Original

Sociodemographic and Work-Related Factors Associated with Burnout Syndrome in Healthcare Professionals

Factores sociodemográficos y laborales asociados al Síndrome de Burnout en profesionales de la salud

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ABSTRACT

Introduction: Burnout syndrome affects healthcare professionals, more frequently and intensively and its prevalence increased during the COVID-19 pandemic.

Objective: The study aimed to determine the sociodemographic and work-related factors associated with the dimensions of burnout in healthcare personnel from a region in Peru.

Methods: A relational study with a cross-sectional predictive design was conducted. The population consisted of 1,844 healthcare professionals from two hospitals in Peru, with a sample of 334 participants aged 22 to 68 years, of both sexes, intentionally selected. A sociodemographic work sheet and the Maslach Burnout Inventory (MBI), which has adequate psychometric properties in the research context, were applied. Psychometric, descriptive, and inferential analyses were performed. Linear regression analysis tested two models as dependent variables, and each model was assessed using the ANOVA test and the determination coefficient (R2).

Results: Regarding emotional exhaustion, the independent models were statistically significant for working condition (R2 = 0.01), marital status (R2 = 0.00), and length of service (R2 = 0.02); in the complete model, the working condition was significant. For depersonalization, only one independent model was statistically significant, gender (R2 = 0.02). Regarding low personal accomplishment, the independent models were significant for gender (R2 = 0.04) and length of service (R2 = 0.03), in the multivariate model only gender was significant.

Conclusion: The main factors associated with the etiopathogenesis of burnout (considering its three dimensions), are being female, being hired, shorter length of service (between 6 to 10 years), and cohabiting.

Keywords: Sociodemographic factors; work-related factors; burnout; healthcare personnel; COVID-19.

RESUMEN

Introducción: El síndrome de burnout afecta con mayor frecuencia e intensidad a los profesionales de la salud, y su prevalencia aumentó durante la pandemia de COVID-19.

Objetivo: Determinar los factores sociodemográficos y laborales asociados con las dimensiones del burnout en el personal de salud de una región en Perú.

Métodos: Se realizó un estudio relacional con un diseño predictivo transversal. La población fue de 1,844 profesionales de la salud de dos hospitales en Perú, la muestra, 334 participantes de ambos sexos, con edades entre 22 y 68 años, seleccionados intencionalmente. Se aplicó una ficha sociodemográfica laboral y el Inventario de Burnout de Maslach (MBI), el cual posee adecuadas propiedades psicométricas en el contexto de la investigación. Se realizaron análisis psicométricos, descriptivos e inferenciales. El análisis de regresión lineal probó dos modelos como variables dependientes, y cada modelo fue evaluado utilizando la prueba ANOVA y el coeficiente de determinación (R2).

Resultados: Respecto al agotamiento emocional, los modelos independientes fueron estadísticamente significativos para la condición laboral (R2 = 0.01), estado civil (R2 = 0.00), y antigüedad en el servicio (R2 = 0.02); en el modelo completo, la condición laboral fue significativa. Para la despersonalización, solo un modelo independiente fue estadísticamente significativo, el género (R2 = 0.02). En cuanto a la baja realización personal, los modelos independientes fueron significativos para el género (R2 = 0.04) y la antigüedad en el servicio (R2 = 0.03); en el modelo multivariante, solo el género fue significativo.

Conclusiones: Los principales factores asociados con la etiopatogenia del burnout (considerando sus tres dimensiones) son ser mujer, estar contratado, tener menor antigüedad en el servicio (entre 6 a 10 años), y convivir.

Palabras clave: Factores sociodemográficos; factores laborales; burnout; personal de salud; COVID-19.

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Introduction

The COVID-19 pandemic triggered a public health emergency of international concern, which managed to expand to a great extent. Likewise, the Pan American Health Organization, 2022, identified that between 15% and 22% of healthcare personnel in the Americas had their mental health affected as a consequence of having worked during the pandemic.[1] Thus, the pandemic has posed unprecedented challenges to health systems worldwide, significantly impacting the provision of medical and health care, including the cessation of routine services, the rationing of services, the repurposing of clinical areas, and the assignment of health professionals to new tasks within areas of high complexity and unknown risk clinical settings.[2]

