ORIGINAL ARTICLE

Professional profile and work conditions of nurses working in intensive care units: A multicentre study

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Abstract

Aim: To determine the professional profile and the work conditions of nurses working in intensive care units (ICU) in Colombia, Argentina, Peru and Brazil.

Background: ICUs require a differentiated professional profile to provide quality care, and appropriate working conditions, leading to a transformation of care and management practices.

Design: Descriptive multicentre cross-sectional observational study.

Methods: An online survey was applied to identify both the characteristics of the professional profile and the working conditions. 1,427 ICU nursing professionals were included. RStudio statistical software was used for the analysis of the information. Descriptive statistics were used for the presentation of the results. The STROBE checklist for cross-sectional studies was used in this study.

Results: Only 33.6% of the professionals had a specialisation degree in intensive care. The skills that were most frequently put into practice were communication (68.5%) and care management (78.5%). The most predominant nurse-to-patient ratios were 1:2, and greater than 1:6. 59.1% of the nurses had an indefinite term contract, 38.8% worked 48 hours per week and 49.8% had rotating shifts. Only 50.4% of them

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received incentives. The average salary ranged between 348 and 1,500 USD. 64.5% of the participants were satisfied with their job.

Conclusion: It is necessary to strengthen nurses' professional profile by promoting both postgraduate education and the development of troubleshooting and teamwork skills. It is necessary to standardise the nurse-to-patient ratio, improve wages and increase incentives to achieve greater job satisfaction.

Relevance to practice: The knowledge and the improvement of both the professional profile and the work conditions of nurses working in intensive care units will improve the quality of the care given to critical patients and, therefore, the quality of health outcomes.

KEYWORDS
critical care, nursing, work conditions, work profile

1 | INTRODUCTION

Intensive care units (ICU) require a differentiated professional profile to provide quality care, as well as appropriate work conditions in order to lead to a transformation of practices related to care and management. This has to do with the fact that work conditions merge with professional education, so education acts as a guideline to improve the quality of those work conditions (Santos & Camelo, 2015).

Therefore, the professional profile can be understood as the set of capacities and skills that characterise, qualify and make nurses suitable to undertake the assigned functions. This profile is an essential aspect, since it is associated with the survival rate at hospitals, adverse events, complications, mortality, infections and patient satisfaction (del Barrio-Linares, 2014; Kelly et al., 2014; Adams et al., 2000; O'Brien-Pallas et al., 2004). For that reason, advanced and postgraduate lifelong education has great relevance, since it makes safer practices possible, preventing damages and diminishing the risks derived from sanitary attention (Camelo, 2012).

On the other hand, the fact that work conditions can interfere with the quality and safety of care provided to the critically ill patient has been identified. International entities such as the World Health Organization (WHO), the International Council of Nurses (ICN) and the International Labour Organization (ILO) have recognised the importance of a positive working environment in which spaces that promote the safety and well-being of the worker are promoted, not only because of the significant impact it has in terms of job satisfaction, reduced absenteeism and employee retention (Cauduro & Kalckmann, 2018), but also because it is closely related to motivation, which is an indispensable aspect in the quality of the service provided by the nurse (Romero-Massa et al., 2011).

1.1 | Justification of the study

Working conditions must be subject to regulations that ensure maximum well-being for workers; however, despite the existence of some

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What does this paper contribute to the wider global clinical community

- The characterisation of the human resource, regarding the work conditions and the training profile in intensive care, becomes an essential aspect to be taken into account to ensure the quality of nursing care and the optimal recovery of patients.
- It provides information for all actors involved in the training and recruitment of ICU nursing professionals to establish plans that strengthen skills and optimise work conditions related to workload, wages and incentives.

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legal standards, this is not effectively reflected in the employment situation, since more attention is being paid to the quality of care provided than the work conditions that professionals have when doing their job (Canales-Vergara et al., 2016).

Regarding the impact generated by both an unsuitable professional profile and unsuitable work conditions, different organisations, such as the World Federation of Critical Care Nurses (Duré et al., 2015) have indicated that critical care nursing workforce must be considered a priority on the part of the governments, hospitals' directors, undergraduate and graduate institutions and professional bodies, to—therefore—guarantee health and safety for the most vulnerable patients.

In Colombia, Argentina, Peru and Brazil, the professional and the career profile in the critical care field is complex, since the world is going through moments of crisis and there is no clear situational diagnosis of the number of nurses with graduate education in intensive care. The demand of health services is collapsed due to the lack of sufficient and suitably educated nursing personnel (Dushkin, 2014; Martins and Robazzi, 2009).

The studies carried out in these four countries in relation to the professional profile and the work conditions are scarce and show—in

a limited way—the outlook in some regions. It is suggested to extend the size of the population and to make comparisons in terms of places, time and work conditions of the infirmary professionals.

This is how this situation demonstrates the necessity to determine the professional profile and the labour conditions of the infirmary personnel in this area, so that a valuable outlook can be generated for the organisations that train nursing professionals, for employers, associations and overseer organisms, for the sake of looking for the best strategies to allow standardisation of the human resources in the healthcare sector.

1.2 | Aim

To determine the professional profile and work conditions of nurses working in intensive care units (ICUs) in Colombia, Argentina, Peru and Brazil.

2 | DESIGN AND METHODS

2.1 | Design

A descriptive multicentre cross-sectional observational study was conducted. 55 health institutions from Latin American countries participated during the period between February and July of 2019. In order to grant adequate and complete reporting of research, the *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) guideline was used (von Elm et al., 2008) for cross-sectional studies (Supplementary File 1).

2.2 | Sample/Participants

The sample size was 1,427 nursing professionals who were working at the time in intensive care units by the time the study was conducted in these countries. The calculation of sample size was made from a stratified sampling with proportional adjustment, since the variance of the variables of interest within population was unknown (Särndal & Swensson, 2003), under the following parameters: Alpha 0.5% with a 95% confidence level, error in participants selections: 3% and an expected non-response rate of 30%.

