



## SCIENTIFIC LETTER

### Survey on the employment situation of intensivists in their early career



### Encuesta sobre la situación laboral de los intensivistas en sus primeros años de actividad

To the Editor,

We, intensivists, lead critically ill patient care through a model that has proven efficient and improved health results.<sup>1</sup> This model requires a specifically organized staff under proper labor conditions.<sup>2,3</sup> Shift work with calls in the critical care setting requires management focused on taking care of the health professionals involved.<sup>4,5</sup> Inappropriate labor conditions are associated with higher chances of occupational accidents *in itinere*, chronic diseases, and burnout syndrome.<sup>6</sup> Despite its importance, the attention paid in our organizations is scarce. Experience in other countries warn us on the importance of these aspects and comprehensive plans have been envisioned on this regard.<sup>7,8</sup> The SEMICYUC Youth working group proposed conducting a survey to get to know the actual labor situation of intensivists within their first few years of practice. The scientific approval from SEMICYUC was obtained for this purpose. Approval from clinical research ethics committee was not deemed necessary given the voluntary and anonymous nature of the survey. All members acting as specialists within their first 10 years of practice were asked to participate through an e-mail sent to them. The period of the survey spanned from December 2020 through September 2021 and recruitment was increased during the pandemic. The survey is available for consultation on the supplementary data (Appendix B; [supplementary data 1](#)). Data obtained are shown based on a descriptive statistical analysis with number (percentage) or median (interquartile range [IQR]). Results were grouped into 3 different categories: 1) Overall characteristics of the population and labor conditions; 2) Opportunities at the working station and talent retention; 3) Conciliation of personal, family and working life and attention to the health professional. Since the COVID-19 pandemic has caused changes to the respondents' working situation, a distinction was made between the situation prior to the pandemic and the situation afterwards.

A total of 100 answers were submitted. The number of intensivists with 10 or less years of experience when the

survey was conducted was 1050 while the rate of response was 9.5%. A total of 74% of the patients were women with a mean age of 33 (31–36) years. A total of 65% of respondents had finished their residencies over the past 5 years (Appendix B; [supplementary data 2](#)). The most highly represented autonomous communities were Catalonia (14%), and the Community of Madrid (13%) (Appendix B; [supplementary data 2](#)). The most common type of contract was temporary (79.3%) followed by indefinite (18.5%). A total of 47% worked for the Spanish National Health System (NHS) alone while 46% also worked for the private sector and the NHS too. Only 4% worked for the private sector alone. A total of 82% conducted their clinical activity at the intensive care setting while the rest shared this activity with other settings like the ER (both in- and out-of-hospital). The median of employees was 2 [1–3]. Respondents did a total of 6 calls/month [5–7] and up to 7 [6–8] during the pandemic. We should mention that 18.8% of respondents did a total of  $\geq 8$  calls routinely (up to 39% during the pandemic).

Regarding working opportunities, 54% said they were master's degree holders while 12% claimed were studying a master's degree while the survey was being conducted. Only 6% were PhD holders while 16% said they were currently studying to become PhDs. A total of 26% stated that they participated in some kind of funded research project. A total of 43.8% considered that their participation in training and research activities was not encouraged. A total of 59% stated that they had had second thoughts about changing their medical specialty recently while 61% were already thinking of working in other country.

