

Emotional intelligence, resilience and personality traits neuroticism and extraversion: predictive capacity in perceived academic efficacy[☆]

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ABSTRACT

Background: Recent studies have shown the importance of promoting emotional intelligence and resilience, as well as knowing the personality (extraversion versus emotional instability or neuroticism) in both nursing students and nursing professionals, for better academic adherence, due to stressful situations derived from high academic and attendance requirements for healthcare practices in clinical settings. However, there is little research that analyzes the importance of the perceived academic effectiveness of university students and its relationship with the psychological variables of resilience, emotional intelligence and personality.

Objective: To analyse the relationships between perceived academic efficacy, emotional intelligence (EI), resilience and the personality factors of emotional instability and extraversion, as well as to observe the variables that predict perceived academic efficacy.

Materials and methods: Cross-sectional study on a sample of 434 nursing students in Valencia (Spain) aged 17–54 (M = 21; SD = 0.320). They filled in standard tests on perceived academic efficacy, EI, resilience, emotional instability and extraversion.

Results: Perceived academic efficacy is closely and positively related to EI and resilience; and to a lesser extent to emotional instability, but negatively. The academic efficacy predictor variables were EI (global trait, well-being and sociability), resilience (social support and emotional regulation) and emotional instability (R^2 of 0.201).

Conclusions: Perceived academic efficacy is fundamentally related to EI and resilience positively, and to a lesser extent to emotional instability negatively, fundamentally via these factors: global trait, social support, well-being, problem-solving capacity. Nursing students' perception of academic efficacy is relevant for building professional skills and carrying out the nurse's role in organisations. So, it is necessary to promote training programs to increase the emotional intelligence and resilience of nursing students, aimed at promoting competence in professional practice.

1. Introduction

People who experience greater feelings of efficacy are more ready to tackle complex tasks successfully, on seeing them as a challenge to overcome (Bandura, 2001). Such people tend to show greater confidence in themselves, as well as getting more involved in the learning and having better academic achievements. Self-efficacy is a dynamic, learned construct that is gradually built up over the course of experience and manifests itself in situations that involve a challenge that can be overcome with effort (Bandura, 2001). Therefore, self-efficacy is a good predictor of personal adaptation and health (Schmitt, 2008).

For educational organisations, to have students who are committed to academic work is encouraging because such students tend to show greater levels of motivation for achievement and of academic success (Bandura, 2001). This study aims to analyse perceived academic efficacy's relationships with neuroticism, extroversion, emotional intelligence (EI) and resilience, as well as observing the weight of each of these factors on perceived academic efficacy in nursing students.

1.1. Emotional instability, extraversion and perceived academic efficacy

Some researchers make a distinction between superficial or central

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personality traits and expressions of personality (McCrae and Costa, 2008). The central traits represent essential factors of human personality. They are stable and not very sensitive to environmental influences. These are “the big five”, which include emotional instability or neuroticism and extraversion (Allik et al., 2017). Said central structures help predict specific behaviours such as academic achievement and health (Costa et al., 2019; McCrae and Costa, 2008). Although these central personality traits are consistent, rather stable and change little, it has been demonstrated that they undergo variations as of adolescence (De Fruyt and Karevold, 2021) into adulthood. For example, emotional stability, extraversion, openness and conscientiousness tend to increase (Durbin et al., 2016).

Emotional instability or neuroticism is related to personal anguish arising from inefficient problem-solving strategies and to negation or emotional hyperventilation (Clarck and Ro, 2014). The more emotionally unstable people are, have a negative impact on academic achievement (Bhagat et al., 2016).

Self-evaluation of efficacy is considered a superficial personality trait, however it is altered by environmental influences. It is a stimulus to focus effort (Bandura, 2001). So, perceived efficacy and competence are seen as predictors of students' goals to be achieved because they largely determine their expectations of success (Schmitt, 2008).

