

# Prevalence and correlates of burnout in health professionals in Ecuador

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## ABSTRACT

**Background:** Although burnout is a widespread phenomenon among healthcare professionals, there are no studies about its prevalence in Ecuador. This study assesses the prevalence of burnout syndrome among Ecuadorian healthcare professionals and examine the relationship with their personal and organizational characteristics.

**Methods:** A total of 2404 healthcare professionals (average age 40.0 years; 68.4% women) from the capitals of all 24 provinces in Ecuador participated in this study. Trained psychologists assessed the presence of burnout by applying the Maslach Burnout Inventory. Sociodemographic variables, emotional distress, social support and coping styles as well as organizational variables were also collected.

**Results:** Of all healthcare professionals surveyed, 2.6% presented burnout syndrome. By dimensions, 17.2% of the participants presented a high level of emotional exhaustion, 13.5% of depersonalization, and 18.2% had reduced personal accomplishment. Being non-mestizo, being classified as a probable case of mental disorder and using more passive coping were associated with a greater probability of presenting burnout; having > 10 years of experience was associated with a lower probability of burnout.

**Conclusions:** A significant number of active health professionals suffer from burnout. It is necessary to develop effective psychotherapeutic interventions for those who have the syndrome and to evaluate potential prevention strategies in those who have not yet developed it.

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## 1. Introduction

Burnout is an increasingly widespread phenomenon among professionals around the world. There is no unanimous agreement on its definition, though the most widely accepted and researched is Maslach and Jackson's (1986) definition [1]. They defined burnout as an inadequate response to chronic stress consisting of emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion refers to the decrease and loss of emotional resources, the feeling of being emotionally exhausted due to work, along with the feeling that one has nothing to offer psychologically to others. Depersonalization consists of the development of negative attitudes and feelings and insensitivity and lack of compassion towards the people they serve. Reduced personal accomplishment at work is the tendency to evaluate oneself and one's own work negatively, together with avoidance of interpersonal relationships, low productivity and the inability to withstand pressure. People who experience all three

symptoms have the greatest degree of burnout, although emotional exhaustion has been identified as the hallmark of burnout [2–3].

Burnout has serious effects on physical and mental health. It is associated with musculoskeletal and cardiovascular disorders [4–5], as well as with depression, anxiety and alcohol dependence [4,6]. In addition, burnout is associated with high costs for society and organizations because it can result in personal and family deterioration [7] and affects workers' productivity [8]. It is associated with higher medically certified sickness absence and absenteeism [7,9], chronic work disability [10], decreased job satisfaction and intention to leave the current job [7,11,12]. Furthermore, in the case of health professionals, burnout impacts the quality of care provided [13] and patient satisfaction [14].

Burnout is typically experienced by workers who care for and help others [15,16], with health professionals being among those who experience it most frequently [2]. Among the reasons for this, one should emphasize: increased stress as a result of the need to respond quickly to the needs of patients and families, the high stakes associated with their caregiving decisions that could result in harm to patients, and the work overload and the need for working long hours and often shiftwork in a complex working environment. It has been found that burnout affects between 4.1% and 61.0% of health professionals

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[17–23]. Specifically, using the Maslach Burnout Inventory (MBI) [1] and defining burnout as high emotional exhaustion, high depersonalization and low personal accomplishment according to the cutoff points established by the instrument, it was reported that 4.1% of 153 primary care physicians [19] and 9.0% of a sample of 267 physicians and nurses from intensive care units in Portugal suffered burnout [22]. A study with samples of health professionals from Argentina, Mexico, Ecuador, Peru, Colombia, Uruguay, Guatemala, El Salvador, Venezuela, Bolivia, Panama, Chile, Honduras, Nicaragua, Costa Rica and Spain that applied the same criteria, but used the terciles of the subscales as cut-off points, found prevalences spanning from 2.5% in El Salvador to 14.9% in Spain [23]. A study of mental health professionals in Italy that defined burnout as high emotional exhaustion and either high cynicism or low efficacy, found that 19.6% of a sample of 2000 health professionals suffered from burnout [18]. Furthermore, in a sample of 244 physicians and residents, 59.0% were found to suffer from emotional exhaustion and 61.0% from depersonalization [21]. With other assessment instruments, it was found a 39.0% of burnout in primary care team members in the USA [17] when using a single item measure [24]; and from 11.0% in nurses in Peru to 59.0% in Argentine physicians in a sample of 1015 doctors and nurses from Argentina, Brazil, Costa Rica and Peru in a study by the Pan American Health Organization [20]. However, these studies have some limitations, such as the use of samples of convenience [e.g., 21–22], small sample sizes [e.g., 19–22], low response rates [22], and the use of samples from specific professions, sectors or health institutions [e.g., 17,18]. In addition, very few studies on burnout in health professionals have been carried out on a large scale at the national level.