Inclusion criteria were as follows: nursing professionals who were employed in adult and paediatric intensive care units in the study countries, and who wished to participate in this research. Professionals who did not adequately or thoroughly fulfil the survey form were excluded.

2.3 | Data collection technique

An online survey containing 33 questions distributed into three categories was designed to collect the information. **Sociodemographic characteristics**: 4 questions focused on age, gender, marital status and number of children. **Professional profile**: 2 questions about level of education and 15 about the 5 critical competencies of the professional. **Labour conditions**: 12 questions oriented to evaluate hiring, wage, work load and incentives. The survey questions were based on the guidelines for the professional profile established by the World Federation of Critical Care Nurses and the guidelines for work conditions by the ILO and the Global Health Workforce Alliance (Houtman et al., 2008; Associations-EfCCNa E federation of CCN, 2013). A pilot test was conducted to assess the clarity of the questions. In the case of Brazil, the survey was translated to Portuguese by the team of researchers in this country.

Nursing professionals at the participating institutions responded to the online survey—prior signature of the informed consent. In order to keep measurement biases under control, the general coordinator of the study carried out ongoing auditing of the surveys to ensure quality and minimise the loss of information.

2.4 | Analysis

The RStudio statistical software (RStudio Team, 2020) was used for the analysis of the data. Descriptive statistics were used for the presentation of the results. Central tendency and dispersion measures were calculated for quantitative variables; for the qualitative ones, frequency calculations and percentage distribution were performed.

2.5 | Ethical and research approval

The study was approved by the ethics and research committee of the university, as well as by the committees from the 55 participating health institutions. The various declarations, rules and resolutions regulating health research were taken into account, including international guidelines—the Helsinki Declaration—and national guidelines—the Resolution 008430 of 1993 of the Ministry of Health and Social Protection of the Republic of Colombia-. All participants gave their informed consent. During the collection and analysis of the data, the principles of confidentiality and privacy were ensured while maintaining the anonymity of the participants.

3 | RESULTS

Table 1 shows that the largest participation of nurses was in Argentina (36.2%), followed by Colombia (30.3%). Most of them were women, either single or married and childless. The median age was 36 years old with an interquartile range of 15, being lower in Brazil and higher in Peru.

In Table 2, it is noticeable that the variable with the highest tally corresponded to postgraduate education in intensive care (specialisation degree), followed by training not conducive to qualification. Nevertheless, technical training prevails in Argentina. Years of work

TABLE 1 Sociodemographic characteristics of nursing professionals

Category	Argentina		Brazil		Colombia		Peru		All countries	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Nurses	571	36.2	154	10.8	433	30.3	323	22.6	1427	100.0
Gender										
Female	425	82.2	120	77.9	344	79.5	302	93.5	1191	83.5
Male	92	17.8	34	22.1	89	20.5	21	6.5	236	16.5
Marital status										
Married	155	30.0	57	37.0	115	26.6	160	49.5	487	34.1
Divorced	37	7.2	7	4.5	21	4.8	20	6.2	85	6.0
Single	262	50.7	81	52.6	196	45.3	127	39.3	666	46.7
Common-law marriage	60	11.6	9	5.8	98	22.6	14	4.3	181	12.7
Widowed	3	0.6	0	0.0	3	0.7	2	0.6	8	0.6
Number of children										
0	190	36.8	102	66.2	188	43.4	105	32.5	585	41.0
1	130	25.1	23	14.9	118	27.3	72	22.3	343	24.0
2	116	22.4	25	16.2	94	21.7	103	31.9	338	23.7
3	58	11.2	4	2.6	31	7.2	40	12.4	133	9.3
4	20	3.9	0	0.0	0	0.0	2	0.6	22	1.5
5	3	0.6	0	0.0	2	0.5	1	0.3	6	0.4
Age										
Median (IQR)*	35	11*	29	11*	34	14*	44	16*	36	15*

experience showed a median of 6 with an interquartile range of 9. A lower median was found in Brazil and a higher one in Peru, which is related to the age of the participants of the study.

With regard to skills development, communication and management of care were permanently put into practice by most participants; however, for the rest of the skills (troubleshooting, personal development and teamwork), it was found that half of the professionals exercised them—always and almost always—when taking care of critical patients.

Table 3 shows that 1:2 and 1:6 or more nurse-to-patient ratios predominate, resulting in most professionals not considering the number of patients allocated appropriate. However, there are some important differences among countries. In the case of Argentina and Peru, the prevailing nurse–patient ratio was 1:2, while in Brazil 1:4, and in Colombia 1:6 or more. In Argentina, Colombia and Peru, the indefinite term contract prevails; however, in Brazil, the non-lifetime 'celestist' contract predominates, in which the employer directly hires the employee and can terminate the contract at any time, always observing current labour laws (Santos et al., 2018; Silva et al., 2020).

In general, an average of 48 hours worked per week among the participants was found. In Argentina and Peru, the hours worked are lower, with 40 and 36 hours, respectively. In relation to work shifts, it was found that rotating shifts are the most frequent, especially in Colombia and Peru; while in Brazil and Argentina fixed day and night shifts predominate. It was evidenced that most of the professionals

had only one job; however, a significant percentage had an additional working day.

With regard to incentives, the category 'employee recognition' is composed of financial support and professional development; training is often related to technical skills on a monthly basis. With respect to remuneration, an average salary ranging between 348 and 1500 USD was found, with which personal and family expenses were to be covered (on average, up to 3 dependents). Finally, it was found that—in general—professionals were satisfied with their job; yet, the proportion of very satisfied professionals is low. It is noteworthy that in Brazil and Colombia, which reported a higher nurse-patient ratio, job satisfaction is lower: a situation reflected in work overload. Accordingly, in Argentina and Peru, they felt more satisfied since their nurse-to-patient ratio was lower.

