 1995; Rodríguez & Valdivieso, 2008), excelling in aspects such as *perceived control*, where they believe that they can be the ones who control situations, and *change* related to the possibility of establishing relationships that will be supportive and flexible for adapting to new situations. As for the profile of coping strategies, the total sample of students showed a preference for using *problem-focused strategies* as compared to strategies focused more on the emotional aspect (*external locus*) in coping with problems. These aspects are positive, in that they encourage searching for solutions and taking responsibility to solve problems,

thereby encouraging the development of autonomy and awareness in the face of stressful situations.

We accept the *second hypothesis* for which we considered that *problem-focused strategies* would have a positive, significant relationship with the resilience scale, given that, as the research has indicated (De la Fuente & colls., 2013; Orozco, 2007), *coping strategies* are part of an array of resilience protection factors.

We partially accept the *third hypothesis*, given that the two variables *university type x gender* showed no effect on students' resilience in this sample, but their effect was found on the *problem-focused coping strategy* dimension, where the *women* in our sample who studied at a religious-type university were strongest in the use of this type of strategy. We also found a joint effect of the two variables (*university x gender*) on certain factors of coping strategies, such as *action directed at the causes*, and *seeking alternative reinforcement*, where once again the women who study at a religious university were the ones who use these two aspects in stressful situations.

As for the effect of *gender*, we partially accept the hypothesis proposed. We found no gender effect on the global resilience score (De la Fuente & colls., 2013; McLafferty, Mallet & McCauley, 2012), nor on any of its five factors. We only observed a gender effect on the *problem-focused coping strategy* dimension and on some factors of the coping scale, where women held the advantage over men in the following aspects: seeking help to solve problems, expressing their feelings, analyzing the causes and possible consequences, learning from past situations, establishing action plans and steps to take, seeking help from a professional, preparing oneself for the worst, communicating how one feels, and seeking alternative reinforcement. As for the factors, the *men* were made more use of the strategy of *positive reappraisal and firmness*, while women used the strategies indicated above more than men.

Regarding the effect of *university type*, we accept the hypothesis proposed, given that effects were observed in resilience and in the type of coping strategies used. For resilience, we observed an effect on the factors *tenacity* and *spirituality*, where we note that students from the secular university held the advantage in the former, while students from the religious university held the advantage in the latter, as expected. In relation to coping strategies, we observed an effect of university type on *problem-focused strategies*, where students from the

*religious university* scored higher in the use of this type of strategy. As for the factors, we also note that students from the *religious university* scored higher in *religious support* (example items: they trust that God will remedy the problem situation, they pray when they have problems, they have faith that things will change), while students at the *secular university* scored higher in items such as analyzing the causes of the problem and possible consequences, learning from similar situations, seeking help and counsel to solve problems, and seeing the positive side when they find themselves in stressful situations.

## Conclusions

In the framework of the expanding literature that emphasizes the role of non-cognitive factors in academic performance and persistence (Leary & DeRosier, 2012), studies on resilience at university are clearly of interest (Munro & Pooley, 2009). This study is a small contribution to the limited research that addresses resilience and coping in the stressful context of university.

Findings from this study indicate that resilience and coping strategies are related constructs, as one would expect, and the relationship is stronger with active coping strategies, revealing this to be an adaptive pattern within the university context (De la Fuente & colls. 2013; Li, *in press*; Terzi, 2013).

This pilot study indicates that certain variations in the profile of perceived resilience and coping strategies are found as a function of the type of university one attends and as a function of gender, thereby confirming the specificity of the constructs analyzed, in line with what is indicated in the literature (Fergus & Zimmerman, 2005). It would be helpful to consider designing intervention programs (McLafferty & colls., 2009), in particular with respect to men, who show less use of problem-focused coping strategies. The differences found in the spirituality factors of the two constructs analyzed as a function of university type (secular-religious) also has its interest, and could be studied more in depth in future research, given the growing attention to spirituality as a resilience protection factor (Davino, 2013; Foy, Drescher, Watson, 2011; Pargament, Cummings, 2010; Smith, Webber & DeFrain, 2013).

In summary, the findings suggest that the scales used are consistent and can be used for improving our understanding of this population, and for helping students to become aware of and identify their strengths, and to develop resources that protect against stressful situations. On the other hand, both the scales and the results obtained will be useful for

universities that wish to incorporate an examination of non-cognitive variables in their admission processes, as is already being done at certain universities such as Notre Dame (USA), which uses measures of resilience and others (OnlineSchools.org, 2014). They are useful, moreover, in guiding universities' educational, preventive and intervention efforts for the sake of helping all students make a good transition and adjustment to this context which is so decisive for their future life (Chung, 2011; Davino, 2013; De la Fuente & colls., *in review*; Hassim & colls., 2013; McCann & Hicks, 2011; Orozco, 2007; Prinyapol, 2003; Steinhardt & Dolbier, 2008; Terzi, 2013).

Nonetheless, this study is not free of limitations, most notably, the small sample size; the statistical analyses used, which, despite their value, they do not allow us to establish cause-effect relationships between the constructs examined; and the typical problems of self-report scales, which are based on subjective perception with its biases. The results may not be generalized to the university population, but they do point to significant tendencies that would be useful to examine with a methodological system and a larger sample.

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