Furthermore, most studies on burnout were conducted in the USA or Europe [17–19,21,22]. To date, no study has analyzed burnout nationwide in Ecuador, although health professionals in this country have some characteristics that distinguish them from those of other countries such as their Hispanic culture, representing a variety of ethnic groups (including indigenous people, who have little representation in the USA and Europe) and the predominance of mestizaje [25]. This is critical, as it is well-known that the definition of mental health problems, how they are expressed and the coping mechanisms employed can be significantly influenced by sociocultural factors [26]. In addition, Ecuador is an emerging country, representing the eighth largest economy in Latin America [27], with an expanding health system that has grown from 19,344 physicians and 11,634 nurses and 12.9 physicians and 7.8 nurses per 10,000 inhabitants in 2010 to a total of 32,617 physicians and 16,250 nurses with 20.4 physicians and 10.1 nurses per 10,000 inhabitants in 2014 [28].

Regarding the theoretical framework, multiple factors may affect the probability of burnout in health professionals. Specifically, burnout in nursing professionals has been associated, among other variables, with younger age [29], working longer hours [30], providing more direct care to patients [31] and attending to a greater number of patients [11]. Among the medical staff, it was found that burnout is associated, among other variables, with being a woman [29], being Caucasian compared to African-Americans in the dimension of depersonalization [32], having less social support [33,34] and working a greater number of hours [35]. When considering several health professions jointly, it was found that burnout is associated, among other variables, with being a woman [22], being younger and single [36], having lower income [37], having more years of professional experience [17,18], emotional distress [38] and a negative coping style [39]. However, findings regarding some of these variables, such as gender [32,40], age [29,36,41], professional experience [17,18,42] or the amount of direct care to patients [31,19] are contradictory. Furthermore, the psychopathological characteristics and the coping strategies used by health professionals have barely been investigated [43]. In addition, the investigations that have taken place, rather than follow a specific theory, have focused on analyzing the contribution of different variables to the onset of burnout and have limited themselves mainly to sociodemographic variables and the general labor context.

In the present study, the Job Demands-Resources (JD-R) model [44, 45] was used as the theoretical framework. This model postulates that

while each occupation may have its own specific risk factors associated with work stress, these factors can be classified into two general categories: the demands of the job and the job resources. Job demands refer to those physical, psychological, social or organizational aspects of work that require sustained effort or physical and/or psychological (cognitive and emotional) skills and are therefore associated with certain physiological and/or psychological costs. The resources of the job are the physical, psychological, social and organizational aspects that facilitate the achievement of the work objectives. The central hypothesis of the JD-R model is that burnout at work develops when work demands are high and when work resources are limited. In contrast, work commitment is most likely when job resources are high in the face of the job's demands. Taking as reference the JD-R model, the existing information in the scientific literature on the factors associated with burnout in health professionals and the social and cultural environment in which the present study was carried out, some variables could be of special interest to describe, explain and predict burnout in Ecuadorian health professionals, namely: age, gender, marital status, having children, ethnicity, emotional distress, social support, active coping, passive coping, profession, income, professional experience, appointment, daily workday, employment sector, type of contract, shifts, direct attention to patients, number of patients/day and institutional resources available.

Thus, age may influence the onset of burnout as professionals may accumulate maturity and emotional self-control strategies over the years and as a result, be less impressionable [46]. Similarly, it has been found that burnout is experienced differently by men and women (women tend to experience greater emotional exhaustion while men are more likely to experience depersonalization) [47]. Marital status and having children can also influence the development of burnout because, on the one hand, professionals with partners and children can meet personal goals beyond work, allowing them to find strength in other areas of life and providing them with motivation to cope with their work [48]. On the other hand, when there is interference between work and family, burnout is likely to occur [49]. In turn, mestizaje has been identified as a factor of the Hispanic culture that may influence the prevalence of mental health problems [50]. Emotional distress, on the other hand, affects work productivity, stress at work and absenteeism [51]. Social support provides instrumental, informational and emotional assistance that provides resources and can modulate the impact of negative life events [52] acting as a buffer for mental health issues [53]. In addition, the coping style used can mediate the development of burnout. That is, an active coping style mediates the relationship between hope and emotional exhaustion and between self-efficacy and reduced personal accomplishment, while the passive style mediates the relationship between self-efficacy and emotional exhaustion [54].

