revistaFuentes
ISSN: 1575-7072 | e-ISSN: 2172-7775

Páginas: 137-148
Recibido: 2021-10-01
Revisado: 2021-11-12
Aceptado: 2022-04-12
Preprint: 2022-03-15
Publicación Final: 2022-05-31

www.revistascientificas.us.es/index.php/fuentes/index
DOI: https://doi.org/10.12795/revistafuentes.2022.19025

Relationships between Academic Engagement and Personality Factors in Nursing Students

Relación entre Compromiso Académico y Factores de Personalidad en Estudiantes de Enfermería

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Abstract
Academic Engagement is defined as a psychological state of accomplishment and commitment to the task performed. Personality factors can help to understand why, some students show a positive mental state related to their studies and others show a lack of engagement. The aim of this study was to determine the personality characteristics of a sample of nursing students based on the Big Five model and to analyze the differences in engagement. The sample consisted of 90 nursing students. Pearson's correlation coefficients were calculated, and a multivariate analysis of variance was performed. The results showed that the existence of engagement is positively associated with Extraversion, Agreeableness, Conscientiousness, and Openness, and negatively associated with the Neuroticism personality trait. The students classified in the first cluster, which was defined by a profile with high neuroticism and low scores on the rest of the personality traits, had a lower presence of engagement. In the second cluster, defined by low Neuroticism and high Extraversion, Agreeableness, Openness and Conscientiousness, the presence of engagement was higher. In conclusion, assessments of personality and engagement can be useful measurement tools to find out about students' academic performance and be able to carry out strategies aimed at preventing the consequences of academic stress in the most vulnerable students.

Resumen
El concepto de compromiso académico se define como un estado psicológico de realización y compromiso con la tarea realizada. Los factores de personalidad pueden ayudar a comprender por qué algunos estudiantes muestran un estado mental positivo relacionado con sus estudios y otros muestran una falta de implicación. El objetivo del presente estudio fue analizar las características de personalidad de una muestra de estudiantes de enfermería basada en el modelo Big Five y analizar las diferencias en la implicación académica a partir de estos perfiles. Los participantes fueron 90 estudiantes de enfermería. Se calcularon los coeficientes de correlación de Pearson y se realizó un análisis de varianza multivariado. Los resultados mostraron que la existencia de implicación académica se asocia positivamente con Extraversión, Amabilidad, Responsabilidad y Apertura, y negativamente con Neuroticismo. Los estudiantes clasificados en el primer clúster, definido por un perfil de Neuroticismo alto y puntuaciones bajas en el resto de rasgos de personalidad, tuvieron una menor presencia de implicación académica. En el segundo grupo, definido por bajo Neuroticismo y alta Extraversión, Amabilidad, Apertura y Responsabilidad, la presencia de implicación fue mayor. En conclusión, las evaluaciones de personalidad e implicación académica pueden ser herramientas de medición útiles para conocer el funcionamiento académico de los estudiantes y poder llevar a cabo estrategias encaminadas a prevenir las consecuencias del estrés académico en los alumnos más vulnerables.

Keywords / Palabras clave
Academic engagement, University students, Personality, Nursing, Educational psychology, Admission requirements.
Compromiso académico, Estudiantes universitarios, Personalidad, Enfermería, Psicología de la educación, Condiciones de admisión.

1. Background

Recently, researchers have turned their interest toward engagement studies. The lines of research on this construct have focused on demonstrating that engagement is the opposite of burnout (Salanova et al., 2010; Agarwal et al., 2020) and testing the positive influence of engagement on personal and social performance in work and academic contexts.

The study of academic engagement is associated with a strong emotional charge established through a link in the chosen studies and defined by three dimensions: Vigor, Dedication, and Absorption. Vigor refers to the presence of high levels of energy and endurance and a strong desire to make an effort while studying. Dedication is manifested by high levels of enthusiasm and pride related to one's studies, and Absorption is characterized by the ability to be deeply focused and absorbed in what one is doing when studying. Academic engagement, therefore, is understood as a positive, satisfactory mental state related to work or studies, and it is commonly measured empirically using the Utrecht Engagement Scale (UWES-S) (Schaufeli et al., 2003).

It is important to note that two major conceptual models currently coexist. The first one the European that we use in this study and the second one, mainly North American. This last model considers commitment as a multidimensional construction that includes behavior, emotion and cognition (Fredricks et al., 2014).