4 | DISCUSSION

Regarding the sociodemographic profile, the data of this study revealed that the majority of the participants were women, with a median age of 36 years old and an interquartile range of 15, either single or married, and childless. These results are similar to those reported by other studies (Stalpers et al., 2017; Muñoz et al., 2018; Shalaby et al., 2018; Wihardja et al., 2019), and agree with Bortoli S., who mentions that—worldwide—the nursing workforce is relatively

TABLE 2 Professional profile of nurses in intensive care units

Category	Argentina		Brazil		Colombia		Perú		All countries	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Degrees obtained										
None	17	3.3	0	0.0	15	3.5	0	0.0	32	2.2
Certificates	25	4.8	61	39.6	148	34.2	3	0.9	237	16.6
Associate degree	207	40.0	0	0.0	0	0.0	0	0.0	207	14.5
Specialisation Degree in ICU	65	12.6	77	50.0	97	22.4	240	74.3	479	33.6
Specialisation Degree in Other Areas	6	1.2	9	5.8	62	14.3	13	4.0	90	6.3
Bachelor's Degree	159	30.8	0	0.0	59	13.6	10	3.1	228	16.0
Master Degree	4	0.8	5	3.2	29	6.7	50	15.5	88	6.2
Doctorate Degree	1	0.2	2	1.3	0	0.0	7	2.2	10	0.7
Courses	33	6.4	0	0.0	23	5.3	0	0.0	56	3.9
Years of Experience in Intensive Care Units										
Median IQR*	6	6*	3	3*	6	9*	11	14*	6	9*
Application of Skills by the Intensive Care Professional										
Troubleshooting										
Always	250	48.4	57	37.0	240	55.4	186	57.6	733	51.4
Almost always	232	44.9	69	44.8	185	42.7	133	41.2	619	43.4
Rarely	34	6.6	27	17.5	8	1.8	4	1.2	73	5.1
Never	1	0.2	1	0.6	0	0.0	0	0.0	2	0.1
Teamwork										
Always	194	37.5	64	41.6	250	57.7	129	39.9	637	44.6
Almost always	259	50.1	61	39.6	175	40.4	170	52.6	665	46.6
Rarely	58	11.2	25	16.2	8	1.8	24	7.4	115	8.1
Never	6	1.2	4	2.6	0	0.0	0	0.0	10	0.7
Care Management										
Always	301	58.2	103	66.9	343	79.2	231	71.5	978	68.5
Almost always	205	39.7	44	28.6	89	20.6	91	28.2	429	30.1
Rarely	11	2.1	7	4.5	1	0.2	1	0.3	20	1.4
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Communication										
Always	386	74.7	118	76.6	356	82.2	260	80.5	1120	78.5
Almost always	127	24.6	32	20.8	77	17.8	62	19.2	298	20.9
Rarely	4	0.8	4	2.6	0	0.0	1	0.3	9	0.6
Never	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Personal Development										
Always	208	40.2	84	54.5	213	49.2	147	45.5	652	45.7
Almost always	248	48.0	55	35.7	201	46.4	165	51.1	669	46.9
Rarely	60	11.6	12	7.8	18	4.2	11	3.4	101	7.1
Never	1	0.2	3	1.9	1	0.2	0	0.0	5	0.4

Source: Own elaboration

young: 38% of the professionals are under 35 years old, compared to 17%, aged 55 years or older (WHO, 2020).

Similarly, Borges shows a relationship between personal factors—such as age, gender and work experience—and the presence of compassion fatigue, which can affect the quality of care (Borges et al., 2019). In addition, it has been shown that professionals' well-being is directly related to productivity, competitiveness and sustainability of organisations (Borges et al., 2019).

TABLE 3 Working conditions of nursing professionals

Category	Argentina n	(%)	Brazil n	(%)	Colombia n	(%)	Peru n	(%)	All countries n	(%)
Nurse-to-Patient Ratio										
1:1	19	3.7		0.0		0.0		0.0	19	1.3
1:2	264	51.1		0.0	11	2.5	196	60.7	471	33.0
1:3	119	23.0	8	5.2	16	3.7	99	30.7	242	17.0
1:4	73	14.1	89	57.8	21	4.8	4	1.2	187	13.1
1:5	14	2.7	25	16.2	75	17.3	6	1.9	120	8.4
1:6 or more	12	2.3	31	20.1	295	68.1	2	0.6	340	23.8
Other	16	3.1	1	0.6	15	3.5	16	5.0	48	3.4
Considers Appropriate the Number of Patients Assigned per Day										
YES	373	72.1	72	46.8	169	39.0	221	68.4	835	58.5
NO	144	27.9	82	53.2	264	61.0	102	31.6	592	41.5
Type of Hiring										
Celetist Contract†	0	0.0	132	85.7	0	0.0	0	0.0	132	9.3
Substitution Contract	11	2.1	0	0.0	1	0.2	2	0.6	14	1.0
Union Contract	0	0.0	0	0.0	42	9.7	0	0.0	42	2.9
Provision of Services Agreement	14	2.7	14	9.1	71	16.4	29	9.0	128	9.0
Temporary Contract	18	3.5	0	0.0	17	3.9	12	3.7	47	3.3
Fixed-term Contract	9	1.7	0	0.0	90	20.8	22	6.8	121	8.5
Indefinite Contract	419	81.0	0	0.0	206	47.6	225	69.7	850	59.6
Informal Job	2	0.4	0	0.0	0	0.0	1	0.3	3	0.2
Other	54	10.4	8	5.2	6	1.4	32	9.9	100	7.0
Hours Worked a Week										
Up to 24 hours	71	13.7	0	0.0	3	0.7	24	7.4	98	6.9
Up to 36 hours	121	23.4	18	11.7	22	5.1	147	45.5	308	21.6
Up to 40 hours	168	32.5	14	9.1	28	6.5	13	4.0	223	15.6
Up to 48 hours	96	18.6	84	54.5	272	62.8	101	31.3	553	38.8
More than 48	34	6.6	35	22.7	86	19.9	29	9.0	184	12.9
Other	27	5.2	3	1.9	22	5.1	9	2.8	61	4.3
Work Shift										
Day	209	40.4	83	53.9	92	21.2	19	5.9	403	28.2
Night	72	13.9	45	29.2	71	16.4	2	0.6	190	13.3
Day and night	23	4.4	14	9.1	21	4.8	45	13.9	103	7.2
Rotating	200	38.7	12	7.8	246	56.8	253	78.3	711	49.8
Other	13	2.5	0	0.0	3	0.7	4	1.2	20	1.4
Number of Current Jobs (by the time of the study)										
1 job only	367	71.0	134	87.0	343	79.2	224	69.3	1068	74.8
2 jobs	136	26.3	20	13.0	85	19.6	95	29.4	336	23.5
3 jobs	12	2.3	0	0.0	3	0.7	4	1.2	19	1.3
More than 3 jobs	2	0.4	0	0.0	2	0.5	0	0.0	4	0.3