On the other hand, the profession may influence the occurrence of burnout insofar as it determines the tasks to be performed, the position and possibility of decision making, the social status and the income received. Thus, differences in the prevalence of burnout have been identified between nurses and physicians [33]. In turn, the level of income can influence the social image and job satisfaction of the professional [55]. The years of experience and the appointment type can influence the skill achieved in the tasks required and the adaptation to the work environment [56]. Long hours and shift work compromise the sleep and rest needed by the professionals [57], which is associated with burnout [30]. In addition, the sector (public or private) to which the institution belongs presents differences in the level of autonomy, salary and level of job security of its workers that can influence burnout. In the same way, the type of contract (fixed or temporary) produces differences in the level of work overload, occupational safety and job satisfaction of the professional [58]. The amount of direct care provided to patients and the patient/health professional ratio also have an impact on work overload and can influence the likelihood of developing burnout and job dissatisfaction [31,11]. Finally, the provision of adequate institutional resources can dampen the impact of the demands of the job on burnout [59].

The objective of this study was to analyze the prevalence of burnout syndrome and its correlates in health professionals working in the national health system of Ecuador.

## 2. Materials and methods

### 2.1. Sample

In 2012, a cross-sectional study was administered to health professionals from Ecuador, a South American country with an area of 256,370 km<sup>2</sup> and a population of 16,304,453 inhabitants [60]. The sample included the whole medical and nursing population ( $N = 3250$ ) who worked in the 91 health institutions (basic hospitals and general hospitals, specialization hospitals, ambulatory health centers) of the public and private health systems in the capitals of the 24 provinces of the country. The sample was recruited from the health professional population of the provincial capitals because it presents a great heterogeneity in relation to the main variables considered in the study.

To participate in the study, the health professionals had to: (a) be qualified as medical or nursing professionals, (b) have a minimum of one year of experience, and (c) be an active employee. Those who did not give informed consent to participate in the study, were on leave (e.g., maternity, sick), or were absent from their workplace for professional reasons (internships in other centers, taking courses) were excluded.

To minimize the loss of subjects, we followed the strategies recommended by Hulley, Newman and Cummings [61] for sample collection. These included the following: treating participants with kindness, affection and respect; helping them understand the research question so that they want the study to be successful; presenting the study in an attractive way; scheduling a systematic series of contact attempts; providing reminders of the date of the evaluation; and collecting the information in the most pleasant and least invasive way.

The response rate was 91.3%. Two hundred and eighty-three subjects (8.7%) refused to participate in the study, and 198 (6.1%) were excluded because they did not give their informed consent, had less than one year of experience, were unemployed or absent for professional reasons. Subsequently, 365 participants were eliminated for not adequately completing the data. The final sample was 2404 health professionals (mean age 40.0 years, 68.4% female) (see Fig. 1).

The study was conducted in accordance with the latest revision of the Declaration of Helsinki and approval of the ethics committees of the participating health institutions was obtained. The selected professionals were contacted personally at their institutions and were invited to participate in the study after being informed of its nature, aims, risks, and benefits. The confidentiality and anonymity of their responses was guaranteed, all participants' questions were answered, and all participants gave their informed consent. Participation was voluntary and free of charge and resulted in no monetary or other compensation.

### 2.2. Assessments

The characteristics of the participants were evaluated by an ad hoc questionnaire about their sociodemographic (age, sex, marital status, ethnicity) and work-related characteristics (profession, monthly income, professional experience, appointment, duration of work day, employment sector, type of contract, shifts, direct attention to patients, number of patients per day and availability of institutional resources).

Burnout was assessed using the *Maslach Burnout Inventory* (MBI [1]; Spanish version of Seisdedos [62]), a self-administered 22-item instrument with 7 Likert-type response options ranging from 0 (*never*) to 6 (*every day*). It consists of three subscales: Emotional Exhaustion (9 items, 0–54 score range), Depersonalization (5 items, 0–30 score range) and Personal Accomplishment (8 items, 0–48 score range). For the emotional exhaustion subscale, the cut-off point  $\geq 27$  was selected for the high level category, 19–26 for the medium level, and  $\leq 18$  for

the low. With respect to depersonalization, scores  $\geq 10$  indicated a high level, 6–9 a medium level, and  $\leq 5$  a low level. In personal accomplishment, scores  $\leq 33$  indicated a high level, 34–39 a medium level and  $\geq 40$  a low level. A participant was considered to present burnout syndrome when they presented high emotional exhaustion, high depersonalization and low personal accomplishment [3]. The internal consistency for the present study was 0.73 for the entire instrument. The internal consistency for the subscales is as follows: 0.84 for emotional exhaustion, 0.70 for depersonalization, and 0.77 for personal accomplishment subscale (Table 3).

Emotional distress was assessed with the *General Health Questionnaire* (GHQ-28 [63]; Spanish version of Lobo, Pérez-Echeverría and Artal [64]), a self-administered questionnaire of 28 items and four subscales (Somatic Symptoms, Anxiety and Insomnia, Social Dysfunction and Severe Depression) of 7 items each with 4 answer choices. The scores range from 0 to 28, where a higher score is indicative of greater emotional distress and a cutting score of 5/6 being indicative of probable case of mental disorder (sensitivity = 84.6%, specificity = 82%). The internal consistency for the present study was 0.89 (Table 3).

