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Work-related Stress, Secondary Traumatic Stress, Hardiness and Post-Traumatic Growth Among ICU Healthcare Workers in the Post-Pandemic Era

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Work-related Stress, Secondary Traumatic Stress, Hardiness and Post-Traumatic Growth Among icu Healthcare Workers in the Post-Pandemic Era

Abstract

Health personnel working in intensive care units (ICUs) are particularly exposed to stressful situations and traumatic experiences in clinical settings. This study aims to analyze the impact of work-related stress and secondary traumatic stress in relation to hardiness and post-traumatic growth among healthcare professionals who provided care to patients affected by COVID-19 during the pandemic.

The sample consisted of 64 participants, including nurses and physicians from ICU settings, with an average age of 44 years. The findings indicate that work-related stress is higher among men and nurses; physicians score higher in responsibility for patient care; less work experience is associated with higher levels of work-related stress. Additionally, there is a direct relationship between hardiness and post-traumatic growth and an inverse relationship between hardiness and secondary traumatic stress. The study highlights the importance of further investigation into the impact and protective factors affecting this population group.

Keywords: work-related stress, secondary traumatic stress, hardiness, post-traumatic growth.

Estrés Laboral, Estrés Traumático Secundario, Personalidad Resistente y Crecimiento Postraumático en Personal Sanitario de UCI en Etapa De Postpandemia

Resumen

El personal sanitario que trabaja en unidades de cuidados intensivos (UCI) está particularmente expuesto a situaciones de estrés y experiencias traumáticas en entornos clínicos. Este estudio tiene como objetivo analizar los efectos del estrés laboral y el estrés traumático secundario en relación con la personalidad resistente y el crecimiento postraumático en profesionales de la salud que brindaron atención a pacientes afectados por COVID-19 durante la pandemia.

La muestra estuvo conformada por 64 participantes, entre enfermeros y médicos del área de UCI, con una media de edad de 44 años. Los resultados indican que el estrés laboral es mayor en varones y enfermeros; los médicos puntúan más alto en responsabilidad en el cuidado de los pacientes; menor experiencia laboral se asocia con mayores niveles de estrés laboral. Además, se observa una relación directa entre personalidad resistente y crecimiento postraumático, y una relación inversa entre personalidad resistente y estrés traumático secundario. El estudio enfatiza la importancia de seguir investigando el impacto y los factores de protección en este grupo poblacional.

Palabras clave: estrés laboral, estrés traumático secundario, personalidad resistente, crecimiento postraumático.

Introduction

In early 2020, the World Health Organization (WHO) declared a global pandemic due to the spread of the SARS-CoV-2 virus. During the first two years of the pandemic, Brazil reported the highest number of diagnosed cases in Latin America, with 30,617,786 cases, followed by Argentina with 9,101,319 cases. Uruguay ranked ninth, with 902,540 confirmed cases (Salud, 2022). These data illustrate the increased demand for medical care.

Healthcare personnel in medical institutions faced various stressors associated with the mass care of infected individuals, widespread societal fear, and the lack of established scientific protocols for treating the disease (Ruiz & Gómez, 2021).

Published studies indicate high levels of emotional exhaustion among healthcare workers, increased symptoms of anxiety and depression, and heightened psychological distress (Lozano, 2020; Montes & Ortúñez, 2021; Sánchez et al., 2021). A systematic review encompassing 33,062 participants concluded that anxiety had a combined prevalence of 23.2% in 12 of the 13 analyzed studies, while depression exhibited a prevalence rate of 22.8% across 10 studies. Furthermore, significant occupational differences were identified, with nurses experiencing higher levels of affective symptomatology than doctors (De Juan-Pérez, 2021).

In addition to the psychological impacts of anxiety, depression, and fear of contagion, stress and burnout were also prominent concerns (Danet, 2021). Nursing staff exhibited higher levels of burnout and psychosomatic symptoms than doctors. These symptoms were more prevalent among women and individuals who had either tested positive for the disease or had a close relative who had tested positive (Montes & Fernández, 2022). The risk factors of greatest psychiatric impact on healthcare personnel included living and working in a densely populated area, being female, job security perception, and being a resident doctor (Erazo & Saltos, 2021).