On the one hand, research on engagement in university students shows its positive influence on academic performance, and students' levels of health (Agarwal et al., 2020; Cabrera Rivas, 2019; Casuso-Holgado et al., 2013; Moreno-Morales et al., 2013). Measuring academic engagement has the potential to satisfy the need to move from the study of burnout or exhaustion to a more positive construction, and it can serve as a useful measurement tool for institutions that wish to assess their students' academic performance (Agarwal et al., 2020).

On the other hand, personality traits of professionals who provide health care have been the topic of discussion in numerous investigations. Personal qualities such as empathy, the capacity for self-control, social skills, adaptive responses to stressful situations, and emotional stability are considered essential in health science professionals (Pitt et al., 2014; Powis, 2015; Powis et al., 2019).

In recent decades, the theory of the structure of the personality has mainly drawn on the Big Five Factors of Personality model (Costa & McRae, 1985). The five-factor theories assign a central role to traits, recognizing the possible modifying influences of the social and cultural environment (McCrae, 2011).

Evaluating students' personal qualities in their selection process is considered essential in nursing studies (Chan & Sy, 2016; Drach-Zahavy & Srulovici, 2019; Fornes-Vives et al., 2016; Pitt, Powis et al., 2012; Pitt, Powis et al., 2014; Wang et al., 2017) and in medicine (Bore et al., 2009; Lo et al., 2018; Sobowale et al., 2018; Song & Shi, 2017). As Powis (2015) points out, people with high Extraversion, Openness, Conscientiousness, and Agreeableness and low Neuroticism would have the necessary qualities to work in a profession based on interpersonal relationships. Most research highlights high Agreeableness as a reliable indicator for establishing personal ties (Melchers et al., 2016; Nettle, 2007). In this regard, studies carried out with nursing and medical students (Pitt et al., 2014; Powis, 2015; Sobowale et al., 2018; Song & Shi, 2017; Trujillo et al., 2016; Wang et al., 2017) reveal that high scores on the Agreeableness factor are related to an adequate disposition to provide health care. Otherwise, undergraduate nursing students experience high levels of stress and anxiety during their clinical practices. This is correlated with Neuroticism factor (Fornés-Vives et al., 2016; Milić et al., 2019).

Moreover, the relationships between personality traits and engagement have been analyzed by several authors in populations of medical and nursing professionals (Janssens et al., 2019; Scheepers et al., 2016; Pérez-Fuentes et al., 2019) and medical students (Hansen et al., 2016) but not in nursing students. The results of the reviewed studies show that the existence of engagement was positively associated with Extraversion (Pérez-Fuentes et al., 2019; Hansen et al., 2016; Janssens et al., 2019), Agreeableness (Pérez-Fuentes et al., 2019), Conscientiousness (Pérez-Fuentes et al., 2019; Janssens et al., 2019), and Openness (Pérez-Fuentes et al., 2019; Janssens et al., 2019), and negatively with the Neuroticism trait (Pérez-Fuentes et al., 2019; Janssens et al., 2019). Specifically, the results of the study by Hansen et al. (2016) showed that the opportunity to make a commitment or experience engagement was 10 times greater in medical students who had high scores on the Extraversion factor of the NEO-PI-R. The studies that analyze the relationship between personality traits and engagement shed variability in the results**.** This fact highlights the need to continue this line of research given the impact that it will have.

The aim of the current study was to determine the personality characteristics of a sample of nursing students, compared to the Spanish normative population, and analyze engagement based on the personality profiles found. An additional objective was to describe how differences in personality are related to a student's

engagement. The intention was to study the associations between the presence of engagement and personality traits in nursing students, evaluating this relationship through the five-factor model, one of the most accepted models in the description of human personality. It is an understudied topic in our population, and knowing which personality traits lead to greater student achievement, satisfaction, and commitment to the task is beneficial, not only for academic performance, but also for future professional performance in a discipline with a tendency to experience symptoms of burnout.