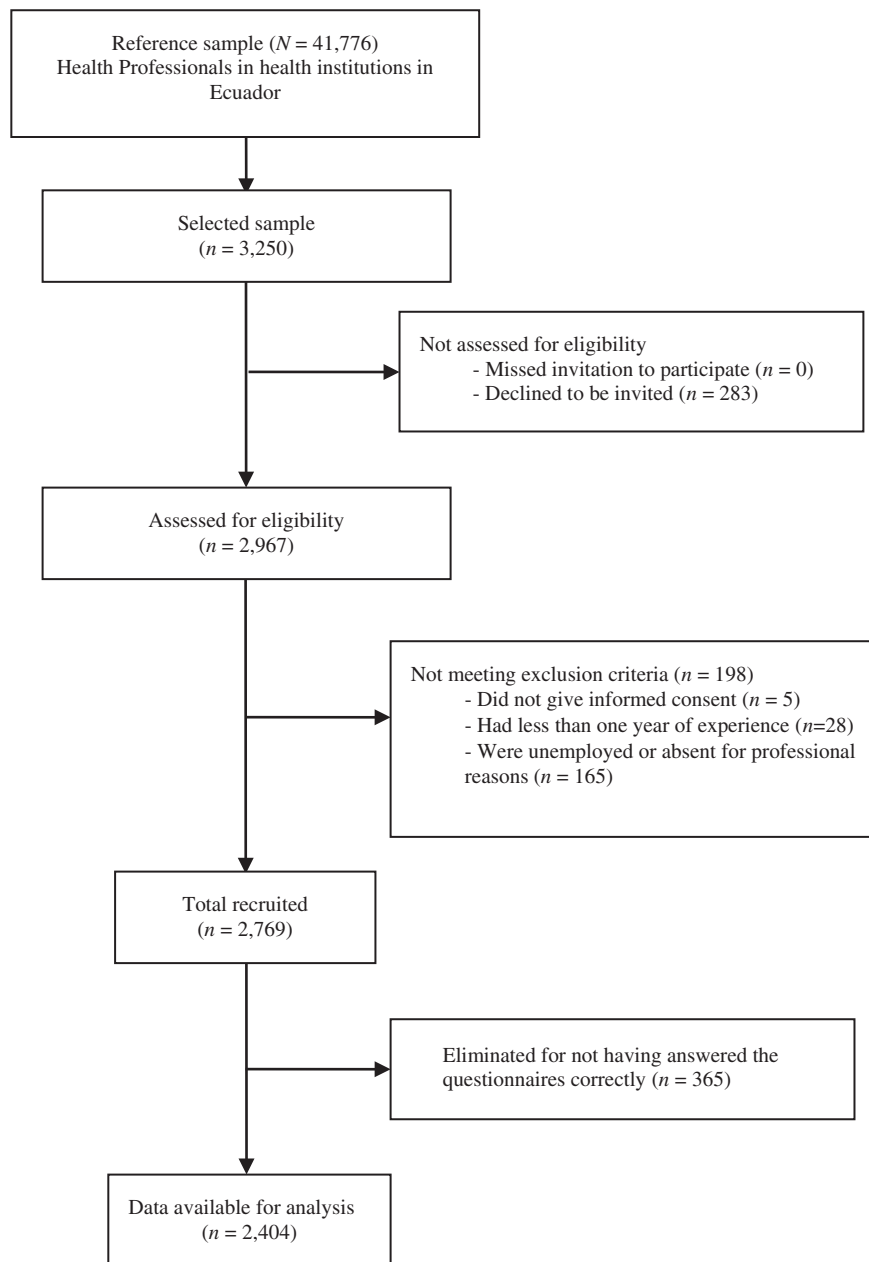
Social support was evaluated with the *Social Support Survey* (MOS [65]; Spanish version of Revilla, Luna del Castillo, Bailón and Medina [66]). It is a 20-item self-administered tool that include the size of the social network and four dimensions of social support (emotional/informational social support, instrumental support, positive social interaction and affective support), measured using a Likert scale, ranging from 1 (*never*) and 5 (*always*). The scores range from 0 to 100, with a higher score indicating greater perceived social support. The internal consistency for the present study was 0.97 (Table 3).

The coping strategies were evaluated with the *Brief COPE* ([67]; Spanish version of Morán, Landero, and González [68]), a self-administered 28-item inventory that consists of 14 subscales, measured using a Likert scale ranging from 0 (*I have been doing this to all*) to 3 (*I have been doing this a lot*). Data from this instrument were consolidated into Active and Passive coping, as categorized by Katz, Ritvo, Irvine, Jackson [69]. Active coping includes active coping, planning, positive reframing, acceptance, humor, using emotional support, using instrumental support and venting. Passive coping includes denial, self-distraction, religion, substance, behavioral disengagement, and self-blame. Higher scores indicate greater use of the corresponding strategy. The internal consistency for the present study were 0.91 and 0.84 for each strategy (Table 3).