Burnout syndrome encompasses three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment, which influence the psychosocial and personal context.[3] Emotional exhaustion and depersonalization lead to a severe decline in skills.[4] The increased focus on burnout among healthcare workers is due to its negative consequences for patient safety, the consistency of care, the costs and workflow of the health system, and the safety and care of the healthcare workers themselves.[5],[6] To achieve high-quality patient care and mitigate negative outcomes, addressing healthcare workers' burnout is necessary.[7]

Burnout has a high incidence worldwide,[8] which was evident during the COVID-19 pandemic,[9] and was prevalent among healthcare personnel who experienced anxiety, depression, and periods of complex crises.[10] Furthermore, burnout was more severe among healthcare workers during the COVID-19 pandemic, due to workload overload (double shifts; no recognition for overtime; insufficient personal protective equipment, as well as equipment and materials for patient care). [11] Thus, burnout emerges as a negative factor that harms the quality of care in hospitals, in addition to being a psychosocial risk for developing other pathological processes. [12]

Multiple studies on burnout before, during, and after the pandemic have focused on assessing its prevalence, associated factors, or the relationship with other variables in different study populations. [13] They also aimed to identify causes, such as overwhelming requirements, a high degree of work, and prolonged exposure to emotionally demanding circumstances at work and in life that can trigger it. [14] Furthermore, interest has been in studying the consequences, such as the loss of motivation, reduced commitment to work, and job satisfaction,

which affect the performance and work efficiency of healthcare personnel, negatively impacting patients and the work organization. [15]

Peru is not immune to the problem, so various researchers have focused their studies on the impact of burnout on healthcare personnel. [16]–[18] Moreover, there is a high prevalence of burnout syndrome in the regions of Lima, Ica, and Tacna, especially among frontline personnel due to the fear of being infected with COVID-19. [19]

Given the high prevalence and incidence of burnout and its negative consequences, it is necessary to understand the sociodemographic and work-related factors associated with the origin and development of the burnout syndrome, in socio-historical contexts from different parts of the world, such as the Ancash region of Peru. The new insights generated from this study will help confirm current trends about the explanatory model of burnout, enabling accurate diagnosis, treatment, prevention, and intervention. The study aimed to determine the sociodemographic and work-related factors associated with the dimensions of emotional exhaustion, depersonalization, and personal accomplishment of the burnout syndrome in healthcare personnel.

Burnout conceptualization

One of the first to study burnout was Freudenberger, who observed the professional activities of physicians. Burnout was initially seen as a social and occupational problem requiring immediate attention, and only later did it become part of the academic research agenda. [20] The initial period of research on the burnout syndrome was predominantly exploratory in nature with a qualitative methodology. [21] Subsequently, there was a phase of empirical research aimed at designing instruments for the objective measurement of burnout, defining the

phenomenon and identifying its indicators, to finally recognize the antecedents and consequences of the burnout syndrome. [22]

On the other hand, Maslach identified the same phenomenon in her case studies with healthcare personnel while researching the maladaptive cognitive attribution strategies followed by these professionals. [23] The generalized model of burnout was developed by Maslach and Jackson, according to which burnout is considered a syndrome whose dimensions are: emotional exhaustion, depersonalization, and a reduction in the feeling of personal accomplishment. [24]

Burnout components

It is characterized by a depletion of energy and resources due to which the person cannot go through the normal process of relaxing and then recovering from any stressful experience. [25] There is a reduction in energy and a prolonged feeling of fatigue is maintained. [26] At the moment when the person cannot cope with the stress demanded by their work or profession, the characteristic behavior that can be noticed in them is this feeling of exhaustion. [27]

Burnout observed in healthcare personnel can be summarized as the way in which the person distances themselves from their work, their clients, and others. [26] As a result, their behavior appears impersonal, cold, and distant. [25] This apathetic attitude entails a reduction in the individual's personal involvement, an indifference that they may consider necessary to cope with the disappointment and exhaustion that can occur when their hopes, ideals, and aspirations are not assured of being fulfilled or are unmet. [7]

The dimensions of emotional exhaustion and depersonalization lead to a severe decline in abilities, and the perception of this contradiction between the

profession's competencies and the reality of one's own performance is reflected in this self-assessment factor of the burnout syndrome. [4] The person sees themselves as ineffective in meeting the demands of their workplace, consequently, the sensation of self-efficacy or effectiveness diminishes. This feeling of being overwhelmed or loss of confidence in one's own ability is termed reduced personal accomplishment. [25]

