ORIGINAL ARTICLE

# The influence of emotional burnout and resilience on the psychological distress of nursing students during the COVID-19 pandemic

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**ABSTRACT:** *The aim of this study was to measure and analyse the association of emotional burnout and resilience with the psychological distress of students who finished their nursing studies after the peak of the COVID-19 pandemic. The mental health of nursing students was affected during the pandemic, and resilience seems to counteract the negative effects. This is a cross-sectional study. The data (quantitative) were gathered at the beginning of the second term of the academic year 2020/2021. The study was carried out in the Spanish university context. Self-reported measures were gathered using three one-dimensional, valid, and reliable scales: the Psychological Distress Scale (K-10), the Emotional Burnout Scale (EBS), and the short version of the Connor-Davidson Resilience Scale (CD-RISC10). A total of 393 students of different Spanish universities participated in this study. A valid linear regression model was obtained, which allowed verifying that psychological distress is explained, with 37% variance, by emotional burnout and resilience. The total score in emotional burnout has more relevance than the total score in resilience, and the latter has a negative tendency. Facing the factors that generate emotional burnout in students in the academic scope and promoting resilience in them are fundamental aspects that contribute to their psychological well-being. The reflection should be extended to clinical practices. Universities are urged to think about last-year students, their experiences, perceptions, and feelings, to determine how their susceptibility to emotional burnout and psychological distress can be minimized in their future clinical practices. Strategies to promote their resilience should also be studied.*

**KEY WORDS:** *emotional burnout, higher education, nursing, psychological distress, resilience.*

## INTRODUCTION

The COVID-19 pandemic has posed an important challenge for healthcare systems and services, leading to difficult situations in medical centres and hospitals all over the world. The psychosocial impact on healthcare professionals, who have provided health care during the outbreak of the new SARS-CoV-2 coronavirus, has been reported in different studies at the international level (García-Iglesias *et al.* 2020). For instance, in Spain (Dosil-Santamaría *et al.* 2021; Ruiz-Fernández *et al.* 2020) and China, where the virus was first detected (Lai *et al.* 2020; Xing *et al.* 2020), these professionals have developed symptoms of stress, anxiety, depression, insomnia, and fatigue. Roberts *et al.* (2021) concluded that, among the nursing professionals of the United Kingdom who had worked with patients with respiratory problems, symptoms of anxiety and depression had been reported, and that the most affected were the youngest and least experienced. Such symptoms have also been reported among last-year students of the degree of nursing who accessed the healthcare scope during the first stage of the health crisis to actively contribute in the hospital response (Casafont *et al.* 2021).

The early and sudden incorporation of last-year nursing students into care environments during COVID-19 allowed them to gain experience (Martin-Delgado *et al.* 2021) and to appreciate the importance of skills such as adaptability in the professional practice. However, they initially experienced feelings of uncertainty and a lack of opportunities for preparation and inducement (Godbold *et al.* 2021). They felt ready for the healthcare practice, although not in terms of the demands of COVID-19, which made them feel insecure (Canet-Vélez *et al.* 2021). Emotions of suffering appeared due to the highly complex context and the lack of professional experience (Collado-Boira *et al.* 2020; Roca *et al.* 2021). Novice nursing students had to face different ethical dilemmas and ethical conflicts in a health system aggravated by this global crisis (Palacios-Ceña *et al.* 2021).

During the pandemic, the levels of stress and anxiety shown by nursing students were moderate, although higher than those perceived before the pandemic (Aslan & Pekince 2020; Labrague 2021; Savitsky *et al.* 2020). Reverté-Villarroya *et al.* (2021) estimated that the students who studied their last year of the degree during the pandemic perceived a risk of suffering from mental health problems that was twice as high as that of students who studied their last year before the global health emergency, and these authors determined that their mental well-being was associated with both the situation and their emotional burnout.

The rapid spread of SARS-CoV-2 forced governments to adopt exceptional measures of prevention and containment. The population lockdown was one of such measures. In nursing students, the quality of sleep worsened during the home confinement (Romero-Blanco *et al.* 2020), and poor sleep hygiene in them was associated with increased psychological distress (Brouwer *et al.* 2021). Students were negatively affected and experienced anxiety and emotions such as fear, unhappiness, boredom, and a lack of life satisfaction (Türkles *et al.* 2021). According to Patelarou *et al.* (2021), part of the nursing student population experienced mild depression.