2. Method

2.1 Participants

The study population was composed of all the students who were enrolled in the first year of the Nursing degree during the 2017-2018 and 2018-2019 academic years and continued their studies in the second year at the University School of Nursing affiliated with Cartagena. The study sample included 90 nursing students (68 women and 22 men). The age range of the women who participated in the study ranged between 18 and 52 years (M = 23.09 years, SD = 9.656), and the age of the men ranged between 18 and 47 years (M = 21.82 years, SD = 7.980). The mean nursing school entrance grade was 13.3 out of a maximum of 14 (SD = 1.35).
The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the University of Murcia. All the students participated voluntarily and gave their signed informed consent. They were assured that the results would be for research purposes only and would not influence the results of the exams, and that their personal data would be protected and included in a file subject to the guarantees of data protection law.

2.2 Instruments

For the personality analysis, we used the third revised and expanded Spanish edition of the NEO-PI-R Inventory (Costa and McCrae, 2008). It consists of 240 elements responded to on a 5-point Likert scale, and it evaluates five main factors: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Each factor is broken down into six facets, allowing a personality analysis to obtain 35 different scores. Reliability analyses of the internal consistency of the NEO PI-R global scales were excellent (alphas ≥ .85), whereas on 25 of the 30 specific scales, they ranged from adequate to good (alphas ≥ .60 and < .80).
To measure engagement, the instrument used was the *Student Utrecht Work Engagement Scale* (UWES-S), originally created for the Dutch population (Schaufeli et al., 2003) and validated in Spanish through a cross-cultural study with Dutch, Portuguese, and Spanish university students. The validation study for the Spanish university population showed that the internal validity values improved after eliminating three of the items on the original questionnaire, so that the resulting Spanish questionnaire consists of 14 items instead of 17 (Schaufeli et al., 2002). The items are grouped into three subscales: vigor, dedication, and absorption, and they are scored on a 7-point scale from "*never*" (0) to "*always*" (6). The reliability of each dimension of the UWES-S scale, demonstrated a good internal consistency, with Cronbach's alpha coefficients of 0.78 (vigor), 0.86 (dedication) y 0.81 (absorption). These values are high and similar to those obtained by other authors with Spanish samples (Casuso-Holgado et al., 2013; Casuso-Holgado et al., 2016).

2.3 Procedure

A quantitative exploratory descriptive study was designed. Recruitment was carried out through advertisements on boards inviting the target population to participate. Students who participated voluntarily made up the study sample. At the beginning of the first academic year of nursing studies, the questionnaires were administered to the students. They were informed about the purpose of the study and told that they would receive individual feedback, available through their student number, which was the only ID they had to submit. Voluntariness was reported as a requirement for participation, and they could withdraw from the study at any time without any consequences.

 DOI: 10.12795/revistafuentes.2022.19025

2.4 Data analysis

Statistical analysis was performed using R Core Team and the SPSS statistical package version 24 for Windows. Means and standard deviations of the scales were calculated, and Student's t test was used for comparison with the national study. T scores (M = 50, SD = 10) were obtained directly from the profile generated by the NEO-PI-R measurement instrument. To quantify the magnitude of the differences, we used the Cohen's d effect size measure. According to Cohen (Aron and Aron. 2001), an effect size of 0.20 is considered small, 0.50 moderate, and 0.80 large. To study the relationship between the questionnaire scales and between the personality and engagement measures, Pearson's correlation coefficients were calculated, and statistical significance was established through the corresponding p-value. A two-step cluster analysis was performed to establish student groups by personality factors: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness, with distance based on the likelihood. The maximum number of clusters was 15, and the Bayesian information criterion was employed. Two cluster was the result of the analysis. Once the groups or clusters had been identified, the comparison of means (multivariate analysis of variance) was carried out to determine the existence of significant differences between the groups with respect to the scores for each of the engagement components

3. Results

3.1. Personality Distribution

The students who participated in the study showed scores above the mean of the Spanish normative population for the Neuroticism factor (p < .001) and below the mean for Extraversion (p = .03), Agreeableness (p < .001), and Conscientiousness (p < .001). With regard to the Openness factor, the sample of students obtained scores within the mean of the Spanish population (p =.37) (See Table 1).