### 2.3. Procedure

A research protocol was developed to standardize the evaluation procedure, detailing the study objectives, design and setting, participants (target population, accessible population, inclusion/exclusion criteria, sampling, recruitment), measures (predictor and outcome variables), bias (non-response, recall bias, selection bias), data analysis strategy, quality control, data management, schedule, and ethical issues.

Because all the evaluation instruments have been previously validated in Spanish in Spain, cultural adaptations to the evaluation protocol were made to use them in a similar language (Spanish) but in another country (Ecuador) [70,71], according to the International Test Commission Guidelines [72]. Two researchers (both of them Ecuadorian native hispanophones familiar with Castilian Spanish) reviewed the battery of instruments including the instructions, items, and response options. The researchers identified ten terms that were not familiar for the Ecuadorian population and reworded them to Ecuadorian terms in an independently and parallel manner. Subsequently, an expert committee (composed by three experts in linguistics and two researchers from Spanish and Ecuadorian cultures) evaluated the semantic, idiomatic, experiential and conceptual equivalence of the two versions of instruments (Castilian and Ecuadorian) and resolved any found flaws. The necessary adaptations for those terms were made retaining referential meaning by referring to the same entities, maintaining the pragmatic meaning, and staying close to lexical and structural features of the source text. The



**Fig. 1.** STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) flow diagram.

modified version was reevaluated by the committee. The process was repeated until the committee reached consensus on the equivalence of the two versions and determined the pre-final version. This version was tested with Ecuadorian professionals and the results of this probe were reviewed by the expert committee, who made the final modifications and signed off the final version.

Subsequently, 89 psychologist were trained to carry out the evaluations. They received around 24 h of training consisting of theoretical-practical seminars on burnout, assessment skills, the evaluation instruments used and the population of health professionals. This training was given by a team of experts made up of 10 professionals from the Psychology Department of the Technical University of Loja (Ecuador) with 5–10 years of experience in psychological assessment and 2 professionals from the Department of Clinical Psychology and Psychobiology of the University of Santiago de Compostela (Spain) with >20 years of experience.

Prior to the study, we conducted a pilot study with 178 health professionals from four health institutions (two public and two private) randomly selected from the health institutions of the city of Loja

(Ecuador). The pilot study served as a simulation of the planned study and to make any changes prior to the main study. Following the recommendations of Cochran [73], the aims were to determine how long the evaluation took, whether the instruments were being understood correctly, the sequence of the evaluation instruments, the evaluators' performance and adherence to the protocol and the feasibility of the project. We found that the time of completion of the instrument battery was approximately 40 min. To explore whether the pre-final version of the instruments were being understood correctly we used the probe technique. Professionals were interviewed after completing the instrument battery to probe about what they thought was meant by each questionnaire instruction, each item and the chosen response, and the distribution of responses was examined to determine the proportion of missing items. We found that 99.3% of participants properly understood all instructions, items and response options and there were only 1.0% of missing items, indicating that the items were understandable and accessible. In addition, we explored the order of administration of the questionnaires. In the pilot study we administered first the

**Table 1**  
Personal and organizational characteristics of participants (N = 2404).

Characteristic	n	(%)
Age <sup>a</sup>	40.0 (10.6)	
Range	21–65	
Gender		
Men	760	31.6
Women	1644	68.4
Marital status		
Without partner	933	38.8
With partner	1471	61.2
Children <sup>a</sup>	1.6 (1.3)	
Range	0–9	
Ethnicity		
Mestizo	2203	91.6
Other ethnicities	201	8.4
Emotional distress <sup>a</sup>	8.6 (5.6)	
Range	0–26	
Social support <sup>a</sup>	73.1 (19.0)	
Range	19–95	
Active coping <sup>a</sup>	28.8 (9.7)	
Range	16–64	
Passive coping <sup>a</sup>	18.4 (5.7)	
Range	12–48	
Profession		
Doctors	1194	49.7
Nurses	1210	50.3
Income		
<\$1000	828	34.4
≥\$1000	1576	65.6
Professional experience <sup>a</sup>	13.4 (10.1)	
Range	1–40	
Appointment		
Part time	568	23.6
Full time	1836	76.4
Daily workday <sup>a</sup>	8.8 (3.5)	
Range	1–24	
Sector in which they work		
Public	1313	54.6
Private/mixed	1091	45.4
Type of contract		
Appointment	1225	51.0
Other	1179	49.0
Shifts		
No shifts	140	5.8
With shifts	2264	94.2
Direct attention		
≤50%	241	10.0
>50%	2163	90.0
Number of patients/day <sup>a</sup>	18.7 (11.5)	
Range	0–45	
Institutional resources available		
No	1068	44.4
Yes	1336	55.6

<sup>a</sup> Mean (standard deviation).

instrument on sociodemographic and labor variables, then the GHQ, followed by MBI, COPE and MOS. However, after the pilot study and following Childs' recommendation [74], we presented targeted instrument first (first the instrument on sociodemographic and labor variables, then the MBI followed by GHQ, COPE and MOS). Furthermore, the evaluators' performance and adherence to the protocol was evaluated. All of the assessments in the pilot study were recorded and reviewed by two researchers who provided them with feedback. We found that the adherence to the protocol by the evaluators was 96.0%, indicating that the protocol was administered correctly.