Most research highlights the impact of work-related stress on healthcare personnel, whether due

to anxiety and depression levels or work overload and its connection to patient care. Cajamarca et al. (2023) found that more than half of healthcare professionals were exposed to stress and reported somatic conditions such as headaches, extremity pain, dizziness, constipation or diarrhea, nausea, fatigue, and insomnia. In this scenario of recognition of work stress and the consideration of the psychological impact on workers, it is reported that coping strategies present an inversely proportional correlation to the impact of stress, so that effective coping mechanisms reduce stress-related consequences (Delgado et al., 2021).

A previous study on ICU intensivists in Uruguay showed that work-related stress levels increased when the weekly workload exceeded 40 hours, with younger intensivists experiencing higher stress levels. Exposure to daily stressors was found to impair bodily functioning, leading to decreased self-confidence, reduced productivity, and job dissatisfaction (Casagrande et al., 2022).

Additionally, a national survey on disruptive behaviors among healthcare personnel due to work stress reported that 91% of respondents had witnessed disruptive conduct among medical personnel, and 61% of doctors reported being victims of such behaviors. This issue is of crucial relevance since it has direct effects on patient safety (Godino et al., 2012). These behaviors caused by stress refer to disturbing behaviors or personal behaviors, whether verbal or behavioral, that negatively affect patient care and can interfere with the ability to work with other professionals, altering the proper functioning of the health team.

In trauma studies, the concept of compassion fatigue refers to the secondary traumatic impact of attending to others' emotional distress (Figley, 1999). Compassion fatigue is usually suffered by professionals who provide care to victims of unexpected crises, such as terrorist attacks or natural disasters.

The concept of a hardy personality has been explored in health psychology as a protective factor against stress. It encompasses characteristics

such as a sense of control, commitment, and the ability to face challenges (Moreno et al., 2004). Hardy personality has an effect on the process of shattered assumptions in secondary traumatic stress. Therefore, this study aims to explore the interaction between hardiness and work demands to better understand the trauma process among emergency service workers (Moreno et al., 2007).

The general objective of this study was to examine work-related stress, secondary traumatic stress, hardy personality, and post-traumatic growth among healthcare personnel who worked in ICUs during the pandemic. The specific objectives were: 1) to provide a sociodemographic description of the sample, 2) to analyze the relationship between sociodemographic factors and the study variables, 3) to evaluate the levels of work-related stress and secondary traumatic stress among participants, 4) to assess the hardy personality traits of ICU healthcare personnel, and 5) to determine the correlation between hardy personality and post-traumatic growth.

Methodology

In line with the stated objectives, this study adopted a quantitative correlational approach with a non-experimental, cross-sectional design. Data analysis was conducted using the statistical software Jamovi Project, version 2.3 (Jamovi, 2022).

Ethical Considerations

This study had the approval of the University Ethics Committee (<https://www.ucu.edu.uy/UCU/Comite-de-Etica-uc739>) (Approval No. 230224) and the primary institution where the sample was collected. Additionally, the study was registered with the Ministry of Public Health under project registration number 7765132.

Procedure

An online survey was conducted using the Qualtrics platform from April to November 2023. The questionnaires were distributed through various digital channels, including WhatsApp, email, LinkedIn,

Facebook, X, and Instagram, allowing participants to answer using their smartphones, tablets, or computers. The survey began with an introduction outlining the study's objectives and clearly stating that participation was voluntary, anonymous, and confidential. It was explicitly mentioned that individual responses from identifiable staff members would not be accessible to their respective health centers—only the overall results—. Finally, participants were required to provide explicit consent before proceeding with the study.

The inclusion criteria included medical professionals, nursing staff, and technical personnel working in public and private healthcare institutions within the city and other regions of the country who had worked in adult and/or pediatric intensive care units (ICUs) during the pandemic.

Participants

The sample consisted of 64 participants ($N = 64$), including medical workers and nursing staff employed in intensive care unit (ICU) departments of public and private hospitals. The majority (56.3%) were from the private health sector in the capital, while 43.7% were from other regions of the country. Of the participants, 75% were female, and 25% were male. Their ages ranged from 26 to 67 years, with a mean age of 44.14 years ($SD = 10.32$) and a mean of 16.08 years of work experience ($SD = 11.2$).

Research Instruments

- **Sociodemographic Survey:** An ad hoc survey collected information on gender, age, marital status, family structure, birthplace, workplace, occupational domain, tenure in the position, work schedules, and on-call shifts.
- **Fear of covid-19 Scale (fcv-19S; Ahorsu et al., 2020):** The Spanish adaptation of this questionnaire consists of seven items measuring fear of contagion. Responses are recorded on a five-point Likert scale ranging from “strongly agree” to “strongly disagree”. This scale assesses the intensity of fear of COVID-19 contagion, categorized as low, moderate, or high. The original authors reported

satisfactory performance in both classical test theory and the Rasch model. Reliability was demonstrated through internal consistency ($\alpha = .82$) and test-retest reliability ($ICC = .72$).