TABLE 3 (Continued)

Category	Argentina		Brazil		Colombia		Peru		All countries	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Work Incentives										
Employee recognition	310	60.0	88	57.1	189	43.6	132	40.9	719	50.4
Welfare	6	1.2	2	1.3	26	6.0	1	0.3	35	2.5
Other	70	13.5	26	16.9	30	6.9	36	11.1	162	11.4
None	131	25.3	38	24.7	188	43.4	154	47.7	511	35.8
Training Areas										
Technical Skills	227	43.9	53	34.4	174	40.2	90	27.9	544	38.1
Quality Management	120	23.2	47	30.5	139	32.1	90	27.9	396	27.8
Occupational Health	42	8.1	5	3.2	58	13.4	84	26.0	189	13.2
Other	72	13.9	33	21.4	47	10.9	33	10.2	185	13.0
None	56	10.8	16	10.4	15	3.5	26	8.0	113	7.9
Training Frequency										
Weekly	18	3.5	3	1.9	60	13.9	1	0.3	82	5.7
Monthly	296	57.3	88	57.1	294	67.9	139	43.0	817	57.3
Annual	102	19.7	39	25.3	34	7.9	118	36.5	293	20.5
Other	46	8.9	7	4.5	30	6.9	40	12.4	123	8.6
None	55	10.6	17	11.0	15	3.5	25	7.7	112	7.8
Remuneration										
USD	348 – 695 USD		403 – 806 USD		508 – 1016 USD		1001 – 1500 USD		348 – 1500 USD	
Dependents										
0 to 3 people	456	88.2	40	26.0	398	91.9	257	79.6	1151	80.7
4 to 6 people	58	11.2	71	46.1	33	7.6	58	18.0	220	15.4
6 to 9 people	3	0.6	19	12.3	2	0.5	7	2.2	31	2.2
More than 10 people	3	0.6	24	15.6	0	0.0	1	0.3	28	2.0
Job Satisfaction										
Dissatisfied	7	1.4	10	6.5	3	0.7	1	0.3	21	1.5
Little satisfied	46	8.9	28	18.2	41	9.5	32	9.9	147	10.3
Satisfied	319	61.7	90	58.4	287	66.3	224	69.3	920	64.5
Very Satisfied	145	28.0	26	16.9	102	23.6	66	20.4	339	23.8

[†]Celetist Contract corresponds to a special type of contract exclusive to Brazil.

Source: Own elaboration.

In the study by Ortega, there is an important relationship between the levels of exhaustion and the presence of children: it seems that the fact of having children reduced the level of stress and emotional exhaustion, as well as the feeling of overwork; the existence of a relationship between marital status, age and job satisfaction is also described (Cañadas-De la Fuente et al., 2018).

Regarding the professional profile, it is important to highlight the fact that only 33,6% of those who work in ICUs have a specialisation degree, followed by non-formal education and certificates: a situation that results alarming. This result could be related to the demand of the academic offer, its cost, availability of time, and the financial and differential recognition of postgraduate training.

It is important to note that training in intensive care predominates in Peru and Brazil, which agrees with the 86.4% reported in Brazil by Sales Maurício et al. (2017), but not with what was found by Gallegos Pacheco in Peru, who only found one report stating that 23% of specialists were registered in national databases (Gallegos, 2020). In Argentina, associate degrees prevail, probably due to the lack of national policies, criteria for evaluation and accreditation of postgraduate programs, which causes problems for their consolidation and development (Piovano, & Gomez, 2008).

In Colombia, training not conducive to qualification is frequent. According to Perez Gutierrez and Rodriguez Darabos (Perez, & Rodríguez, 2015), only 25% of nurses working in ICUs have postgraduate degrees. This panorama may be related to professional instability and difficulties in harmonising work and family life, which are usually the main impediments to specialisation. In addition, in-person modalities of the academic programs could generate difficulties for professionals to combine work and study, due to rotating schedules (Cavalcanti et al., 2010).

As mentioned in the studies by Santana-Padilla et al., (2019) and Currey et al. (2015), postgraduate education is an opportunity to strengthen teamwork and care competencies that allow the successful directing of care to the person in critical health conditions. In addition, ICUs must have integral specialists in search of professional growth to enrich their knowledge (Regan et al., 2015).

Regarding years of experience, authors such as Spence highlight that work experience is essential for professionals to develop a daily practice with clinical judgment in care management (Spence-Laschinger & Fida, 2015).

Concerning the exercising of skills, it is evident that communication and care management were developed permanently by most of the participants. Communication can be understood as attention, explanation, emotional support, compassion and comfort (Diaz-Mass & Soto-Lesmes, 2020). Communication requires the same effort needed to perform a procedure or apply a technique when assisting a patient in the ICU, since it improves and facilitates interpersonal relationships, endowing them with efficiency and warmth (Fatma et al., 2020). It allows greater participation from patients and their families, and also facilitates agreeing on the opinion of the different members of the health team (Diaz-Mass and Soto-Lesmes, 2020) who participate in taking care of the person; therefore, it is a skill that must be strengthened in both undergraduate and graduate education.

It should be noted that good management is important to provide assistance with sufficient resources and to resolve the different problems that arise when taking care of the person in critical condition (Bengoechea-Calpe et al., 2016; Regan et al., 2015), so the skills related to care management are aimed at responding to the health problems of the person during their stay in the ICU (Spence-Laschinger and Fida, 2015; Asif et al., 2019). This is a relevant aspect in this study, since it is possible to demonstrate the ability of nursing professionals with training in critical care to solve health problems.