Neuroticism and extraversion, however, are not conclusively connected to perceived academic efficacy. Firstly, neuroticism and extraversion predict negative or positive effects on emotional well-being in the long-term (Afshar et al., 2015; Clarck and Ro, 2014) and on self-efficacy; extroverts give higher values for self-efficacy and neurotic people lower ones (Ustuna, 2017). People with high levels of neuroticism tend to behave impulsively without thinking twice, which has a negative effect on their academic achievements. Secondly, extroverts tend to handle emotions better by seeking social support (Afshar et al., 2015). However, according to Smidt (2015) academic achievement is negatively related to extraversion and neuroticism.

Some researchers observed a non-linear trajectory in emotional stability-instability and in self-efficacy (Caprara et al., 2013). All in all, it seems that emotional stability and self-efficacy are psychological factors that predict academic achievements. Indeed, Schmitt (2008) showed that the connection between emotional stability and self-efficacy seems to be decisive in academic performance, especially among women. Women tend to have higher levels of neuroticism and social support (Rogers et al., 2018).

1.2. Emotional intelligence, resilience and perceived academic efficacy

EI refers to a great variety of emotional self-perceptions in the lower levels of the personality hierarchy (Cooper and Petrides, 2010). It refers to the people's self-evaluation as regards their ability to understand and handle their own emotions and those of others. One could consider it to be a personality trait or skill. EI has been related to academic achievements (Foster et al., 2017), though other studies have not managed to confirm relationships between the two (Beauvais et al., 2014). However, the work by Foster et al. (2017) did reveal a connection between EI and resilience that would contribute to academic success.

Resilience is defined as an individual, dynamic process by which individuals acquire personal factors that protect them from adverse, stressful situations and which foster positive adaptation to one's surroundings (Masten, 2016). Resilience is especially important in nursing studies because it helps students to control stressful situations arising from work experience in situ as of the first years of study (Cleary et al., 2018). Nursing also requires teamwork and to interact with patients and their families. This is why some authors have recommended resilience programmes to be included in nursing studies (Delgado et al., 2017).

Resilience has been associated with competence and personal well-being, and with EI in the Spanish and United States' populations (Sarrionandia et al., 2018). People that show an ability to perceive, assimilate and handle their own emotions and those of others tend to show

high levels of resilience and are more prepared to confront daily demands (Benson et al., 2010). In this vein, some studies have found a significant positive association between resilience and academic results (Droppert et al., 2019).

Next, the following flowchart summarizes the main findings found in the literature about the study variables (Graph 1).

1.3. Objectives and hypotheses

The following objectives have been set:

1. To observe the differences in emotional instability according to the age of the nursing students.
2. To analyse the relationships between perceived academic efficacy, EI, resilience and personality among university nursing students.
3. To study the predictive capacities of EI, resilience, emotional instability and extraversion for perceived academic efficacy among university nursing students.

1.4. Hypotheses

Hypothesis 1. Significant differences are expected to be observed in emotional instability, extraversion, EI and resilience depending on age and sex.

Hypothesis 2. The perception of academic efficacy is positively related to extraversion and negatively to emotional instability. It is also positively related to EI factors and to resilience.

Hypothesis 3. It is expected that positive relationships will be obtained among the EI and resilience factors.

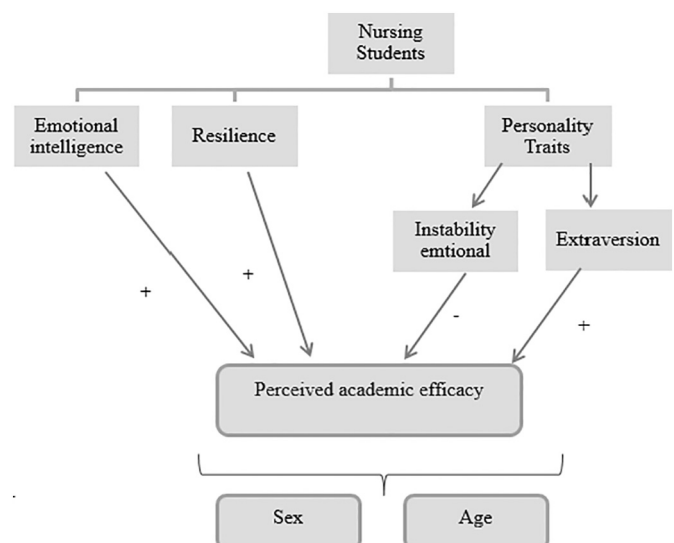
Hypothesis 4. Emotional instability and extraversion, together with EI and resilience, are factors that predict perceived academic efficacy. Among them, the greatest influence or weight is expected to come from resilience in perceived academic efficacy (Cleary et al., 2018; Delgado et al., 2017).