- **Health Professions Stress Inventory (Wolfgang, 1988):** The Spanish-adapted version (Palacios & Morán, 2014) consists of 30 Likert-type items with response options ranging from 0 (never) to 4 (very frequently). Total scores indicate levels of stress, ranging from minimal to severe. The instrument assesses four dimensions: personal recognition, responsibility for patient care, conflict at work, and uncertainty. The Spanish version reports a Cronbach's alpha of .91.
- **Secondary Traumatic Stress Scale (stss; Moreno et al., 2004):** The Spanish version measures antecedent variables of stress, personality variables, and the social, occupational, and physical consequences of stress. The questionnaire employs a Likert-type response format ranging from "strongly disagree" to "strongly agree". It provides an overall score categorized as low, moderate, or high and includes three dimensions: compassion fatigue, secondary trauma symptoms, and shattered assumptions. The authors reported a Cronbach's alpha of .76.
- **Hardy Personality Questionnaire (Moreno et al., 2000):** This questionnaire consists of 21 items designed to assess three dimensions of the hardy personality construct: control, commitment, and challenge. Respondents rate each item on a scale from (1) "strongly disagree" to (4) "strongly agree". Higher scores indicate greater hardiness. The instrument showed adequate internal consistency ($\alpha = .86$), with factor coefficients ranging from .75 to .81.
- **Post-Traumatic Growth Inventory (Vázquez et al., 2006):** The Spanish-adapted version consists of 21 items designed to assess perceived benefits following traumatic events. Responses are recorded on a Likert-type scale ranging from 0 (no change) to 5 (major

change). The instrument provides an overall score categorized as low, medium, or high in terms of post-traumatic growth. Esparza et al. (2016) reported a Cronbach's alpha of .92.

Data Analysis

Prior to conducting statistical analyses, anomalous data, including incomplete or blank responses, were excluded. A general descriptive analysis was then performed, followed by stratified analyses based on gender and occupational domain within the healthcare system (i.e., nurses and doctors). Subsequently, correlations between the aforementioned variables were analyzed. A linear regression analysis was conducted with post-traumatic growth as the dependent variable. Finally, a path analysis model was performed with the variables described above to assess the result of the interaction of all the variables from the regression results. The statistical software Jamovi Project version 2.3 was employed for data analysis.

Results

89.1% of the participants reported having worked throughout the pandemic, 1.6% did not work during the entire pandemic having requested medical certification, while 9.4% began their work during the middle stage of the pandemic, when the vaccine had already been introduced into the country. It is noteworthy that most study participants worked throughout the entire COVID-19 pandemic period.

Regarding place of residence and employment, 56% of participants worked in medical institutions in Montevideo, while 44% were employed in other regions of the country, distributed as follows: 6.3% in Canelones, 6.3% in Cerro Largo, 1.6% in Lavalleja, 7.8% in Maldonado, 1.6% in Paysandú, 17.2% in Salto, 1.6% in San José, and 1.6% in Tacuarembó.

In terms of healthcare sector distribution, 82.8% of participants worked in private healthcare institutions, while 17.2% were employed in the public sector.

Descriptive data related to participants' occupation, occupational domain, and work schedules are presented in Table 1 below.

Table 1.
Descriptive data of the sample

	n (%)
Occupation healthcare	
Nurse	34 (53.1)
Doctor	27 (42.2)
Others	3 (4.7)
Work domain	
Adults ICU	50 (78.1)
Pediatric ICU	6 (9.4)
Intermediate care	8 (12.5)
Work schedules	
Morning	10 (15.6)
Afternoon	11 (17.2)
Night	14 (21.9)
All shifts	29 (45.3)

Regarding work experience, participants reported tenures ranging from 2 to 45 years, with a mean tenure of 16.08 years (SD 11.23), of which the average for the female gender is 14.5 while for the male gender the average is 20 years.