Nevertheless, for the skills in troubleshooting, personal development and teamwork, it was found that professionals integrate them in a lower proportion than expected in the ideal scenario of critical patient care. These skills are essential since they raise the level of preparation and the ability to resolve—with assertiveness and promptness—the various care and administrative situations in the ICU (De Arco-Canoles, & Suarez-Calle, 2018; Santos & Camelo, 2015).

With regard to the working conditions, it was found that the professionals do not consider the number of patients allocated adequate. This aspect can be related to the international guidelines that consider, as the gold standard for ICU assistance, the allocation of one nurse per ventilated patient and maximum one nurse for two patients in the rest of the cases (Bray et al., 2010; Schmitz-Rixen & Grundmann, 2019; Achury-Saldaña et al., 2014) a situation that differs widely from the data obtained in the present investigation. Scruth argues that defining the optimal nurse-to-patient ratio is controversial, because measurements do not always accurately reflect the size, components and deployment of work teams (Scruth, 2018). In Latin America, not all countries have the nurse-to-patient ratio in ICUs standardised (Arango et al., 2015), hence, the variability found in this research, in which ratios from 1:2 to 1:4 predominate. However, it increases to 1:6 or more, making evident the need to normalise the nurse-to-patient allocation and, thereby, reduce the deleterious effects of work overload.

Concerning the type and duration of the contract, more than 50% of the participants reported an indefinite term employment relationship, which—to some extent—provides stability and is—therefore—related to the quality of care, since limited job security and reduced benefits reflect not only in high levels of stress (Qin et al., 2016), but also in dissatisfaction on the part of the patients (Chang et al., 2019). In Brazil, non-lifetime 'celetist' contracts prevail, through which lower salaries tend to be offered. This means that recently graduated nurses, due to difficulties in entering the labour market, are subjected to more precarious work conditions; therefore, this could even lead them to have more than one employment relationship in order to expand their financial income (Santos et al., 2018; Silva et al., 2020).

On the other hand, the hours and shifts worked by nursing personnel may vary, depending on the institutions and the labour regulations of each country (Alameddine et al., 2018; Mousazadeh et al., 2018). However, the hours and length of working hours should be evaluated and managed cautiously, as long shifts are associated with lower quality and lower safety in patient care (Griffiths et al., 2014), just as rotating shifts increase health risks in workers and generate problems in the quality of life, which produces an increase in work errors and a loss of continuity in care (Ramírez, 2012).

With respect to income, the present study found differences among countries. Accordingly, the monthly payment received by the nursing professional ranges between 1.6 and 5.3 minimum wages, which in dollars is equivalent to an average wage between 348 and 1500 USD: results lower than those reported by Sales (Maurício et al., 2017) or by the Institute for Economic Research (Economic Research Institute, n.d.). Other international studies also report disparity between nursing care in ICUs and payments received, with nursing wages representing only 4.7% of total medical expenses (Chang et al., 2019). This situation can be associated with lower job satisfaction and a greater emotional burden, since said income may be limited to meet the basic needs of the family nucleus.

Regarding work incentives, the majority reported employee recognition in terms of economic incentives or support for professional development and, to a lesser extent, flexibility in schedules, similar to that reported by Kingma et al, cited by Gómez and Enders (Enders and Gomez, 2016), who refer that economic incentives occupy the second place of importance for the nursing community. However,

it is important to mention that 35.8% of the professionals did not report any type of incentive, which should call the attention of employers, since incentives become a source of motivation for workers, ensuring adequate quality of the job carried out and permanence in the institutions (MinSalud, n.d.).

Gómez & Enders documented training as one of the most predominant incentives in the health area (Enders & Gómez, 2016); however, the present investigation found a predominance of training in technical skills, quality management and occupational health, so there is a loss of importance in the development of non-technical skills and other aspects of training necessary to improve the skills of the professionals who work in the ICU.

Finally, 64.5% of the participants reported being satisfied with the work carried out, a result similar to that found by Mousazadeh, et al, who documented a medium level of satisfaction (Mousazadeh et al., 2018). Although the level of satisfaction reported is appropriate, the fact that the percentage of nurses who are very satisfied is low, is noticeable.

It is important to mention that approximately a quarter of the professionals have more than two jobs. This situation could be related to the lack of work incentives and low financial remuneration, since the precariousness of working conditions (low salaries, high personnel turnover, lack of a possible job promotion) and adverse work conditions (exposure to violence, discrimination and accidents) (Santos et al., 2018; Silva et al., 2020) induce the search for additional sources of income. On the other hand, in nursing, multiple job-holding produces several variants: one of them is the double working day in different establishments and another—very frequent—is the extension of working hours in the same establishment through overtime. Both function as the 'compensatory' mechanisms for low wages (Aspiazu, 2016).

Since the professional profile and the work conditions influence both well-being and employee performance—generating effects on occupational health and the quality of the nursing care provided (Granero et al., 2018)—the results of this research should lead the different actors to reevaluate both the development of skills and the work conditions, in order to guarantee the best possible quality of nursing care.

4.1 | Limitations

Given the multicentre nature of the study, specific information is not obtained from each of the clinics and hospitals, since this type of study seeks to obtain information to be generalised in the different institutions.

4.2 | Implications and recommendations for practice

It is necessary for higher education institutions—in conjunction with health institutions—to develop improvement strategies to strengthen skills during training and professional practice. It is also pertinent to standardise the nurse-to-patient ratio to ensure an appropriate workload; the allocation of permanent working hours that minimise the repercussions on workers and patients; remuneration according to both the workload and the professionals' level of training and, finally, a rethinking of work incentives: aspects that together will optimise motivation and satisfaction with their consequent effect on the quality of care provided to patients in critical condition.

5 | CONCLUSIONS

Concerning the professional profile, it is noticeable that only 33% of those who work in ICUs have a specialisation degree, followed by non-formal education and certificates: a situation that results alarming.