2. Materials and method

2.1. Structure of the study

2.1.1. Participants

There were 434 students in their first year of a degree in nursing in



Graph 1. Flowchart on the literature reviewed.

the metropolitan area of Valencia (Spain) who took part in the study (76% women and 24% men). The ages ranged between 17 and 54 years ($M = 21$; $SD = 0.320$); single 71.7% and married or living as a couple 23.3%. There were 59% studying in a private university and 41% in a public university. According to the [Hollingshead Index \(2011\)](#), 25% belong to the upper social class, 16.6% upper-middle, 36.2% middle and 22.2% middle-to-low.

2.1.2. Procedure

Before carrying out the evaluation, permission was obtained from the institutions and then from the students who study there. This was accompanied by the informed consent forms.

The evaluation used a cross-sectional group study at the university itself, where students received instructions for the correct completion of self-reports. The evaluation sessions lasted 50 min. The questionnaire was disseminated by an expert person during class. This expert person was responsible for the administration and custody. The students were informed and were able to withdraw whenever they wanted, although there were no withdrawals or losses. Evaluation was voluntary, anonymous and confidential.

2.1.3. Ethical concerns

The ethical principles corresponding to research with human beings were observed (Declaration of Helsinki, 1964). The study was approved by the academic institution's ethics committee.

2.1.4. Instruments

The Trait Emotional Intelligence Questionnaire TEIQue-SF ([Cooper and Petrides, 2010](#)) evaluates the global trait EI and the factors of well-being, self-control, emotionality and sociability. Lickert Scale with 7 possible answers (1 = completely disagree; 7 = fully agree). Cronbach's alpha = 0.86 for the entire scale. Well-being evaluates the level of self-esteem and happiness ($\alpha = 0.79$). Self-control refers to impulsiveness and coping with stress ($\alpha = 0.65$). Emotionality evaluates the ability to perceive emotions and empathy ($\alpha = 0.65$). Sociability addresses assertiveness and emotional coping in the social environment ($\alpha = 0.64$). Lastly, the EI general trait addresses the capacity for adaptation and self-motivation ($\alpha = 0.66$).

Resilience Appraisal Scale ([Johnson et al., 2010](#)). This is made up of the factors of social support, emotion regulation and situational coping. The replies range from "1 = strongly disagree" to "5 = strongly agree". Social support evaluates the ability to resort to others; emotion regulation refers to the ability to deal with emotions, and situational coping addresses the use of strategies aimed at problem-solving. Cronbach's alpha was 0.88 for the global scale; 0.93 for the social support sub-scale; 0.92 for emotion regulation and 0.92 for situational coping.

Eysenck Personality Inventory ([Eysenck and Eysenck, 1964](#)). The questionnaire measured two factors of personality: the introversion-extraversion and neuroticism axis, and the emotional stability-instability axis. The replies are dichotomies using the forced choice technique (YES – NO). The questionnaire's internal consistency was $\alpha = 0.89$.

Perception of academic efficacy. The students evaluated the following matters on a scale of 1 to 10: 1) academic performance; 2) motivation and interest for the academic activities; 3) suitable pace of academic work; and 4) considering oneself to be a good student. Cronbach's alpha was 0.81. Results for goodness of fit: $\chi^2 = 60.414/16$, $p < 0.001$; NFI = 0.973; CFI = 0.980; TLI = 0.960; RMSEA = 0.076 (90% confidence interval 0.056–0.097). In this study, the replies were classified into three categories: high (scores from 8 to 10), medium (scores from 5 to 7) and low (scores from 1 to 4).