Table 2.
Analysis of the variables based on gender and occupational domain

Gender	Statistical	P	Effect size
Total_WRS	1.132	0.262	0.3267
Total_STS	0.283	0.778	0.0816
Total_HP	1.629	0.108	0.4702
Total_PTG	-0.785	0.436	-0.2265
Occupation			
Total_WRS	-0.154	0.561	-0.0386
Total_STS	-0.101	0.540	-0.0252
Total_HP	-0.534	0.703	-0.1339
Total_PTG	-0.498	0.690	-0.1248

Table 3.
Correlation between work-related stress and secondary traumatic stress

		Work-related stress	Personal recognition	Responsibility for patient care	Conflict at work	Uncertainty
Secondary traumatic stress	R	0.636 ***	0.543 ***	0.499 ***	0.525 ***	0.510 ***
	P value	<.001	<.001	<.001	<.001	<.001
	Upper IC 95%	0.762	0.696	0.664	0.683	0.671
	Lower IC 95%	0.462	0.343	0.289	0.320	0.302
Compassion fatigue	R	0.548 ***	0.606 ***	0.248 *	0.452 ***	0.388 **
	P value	<.001	<.001	0.048	<.001	0.002
	Upper IC 95%	0.700	0.742	0.466	0.628	0.578
	Lower IC 95%	0.350	0.424	0.002	0.232	0.157
Symptoms of secondary trauma	R	0.316 *	0.139	0.448 ***	0.271 *	0.270 *
	P value	0.011	0.273	<.001	0.031	0.031
	Upper IC 95%	0.521	0.372	0.625	0.484	0.484
	Lower IC 95%					

		Work-related stress	Personal recognition	Responsibility for patient care	Conflict at work	Uncertainty
Shattered assumptions	Lower IC 95%	0.076	-0.111	0.227	0.026	0.026
	R	0.542 ***	0.491 ***	0.347 **	0.433 ***	0.477 ***
	P value	<.001	<.001	0.005	<.001	<.001
	Upper IC 95%	0.695	0.657	0.546	0.614	0.647
	Lower IC 95%	0.341	0.278	0.111	0.210	0.262

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. FCV= fear of COVID; WRS= work-related stress; STS= secondary traumatic stress; HP= hardy personality; PTG= post-traumatic growth.

Analysis of Variables

The analysis of the variables (Table 2) —work-related stress, secondary traumatic stress, hardy personality, and post-traumatic growth— by gender and occupational domain indicates that work-related stress is higher among men, whereas post-traumatic growth is higher among women.

When considering the occupational domain (doctors vs. nurses), nurses exhibit higher levels of work-related stress, hardy personality, and post-traumatic growth than doctors. Work-related stress is higher among nurses in the dimensions of personal recognition and uncertainty, whereas in the dimension of responsibility for patient care, it is higher among doctors. In the dimensions of commitment and control, nurses score higher than doctors, with no significant differences in the challenge dimension.

When assessing work-related stress and secondary traumatic stress based on tenure in the position (categorized as less than 10 years vs. more than 10 years of work experience), results indicate that those with less experience report higher levels of both work-related stress and secondary traumatic stress, alongside lower levels of hardiness. In contrast, healthcare personnel with more experience exhibit higher levels of hardiness and lower levels of both work-related stress and secondary traumatic stress.

As seen in Table 3, all dimensions of work-related stress show significant correlations with dimensions of secondary traumatic stress, except

for personal recognition, which does not correlate with secondary stress symptoms.

Based on the results presented in Table 4, which analyzes the interplay among the variables' dimensions, secondary traumatic stress in its *compassion fatigue* dimension exhibits significant correlations with personal recognition ($t = .54, p < .001$), responsibility for patient care ($t = .60, p < .001$), and uncertainty ($t = .45, p < .001$). Additionally, the *shattered assumptions* dimension correlates significantly with personal recognition ($t = .54, p < .001$) and responsibility for patient care ($t = .49, p < .001$).

Moreover, there is a negative correlation between the *control* ($t = -.48, p < .001$) and *challenge* ($t = -.46, p < .001$) dimensions and secondary traumatic stress, indicating that higher levels of control and challenge are associated with lower levels of secondary trauma.

Figure 1. Path analysis model with the studied variables. Note. * $p < .05$.

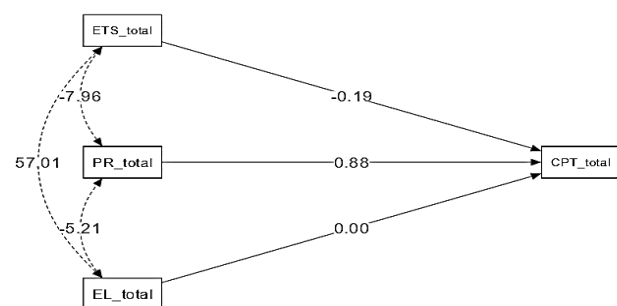


Table 4.