In the academic scope, the adaptation of teaching to the online modality allowed them to continue with their studies while they adhered to social distancing, with the consequent impact on their mental health (Usher *et al.* 2020). Nevertheless, learning was self-directed, erratic, and unorganized, and students had to learn under pressure (Velarde-García *et al.* 2021). This period of online lectures was stressful (Majrashi *et al.* 2021). Nursing students' stress and mental health partly explain academic burnout at this time, in addition to perceived support and educational level, since third- and fourth-year undergraduate students reported higher academic burnout (Sveinsdóttir *et al.* 2021). Teacher and peer support were the main pedagogic resources to enhance nursing students' mental health and competence development (Utvær *et al.* 2022).

To preserve the safety of the students, the clinical practical sessions were suspended (Agu *et al.* 2021), and the doubts and fear about the future of their academic careers and the completion of their studies spread among them (Dewart *et al.* 2020). Regarding the clinical practical sessions, nursing students identified multiple stressful factors against which, according to Ching *et al.* (2020), they used different coping strategies depending on their levels of resilience and emotional burnout. The COVID-19 pandemic affected the emotional status of nursing students, which was correlated with emotional regulation and coping **strategies** (Miao *et al.* 2021). Students developed immature or negative coping strategies (Huang *et al.* 2020). In the middle of the pandemic, the students who went back to the practical sessions perceived the need for greater psychosocial support (Ulenaers *et al.* 2021).

During the pandemic, psychological flexibility proved to be relevant for the support of psychological resilience in nursing students (Yıldız 2020), and resilience, in turn, proved to be relevant for reducing the negative effects of the stress associated with the pandemic on their psychological well-being (Labrague 2021). Greater resilience and self-esteem have been associated with lower levels of anxiety (Savitsky et al. 2020). Resilience is a predictor of psychological preparation in the management of pandemics (Gandhi et al. 2021).

## METHOD

Further research on psychological distress, emotional burnout, and resilience is needed, especially at a time of crisis that has posed daunting challenges in nursing education. The analysed background shows that students lived with anxiety and stress, negative emotions, fatigue in academic activities, and worry during the clinical practices. The direction of the relationship between emotional burnout, resilience, and psychological distress is not clear.

Now that the peak of the COVID-19 pandemic is over, we intended to measure the emotional burnout, psychological distress, and resilience of last-year students of the degree of nursing, in order to analyse the association of emotional burnout and resilience with psychological distress.

### Participants

In this cross-sectional study, we used self-reported measures. Data were gathered from a total of 393 students. To determine the sample size, we calculated the minimum sample required to estimate a parameter with a proportion of 0.50 (scenario with largest sample requirement) in a population of unknown size. Considering a confidence level of 95%, and a precision of 10% and 5% of possible losses during the data cleansing process, it was estimated that the minimum sample size for this study would be 120 individuals. However, in order to analyse the sample by subgroups, we decided to obtain a sample of around 400 individuals.

The participants were 393 Spanish individuals who agreed to participate voluntarily, of whom 17.3% were men and 82.7% were women. The mean age of the sample was 23 years, ranging from 19 to 52 years. Regarding marital status, 91.6% were single, 1.8% were married, 0.8% were divorced, and 0.3% were widowed. Of the entire sample, 95.7% did not have any children, whereas 3% had one child and 1.3% had more than one child. Moreover, 50.6% of them worked and studied; and 84.9% had not suffered from COVID-19.

The participants were from different Spanish provinces: Huelva (24.8%), Cádiz (14.2%), Seville (11.2%), Asturias (3.8%), Jaén (3.6%), Madrid (6.9%), Murcia (4.1%), Ávila (1%), Badajoz (0.8%), Lleida (0.8%), Granada (2%), León (0.5%), Guadalajara (0.8%), Zamora (2.3%), Zaragoza (0.5%), etc. Among other universities, they studied at: University School of Osuna, Autonomous University of Madrid, Catholic University of Ávila, University of Alcalá de Henares, University of Burgos, University of Alicante, University of Cantabria, University of Córdoba, University of Huelva, University of Las Palmas, University of Oviedo, Pompeu Fabra University, etc.

### Measurement tool

The data were obtained through a self-administered questionnaire between 10 March 2021 and 23 April 2021. The student representatives were in charge of distributing the questionnaire among the final-year students of the different universities. The questionnaire was developed using Google Forms, which favoured its rapid distribution.