2.1.5. Data analysis

Firstly, a descriptive analysis was made and there were *t*-tests for sex and age. Age was classified into two sub-samples. One was made up of traditional students (17–24 years of age). The other contained students

of over 24 years of age. If a student begins their studies after 24 years of age, this indicates they began or took up their studies again after a period dedicated to tasks other than their studies. Such students usually start their studies or take them up again due to a conviction or because their job conditions encourage them to improve their academic level. They therefore take their studies more seriously. The variables of sex and age are dummy variables (0–1). In the case of sex, 1 = male, 0 = female. Age was classified as 1 = 17–24 years and 0 = 25 years or more. A Pearson's correlation analysis and a hierarchical regression analysis were carried out on the perceived academic self-efficacy as a criterion variable in order to observe the weight of the different categories of variables that acted as independent variables. To do so, the following were introduced: (i) personality variables (neuroticism and extraversion); (ii) EI factors (well-being, self-control, emotionality, sociability and global trait); (iii) emotional resilience variables (social support, emotional regulation abilities and problem-solving capacity); (iv) age and sex.

3. Results

[Table 1](#) shows that the students have a high perception of their academic self-efficacy (the mean of the items that make up this variable is 7.64 out of 10, with a SD of 0.86), as well as in EI factors and resilience, with scores above the mean values.

3.1. Differences in mean averages among the population: *t*-tests

In order to find if there are differences depending on sex and age, two Student's *t*-tests were carried out: one for sex and another for age.

As regards sex, there are significant differences in emotional instability ($t_{(432)} = -4.630$ $p = 0.000$), self-control ($t_{(432)} = 4.303$ $p = 0.000$), sociability ($t_{(432)} = 2.769$ $p = 0.006$), social support ($t_{(432)} = -2.367$ $p = 0.018$), emotion regulation ($t_{(432)} = 6.325$ $p = 0.000$) and problem-solving capacity ($t_{(432)} = 3.862$ $p = 0.000$). It should be noted with these results that the women's group obtained higher rates of emotional instability and search for social support. The men obtained significant scores that were higher in self-control, sociability, emotion regulation and problem-solving capacity ([Graph 2](#)).

By age, the results indicate that there are significant differences only in emotional instability ($t_{(432)} = 2.121$ $p = 0.035$) and problem-solving capacity ($t_{(432)} = -2.390$ $p = 0.017$). The rates of emotional instability decrease with age, whereas the problem-solving capacity increases. The other variables analysed did not show significant differences with age ([Graph 3](#)).

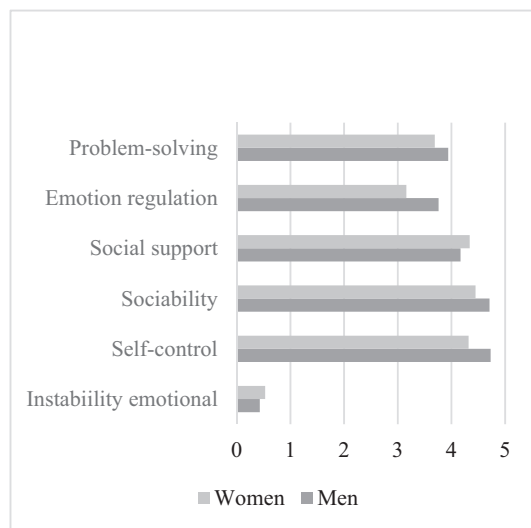
3.2. Correlation analysis among variables

The perceived academic efficacy obtained high correlations with the EI global trait and with social support, both cases positively ($r = 0.332$, $p < 0.01$ and $r = 0.305$, $p < 0.01$, respectively). After them, the indices

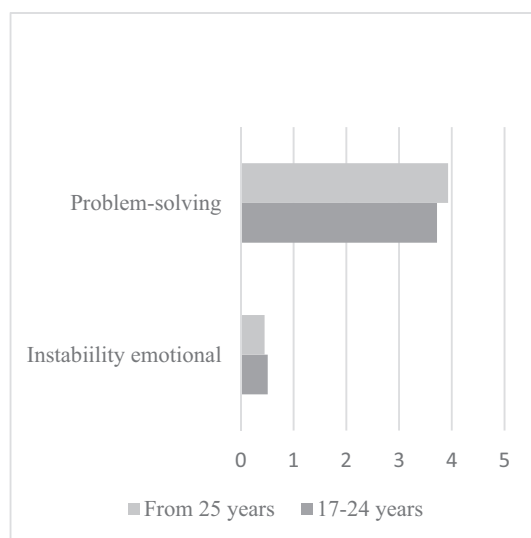
Table 1

Descriptive analyses of perceived academic efficacy, Personality, EI and resilience.