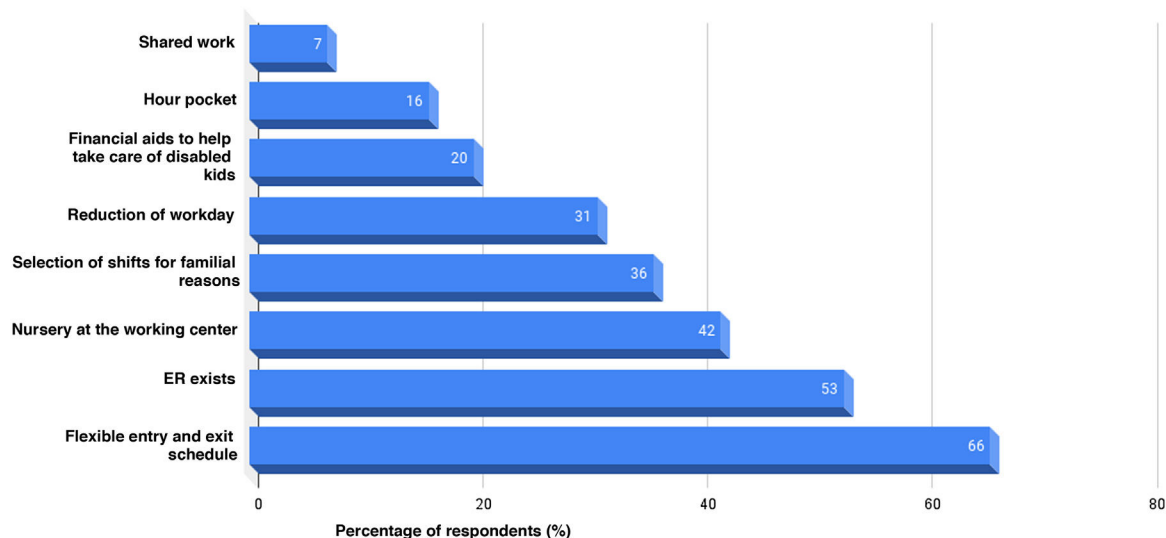
Finally, the possibilities of conciliation of personal, family and working life were studied. A total of 34% of respondents were in charge of family members. When asked on how difficult it was to match their professional and personal lives, 57% responded "difficult" or "very difficult". Respondents were asked to assess different statements on care and conciliation (Table 1). We should mention that 44% did not identify a climate prone to conciliation at their unit while half of them thought their health had become worse since the beginning of their residency. Among the measures proposed to improve the working conditions (Fig. 1), the ones most widely accepted were the presence of a flexible schedule (66%), and the existence of hour pockets for emergencies associated with family members and care (53%).

This survey is the starting point to analyze the working situation of our medical specialty. Results show high levels of

**Table 1** Conciliation of personal, family and working life and attention of health professionals.<sup>a</sup>

	1	2	3	4	5
There is a certain climate prone to family conciliation at my unit	23.5	21.4	25.5	21.4	8.2
Involvement in training, and research beyond healthcare practice is encouraged at my unit	17.3	26.5	20.4	23.5	12.2
I think my health has become worse since I started my residency	4	11	16	21	48
I would do the same specialty all over again	13	10	25	30	22

<sup>a</sup> Level of agreement with the aforementioned statements being 1 (profound disagreement) and 5 (full agreement). Percentage of answers per category.



**Figure 1** Measures proposed for better conciliation of personal, family and working life.

transitoriness (above half of the sample studied). Also, the lack of strategies aimed at retaining and promoting talent and conciliation issues were evident in the answers given. Data require raising awareness to make sure that health professionals in charge of critically ill patients have the necessary life and working conditions to do their job with quality and safely.<sup>2-4</sup> The impact this situation can have can be described in 3 different levels. In the first place, impact on the quality of care with several studies associating the health professionals' wellbeing with quality and safety of care.<sup>6,7,9</sup> Secondly, on the health professionals' wellbeing since working conditions have been associated with more diseases, labor absenteeism, rotation, and higher costs for the entire healthcare system. Finally, impact on the very future of our medical specialty.<sup>3,8</sup> In this sense, both the strategic plan of our society and the international studies on this regard include some working lines to improve this situation.<sup>1,4,6</sup> Results should be assessed with caution given the scarcity of data. Results come from an age range of all the respondent specialists, yet the rate of response was scarce despite the interest associated with the topic at stake. In any case, only a generation of intensivists with proper working stability, motivated, and involved with different organizations can be the foundation upon which the future of our medical specialty can be built.

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## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.medicine.2022.06.022>.