Factors affecting burnout

Providing high-quality patient care is the primary purpose of healthcare staff. Yet, various conditions of healthcare work, such as the work environment, overload issues, and irregular working hours, lead to a stressful atmosphere for health professionals. [6] A large number of variables that facilitate, affect, and moderate the repercussions of burnout have been studied; highlight the work, organizational, and individual characteristics that contribute to burnout. Among personal variables, they include sociodemographic characteristics, personality traits, and attitudinal features. [25]

Various studies suggest a high prevalence of professional burnout among doctors, nurses, technical assistants, nurse practitioners, and other members of the healthcare team. [8] The conditions and management of the workplace are key factors in optimizing job performance and enhancing employee well-being. [28] Given the well-documented detrimental effects of burnout on employees and workplace well-being, it is important to examine the organizational and personal conditions that protect healthcare staff from burnout.

Upon reviewing the general literature, there is no consensus regarding the factors associated with burnout. It has been reported that younger employees with fewer years at work are more likely to experience burnout than older employees with

more years at work. [29] Given that age and years at work are often confounding variables and the results are not consistent, [30] it has been suggested that with age comes a better understanding of the reality of the workplace, and years of experience mean having learned to face the challenges of the workplace in a mostly successful manner. [31]

In general, the highest rates of burnout are observed to a greater extent in staff with more work experience. [32] On the other hand, gender has not been a strong predictor of burnout, with studies finding a link, but the findings are not consistent. Levels of depersonalization are the only aspect that has consistently been higher in men than in women. [25]

Finally, the connection between employment status (full-time or part-time) is not clear. Those who have more permanent jobs may have greater job security, with a certain number of guaranteed hours, which can act to protect against burnout or reduce its severity. [33] Many also have more organizational support that goes hand in hand with job security. However, at the same time, this group is likely to have greater exposure to all issues related to burnout and will have more encounters with patients and coworkers, which may increase their risk of suffering from this syndrome.

Methods

Research design

Considering the classification system for research designs in psychology, [34] the study was basic, following an associative strategy. Likewise, the study type was

quantitative with a cross-sectional predictive design, as it aimed to explore the functional relationship between variables by forecasting a criterion variable (burnout syndrome) based on various predictors (sociodemographic and work-related variables).

Participants

There were 334 healthcare professionals from two hospitals in the province of Ancash, Peru. [35] The sample selection was carried out using a non-probabilistic sampling of the purposive type. [36]

For the sample selection, the following inclusion criteria were applied: healthcare professionals aged 22 to 68 years, of both genders, with the employment status of either permanent or contract, with experience of one month or more, and who agreed to participate voluntarily in the study by signing the informed consent. On the other hand, individuals undergoing psychological or psychiatric treatment, as well as those who were on leave or had ceased employment at the time the data collection instruments were applied, were excluded from the research.

The sample size was calculated using a priori statistical power analysis. This procedure determines the minimum necessary sample size for the statistical test to detect a real effect with a certain probability. [37] The initial parameters of the analysis were set at: two-tailed test; significance level of 0.05; expected effect size $r^2 = 0.04$, the minimum recommended to represent a significant effect at a practical level in social sciences (Ferguson, 2009); and expected statistical power of 0.800, suitable in behavioral sciences. [38] The result of this analysis suggests having a minimum sample size of 334 participants, so this number of participants was collected to ensure the analyses have the desired statistical power.

Instruments

Sociodemographic and labor file: The instrument was developed for the current study with the aim of collecting information on the most important sociodemographic and work-related characteristics of the participants: age, gender, marital status, number of children, hospital of origin, employment status, occupation, work area, mode of employment, length of service, and hours of patient contact. Additionally, the form included two questions related to COVID-19: Did you have direct care of patients confirmed with COVID-19? Were you diagnosed with COVID-19 infection?

Maslach Burnout Inventory (MBI): The MBI consists of 22 items, with seven response options in a Likert-type format (0 = never to 6 = every day), aimed at measuring feelings related to work. [39] Thus, the evaluated individuals respond to the items based on the frequency with which they perceive these feelings. The MBI has three components: emotional exhaustion, depersonalization, and personal accomplishment. Higher scores on the items of the emotional exhaustion and depersonalization components, and lower scores on the personal accomplishment component, imply high levels of burnout. It is important to note that, due to the theoretical foundation and empirical evidence of the MBI, the scores of each dimension are considered separately, without combining them into a total score.