Skills related to troubleshooting, personal development and teamwork are integrated into critical patient care in a lower proportion than expected in the ideal critical patient care scenario.

In relation to work conditions, nursing professionals do not have an adequate workload as there is a nurse-to-patient ratio that does not meet international standards; besides, shifts are rotating, wages are scarce and there are not sufficient job incentives to increase employee satisfaction.

CONFLICT OF INTEREST
The authors whose names are listed immediately below certify that no conflict of interest is involved.

AUTHOR CONTRIBUTIONS
The authors whose names are listed below participated in the study design, data collection and the article elaboration: Diana Marcela Achury Saldaña, Luisa Fernanda Achury Beltrán, Sandra Mónica Rodríguez Colmenares, Herly Ruth Alvarado Romero, Edhit Cavallo, Ana Cristina Ulloa, Virginia Merino, Mayckel da Silva Barreto. The authors whose names are listed below participated in the data collection and the article elaboration: Doraly Muñoz Acuña, Yanier Betancur Manrique, Jorge Eliecer Rodríguez Marín, Ana Angelica González Gómez, Katerine Herrera Corpas, Brayant Andrade Méndez, Ruby Elizabeth Vargas Toloza, Sandra Milena Martínez Rojas, Roxana Patricia de las Salas Martínez. The author whose name is listed below participated in the study design, statistical analysis and the article elaboration: David Andrade Fonseca.

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REFERENCES

Achury-Saldaña, D., Achury-Beltrán, L., Díaz-Álvarez, J., Colmenares, R., Mónica, S., Alvarado, H. R., Ortiz, C., García Peñuela, P., & Acosta Huertas, S. L. (2014). Panorama general de la relación enfermera-paciente en algunas unidades de cuidado intensivo en Bogotá. *Investigación En Enfermería: Imagen Y Desarrollo*, *16*(1), 73–85. Disponible en: https://www.redalyc.org/articulo.oa?id=145231426006. https://doi.org/10.11144/Javeriana.IE16-1.pgre

Adams, A., Lugsden, E., Chase, J., Arber, S., & Bond, S. (2000). Skill-Mix Changes and Work Intensification in Nursing. *Work, Employment and Society*, *14*(3), 541–555. https://doi.org/10.1177/09500170022118563

Alameddine, M., Otterbach, S., Rafii, B., & Sousa-Poza, A. (2018). Work hour constraints in the German nursing workforce: A quarter of a century in review. *Health Policy*, *122*(10), 1101–1108. https://doi.org/10.1016/j.healthpol.2018.07.023

Arango, G. L., Peña, B., & Vega, Y. (2015). Relación de la asignación de personal de enfermería con indicadores de resultado de la calidad de la atención en unidades de cuidados intensivos adulto. *Aquichan*, *15*(1), 90–104. https://doi.org/10.5294/aqui.2015.15.1.9

Asif, M., Jameel, A., Hussain, A., Hwang, J., & Sahito, N. (2019). Linking Transformational Leadership with Nurse-Assessed Adverse Patient Outcomes and the Quality of Care: Assessing the Role of Job Satisfaction and Structural Empowerment. *International Journal of Environmental Research and Public Health*, *16*(13), 2381. https://doi.org/10.3390/ijerph16132381

Aspiazu, E. (2016). Las condiciones laborales de las y los enfermeros en Argentina: entre la profesionalización y la precariedad del cuidado en la salud. *Trabajo Y Sociedad*, *28*, 11–35.

Associations-EfCCNa E federation of CCN. EfCCNa Competencies for European Critical Care Nurses. 2013 [cited 15 November 2020]. Available on: https://www.efccna.org/images/stories/publication/competencies_cc.pdf

Bengoechea-Calpe, L., Marín-Fernández, B., & Regaira-Martínez, E. (2016). Análisis de la intensidad de colaboración profesional entre enfermeras en un área de críticos. *Enfermería Intensiva*, *27*(2), 44–50. https://doi.org/10.1016/j.enfi.2015.12.001

Borges, E. M. D. N., Fonseca, C. I. N. D. S., Baptista, P. C. P., Queirós, C. M. L., Baldonedo-Mosteiro, M., & Mosteiro-Diaz, M. P. (2019). Fadiga por compaixão em enfermeiros de urgência e emergência hospitalar de adultos. *Revista Latino-Americana De Enfermagem*, *27*, https://doi.org/10.1590/1518-8345.2973.3175

Bray, K., Wren, I., Baldwin, A., St Ledger, U., Gibson, V., Goodman, S., & Walsh, D. (2010). Standards for nurse staffing in critical care units determined by: The British Association of Critical Care Nurses, The Critical Care Networks National Nurse Leads, Royal College of Nursing Critical Care and In-flight Forum. *Nursing in Critical Care*, *15*(3), 109–111. https://doi.org/10.1111/j.1478-5153.2010.00392.x

Camelo, S. H. H. (2012). Professional competences of nurse to work in Intensive Care Units: an integrative review. *Revista Latino-Americana De Enfermagem*, *20*(1), 192–200. https://doi.org/10.1590/s0104-11692012000100025

Cañadas-De la Fuente, G., Ortega, E., Ramirez-Baena, L., De la Fuente-Solana, E., Vargas, C., & Gómez-Urquiza, J. (2018). Gender, Marital Status, and Children as Risk Factors for Burnout in Nurses: A Meta-Analytic Study. *International Journal of Environmental Research and Public Health*, *15*(10), 2102. https://doi.org/10.3390/ijerph15102102

Canales-Vergara, M., Valenzuela-Suazo, S., & Paravic-Klijn, T. (2016). Condiciones de trabajo de los profesionales de enfermería en Chile. *Enfermería Universitaria*, *13*(3), 178–186. https://doi.org/10.1016/j.reu.2016.05.004

Cauduro, F. L. F., & Kalckmann de Macedo, S. M. (2018). Avaliação do ambiente de trabalho entre profissionais de enfermagem em uma unidade de urgência e emergência. *Enfermería Global*, *17*(2), 361–399. https://doi.org/10.6018/eglobal.17.2.283991