	M	SD	Kurtosis	Asymmetry
Perceived academic efficacy	7.64	0.86	0.233	−0.425
Personality				
Emotional instability	0.51	0.189	0.427	0.366
Extraversion	0.49	0.151	−0.053	−0.092
EI				
Well-being	5.37	0.950	0.525	−0.683
Self-control	4.41	0.865	−0.149	−0.247
Emotionality	5.29	0.779	−0.266	−0.218
Sociability	4.52	0.821	0.258	0.147
Global trait	5.02	0.950	−0.239	−0.118
Resilience				
Social support	4.30	0.642	1.564	−1.198
Emotion regulation	3.30	0.876	−0.081	−0.407
Situational coping	3.75	0.588	0.820	−0.431



Graph 2. Differences according to sex.



Graph 3. Differences according to age.

that follow are the correlations with well-being, problem-solving capacity and sociability ($r = 0.285$, $p < 0.01$; $r = 0.229$, $p < 0.01$ and $r = 0.205$, $p < 0.01$, respectively). With lower yet significant indices, there are the correlations with self-control, emotionality and emotional instability ($r = 0.169$, $p < 0.01$; $r = 0.167$, $p < 0.01$ and $r = -0.106$, $p < 0.05$). All of the relationships are positive except with emotional instability, where the correlations are negative. The perceived academic efficacy is not significantly related to sex or age (Table 2).

As for the personality factors, on one hand emotional instability is negatively correlated with EI factors and with resilience. The indices range between $r = -0.468$, $p < 0.01$ with well-being and $r = -0.186$, $p < 0.01$ with social support. With a correlation above 0.400, $p < 0.01$, there are the variables of self-control, global trait EI, emotion regulation and problem-solving. Emotional instability is also negatively related to sex, age and extraversion, although in these cases the correlations are low. Extraversion is related to well-being, and global trait EI to social support (Table 2).

The correlations between EI and resilience tend to be high (in some cases above 0.500; $p < 0.01$); for example, between self-control and emotion regulation ($r = 0.603$, $p < 0.01$) and between self-control and problem-solving capacity ($r = 0.518$, $p < 0.01$). The other correlations are lower, but significant at 0.01. The variable of sex is positively related to self-control and sociability at low yet significant levels ($r = 0.203$, $p < 0.01$; $r = 0.132$, $p < 0.01$, respectively, Table 2). However, age is not significantly related to the variables analysed, except for emotional instability positively and problem-solving negatively, whose relationships are very low ($r = 0.102$, $p < 0.05$; $r = -0.114$, $p < 0.05$).

3.3. Hierarchical regression analysis for perception of academic efficacy as the criterion variable

In order to find the weight of the variables in nursing students' perception of academic efficacy, a four-stage hierarchical regression analysis was carried out. First, the personality variables of emotional instability and extroversion were introduced, followed by EI, resilience, and lastly, age and sex (Table 3).

The results indicate that the variables analysed explain the 20.1% variance in the perceived academic efficacy ($R^2 = 0.201$). Out of these, EI obtained the greatest weight through well-being, sociability and global trait ($R^2 = 0.129$), followed by the three resilience variables (social support, emotion regulation and problem-solving) ($R^2 = 0.06$). Emotional instability was lowest with $R^2 = 0.011$. The variables of sex and age were not significant. The variance inflation factors (VIF) indicate that there were no problems of collinearity (Pardo and Ruiz, 2005).