Regarding the psychometric properties of the MBI in this research, adequate evidence of validity and reliability was obtained. Evidence of validity based on internal structure for the three-factor model was collected through confirmatory factor analysis. The results indicated an acceptable fit of the model (χ^2 = 680.35, df = 206, χ^2/df = 3.30, SRMR = 0.08, RMSEA = 0.08 [95% CI 0.08, 0.09], CFI = 0.94, TLI = 0.93). In addition, all factor loadings were greater than 0.40 (ranging from

0.43 to 0.88). On the other hand, reliability was assessed using internal consistency with the omega coefficient (ω). Emotional exhaustion (ω = 0.93) and personal accomplishment (ω = 0.86) had a good level of score reliability, however, the depersonalization dimension showed low reliability (ω = 0.66).

Procedure and ethical considerations

Prior to the study's execution, the research protocol was approved by the Research Ethics Committee of the National University Santiago Antúnez de Mayolo to ensure compliance with ethical principles. Authorization was requested from the hospital directors for the application of the instruments, accompanied by informed consent. Healthcare professionals were invited to participate in the study, being informed of the objectives, procedures, risks, and benefits, as well as the treatment of confidentiality and anonymity of their responses. Thus, the participation of healthcare staff was voluntary and anonymous. [40] The instrument was applied online via email and WhatsApp, through which the evaluation link was sent, and was carried out between February and March of 2022.

Analysis of data

The statistical analysis was performed in the free software R version 4.3.1, [41] through the integrated development environment RStudio version 2023.06.1.524. [42] In this way, various psychometric, descriptive, and inferential analyses were carried out to address the objectives of the study

In describing the sociodemographic and work-related variables of the participants, summary statistics such as frequency and percentage were used. On the other hand, in the linear regression analysis, two models were tested for

each of the burnout dimensions as dependent variables. In both models, gender, age, marital status, employment status, occupation, work area, length of service, patient contact, and work modality were used as independent variables. The first model consisted of a series of nine simple regressions for each of the independent variables, and the second model was a multiple regression with the independent variables that obtained significant values in the previous model.

Each model's evaluation was conducted using the ANOVA test and the determination coefficient (R^2), considering a very weak fit to be less than 0.02, weak between 0.02 and 0.13, moderate between 0.13 and 0.26, and substantial greater than 0.26. [38] Regarding the assumptions of linear regression analysis: the normality of residuals was analyzed through the Q-Q plot; the absence of autocorrelation among residuals was detected from the Durbin-Watson statistic, which did not show values outside the expected range, [43] just like multicollinearity, which was analyzed using the variance inflation factor (VIF), considering values below 10 to be adequate, and the tolerance criterion, accepting values greater than 0.10. [44]

Results

Table 1 contains the description of the sociodemographic and work-related characteristics of the participants. It was found that the majority of the sample were aged between 50 and 68 years (36.23%), were predominantly women (72.46%), with married being the most common marital status (43.68%), and the majority were permanent staff according to their employment status (62.28%). On the other hand, in terms of job occupation, the majority were nurses (43.97%) and worked in various areas such as gynecology-obstetrics (17.28%), COVID-19

(14.20%), and emergency (14.82%). Additionally, the majority worked in-person (89.06%). Lastly, most had a service time between 1 and 5 years (35.33%) and spent 7 or more hours in contact with patients per day (70.96%).

Regression analysis was used to test whether various sociodemographic (gender, age, and marital status) and work-related (employment status, occupation, work area, length of service, patient contact, and work modality) variables represented factors associated with the dimensions of burnout. For this purpose, two series of models (simple and multiple) were tested for each of the burnout dimensions as dependent variables.