A letter was sent to the 91 health institutions of the capitals of the 24 provinces of Ecuador outlining the objectives of the study and inviting them to participate in the study. We garnered the support of the directors of the institutions and the heads of the medical and nursing personnel through personal interviews. The date of application of the evaluation instruments in each institution was determined with the directors and heads of departments. Subsequently, the evaluators moved to the health institutions and the battery of evaluation self-

**Table 2**  
Prevalence of burnout syndrome and its dimensions in the participants (N = 2404).

Variable	n	%
Burnout syndrome		
No	2341	97.4
Yes	63	2.6
Emotional exhaustion subscale		
Low	1532	63.7
Medium	458	19.1
High	414	17.2
Depersonalization subscale		
Low	1650	68.6
Medium	429	17.9
High	325	13.5
Personal accomplishment subscale		
Low	438	18.2
Medium	502	20.9
High	1464	60.9

administered instruments was administered face-to-face collectively and in paper and pencil format by the aforementioned trained evaluators in the consulting rooms or in conference rooms at the health institutions. Each session lasted approximately 35–40 min.

## 2.4. Statistical analyzes

All statistical analyzes were performed with SPSS for Windows (version 20.0). Contingency tables, means and percentages were used to obtain personal, and organizational characteristics and estimates of burnout syndrome and its dimensions (emotional exhaustion, depersonalization and reduced personal accomplishment).

To analyze the associations between burnout syndrome, as well as each of its dimensions, and the variables included in the study, we performed multiple logistic regression analyses. Prior to logistic regression, the strength and direction of relationships among variables were determined using Pearson's parametric correlation coefficient measure for two quantitative variables, biserial correlation coefficient for a quantitative and a dichotomous variables, and Cramer's V for two dichotomous variables. Detection of multicollinearity between explanatory variables was evaluated by the variance inflation factor (VIF) and its counterpart, Generalized Variance Inflation Factor (GVIF), for categorical predictors [75,76]. The VIF for predictor  $j$  is  $1 / (1 - R_j^2)$ , where  $R_j^2$  is the  $R^2$  from a regression of predictor  $X_j$  against the rest of predictors. A value of 3 [77] is the threshold used as an indicator of multicollinearity. The strategy for combating multicollinearity was to sequentially eliminate the predictor with the highest VIF, recalculate the VIF for the rest of variables, and repeat this process until all VIFs are smaller than the threshold of 3 [75,76]. Burnout syndrome and each of its dimensions, which were included in the analyses as outcome variables, were categorized absent (0) and present (1). In addition, new categories were also established for some of the variables included in the analysis: marital status (without/with partner), ethnicity (mestizo, other ethnicities), monthly income (<\$1000, ≥\$1000), daily working day (≤8 h, >8 h), sector in which they work (public, private/mixed), shifts (no shifts, shifts), direct care (≤50%, >50%), number of patients/day (0–17 patients, ≥18 patients), and availability of institutional resources (no, yes). All logistic regression analyzes were done with and without simultaneous adjustment of the variables that reached a  $p$  value of at least 0.30. Results are reported as odds ratios (ORs) with 95% confidence intervals (CI).

## 3. Results

### 3.1. Personal and organizational characteristics

As shown in Table 1, in relation to the personal characteristics, the mean age of the sample was 40.0 ( $SD = 10.6$ ), with a range of 21 to