Table 2
Correlation analysis of the variables studied.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Perception of academic efficacy	1											
2. Emotional instability	-0.106*	1										
3. Extraversion	0.011	-0.121*	1									
4. Well-being	0.285**	-0.468**	0.270**	1								
5. Self-control	0.169**	-0.471**	-0.087	0.439**	1							
6. Emotionality	0.167**	-0.324**	0.168**	0.485**	0.357**	1						
7. Sociability	0.205**	-0.245**	0.370**	0.310*	0.225	0.335**	1					
8. Global trait	0.332**	-0.404**	0.282**	0.680**	0.387**	0.516**	0.454**	1				
9. Social support	0.305**	-0.186**	0.134	0.337**	0.145**	0.322**	0.133**	0.299**	1			
10. Emotion regulation	0.027	-0.412**	-0.065	0.279**	0.603**	0.167**	0.150**	0.237**	0.025	1		
11. Problem-solving	0.229**	-0.430**	0.027	0.431**	0.518**	0.376**	0.312**	0.485**	0.232**	0.555**	1	
12. Sex	-0.011	-0.217**	0.065	0.044	0.203**	-0.010	0.132**	0.029	-0.113*	0.291**	0.183**	1
13. Age	-0.020	0.102*	0.064	0.036	-0.064	-0.039	0.030	-0.057	0.067	-0.042	-0.114*	-0.123*

* $P < 0.05$ (bilateral).

** $P < 0.01$ (bilateral).

Table 3
Hierarchical regression analysis for perception of academic efficacy.

		Non-standardised coefficients		Standardised coefficients	t	Sig.	VIF	R ²
		β	Dev. error	Beta				
Stage 1	Emotional instability	-0.489	0.221	-0.107	-2.210	0.028	1.015	0.011
	Extraversion	-0.014	0.277	-0.002	-0.049	0.961	1.015	
Stage 2	Well-being	0.147	0.060	0.163	2.431	0.015	2.217	0.140
	Self-control	0.013	0.056	0.013	0.234	0.815	1.563	
	Emotionality	-0.043	0.061	-0.039	-0.710	0.478**	1.489	
	Sociability	0.123	0.056	0.117	2.191	0.029	1.424	
	Global trait	0.228	0.061	0.252	3.728	0.000	2.265	
Stage 3	Social support	0.296	0.064	0.221	4.639	0.000	1.204	0.200
	Emotion regulation	-0.137	0.059	-0.139	-2.305	0.022	1.930	
	Situational coping	0.154	0.089	0.105	1.735	0.083	1.944	
Stage 4	Age	-0.058	0.119	-0.022	-0.489	0.625	1.069	0.201
	Sex	0.040	0.096	0.020	0.415	0.678	1.183	

4. Discussion

The objectives of this study are to analyse the relationships of perceived academic efficacy, emotional instability, extraversion, EI and resilience, as well as to observe the differences depending on sex and age, and to study the weight of the variables of personality, emotional instability and extraversion, EI, resilience, age and sex in predicting perceived academic efficacy.

As regards the first hypothesis (an increase in emotional instability with age), the results indicate that it decreases with age. Students aged 17 to 24 show the highest rates of emotional instability within the emotional stability-instability axis. Although some consider that personality traits vary little over a lifetime (McCrae and Costa, 2008), these results appear to be more in line with Roberts et al. (2006) on showing significant differences between age categories (17–20 years and 21–51 years). Nevertheless, in extraversion our results do not show significant differences between the two age groups, whereas the meta-analytical study by Roberts et al. (2006) gave an increase in adulthood (20–40 years). In addition to emotional instability, there were also significant differences in problem-solving capacity, where age helps provide better problem-solving strategies.

The second hypothesis aimed to confirm if the perception of academic efficacy is related positively to extraversion, to EI factors and to resilience; and whether it is negatively related to emotional instability. The results are in line with the hypothesis, except for extraversion and emotion regulation, with which it does not have significant relationships. Perceived academic efficacy is positively related to global trait EI; in other words, people with skills to handle their emotions and other people's emotions tend to have efficient resources to cope with adversity (Cooper and Petrides, 2010). It is also positively related to the other EI factors. The nursing students' environment brings with it stressful situations arising from the studies themselves, with a lot of practical work where students have to provide an efficient response to patients (Cleary et al., 2018).

Perceived academic efficacy is related to the capacity to ask for social support in adverse situations and to the capacity to solve situations of conflict. To do so, resilience and EI factors come into play as psychological constructs that strengthen the body and its well-being (Sarrionandia et al., 2018). People capable of asking for advice from family members, specialist professionals or friends tend to organise their thoughts, which brings them calmness and well-being (Sarrionandia et al., 2018).