Table 1. Sociodemographic and Work-Related Characteristics of the Participants (N = 334)

Variable	Category	*n*	%
Gender	Female	242	72,46
	Male	92	27,55
Age	22 to 29 years	33	9,88
	30 to 39 years	113	33,83
	40 to 49 years	67	20,06
	50 to 68 years	121	36,23
Marital Status	Married	145	43,68
	Cohabiting	49	14,76
	Divorced or separated	30	9,04
	Single	108	32,53
Employment Status	Contracted	126	37,73
	Permanent	208	62,28
Occupation	Nurse	124	43,97
	Doctor	72	25,53

	Obstetrician	33	11,70
	Nursing technician	53	18,79
Work Area	Surgery	19	5,86
	COVID-19	46	14,20
	Emergency	48	14,82
	Gynecology-obstetrics	56	17,28
	Medicine	18	5,56
	Pediatrics	21	6,48
	Others	116	35,80
Length of Service	1 to 5 years	118	35,33
	6 to 10 years	68	20,36
	11 to 20 years	51	15,27
	21 years and over	97	29,04
Patient Contact	None	21	6,29
	1 to 6 hours	76	22,75
	7 hours or more	237	70,96
Work Modality	In-person	293	89,06
	Remote	36	10,94

Table 2 presents the results of a linear regression analysis focused on the emotional exhaustion dimension. Several independent variables were identified as statistically significant, including employment status, marital status, and length of service, reflecting their significant impact on emotional exhaustion. Specifically, the employment status variable showed an explained variance (R^2) of 0.010, indicating a significant, albeit modest, contribution to the model. Meanwhile, marital status was also significant with an R^2 of 0.00, suggesting a notable effect despite the apparent smallness of its quantitative contribution. Finally, the length of service exhibited an explained variance of 0.02, highlighting its relevance in predicting emotional exhaustion.

Table 2. Linear Regression Analysis for the Emotional Exhaustion Dimension

Variable	Reference level	B	Adjusted R^2	Sig.
Gender	Female	-2,13	0,00	0,15
Age	22 to 29 years	-	0,04	-
30 to 39 years		2,89		0,21
40 to 49 years		0,72		0,77
50 to 68 years		-3,14		0,17
Marital Status	Married	-	0,00	-
Cohabitating		3,93		**0,05**
Divorced or separated		1,06		0,66
Single		0,61		0,69
Employment status	Hired	-2,82	0,01	**0,04**
Occupation	Nurse	-	0,02	-
Doctor		2,00		0,26
Obstetrician		2,25		0,34
Nurse Technician		-4,15		0,03
Work area	Surgery	-	0,01	-
COVID-19		4,37		0,18
Emergency		1,71		0,60
Gynecology and Obstetrics		2,40		0,45
Medicine		5,23		0,18
Pediatrics		3,51		0,35
Others		-0,13		0,97
Length of service	1 to 5 years	-	0,02	-
6 to 10 years		-3,86		0,03
11 to 20 years		-4,84		0,15
21 years or more		-2,69		0,10
Patient contact	No patient contact (remote-virtual)	-	0,00	-
1 to 6 hours		-0,60		0,84

7 hours or more		-0,60		0,83
Work modality	In-person	-2,58	0,00	0,22

Table 3 illustrates the analysis of the normality of residuals in the multiple regression model, showing an adequate fit. This model incorporated variables such as employment status, marital status, and length of service, and demonstrated an adjusted explained variance (R^2 = 0.01), with an F-statistic of 2.53 and a significance of p = 0.05, indicating an overall satisfactory fit. Notably, within this comprehensive model, only the employment status variable reached statistical significance.

Table 3. Multiple Regression Analysis for the Emotional Exhaustion Dimension

Variable	B	Sig.	Adjusted R^2	F	Sig.
Employment Condition	-3.03	0.03	0.01	2.53	0.05
Length of Service	-0.92	0.08			
Marital Status	-0.21	0.60			

Table 4 details the results of a linear regression analysis focused on the depersonalization dimension, showing that, within the set of variables analyzed, only gender proved to be a statistically significant predictor (adjusted R^2 = 0.02; Sig. = 0.01). The other independent models, including age, marital status, employment status, occupation, work area, length of service, patient contact, and work modality, did not reach statistical significance in this analysis. This result emphasizes the importance of considering gender differences when addressing and understanding depersonalization in relevant contexts.

Table 4. Linear Regression Analysis for the Depersonalization Dimension

Variable	Reference level	B	Adjusted R^2	Sig.