Correlations between fear of COVID-19, work-related stress, secondary traumatic stress, hardy personality and posttraumatic growth.

		FCV	WRS_pers		WRS_respon_care		WRS_conflict_at_work		WRS
WRS_total	R	0.06	—						
	p	0.60	—						
WRS_pers	R	,-0.07	0.85 ***		—				
	p	0.54	<.00		—				
WRS_respon_care	R	0.06	0.63 ***		0.36 **		—		
	p	0.58	<.00		0.00		—		
WRS_conflict at work	R	0.06	0.91 ***		0.68 ***		0.54 ***		
	p	0.60	<.00		<.00		<.00		
WRS_uncertainty	R	0.22	0.80 ***		0.58 ***		0.34 **		
	p	0.07	<.00		<.00		0.00		
STS_total	R	0.06	0.63 ***		0.54 ***		0.49 ***		
	p	0.59	<.00		<.00		<.00		
STS_comp fatigue	R	,-0.19	0.54 ***		0.60 ***		0.24 *		
	p	0.12	<.00		<.00		0.04		
STS_sec trauma	R	0.23	0.31 *		0.13		0.44 ***		
	p	0.05	0.01		0.27		<.00		
STS_shattered assumptions	R	0.06	0.54 ***		0.49 ***		0.34 **		
	p	0.62	<.00		<.00		0.00		
HP_total	R	0.22	,-0.04		,-0.15		0.27 *		
	p	0.07	0.71		0.23		0.02		
HP_commitment	R	0.07	0.05		,-0.02		0.26 *		
	p	0.58	0.66		0.87		0.03		
HP_control	R	0.27 *	,-0.03		,-0.14		0.26 *		
	p	0.03	0.75		0.25		0.03		
HP_challenge	R	0.24	,-0.13		,-0.22		0.19		
	p	0.05	0.28		0.07		0.11		
PTG_total	R	0.02	,-0.04		,-0.10		,-0.02		
	p	0.86	0.75		0.40		0.83		
PTG_relation_w/ others	R	0.02	,-0.09		,-0.13		,-0.05		
	p	0.81	0.45		0.29		0.68		
PTG_new possibilities	R	,-0.02	,-0.03		,-0.09		,-0.01		
	p	0.84	0.80		0.43		0.92		
PTG_personal strength	R	0.03	,-0.00		,-0.07		,-0.01		
	p	0.77	0.97		0.56		0.92		
PTG_spiritual	R	0.12	0.02		,-0.06		,-0.01		
	p	0.32	0.85		0.59		0.89		
PTG_life appreciation	R	0.05	,-0.10		,-0.14		,-0.12		
	p	0.64	0.430		0.27		0.32		

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. FCV= fear of COVID; WRS= work-related stress; STS= secondary traumatic stress; HP= hardy personality; PTG= post-traumatic growth.

WRS_uncertainty		STS_total		STS_comp_fatigue		STS_sec_trauma		STS_shattered_assumptions
—								
—								
0.68	***	—						
<.00		—						
0.52	***	0.51	***	—				
<.00		<.00		—				
0.45	***	0.38	**	0.73	***	—		
<.00		0.00		<.00		—		
0.27	*	0.27	*	0.70	***	0.13		—
0.03		0.03		<.00		0.28		—
0.43	***	0.47	***	0.69	***	0.49	***	0.18
<.00		<.00		<.00		<.00		0.15
-0.01		,-0.16		,-0.23		,-0.50	***	0.07
0.90		0.19		0.06		<.00		0.55
0.05		,-0.04		,-0.13		,-0.35	**	0.08
0.69		0.73		0.27		0.00		0.50
0.00		,-0.15		,-0.23		,-0.48	***	0.04
0.98		0.21		0.06		<.00		0.72
,-0.09		,-0.22		,-0.23		,-0.46	***	0.06
0.47		0.07		0.06		<.00		0.58
,-0.03		0.06		,-0.10		,-0.20		0.02
0.80		0.60		0.41		0.09		0.85
,-0.09		0.00		,-0.06		,-0.17		0.06
0.45		0.97		0.62		0.17		0.61
0.00		0.03		,-0.10		,-0.15		,-0.05
0.98		0.79		0.42		0.22		0.65
,-0.01		0.12		,-0.10		,-0.19		0.02
0.91		0.33		0.41		0.12		0.82
0.07		0.10		,-0.09		,-0.21		0.04
0.55		0.42		0.44		0.09		0.72
,-0.11		0.08		,-0.22		,-0.31	*	,-0.04
0.35		0.52		0.074		0.01		0.74

Finally, a path analysis was conducted to assess the relationships among all variables (see Figure 1). The results of this model, with a goodness-of-fit index indicating CFI = 1, TLI = 1, and GFI = 0.998, show an inverse relationship between hardy personality and both secondary traumatic

stress and work-related stress. Additionally, the analysis reveals an inverse relationship between secondary traumatic stress and posttraumatic growth, as well as a positive relationship between hardy personality and posttraumatic growth.