**Table 3**  
Cronbach's alphas and correlations for all the variables.

	$\alpha$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
1. Burnout <sup>a</sup>	0.73	1																							
2. Emotional exhaustion <sup>b</sup>	0.84	0.36**	1																						
3. Depersonalization <sup>c</sup>	0.70	0.41**	0.36**	1																					
4. Personal accomplishment <sup>d</sup>	0.77	0.35**	0.13**	0.13**	1																				
5. Age	–	–0.11**	–0.11**	–0.14**	–0.08**	1																			
6. Gender <sup>e</sup>	–	–0.11**	0.04	0.06**	0.07	–0.15**	1																		
7. Marital status <sup>f</sup>	–	0.03	0.03	0.05*	0.03	–0.22**	0.15**	1																	
8. Children <sup>g</sup>	–	–0.04	0.09**	0.08**	0.07**	0.52	0.14**	–0.41**	1																
9. Ethnicity <sup>h</sup>	–	0.01	0.05*	0.06*	0.07**	0.06**	–0.07**	0.02	–0.01	1															
10. Emotional distress <sup>i</sup>	0.89	0.39**	0.26	0.17	0.17	–0.14**	0.06**	0.06**	–0.10**	0.03	1														
11. Social support	0.97	0.03	–0.03**	–0.02	–0.02	–0.10**	0.01	–0.03	–0.07**	–0.04	–0.14**	1													
12. Active coping	0.91	0.28**	0.24**	0.18	0.18	–0.11**	–0.02	0.11**	–0.09**	0.05	0.37**	–0.04	1												
13. Passive coping	0.84	0.30**	0.28**	0.23	0.23	–0.12**	0.02	–0.08**	–0.08**	0.04*	0.40**	–0.07**	0.85**	1											
14. Profession <sup>j</sup>	–	–0.17**	0.08**	0.03	0.10**	–0.08**	0.56**	0.05*	0.01	–0.03	0.01	–0.07**	–0.08**	–0.02	1										
15. Income <sup>k</sup>	–	0.09**	0.04	0.02	0.10**	0.23**	–0.23**	–0.08**	0.08	0.05*	–0.03	0.06**	0.03	–0.02	–0.35**	1									
16. Professional experience <sup>l</sup>	–	–0.09**	0.09**	0.11*	0.06**	0.86**	–0.09**	–0.20**	0.50**	0.06**	–0.11**	–0.09**	–0.08**	–0.10**	–0.01	0.20**	1								
17. Appointment <sup>m</sup>	–	–0.07**	0.06*	0.03	0.02	0.03	–0.02	0.01	0.03	0.01	–0.08**	0.03	–0.03	–0.04*	–0.04	–0.02	0.01	1							
18. Daily workday <sup>n</sup>	–	0.10**	0.02	0.06**	0.01	–0.11**	–0.13**	0.04*	–0.07**	0.01	0.03	0.03	0.05*	0.03	–0.20**	–0.01	–0.12**	–0.10**	1						
19. Sector <sup>o</sup>	–	0.08**	0.01	0.02	0.04	0.06**	–0.19**	–0.06**	0.03	0.08**	–0.01	0.01	0.01	–0.01	–0.19**	0.09**	0.03	0.07**	0.13**	1					
20. Type of contract <sup>p</sup>	–	0.07**	0.06*	0.09**	0.02	–0.50**	–0.05**	0.12**	–0.26**	–0.05*	0.03	0.03	0.09**	0.08**	–0.16**	–0.14**	–0.49**	–0.01	0.12**	–0.02	1				
21. Shifts <sup>q</sup>	–	0.01	0.01	0.01	0.02	–0.06**	0.03	0.02	–0.04*	0.01	0.04*	–0.01	–0.01	0.01	0.08**	–0.02	–0.04*	–0.01	0.01	–0.07**	–0.01	1			
22. Direct attention <sup>r</sup>	–	0.01	0.02	0.02	0.01	–0.11**	0.01	0.06**	–0.03	0.03	0.01	0.05*	0.02	0.04	–0.01	–0.01	–0.12**	0.02	0.01	–0.01	0.7**	0.04*	1		
23. Number of patients/day <sup>s</sup>	–	0.09**	0.01	0.04*	0.03	–0.04*	–0.03	0.01	0.01	0.01	0.01	0.03	0.05*	0.01	–0.08**	–0.01	–0.04*	–0.08**	0.14**	–0.04*	0.10**	0.02	0.09**	1	
24. Institutional resources <sup>t</sup>	–	–0.06**	0.03	0.02	0.01	0.08**	–0.02	–0.07**	0.05*	0.04*	–0.08**	–0.02	–0.05*	–0.04*	–0.03	0.01	0.07**	–0.01	0.01	0.14**	–0.04	–0.03	–0.04	–0.04*	1

$\alpha$ : Cronbach's alpha.

<sup>a</sup> 0: No burnout, 1: Burnout.

<sup>b</sup> 0: Medium/low emotional exhaustion, 1: High emotional exhaustion.

<sup>c</sup> 0: Medium/low depersonalization, 1: High depersonalization.

<sup>d</sup> 0: Medium/high personal accomplishment, 1: Low personal accomplishment.

<sup>e</sup> Male, 1: Female.

<sup>f</sup> 0: Without partner, 1: With partner.

<sup>g</sup> 0: No children, 1: Has children.

<sup>h</sup> 0: Mestizo, 1: Other ethnicities.

<sup>i</sup> 0: No probable case, 1: Probable case.

<sup>j</sup> 0: Doctors, 1: Nurses.