Gender	Female	1,65	0,02	**0,01**
Age	22 to 29 years	-	0,01	-
30 to 39 years				0,96
40 to 49 years				0,98
50 to 68 years				0,19
Marital Status	Married	-	0,00	-
Cohabitating		0,84		0,36
Divorced or separated				0,85
Single		0,11		0,88
Employment status	Hired	-0,94	0,00	0,13
Occupation	Nurse	-	0,02	-
Doctor		1,47		0,08
Obstetrician		0,80		0,47
Nurse Technician				0,62
Work area	Surgery	-	0,02	-
COVID-19		0,05		0,97
Emergency		1,79		0,23
Gynecology and Obstetrics				0,79
Medicine		1,46		0,42
Pediatrics		0,65		0,71
Others		-1,03		0,45
Length of service	1 to 5 years	-	0,00	-
6 to 10 years				0,08
11 to 20 years				0,44
21 years or more				0,80
Patient contact	No patient contact (remote-virtual)	-	0,01	-
1 to 6 hours				0,07
7 hours or more				0,34
Work modality	In-person	-0,43	0,00	0,66

Table 5 presents the results of a linear regression analysis focused on the personal accomplishment dimension. Among all the variables studied, only gender and length of service emerged as statistically significant predictors, both with an adjusted R^2 of 0.03. This finding highlights the significant influence of gender, with a B coefficient of -3.25 and a significance of 0.00, indicating a strong negative association with personal accomplishment. Similarly, length of service proved to be a relevant factor, reflecting significant variance in personal accomplishment across different service durations.

Table 5. Linear Regression Analysis for the Personal Accomplishment Dimension

Variable	Reference level	B	Adjusted R^2	Sig.
Gender	Female	-3,25	0,03	**0,00**
Age	22 to 29 years	-		-
30 to 39 years			0,01	0,19
40 to 49 years				0,53
50 to 68 years				0,39
Marital Status	Married	-		-
Cohabitating		-1,05	0,00	0,42
Divorced or separated				0,40
Single		0,37		0,71
Employment status	Hired	0,30	0,00	0,73
Occupation	Nurse	-		-
Doctor		-1,53	0,02	0,15
Obstetrician		2,17		0,13
Nurse Technician				0,15
Work area	Surgery	-		-
COVID-19		2,44	0,00	0,26
Emergency		2,79		0,19
Gynecology and Obstetrics				0,09

Medicine		3,67		0,16
Pediatrics		2,66		0,29
Others		1,96		0,32
Length of service	1 to 5 years	-		-
6 to 10 years			0,03	**0,00**
11 to 20 years				0,39
21 years or more				0,45
Patient contact	No patient contact (remote-virtual)	-		-
1 to 6 hours			0,00	0,23
7 hours or more				0,40
Work modality	In-person	1,86	0,00	0,18

Table 6 presents the results of a multiple regression analysis, where the normality of residuals was evaluated, showing an adequate fit of the model. This analysis incorporated the variables of gender and length of service, yielding an adjusted R2 of 0.03, an F value of 6.11, and a significance of p = 0.00 for the complete model, indicating overall statistical significance. Within this model, the gender variable was statistically significant, with a B coefficient of -3.28 and a significance of p = 0.00, highlighting a strong negative influence on personal accomplishment. On the other hand, length of service, despite being included in the model, did not reach statistical significance (B = 0.17; Sig. = 0.61), indicating that, in this context, it does not have a significant effect on the personal accomplishment dimension.

Table 6. Multiple Regression Analysis for the Personal Accomplishment Dimension

Variable	B	Sig.	R^2 Corregida	F	Sig.
Sexo	-3,28	0,00	0,03	6,11	0,00
Tiempo de servicio	0,17	0,61			

Discussion

The study aimed to identify the sociodemographic and work-related factors associated with burnout through its three dimensions: emotional exhaustion, depersonalization, and personal accomplishment among healthcare staff at three main reference hospitals in the highland and coastal areas of Ancash (Peru). Statistically significant results indicated that emotional exhaustion is affected by employment status, length of service, and marital status separately, although in the presence of these three variables together, only employment status maintains this effect. Regarding depersonalization, gender was an associated factor. Finally, in the personal accomplishment dimension, gender and length of service appear as associated factors, although in the presence of these two variables together, only gender maintains this effect.

Thus, four of the nine sociodemographic and work-related variables significantly affected the three dimensions of burnout at the statistical level: gender (higher in women), employment status (higher in contract workers), length of service (higher among those with 6 to 10 years), and regarding marital status (higher in cohabiting individuals). However, in each of the models, the independent variables only explained a small part of the variance of the burnout dimensions. It is also important to highlight that the model for depersonalization was not statistically significant, which suggests the possibility that other factors may play a significant role in the feeling of depersonalization.