Table 5.
Variable coefficients

95% Confidence Intervals								
Dep	Pred	Estimate	SE	Lower	Upper	β	z	p
PTG_total	EL_total	-0.00398	0.0504	-0.103	0.0948	-0.00354	-0.0791	0.937
PTG_total	PR_total	0.92041	0.2011	0.526	1.3145	1.01333	4.5775	<.001
PTG_total	ETS_total	-0.13709	0.4128	-0.946	0.6719	-0.07334	-0.3321	0.740

Discussion

The aim of this study was to investigate the relationship between work-related stress, secondary traumatic stress, hardy personality, and post-traumatic growth in healthcare personnel working in ICUs during the COVID-19 pandemic. It was hypothesized that secondary traumatic stress would be associated with work-related stress and that, in relation to hardy personality, it would be linked to post-traumatic growth. This hypothesis was based on the premise that ICU personnel faced an unexpected change that significantly increased the stress inherent to their already demanding work functions.

In the first place, it was observed that work-related stress was higher in men and nurses, who exhibited elevated levels of personal recognition, uncertainty, commitment, and control, while doctors reported higher scores in responsibility for patient care. These findings align with the research by De Juan-Pérez (2021), which highlights the greater emotional impact on nursing staff compared to doctors. On the other hand, it was observed that post-traumatic growth was higher in women.

Participants with less work experience exhibited higher levels of work-related stress and lower levels of hardiness, whereas those with longer tenures demonstrated higher levels of hardiness and were less affected by work-related stress. These

findings are consistent with a previous study by Casagrande et al. (2022) conducted in the same country, which showed a similar trend.

A connection was observed between hardy personality and post-traumatic growth, particularly in the domains of new possibilities, commitment, and personal strength.

Regarding secondary traumatic stress, the dimension of compassion fatigue correlated with personal recognition, responsibility for patient care, and uncertainty. Additionally, shattered assumptions correlated with personal recognition and responsibility for patient care. Conversely, an inverse relationship was found between hardy personality (control and challenge) and secondary trauma, indicating that individuals with harder personalities exhibited lower levels of secondary trauma involvement.

Our study has some limitations. Firstly, the sample size was small, which restricts the generalizability of the findings. Additionally, most participants were employed in the private sector. However, it is noteworthy that most participants worked throughout the entirety of the pandemic, experiencing various stages, including the intermediate phase marked by the introduction of vaccines and the subsequent return to normal ICU clinical care.

Another limitation relates to the study's cross-sectional design, which measures variables at a

single point in time. For this reason, we believe that experimental or longitudinal studies would be more appropriate to further explore these findings and determine the nature of the relationships identified.

Nevertheless, the data obtained in this study underscore the importance of evaluating and addressing this population group from the perspective of strengthening psychological resources as protective factors for mental health.

Conclusions

The data obtained in this study suggest that ICU healthcare personnel exhibit certain affectation in connection with work-related stress and secondary stress. Moreover, it appears that hardy personality can regulate the effects of this affectation and have an impact on post-traumatic growth, being a protective factor against both work-related stress and secondary traumatic stress arising from professional duties.

However, further research is required in this population group, and that such investigations should delve deeper into other factors of vulnerability and protection, employing in-depth analyses and longitudinal evaluations of the stressors encountered in ICU healthcare settings.

Justification

Although this study has the limitations mentioned above, so that the data are generalizable, it is considered that it is a starting point for future research in a poorly studied population and in a particularly uncertain time that increased the level of stress, to the normal work activity of this study group. Therefore, it would be from a good start, just like other papers that continued investigating an incipient topic.

Finally, some findings from this study may be useful for the prevention and promotion of healthcare workers' well-being. The results suggest that hardy personality serves as a protective factor that mitigates the effects of work stress and could

be enhanced through preventive psychological interventions.

The researchers declare that there is no conflict of interest.

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