The questionnaire consisted of three one-dimensional, validated scales: the Psychological Distress Scale (K-10) (Kessler et al. 2003), the Emotional Burnout Scale (EBS) (Ramos et al. 2005), and the short version of the Connor-Davidson Resilience Scale (CD-RISC10) (Campbell-Sills & Stein 2007).

The K10 scale includes 10 items about emotional states (e.g. 'in the last 4 weeks, how frequently have you felt tired, nervous, desperate') and 5 response levels (from never to always), with a score range of 1–5 points, thus the total score of the instrument ranges between 10 (low psychological distress) and 50 (very high psychological distress) points.

EBS also consists of 10 items (e.g. 'in the last 12 months, I have had low mood, poor sleep, headaches and other discomforts that affect my performance') and 5 response levels according to frequency (from 1 = rarely, to 5 = always). The total score, that is, the sum of the values of the items, ranges between 10 and 50 points.

The CD-RISC10 scale measures resilience through 10 items related to the capacity observed by students in the last month to adapt to change, face challenges, see the bright side of things, recover in difficult situations, etc., in a range of 1 (not at all) to 5 (always).

The three scales were subjected to a confirmatory factor analysis, to verify the validity of the construct, and to a reliability analysis, to determine the internal consistency. Table 1 presents the values of the relevant coefficients of classic reliability. Cronbach's α and McDonald's ω are above 0.9 in all three scales.

Table 2 shows the fitting parameters. According to Hair *et al.* (2014) and Hoyle (1995), good fitting results are obtained if GFI ≥ 0.96 and RMSEA ≤ 0.05. Regarding SRMR, according to the criterion of Hair *et al.* (2014) and Hu and Bentler (1999), values ≤0.08 indicate a good fit. Thus, the fit of all the scales is good. The JAPS v.0.14.1.0 software was used to perform these analyses.

## Ethical consideration

The study was approved by the Research Ethics Committee of Huelva (code: MG-COV-2021-02; internal code: 0742-N-21). It was necessary to collect self-reported data from students. Informed consent was obtained from all subjects involved in the study. Along with the questionnaire, an informed consent document was also provided. All participants stated in writing that they were informed about the study, that they wanted to participate in it freely and that they allowed the information provided by them to be analysed and the results to be communicated. Students participated in the study freely. Their anonymity was guaranteed at all times. We ensured the adherence with the current regulations about user data protection contemplated in Organic Law 3/2018, of 5th December, on the Protection of Personal Data and Guarantee of Digital Rights. The formal aspects of the Declaration of Helsinki were taken into account throughout the entire study.

## Data analysis

Firstly, with the set of data obtained in the scales, statistical descriptive analyses of frequency, central tendency, and dispersion were performed. Then, the total mean score per scale for each of the students was calculated, which allowed exploring, through bivariate correlations, the relationship between the global scores of the study variables: psychological distress, emotional burnout, and resilience.

Lastly, a multiple linear regression was performed following the stepwise integration method. The independent variables to integrate were the global scores in resilience and emotional burnout. The dependent variable was the global score in psychological distress. To evaluate the quality of the prediction, we firstly verified the absence of problems derived from collinearity. To this end, we calculated the variance inflation factor (VIF), which should be below 30. Moreover, correlations were used to verify that the relationship between the independent variables was weak. Secondly, to prevent homoscedasticity problems and verify the normality of the data, we extracted the regression graphs with the standardized and dispersion residuals. Both assumptions were visually verified. By observing these graphs with the obtained and expected values, on the one hand, if the point cloud is symmetric with respect to the horizontal axis, it is considered that the relationship is linear. On the other hand, if the point cloud presents a constant width, it can be asserted that the variances are homogeneous.

The SPSS v.26 software was used to perform these analyses.

## RESULTS

The last-year students of the degree of nursing obtained, on average, a higher score in resilience ($M = 36.34$) than in psychological distress ($M = 27.89$) and emotional burnout ($M = 26.28$). Descriptive statistics of the scales by items and global scores can be seen at Appendix S1. With respect to the outcomes of the correlations, there was a significant, moderate and directly proportional correlation between psychological distress and emotional burnout. Between psychological distress and resilience, as well as between emotional burnout and resilience, the correlation was significant, discrete, and inversely proportional, as is observed in Table 3.

Table 4, which presents the coefficients of partial regression, shows the relevance of the score of emotional burnout and resilience in the equation, as well as the tendency of influence on the regression model. Of the two associated variables, emotional burnout is the one with the greatest relevance. According to the beta value, resilience has a tendency of negative influence. The students with lower resilience have a greater tendency toward psychological distress.