As for emotional instability, the results show strong, significant, negative relationships with EI and resilience factors. Neuroticism and emotional instability are expressions that the literature tends to connect (Eysenck and Eysenck, 1964). Neuroticism is related to behaviour of withdrawal and of loss of behavioural and emotional control, which leads one's body to experience personal anguish when confronted with a lack of efficacy in solving problems of daily life (Clarck and Ro, 2014).

Hence, resilience and EI could be protective factors that help provide one's body with emotional stability. These results may be relevant among nursing students and patients because in their profession they are going to continually experience the stressful effects of interaction with the patient, who will sometimes be in a terminal phase. To a certain extent, the results lend support to contributions aimed at introducing programmes for intervening in resilience and EI in nursing studies in order to strengthen efficient behaviour and to foster academic achievements (Delgado et al., 2017). The capacity for interpersonal communication, knowing how to listen, efficiently responding to patients' demands and conveying information to patients and their relatives are all part of the nurse's role, which is why it is important to know how to act with sensitivity and respect without letting the situation affect oneself personally (Cleary et al., 2018).

The third hypothesis is intended to analyse the positive relationships between EI and resilience factors. The results indicate close relationships between the two constructs aimed at lowering psychological anguish (Benson et al., 2010) and they are involved in nursing students' academic and working life (Cleary et al., 2018). Having strategies to efficiently deal with adverse situations gives a person resources to solve a problem with energy, and leads to personal well-being (Sarrionandia et al., 2018).

The fourth hypothesis involves confirming the weight of the factors of personality, emotional instability and extroversion, together with EI and resilience in predicting perceived academic efficacy. The results show a greater weight in the EI factors together with resilience factors in predicting perceived academic efficacy. The EI factors of global trait, well-being and sociability, together with resilience, explain 18.9% of the variance. These findings contribute to recognition of the importance of EI and resilience among nurses and provide evidence to back fostering the two psychological constructs among nurses. This is in line with the results obtained by Foster et al. (2017) in the Australian health care population.

As for sex, the results show women to have greater rates of emotional instability and of seeking social support in complex, stressful situations. These results are in line with the preceding study. It seems that women tend to have higher rates of neuroticism (Rogers et al., 2018) and more likelihood of seeking social support when confronted with adverse situations and obstacles in life (Lee and Goldstein, 2016). Furthermore, males use strategies aimed at problem solving, emotion regulation and self-control more, while also showing greater social and assertive competence.

5. Conclusions and limitations

To sum up, close relationships have been shown among perceived academic efficacy, EI and resilience, as well as with emotional instability in good practices in the profession of nursing. Perceived academic efficacy favours implication and success in nursing studies. Having EI

strategies and resilience helps interpersonal relationships, which is essential among nurses that have to interact continually with patients and their relatives in carrying out their professional practice. The capacity to handle and control their own emotions and those of others is a fundamental tool in order to carry out the work of nursing at a level of excellence. Therefore, our results back the importance of fostering training programmes in emotional intelligence and resilience for nursing students, geared towards fostering competence in their professional practice. In doing their job, they will have to face complex situations involving direct interaction with patients and their relatives.

This study has some limitations. It is a cross-sectional study with students participating from the geographical area of Valencia, based on self-reports. This prevents causal relationships from being found. A longitudinal study would have contributed consistency to the results. The study could also be improved by having different sources of information. Another limitation is concerned with the sample: three quarters of it are women. This fact indicates the proportion of women studying nursing in the Spanish environment, which is considered a feminised profession.

Ethical approval

The ethical approval was granted by the corresponding Institutional Review Board.

CRediT authorship contribution statement

All the authors contributed in the data processing, the elaboration of the text, figures and tables, and overall review. The original conception of this paper, the data collecting generals and specifics, were done by Noemí Cuartero Monteagudo. The contributions to the statistics treatment of data presentation in the text, your critical review and the final approval of the version were done by Ana Tur Porcar.

All authors agree with the final version of the article.

Declaration of competing interest

There are no conflicts of interest.

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