Table 1
Descriptive statistics for the total sample compared to the Spanish reference for the 5 main factors obtained from the NEO-PI-R

	Study Sample		Reference Population			
	Mean	**SD**	**Mean**	**SD**	**Cohen's d**	**P-value**
Neuroticism (N)	94.48	22.38	71.75	19.45	1.29	**.00**
Extraversion (E)	113.21	19.15	119.41	15.72	0.26	**.03**
Openness (O)	115.37	17.48	118.81	15.51	0.10	.37
Agreeableness (A)	119.93	17.60	134.12	14.51	0.75	**.00**
Conscientiousness (C)	123.93	21.13	140.97	16.99	0.90	**.00**

In relation to the data of the normative group, we performed the interpretation of the personality profile of each participant evaluated for each factor and facet based on the following reference scores for the typified T scores: Very high ≥ 65, High 56-65, Medium 46-55, Low 36-45, Very low ≤ 36. Regarding the Neuroticism factor, 24.44% of the sample presented typified scores at the mean or below it, whereas 76% of the sample showed high (48%) and very high (28%) scores. Regarding the Agreeableness and Conscientiousness factors, 14% and 10% of the students scored above the mean, respectively. On Agreeableness, 50% scored below the mean, specifically, 38% with low values and 12% with very low values. On Conscientiousness, 60% scored below the mean, 53% low and 7% very low. On Extraversion, 44% of students scored below the mean. However, the analysis of the facets of this factor shows that, in the search for emotions, 64% of the students scored above the mean, specifically, 44% with high values and 20% with very high values, contrary to what occurred in the rest of the facets (See Figure 1).

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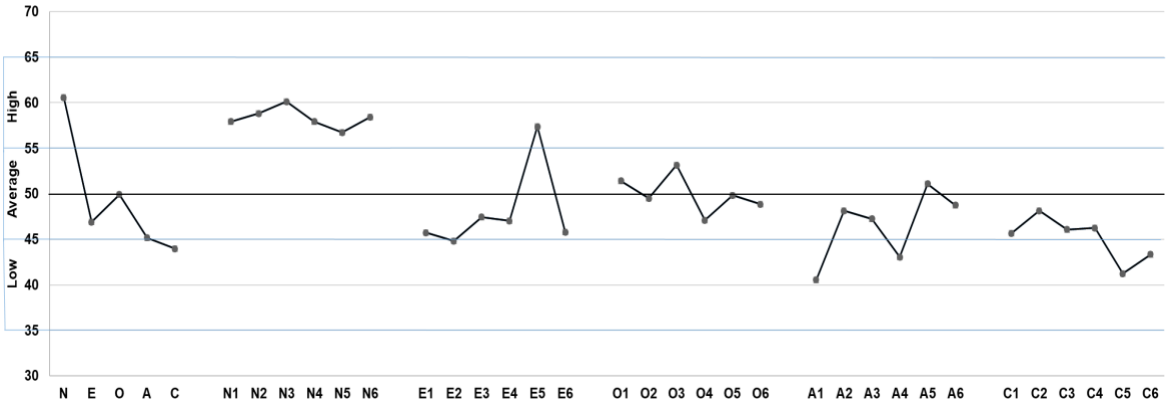
Figure 1
Means of the T scores obtained on the global dimensions and facets of the NEO-PI-R



3.2. Engagement Distribution

Approximately half of the students were in the average category for the total scale and on the subscales of Vigor and Absorption. We observed that only 32% had high and very high total scores on the scale,14.4% on the Vigor subscale, and 28% on Absorption. However, on the Dedication subscale, 70% of the students had high and very high scores. Table 2 presents the means, standard deviations, 95% confidence intervals, and frequency data for each of the UWES-S dimensions.

Table 2
Description of the dimensions of the UWES-S

	Very low		Low		Average		High		Very high				
	N	%	N	%	N	%	N	%	N	%	*M*	*SD*	*IC 95%*
Vigor	5	5.6%	24	26.7 %	48	53.3 %	11	12.2 %	2	2.2%	3.79	1.04	3.58-4.01
Dedication	0	0%	5	5.6%	22	24.4 %	32	35.6 %	31	34.4 %	5.12	.96	4.92-5.32
Absorption	5	5.6%	20	22.2 %	40	44.4 %	15	16.7 %	10	11.1 %	3.62	1.25	3.36-3.88
Total (n=90)	1	1.1%	9	10%	51	56.7 %	24	26.7 %	5	5.6%	4.21	0.88	4.03-4.40

Note: Cutoff scores: Total UWES (Very high ≥ 5.54. High ≥ 4.67. Average ≥ 3.07. Under ≥ 1.94. Very Low ≤ 1.93). Vigor (Very high ≥ 5.61. High ≥ 4.81. Average ≥ 3.21. Under ≥ 2.18. Very Low ≤ 2.17). Dedication (Very high ≥ 5.80. High ≥ 4.91. Average ≥ 3.01. Under ≥ 1.61. Very Low ≤ 1.60). Absorption (Very high ≥ 5.36. High ≥ 4.41. Average ≥ 2.76. Under ≥ 1.61. Very Low ≤ 1.60).