**TABLE 1** *Classic reliability*

| | Point estimate | |
|---|---|---|
| | McDonald's ω | Cronbach's α |
| Psychological Distress Scale | 0.911 | 0.908 |
| Emotional Burnout Scale | 0.905 | 0.902 |
| Resilience Scale | 0.911 | 0.910 |

**TABLE 2** *Goodness-of-fit of the one-factor scales*

| | Chi-squared test factor model | | RMSEA 90% CI lower bound | Goodness-of-fit index (GFI) | Standardized root mean square residual (SRMR) |
|---|---|---|---|---|---|
| | $X^2$ | $P$ | | | |
| Psychological Distress Scale | 61.837 | <0.001 | 0.032 | 0.969 | 0.036 |
| Emotional Burnout Scale | 67.541 | <0.001 | 0.043 | 0.966 | 0.046 |
| Resilience Scale | 73.652 | <0.001 | 0.045 | 0.963 | 0.043 |

**TABLE 3** *Correlations between global scores in psychological distress, emotional burnout, and resilience*

| | Global psychological distress | Global emotional burnout | Global resilience |
|---|---|---|---|
| Global psychological distress | | | |
| Pearson's correlation | 1 | 0.588** | −0.271** |
| Sig. (bilateral) | | 0.000 | 0.000 |
| Global emotional burnout | | | |
| Pearson's correlation | | 1 | −0.189** |
| Sig. (bilateral) | | | 0.000 |
| Global resilience | | | |
| Pearson's correlation | | | 1 |
| Sig. (bilateral) | | | |

**The correlation is significant at 0.01 (bilateral).

The fitted value of $R^2$ (Table 5) demonstrates the variance explained by the model, which thereby explains 37% of the variability of psychological distress. The F value indicates that the linear relationship is significant, as it is below 0.05. The regression model considered is not valid (see Table 6).

The assumptions of normality and homoscedasticity were verified by observing the standardized residual scores. Regarding the assumption of homoscedasticity, as is shown in Graph 1, the variation of the residuals presents a uniform and constant width. The assumption of normality was verified through Graph 2, which shows a linear distribution.

The assumption of no collinearity implied the analysis of the correlation between the total scores of resilience and emotional burnout. The correlation between them is low, as can be observed in Table 7. The VIF value is under 30 (see Table 4).

## DISCUSSION

Last-year nursing students, once the peak of the pandemic was over, showed moderate levels of emotional burnout and psychological distress, as was the case for the levels of stress and anxiety (Aslan & Pekince 2020; Labrague 2021; Savitsky *et al.* 2020). We cannot assert that the level of resilience is low in them (Hamadeh Kerbage *et al.* 2021), although we certainly cannot state that it is high either.

The obtained results reveal, on the one hand, that resilience is negatively correlated with emotional burnout and psychological distress. That is, resilient nursing students are less tired emotionally, have a better mood and live with less psychological distress than those who are not resilient. Resilience may act as a preventive factor against emotional burnout and psychological distress. Resilience helps to cope with adverse situations (Yu *et al.* 2019). According to Ching *et al.* (2020),

**TABLE 4** *Partial regression coefficients*

| | Coefficients[a] | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | Non-standardized coefficients | | Standardized coefficients | | | 95.0% confidence interval for B | | Correlations | | | Collinearity statistics | |
| | $B$ | Desv. error | Beta | $t$ | Sig. | Lower limit | Upper limit | Zero order | Partial | Part | Tolerance | VIF |
| 1 (Constant) | 20.056 | 1.987 | | 10.094 | 0.000 | 16.150 | 23.963 | | | | | |
| Global emotional burnout | 0.529 | 0.039 | 0.557 | 13.637 | 0.000 | 0.453 | 0.606 | 0.588 | 0.568 | 0.547 | 0.964 | 1.037 |
| Global resilience | −0.167 | 0.041 | −0.166 | −4.056 | 0.000 | −0.248 | −0.086 | −0.271 | −0.201 | −0.163 | 0.964 | 1.037 |

[a]Dependent variable: global psychological distress.

**TABLE 5** *Summary of the model*

| Model | R | R squared | R squared fitted | Standard error of the estimation | Change statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Change in R squared | Change in F | df1 | df2 | Sig. change in F | |
| 1 | 0.610[a] | 0.373 | 0.369 | 5.72017 | 0.373 | 115.839 | 2 | 390 | 0.000 | 1.798 |

[a]Predictors: (constant), global resilience, global emotional burnout.