Regarding gender, the results are consistent with the study by Pontes et al. (2022), who found higher levels of burnout in women, along with the

characteristic of being nurses. This could be explained by the dual role and various professional and domestic responsibilities that Peruvian professional women undertake; and on the other hand, it would be due to the gender gap existing in different work contexts, including healthcare. [45] Likewise, the results differ from those of Taranu et al., 2022, as they did not find significant differences based on gender, but they did find differences with marital status. [46] However, they coincide with the results of the present study because there was no relationship between burnout with age and profession.

Considering specific dimensions, one study found an association between emotional exhaustion with marital status and age (distinct from what was found in this research), an association between gender and depersonalization (consistent with the present sample), and an association between age and personal accomplishment (different from the results of the current study). [18] Additionally, Fajardo-Lazo et al.'s research (2021) showed differences with the present results, finding a relationship between emotional exhaustion with profession, but not with years of service and employment status of the employee, both of which were statistically significant in the current study. [14] However, age was not significant, coinciding with the data found in this study. Regarding depersonalization, they also found a relationship with profession, but not with gender, unlike our results. [14] However, in both studies, the age and employment status of the employee were not related to this dimension. Finally, in the dimension of personal accomplishment, they indicated a relationship with profession and age, but not with gender and length of service [14], which differs from what was found in this study.

Our results indicate that professionals with less experience present higher scores in burnout dimensions, in line with previous research. [29] This supports the idea

that healthcare personnel with less experience and younger age, who generally work in critical areas (emergency, intensive care unit, COVID area), do not apply strategies to cope with daily work stressors such as attending to patients with severe illnesses, complaining, or agonizing patients at risk of death.

The findings of the research could have particular relevance for hospital directors who oversee frontline healthcare personnel. Firstly, as work demands can cause burnout, it is important to limit workload and overwhelming job demands; regulate the number of day and night shifts according to the available healthcare staff. Establishing employment policies to encourage appropriate levels of job performance to counteract the negative effects caused by burnout is also crucial. Secondly, support from managers (leadership effectiveness) and colleagues (teamwork) can reduce burnout in this vulnerable group and alleviate the negative consequences caused by work-related stressors.

The overall results of our research indicate that burnout is present indiscriminately in the healthcare collective, and according to reports from previous studies, there is no consensus regarding affirming that sociodemographic and occupational variables are the only variables contributing to healthcare personnel burnout. Therefore, this study has a limitation based on the analysis performed in that there may be other individual factors associated with burnout as the individual predictors that can influence HRQL, that were not included in this research, which is an important aspect for the development of future investigations. Thus, to better understand the etiopathogenesis of burnout, other factors must be considered, such as extralaboral factors like social and family support (family, friends, colleagues, use of leisure time, etc.), organizational factors, and environmental factors to understand how these variables interact

with the studied variables and establish a general explanatory model about burnout. [47]

Among the limitations found in the study are those related to methodological aspects such as sampling type, sample size, limited for obtaining a representative quantity in each of the levels of sociodemographic and occupational variables. Additionally, the measurement of some variables could be more precise if information were gathered from the same healthcare institutions regarding organizational factors, working conditions, mental and occupational health of healthcare personnel.

For future studies, considering the specific sociodemographic and occupational characteristics of frontline healthcare personnel, it is recommended to study other job demands and resources, such as work-family conflict, professional development opportunities, and investigating other predictors of burnout, such as working conditions. This will contribute to developing explanatory models with relevant variables for the study of burnout syndrome.

Conclusion

The findings of this study highlight that burnout in healthcare personnel is influenced by various factors, such as female gender, employment status, length of service, and marital status. These findings reflect the persistence of variable levels of burnout in healthcare personnel, both before and during and after the COVID-19 pandemic. Therefore, it is crucial to implement a renewed approach to mental health management in the post-COVID context, to improve health-related quality of life. This entails conducting additional collaborative research to improve the planning of programs aimed at identifying and intervening in groups at risk of experiencing burnout within the healthcare setting. These interventions

are expected to contribute to reducing turnover rates, performance errors, and increasing job satisfaction, while preserving the morale and overall health of professionals. Additionally, efforts are aimed at mitigating suicide attempts, which will result in an improvement in organizational well-being and the quality of patient care. This approach will also promote greater empathy and warmth in patient interactions, thereby strengthening the healthcare system as a whole.

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