Cavalcanti, G. S., Viana, L. O., & Garcia Neves, I. (2010). Las especialidades y los vínculos con la formación continua del enfermero: Repercusiones para la actuación en el Municipio de rio de janeiro. *Enfermería Global*, *19*(2), 1–12. https://doi.org/10.4321/S1695-61412010000200022

Chang, L.-Y., Yu, H.-H., & Chao, Y.-F.-C. (2019). The Relationship Between Nursing Workload, Quality of Care, and Nursing Payment in Intensive Care Units. *Journal of Nursing Research*, *27*(1), e8. https://doi.org/10.1097/jnr.0000000000000265

Currey, J., Eustace, P., Oldland, E., Glanville, D., & Story, I. (2015). Developing professional attributes in critical care nurses using Team-Based Learning. *Nurse Education in Practice*, *15*(3), 232–238. https://doi.org/10.1016/j.nepr.2015.01.011

De Arco-Canoles, O. D. C., & Suarez-Calle, Z. K. (2018). Rol de los profesionales de enfermería en el sistema de salud colombiano. *Universidad Y Salud*, *20*(2), 171. https://doi.org/10.22267/rus.182002.121

del Barrio-Linares, M. (2014). Competencias y perfil profesional de la enfermera de práctica avanzada. *Enfermería Intensiva*, *25*(2), 52–57. https://doi.org/10.1016/j.enfi.2013.11.005

Diaz-Mass, D., & Soto-Lesmes, V. (2020). Competencias de enfermeras para gestionar cuidado directo en Unidad de Cuidados Intensivos adultos. *Revista Cubana De Enfermería*, *36*(3), Retrieved from http://www.revenfermeria.sld.cu/index.php/enf/article/view/3446

Duré, M., Dursi, C., & Cadile, M. (2015). La complejidad del campo de los recursos humanos de salud en Argentina. La gestión de recursos humanos en salud en Argentina (2007-2015).

Dushkin, A. (2014). El trabajo de enfermería: la percepción de las enfermeras y enfermeros de acerca de su profesión en Área Metropolitana de Buenos Aires en Área Metropolitana de Buenos Aires. Independent Study Project (ISP) Collection. 1849. [Cited 5 December 2020]; Available on: https://digitalcollections.sit.edu/isp_collection/1849

Economic Research Institute. (n.d.). ICU Nurse Salary. Retrieved January 5, 2021, from https://www.erieri.com/salary/job/icu-nurse/united-states

Enders, J., & Gomez, P. F. (2016). El sistema de remuneración e incentivos en la salud, como un instrumento para la mejora de la calidad de atención. *Revista De Salud Pública*, 20(1), 38. https://doi.org/10.31052/1853.1180.v20.n1.13871

Fatma, A., Salem, F., Kawther, A., Ali, K., Taha, A., & Sheren, M., (2020). *Development of Clinical Nurses' Competency in Cardiothoracic Intensive Care Unit.* https://doi.org/10.9790/1959-0902081731

Gallegos, A. (2020). Necesidad de recursos humanos de enfermería por brote de COVID-19 Perú. *Rev. RECIEN*, 9(1), 55–68.

Granero, A., Blanch, J. M., & Ochoa, P. (2018). Labor conditions and the meanings of nursing work in Barcelona. *Revista Latino-Americana De Enfermagem*, 26, https://doi.org/10.1590/1518-8345.2342.2947

Griffiths, P., Dall'Ora, C., Simon, M., Ball, J., Lindqvist, R., Rafferty, A.-M., Schoonhoven, L., Tishelman, C., & Aiken, L. H. (2014). Nurses' Shift Length and Overtime Working in 12 European Countries. *Medical Care*, 52(11), 975–981. https://doi.org/10.1097/mlr.0000000000000233

Houtman, I., Jettinghof, K., & Cedillo, L. & World Health Organization. Occupational and Environmental Health Team (2008). *Sensibilizando sobre el estrés laboral en los países en desarrollo: un riesgo moderno en un ambiente tradicional de trabajo: consejos para empleadores y representantes de los trabajadores.* Organización Mundial de la Salud. https://apps.who.int/iris/handle/10665/43770

Kelly, D. M., Kutney-Lee, A., McHugh, M. D., Sloane, D. M., & Aiken, L. H. (2014). Impact of Critical Care Nursing on 30-Day Mortality of Mechanically Ventilated Older Adults*. *Critical Care Medicine*, 42(5), 1089–1095. https://doi.org/10.1097/ccm.0000000000000127

Martins, J., Robazzi, M. L.. El trabajo del enfermero en una unidad de terapia intensiva: Sentimientos de sufrimiento. *Rev Lat Am Enfermagem*. 2009 [cited 6 December 2020];17(1):52–58. Available on: www.eerp.usp.br/rlae

Maurício, L. F. S., Okuno, M. F. P., Campanharo, C. R. V., Lopes, M. C. B. T., Belasco, A. G. S., & Batista, R. E. A. (2017). Professional nursing practice in critical units: assessment of work environment characteristics. *Revista Latino-Americana De Enfermagem*, 25, https://doi.org/10.1590/1518-8345.1424.2854

Mousazadeh, S., Yektatalab, S., Momennasab, M., & Parvizy, S. (2018). Job satisfaction and related factors among Iranian intensive care unit nurses. *BMC Research Notes*, 11(1), https://doi.org/10.1186/s13104-018-3913-5

Muñoz, S., Ordoñez-Villota, J., Solarte-Moncayo, M., Valverde-Ceron, Y., Villarreal-Castro, S., & Zemanate-Perez, M. (2018). Síndrome de Burnout en enfermeros del Hospital Universitario San José. Popayán: Burnout syndrome in nurses from the University Hospital San José. Popayán. *Revista Médica de Risaralda*, 24(1), 34-37. Retrieved January 7, 2021, from http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0122-06672018000100006&lng=en&tlng=es

Ministerio de Salud y Protección Social de Colombia (n.d.). (2021). Incentivos-talento-humano-en-salud. Retrieved January 05,.from: https://www.minsalud.gov.co/salud/PO/Paginas/incentivos-talento-humano-en-salud.aspx