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- J.A. Barea Mendoza<sup>a,\*</sup>, L. Galarza Barrachina<sup>b</sup>, B. Lobo Valbuena<sup>c</sup>, L. López de la Oliva Calvo<sup>c</sup>, M. Martínez Martínez<sup>d</sup>, I. Barrero García<sup>e</sup>, S. Pajares Martínez<sup>c</sup>
- <sup>a</sup> Servicio Medicina Intensiva, Hospital Universitario 12 de Octubre, Madrid, Spain  
<sup>b</sup> Servicio Medicina Intensiva, Hospital General Universitario de Castellón, Castellón, Spain  
<sup>c</sup> Servicio Medicina Intensiva, Hospital Universitario del Henares, Coslada, Madrid, Spain  
<sup>d</sup> Servicio Medicina Intensiva, Hospital Universitario Vall d’Hebron, Barcelona, Spain  
<sup>e</sup> Servicio Medicina Intensiva, Hospital Universitario Virgen Macarena, Sevilla, Spain
- Corresponding author.  
 E-mail address: [jesusabelardo.barea@salud.madrid.org](mailto:jesusabelardo.barea@salud.madrid.org) (J.A. Barea Mendoza).
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## Traumatic cerebrovascular injury



### Lesión cerebrovascular asociada a la enfermedad traumática

Dear Editor,

Traumatic cerebrovascular injury (TCVI) is a rare complication of patients with traumatic disease with an incidence rate between 0.5% and 3.3%. Neurologic deficits—that can occur after the acute phase—happen in up to 58% of the patients with a mortality rate close to 25%.<sup>1,2</sup> It is important to identify risk groups so that optimal treatment can improve functional results and reduce the morbidity and mortality rates. We describe a series of cases approved by the local research ethics committee. The patients and/or their representatives’ written informed consents were granted.

The identification of patients who can develop TCVI is one of the main challenges. Guidelines recommend using the modified Denver and Memphis criteria as screening.<sup>3,4</sup> High-energy mechanisms are the leading cause of TCVI, above all, those causing flexion-extension, rotation, and deceleration; anecdotally, low-energy trivial mechanisms like chiropractic, and the practice of yoga have been described.<sup>5</sup> In our series, all cases presented with closed trauma, being high-energy most of them, due to traffic accidents (60%). All showed traumatic brain injury. Clinical characteristics and severity scores are shown on [Table 1](#).

The modified Denver and Memphis criteria include aspects associated with the lesion mechanism, associated lesions, and the clinical characteristics of patients with

traumatic disease. However, despite such criteria, a non-negligible number of patients won’t be diagnosed with TCVI.<sup>1</sup> In this sense, a recent study conducted by Leichte et al.<sup>6</sup> estimates that up to 20% of the patients are misdiagnosed, and 25% of these have severity scores  $\geq 3$  according to the Denver scale; it is for this reason that authors recommend universal screening to discard TCVI in all patients with severe traumatic disease due to closed mechanisms. However, feasibility and cost-effectiveness studies are needed to back up this approach.

The severity of TCVI is defined based on the Denver severity scale (also called the Biffel scale), and has been designed to guide the therapeutic approach and for the prognosis of results.<sup>4</sup> However, this scale only defines lesions caused at arterial level at the TCVI normal setting sparing venous lesions on cerebral sinuses that can be accompanied by neurologic deficits.<sup>5</sup> We present 5 cases, 3 of which showed arterial lesions with severity grades II, III, and IV ([Fig. 1A](#), [B](#), [E](#), [F](#), and [G](#)) plus 2 cases of lesions in cerebral venous sinuses ([Fig. 1C](#) and [D](#)).

The therapeutic goal is to prevent the development of ischemic lesions.<sup>3</sup> Benefits in the morbidity and mortality rates have been demonstrated with the early use of antithrombotic therapy<sup>4</sup>; despite of that, there is discrepancy on what the most suitable antithrombotic therapy is (anticoagulation or antiplatelet therapy).<sup>7</sup> The risk of ischemic events increases the severity of the lesion; therefore, the current recommendations advocate for using antithrombotic therapy after diagnosis considering the bleeding risks involved.<sup>3,4,8</sup> In our series, 4 patients received anticoagulation with unfractionated heparin, and 1 with low-molecular weight heparin. One patient presented with bleeding ([Fig. 1H](#)) 5 days after starting anticoagulant therapy with unfractionated heparin. At the present time, no