3.3. Personality Factors and Engagement

In the Neuroticism factor, the scores obtained showed a negative correlation with the dimensions of Vigor (r = -.33. p = .001) and Absorption from the UWES-S (r = -.35. p = .001). In the case of the facets, the Vigor dimension correlated negatively with most of the facets of the Neuroticism factor (Anxiety: r = -.29, p = .006; Hostility: r = -.23, p = .03; Depression: r = -.30, p =.004; Social anxiety: r = *-.23, p= .03*; and Vulnerability: r = -.42, p < .001). The Absorption dimension correlated negatively with the facets of Anxiety (r = -.30, p =.004) and Vulnerability (r = -.33, p = .002).
The Extraversion factor correlated positively with the Dedication dimension (r = .32, p = .002). In addition, four of the six facets of this factor correlated positively and significantly with this dimension of engagement (Warmth: r = .28, p = .008; Gregariousness: r = .27, p= .01; Activity: r = *.27, p* = 0.01; and Positive emotions: r = .29, p = .006). The Excitement Seeking facet correlated negatively with the Vigor dimension (r = -.23, p = .027).

 DOI: 10.12795/revistafuentes.2022.19025

In the Openness factor, the only correlation found was between the Dedication dimension and the Aesthetic facet (r = .23, p = .03). Similarly, in the Agreeableness factor, the only significant correlations occurred between three facets of this factor and the Dedication dimension (Straightforwardness: r = .23, p = .03; Altruism: r = .22, p = .03; and Tender-mindedness: r = .24, p = .02).
The Conscientiousness factor correlated positively with the three dimensions: Vigor (r = .46, p < .001) Dedication (r = .28, p = .009), and Absorption (r = .39, p < .001). The Dedication dimension correlated positively with the facets of Competence (r = .27, p = .009), Order (r = .24, p = .025), Dutifulness (r = .32, p = .002), Achievement striving (r = .30, p = .004), and Self-discipline (r = .25, p = .02). The Vigor dimension correlated positively with the facets of Competence (r = .23, p = .03), Dutifulness (r = .21, p =.04), and Self-Discipline (r = .36, p < .001). The Absorption dimension correlated positively with the facets of Achievement striving (r = .21, p = .04) and Self-discipline (r = .29, p =.005) (See Pearson correlations between engagement dimensions and personality factors in Table 3)

Table 3
Pearson correlations between engagement dimensions (UWES-S) and personality factors (NEO PI-R)

	Vigor	Dedication	Absorption
Neuroticism	**-.33*** **	-.20	**-.35*** **
Extraversion	.19	**.32** **	.14
Openness	.11	.11	.08
Agreeableness	.16	.18	.054
Conscientiousness	**.46*** **	**.28** **	**.39*** **