**TABLE 6** *Summary of the ANOVA*

| Model | | Summary of squares | df | Quadratic mean | F | Sig. |
|---|---|---|---|---|---|---|
| | | ANOVA[a] | | | | |
| 1 | Regression | 7580.578 | 2 | 3790.289 | 115.839 | 0.000[b] |
| | Residual | 12760.933 | 390 | 32.720 | | |
| | Total | 20341.511 | 392 | | | |

[a]Dependent variable: global psychological distress.
[b]Predictors: (constant), global resilience, global emotional burnout.

resilient students accept their limitations, recognize their stressful factors and practise self-regulation. Thus, having resilience resources is a fundamental protective factor (Lorente *et al.* 2021).

The interaction of resilience with stress and well-being in nursing students has been analysed by Li and Hasson (2020), who determined that resilience and low stress predict well-being. On the other hand, the present study shows that psychological distress is partly explained by emotional burnout and resilience. Future studies should address the remaining variables that would explain psychological distress, with better sampling methods and larger sample sizes, which were the main limitations of this work. The participants of this study may not be fully representative of the population, and the sample size was calculated for a population of unknown size.
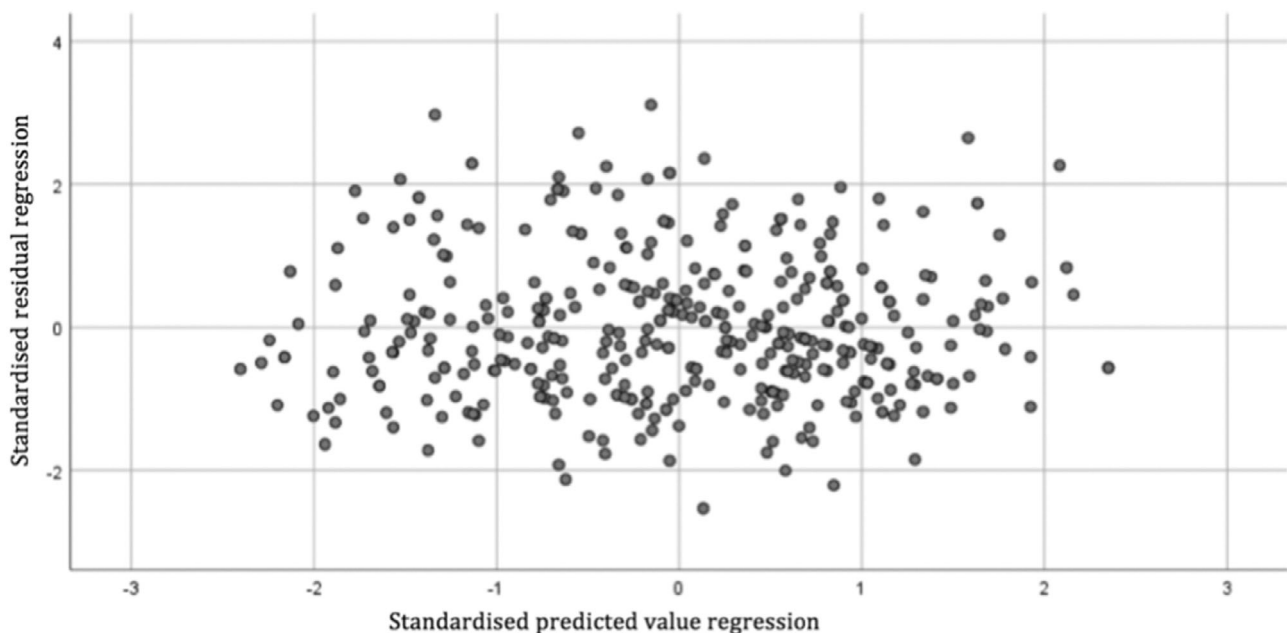