O'Brien-Pallas, L., Thomson, D., Hall, L., Pink, G., Kerr, M., & Wang, S. (2004). Evidence-based standards for measuring nurse staffing and performance. *Ottawa Can Heal Serv Res Found*. [Cited 17 December 2020]; (January):http://fhs.mcmaster.ca/nru/documents/_VTI_CNF/Evi. Available on: https://www.researchgate.net/publication/228738285_Evidence-Based_Standards_for_Measuring_Nurse_Staffing_and_Performance

Pérez Gutiérrez, N., & Rodríguez Darabos, E. I. (2015). Talento humano en unidades de cuidado intensivo: adaptación de un modelo de estándares para Colombia basado en la evidencia científica. *Acta Colombiana De Cuidado Intensivo*, 15(2), 80–102. https://doi.org/10.1016/j.acci.2015.02.006

Piovano, M., & Gomez, P. (2008). Características y tendencias en la formación de postgrado de las enfermeras. *Argentina. Rev Salud Pública*, 12(2), 35–44. Disponible en: https://revistas.unc.edu.ar/index.php/RSD/article/view/7199/8283

Qin, Z., Zhong, X., Ma, J., & Lin, H. (2016). Stressors affecting nurses in China. *Contemporary Nurse*, 52(4), 447–453. https://doi.org/10.1080/10376178.2016.1221321

Ramírez, N. (2012). Turnos de trabajo en el personal de Enfermería de una unidad de cuidados intensivos. *Enfermería En Costa Rica*, 2(33), 74–80. Available on: https://dialnet.unirioja.es/servlet/articulo?codigo=4741648

Regan, S., Laschinger, H. K. S., & Wong, C. A. (2015). The influence of empowerment, authentic leadership, and professional practice environments on nurses' perceived interprofessional collaboration. *Journal of Nursing Management*, 24(1), E54–E61. https://doi.org/10.1111/jonm.12288

Romero-Massa, E., Lorduy-Bolívar, J. P., Pájaro-Melgar, C., & Pérez-Duque, C. A. (2011). Relationship between the Nursing Workload and the Severity of the Patient's Condition in Adult Intensive Care Units. *Aquichan*, 11(2), 173–186. https://doi.org/10.5294/aqui.2011.11.2.4

RStudio Team (2020). *RStudio: Integrated Development for R.* RStudio. http://www.rstudio.com/

Santana-Padilla, Y. G., Santana-Cabrera, L., Bernat-Adell, M. D., Linares-Pérez, T., Alemán-González, J., & Acosta-Rodríguez, R. F. (2019). Training needs detected by nurses in an intensive care unit: a phenomenological study. *Enfermería Intensiva (English Ed.)*, 30(4), 181–191. https://doi.org/10.1016/j.enfie.2019.05.001

Santos, F. C., & Camelo, S. H. (2015). *O enfermeiro que atua em Unidades de Terapia Intensiva: Perfil e Capacitação Profissional. Cultura de Los Cuidados Revista de Enfermería y Humanidades* (p. 43). https://doi.org/10.14198/cuid.2015.43.13

Santos, T. A., Silva-Santos, H., Silva, M. N., Coelho, A. C. C., Pires, C. G. S., & Melo, C. M. M. (2018). Job insecurity among nurses, nursing technicians and nursing aides in public hospitals. *Rev Esc Enferm USP*, 52, e03411. https://doi.org/10.1590/S1980-220X2017050503411

Särndal, C., & Swensson, B. (2003). *Model assisted survey sampling.* Springer-Verlag.

Schmitz-Rixen, T., & Grundmann, R. T. (2019). Pflegepersonalausstattung des Krankenhauses und Patientenoutcome. *Der Chirurg*, 91(4), 329–336. https://doi.org/10.1007/s00104-019-01076-8

Scruth, E. (2018). Nurse-Patient Staffing Relationship in the ICU. *Critical Care Medicine*, 46(10), 1681–1682. https://doi.org/10.1097/ccm.0000000000003327

Shalaby, S. A., Janbi, N. F., Mohammed, K. K., & Al-harthi, K. M. (2018). Assessing the caring behaviors of critical care nurses. *Journal of Nursing Education and Practice*, 8(10), 77. https://doi.org/10.5430/jnep.v8n10p77

Silva, R. M., Vieira, L. E. S., Garcia-Filho, C., Bezerra, I. C., Cavalcante, A. N., Borba-Netto, F. C., & Aguiar, F. A. R. (2020). Labor market insecurity for nursing assistants and technicians in the State of Ceará. *Brazil. Ciência & Saúde Coletiva*, 25(1), 135–145. https://doi.org/10.1590/1413-81232020251.28902019

Spence-Laschinger, H. K., & Fida, R. (2015). Linking Nurses' Perceptions of Patient Care Quality to Job Satisfaction. JONA. *The Journal of Nursing Administration*, 45(5), 276–283. https://doi.org/10.1097/nna.0000000000000198

Stalpers, D., Van Der Linden, D., Kaljouw, M. J., & Schuurmans, M. J. (2017). Nurse-perceived quality of care in intensive care units and associations with work environment characteristics: a multicentre survey study. *Journal of Advanced Nursing*, 73(6), 1482–1490. https://doi.org/10.1111/jan.13242

Von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & Initiative, S. T. R. O. B. E. (2008). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Journal of Clinical Epidemiology Accepted Article*, *61*(4), 344–349. https://doi.org/10.1016/j.jclinepi.2007.11.008

Wihardja, H., Hariyati, R. T. S., & Gayatri, D. (2019). Analysis of factors related to the mental workload of nurses during interaction through nursing care in the intensive care unit. *Enfermería Clínica*, *29*, 262–269. https://doi.org/10.1016/j.enfcli.2019.06.002

World Health Organization (2020). State of the world's nursing 2020: investing in education, jobs and leadership. *World Health Organization*, https://apps.who.int/iris/handle/10665/331677

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.