Note: *** = $p \leq .001$ / ** = $p \leq .025$ / * = $p \leq .05$

3.4. Personality profiles and Engagement

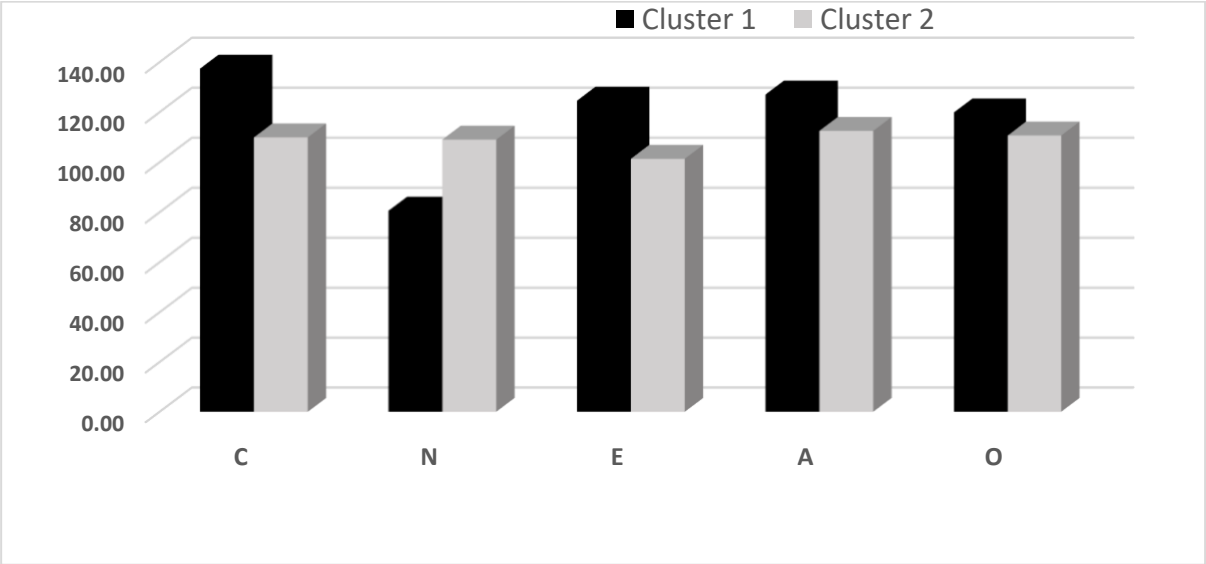
A two-step cluster analysis of the personality factors was performed to identify the groups. The inclusion of these variables resulted in two groups with the following distribution: 51.1% (n = 46) of the participants in Cluster 1 and 48.9% (n = 44) in Cluster 2. The first group resulting from the cluster analysis (Cluster 1) is characterized by scores below the mean of the total population on Neuroticism (M = 80.59) and above it on Extraversion (M = 124.57), Openness (M = 119.89), Agreeableness (M = 127.04), and Conscientiousness (M = 137.37). The Second Group (Cluster 2) identifies students with scores above the mean of the total population on Neuroticism (M =109.00) and below it on Extraversion (M = 101.34), Openness (M =110.64), Agreeableness (M = 112.50), and Conscientiousness (M = 109.89). Table 4 shows the means of the direct scores obtained on the 5 personality factors measured for the total sample of participants and each group, and Figure 2 shows the results of the comparative analysis of the profiles.

Table 4
Mean scores for the total sample and clusters (N= 90)

		Cluster	
Variables	**Total (N=90)**	**1 (n = 46)**	**2 (n = 44)**
Neuroticism (N)	94.48 (22.38)	80.59 (14.80)	109.00 (19.63)
Extraversion (E)	113.21 (19.15)	124.57 (14.03)	101.34 (16.47)
Openness (O)	115.37 (17.48)	119.89 (14.63)	110.64 (19.07)
Agreeableness (A)	119.93 (17.60)	127.04 (14.52)	112.50 (17.60)
Conscientiousness (C)	123.93 (21.13)	137.37 (14.45)	109.89 (17.63)

Note: The data are means and standard deviations (in parentheses).

Figure 2
Cluster composition (N= 90). The factors were organized according to the order of importance of the input



After the classification into groups based on the two-cluster solution, a multivariate analysis of variance (MANOVA) was performed to compare the personality profiles with the three dimensions of engagement. Homogeneity of covariance was examined using the Box M test, and the null hypothesis of data fit was rejected (MBox = 4.26, F = .68). Multivariate comparison showed significant differences between the groups (Wilks Lambda = .82, $F_{(3,86)}$ = 6.46, p =.001, η_p^2 = .18, observed power = 0.964). After analyzing this relationship individually for each of the dependent variables (Vigor, Dedication, Absorption), we found that the results were statistically significant in all cases (Table 5). Cluster 1 (with scores above the mean on all the personality factors, except Neuroticism, which was below the total sample) had significantly higher mean scores than Cluster 2 on Vigor ($F_{(1,88)}$ = 18.47, p = 0.001, η_p^2= .17, observed power= 0.99), Dedication ($F_{(1,88)}$ = 6.85, p = .01, η_p^2 = .07, observed power= 0.7), and Absorption ($F_{(1,88)}$ = 8.3, p = .005, η_p^2 = .09, observed power= .81)

Table 5
Multivariate analysis of variance (effects between participants per cluster) depending on the dimensions of engagement

	Cluster 1 (n =46)		Cluster 2 (n =44)					
	M	***SD***	***M***	***SD***	***F***	***p***	η_p^2	***Observed power***
Engagement								
Vigor	4.21	0.90	3.35	1.00	18.47	.000	.17	.99
Dedication	5.36	0.87	4.85	0.98	6.85	.01	.07	.74
Absorption	3.98	1.16	3.24	1.24	8.3	.005	.09	.81

4. Discussion

The aim of this study was to describe the personality characteristics of a sample of nursing students, comparing them to the Spanish normative population, evaluate the level of engagement through psychometric tests, and establish possible associations between the presence of engagement and the personality traits. This allows

DOI: 10.12795/revistafuentes.2022.19025

us to establish which personality traits lead to greater student achievement, satisfaction, and commitment related to their nursing studies.