**GRAPH 1** Dispersion graph of the dependent variable 'global psychological distress'.
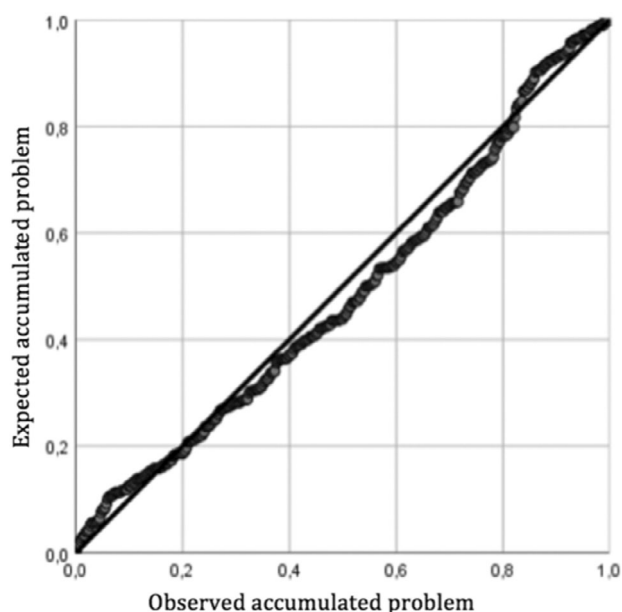
**GRAPH 2** Normal P–P graph of the standardized residual regression.

**TABLE 7** *Correlation between the global score in resilience and emotional burnout*

| Model | | | Global resilience | Global emotional burnout |
|---|---|---|---|---|
| | | Coefficient correlations[a] | | |
| 1 | Correlations | Global resilience | 1.000 | 0.189 |
| | | Global emotional burnout | 0.189 | 1.000 |
| | Covariances | Global resilience | 0.002 | 0.000 |
| | | Global emotional burnout | 0.000 | 0.002 |

[a]Dependent variable: global psychological distress.

## CONCLUSIONS

In the university context, it is necessary to raise awareness about the emotional burnout that affects nursing students. The factors that generate emotional burnout in pandemic situations should be studied, in order to promote initiatives that mitigate the negative effects on the mood and stamina of students, especially those who finish their studies. Nursing faculty members must consider how the adjustment of the degrees to the online or blended modality has been carried out and evaluate the quality of the training at that time (academic load, social organization of learning activities, students' role, etc.). Due to the health crisis, students suffered from a lack of motivation and poor concentration, in addition to significant learning difficulties

(Lovrić *et al.* 2020). Faculty members must receive training in terms of distance education (Eycan & Ulupinar 2021). Clinical scenarios should be analysed by university officials, as well as the supports offered to nursing students. Healthcare and nursing education institutions should establish a transition programme, especially for pandemic situations (Palacios-Ceña *et al.* 2021). Some of the initiatives should promote resilience and prepare students to overcome adversities and stressful situations that may occur when facing the requirements of their degrees in pandemic situations (Hernández-Martínez *et al.* 2021). A service must be created at universities to prevent, detect, and act in case of symptoms from which to cultivate emotional skills, such as mood repair, coping strategies, and resilience (Fernández-Martínez *et al.* 2019). Zhu *et al.* (2021) concluded that students' emotional regulation ability directly affects their mental health. Increased resilience has been recognized as necessary for students to face adversity in their educational environment and nursing practice (Thomas & Asselin 2018).

Facing the factors that generate emotional burnout and promoting resilience are fundamental to contribute to the psychological well-being of last-year nursing students in the academic scope.

## RELEVANCE FOR CLINICAL PRACTICE

The reflection should be extended to clinical practices. The clinical context and performance in it are part of Nursing training programmes. Therefore, last-year students have been exposed to the same risks, problems, and conflicts as nurses in practice during the COVID-19 pandemic. They had to be prepared for the transition to the profession and for coping with the difficulties of assistance in the pandemic situation. However, university institutions are urged to consider them, as well as their experiences, perceptions, and feelings as students, in order to determine how their susceptibility to emotional burnout and psychological distress can be minimized in their future clinical practices. Academic and professional tutors must offer psychological support and the resilience of students must be strengthened during the internship.

## AUTHORSHIP STATEMENT

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Domínguez: Writing – Original Draft. Jesús Conde-Jiménez: Formal analysis, Writing – Original Draft. Patricia Ramírez-Martín: Investigation, Writing – Review & Editing. Piedad María Lunar-Valle: Investigation, Writing – Review & Editing.

## INSTITUTIONAL REVIEW BOARD STATEMENT

The formal aspects of the declaration of Helsinki were considered at all times. The study was approved by the Research Ethics Committee of Huelva (code:MG-COV-2021-02; internal code: 0742-N-21).

## INFORMED CONSENT STATEMENT

Informed consent was obtained from all subjects involved in the study.

## DATA AVAILABILITY STATEMENT

Research data are not shared.

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## SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's website:

**Appendix S1** Descriptive statistics of the scales by items and global score