The students who participated in the study obtained scores above the mean on the Neuroticism factor and below the mean on the Extraversion, Agreeableness, and Conscientiousness factors, whereas the Openness factor remained at the mean of the Spanish reference population. Several researchers propose that a personality that combines a high profile of Agreeableness and Conscientiousness is the key to establishing a satisfactory relationship with the patient in the clinical setting (Pitt et al., 2014; Powis, 2015; Sobowale et al., 2018; Song & Shi, 2017; Trujillo et al., 2016; Wang et al., 2017). These results contrast with our population, where the scores on the Agreeableness factor, which defines the willingness to provide emotional care, were low, as were the scores on the Conscientiousness factor, which expresses the innate capacity for interpersonal relationships, traits that are considered fundamental in a profession based on caring. After analyzing these results, two lines of action arise; on the one hand, re-evaluate this sample of students at the end of their undergraduate studies to check whether the changes derived from the personal evolution of the students (Caspi et al., 2005; Ferguson & Lievens 2017; Kool et, 2019; Kostromina & Grishina., 2018; Trillmich et al., 2018) or the training process itself (Fornes-Vives et al., 2016) might have shaped their personality traits. Also, the high scores reached in neuroticism factor could be dues to the students' high levels of anxiety, as indicated by other studies with nursing students (Fornes-Vives et al., 2016; Milić et al., 2019).

Moreover, in the published literature on personality traits in university students, we hardly find any studies that analyze the facets evaluated by the NEO PIR, as Sobowale et al. (2018) indicated, and so the results obtained raise questions to analyze due to their importance in clinical practice and the development of undergraduate studies (Chan and Sy, 2016; Trujillo et al., 2016). Having more precise knowledge about the personal characteristics of these students would make it possible to adapt training programs and achieve better performance (Sobowale et al., 2018; Song & Shi, 2017; Pitt et al., 2012; Powis, 2015).

Together, these data taken suggest the need to continue to analyze into the personality characteristics of this population throughout their undergraduate studies and observe their variability over time, as indicated in the studies by Fornes-Vives et al. (2016) and Pitt et al. (2014). It would be important to check the stability or change in the personality traits analyzed (Caspi et al., 2005; Ferguson & Lievens, 2017) and propose education programs to acquire the necessary professional skills (Fornes-Vives et al., 2016; Trujillo et al., 2016).

The students reported medium-high levels of academic engagement, with the levels of the Dedication dimension being especially high. As indicated above, this refers to the fact that these students feel highly motivated about their studies, and it should be noted that this dimension refers to motivational or vocational aspects in performing the task. Likewise, students learning strategies and styles are closely linked to engagement and are excellent predictors of academic results.

Regarding the correlations found between personality traits and academic engagement, measured by the UWES-S in the Neuroticism factor, the results obtained are in line with previous studies (Janssens et al., 2019). The scores obtained show a negative correlation with the Vigor and Absorption dimensions evaluated. Specifically, the Vigor dimension correlates negatively with the Anxiety facets, which measure the degree of current anxiety, hostility, or tendency toward anger, depression, or melancholy. Social Anxiety shows the discomfort felt in the presence of others, and Vulnerability expresses the inability to handle stressful situations. Therefore, an anxious, melancholy, and vulnerable person will have a low level of energy and endurance and little desire to make an effort while studying. The Dedication dimension correlates negatively with the Depression facet, which describes a general lack of enthusiasm, specifically toward studies. The Absorption dimension is negatively related to the degree of anxiety or discomfort measured by the Anxiety facet and to the feeling of lacking resources to handle adverse situations, represented by high scores on the Vulnerability factor. This degree of restlessness and lack of control would impede the concentration and absorption in their studies that define this dimension.

The Extraversion factor is positively correlated with the Dedication dimension, specifically with the Cordiality facet, which express the tendency to be intimate in interpersonal relationships, Gregariousness, or the preference for seeking company, Activity, or the need for constant occupation and positive emotions that defines the enthusiasm experienced. These characteristics are linked to the Dedication dimension, manifested by high levels of enthusiasm and pride related to studies. The Vigor dimension is negatively related to the Thrill-seeking facet or the need for constant stimulation or arousal. Because Vigor is related to effort and endurance in the task, people with a constant need for emotion will see their endurance diminished. Published studies (Pérez-Fuentes et al., 2019; Janssens et al., 2019; Scheepers et al., 2016) have shown this positive relationship. However, because each factor is composed of characteristic features that define it, the analysis of the facets yields more precise results, and particularly, the negative relationship found differs from previous

investigations. The analysis of the facets gives us a more exact image of the personality than the globality defined by the factors, and having a high score on one of the facets in the same factor could distort the total correlation. Specifically, most of the facets of the Extroversion factor tend to correlate positively with the Vigor dimension, so that the negative correlation found with the Emotion Search facet would be masked if only the factor were analyzed.

The Conscientiousness factor correlated positively with the three dimensions: Vigor, Dedication, and Absorption, results previously found in the literature (Pérez-Fuentes et al., 2019; Janssens et al., 2019; Scheepers et al., 2016). The pride in studies, measured in the Dedication dimension, is found in students who trust their own abilities and are orderly, with a high degree of fulfillment of their obligations, achievement of objectives, and motivation to complete the task. The energy to strive that Vigor implies is related to self-confidence and the ability to fulfill and finish the task. The Absorption dimension, which involves the degree of concentration on one's studies, is found in students who have a high aspiration and motivation to complete the task and meet their objectives.

In the Agreeableness factor, we find that sincere, altruistic, and empathetic students face their studies with greater enthusiasm, as in other publications (Pérez-Fuentes et al., 2019; Scheepers et al., 2016). The same thing is true of students with greater aesthetic sensitivity, defined in the Openness factor, as in results previously published (Pérez-Fuentes et al., 2019; Janssens et al., 2019).

However, when analyzing all the personality profiles, we found nuances of the previous results. Specifically, the high need to search for new stimuli that is part of the Extroversion factor would impede effort and resistance to achieve objectives.

When the personality profiles of the nursing students were analyzed, two different groups were found. The first had positive scores on all the personality factors analyzed except Neuroticism. The second profile consisted of students with a personality profile contrary to the one shown by the first group. Thus, this group was characterized by presenting scores above the mean on Neuroticism and below the mean on the rest of the factors. A comparison of the engagement scores in these two profiles showed that the second group, which had low scores on all the traits except Neuroticism, had a lower presence of engagement. In addition, the highest scores on commitment were shown by the first group, which had high scores on Extraversion, Agreeableness, Openness, and Conscientiousness.

It is important to notice that there is barely any research on university students linking personality and engagement. The results are in line with previously described studies, that is engagement was higher in students who had high scores on the Extraversion factor of the NEO-PI-R. (Hansen et al., 2016).

In general, our results confirm those obtained in other studies, consistently showing that students with high scores on the Conscientiousness, Extraversion, Agreeableness, and Openness factors and low scores on the Neuroticism factor acquire greater commitment to their studies (Pérez-Fuentes et al., 2019; Hansen et al., 2016; Janssens et al., 2019; Scheepers et al., 2016).

A limitation of the study is that the sample size is small. Therefore, for a future research will be advisable to increase the sample size and to enhance the analysis with structural equations which overcome the correlations analyzed in the study.

5. Conclusions

The results show that personality factors can help to understand why, under the same learning context conditions, some students are resilient and linked to their studies. Recognizing personality factors as protective factors for the presence of engagement can be useful in carrying out programs to promote mental health and prevent the physical and psychological consequences of academic stress. Therefore, it is about identifying vulnerable students through personality factors, these students could benefit from strategies that help them improve their coping skills when they face stressful situations in the context. These strategies could have an impact throughout the professional and personal lives of future nurses. The article shows an advance in the explanation of personality factors that seem to be related to the academic engagement for a sample of nursing students. Engagement, measured by the UWES-S, can be a useful assessment tool for nursing students, due to its potential to address demands from a positive perspective and provide reliable information on student academic performance.

 DOI: 10.12795/revistafuentes.2022.19025

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