<sup>k</sup> 0: <\$1000, 1: ≥\$1000.

<sup>l</sup> 0: ≤10 years, 1: >10 years.

<sup>m</sup> 0: Part time, 1: Full time.

<sup>n</sup> 0: ≤8 h, 1: >8 h.

<sup>o</sup> 0: Public, 1: Private.

<sup>p</sup> 0: Appointment, 1: Other.

<sup>q</sup> 0: No shifts, 1: With shifts.

<sup>r</sup> 0: ≤50%, 1: ≥50%.

<sup>s</sup> 0: 0–17; 1: ≥18.

<sup>t</sup> 0: No, 1: Yes.

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

65 years. Of all participants, 68.4% were women, 61.2% had a partner, the mean number of children was 1.6 ( $SD = 1.3$ ), and 91.6% were mestizos. In addition, we found an average emotional distress score of 8.6 ( $SD = 5.6$ ). The mean scores for social support, active coping strategies, and passive coping strategies were as follows: 73.1 ( $SD = 19.0$ ), 28.8 ( $SD = 9.7$ ), 18.4 ( $SD = 5.7$ ).

In relation to the organizational characteristics, 50.3% were nurses, 65.6% of the professionals had a monthly income  $\geq \$1000$ ; professionals had an average professional experience of 13.4 years ( $SD = 10.1$ ); 76.4% had a full-time appointment, with an average daily working day of 8.8 h ( $SD = 3.5$ ); 54.6% worked in the public sector, and 51.0% had a contract by appointment. Of all professionals, 94.2% worked in shifts, 90.0% dedicated  $>50\%$  of their workdays to direct care, attending an average of 18.7 patients per day ( $SD = 11.5$ ), and 55.6% reported having institutional resources.

### 3.2. Prevalence of burnout syndrome

The study found an average burnout score of 60.1 ( $SD = 14.1$ ) among health professionals. Mean scores of 16.3 ( $SD = 10.5$ ), 4.1 ( $SD = 4.8$ ) and 39.7 ( $SD = 7.9$ ) were found in the subscales of emotional exhaustion, depersonalization and personal accomplishment, respectively.

As shown in Tables 2, 2.6% ( $n = 63$ ) of participants presented burnout syndrome (high emotional exhaustion, high depersonalization and low personal accomplishment). We identified 17.2% ( $n = 414$ ) of the participants as presenting with a high level of emotional exhaustion,

13.5% ( $n = 325$ ) presenting with a high level of depersonalization and 18.2% ( $n = 438$ ) presenting low personal accomplishment.

### 3.3. Correlates of burnout

Table 3 shows the values of the internal consistency and the correlations between the variables. Some significant correlations were found with associations ranging from weak ( $r = 0.01$ ) to strong ( $r = 0.86$ ). Subsequently, multicollinearity was corrected prior to regression analysis by eliminating from the analysis the variables with the highest VIF (age, gender, children, type of contract, and active coping). As a result, all variables included in regression analysis had VIF values lower than 3 (specifically, marital status = 1.42, ethnicity = 1.08, probable case = 1.00, social support = 1.06, passive coping = 1.05, profession = 1.65, income = 1.21, professional experience = 2.17, appointment = 1.05, daily workday = 1.18, sector in which they work = 1.17, shifts = 1.03, direct attention = 1.04, number of patients/day = 1.04, institutional resources available = 1.04).

The odds of having burnout syndrome were significantly greater for non-mestizos than for mestizos (adjusted OR = 3.05), for those classified as possible cases of mental disorder than for those not classified as possible cases (adjusted OR = 22.89) and for those with a higher score in passive coping (adjusted OR = 1.12), and significantly lower for those having more than ten years of experience (adjusted OR = 0.55). There were no significant differences between professionals

**Table 4**  
Correlates of burnout syndrome among healthcare professionals ( $N = 2404$ ).

Characteristic	Burnout ( $n = 63$ ) $n$ (%)	No burnout ( $n = 2341$ ) $n$ (%)	OR (95% CI)	Adjusted OR (95% CI)
Marital status				
Without partner	28 (44.4)	905 (38.7)	1 [Reference]	1 [Reference]
With partner	35 (55.6)	1436 (61.3)	0.79 (0.48–1.30)	0.86 (0.50–1.48)
Ethnicity				
Mestizo	50 (79.4)	2153 (92.0)	1 [Reference]	1 [Reference]
Other ethnicities	13 (20.6)	188 (8.0)	2.98 (1.59–5.58)	3.05 (1.56–5.97)
Probable case				
No	1 (1.6)	807 (34.5)	1 [Reference]	1 [Reference]
Yes	62 (98.4)	1534 (65.5)	32.62 (4.51–235.66)	22.89 (3.08–170.17)
Social support, $M$ ( $SD$ )	67.5 (20.1)	73.2 (18.9)	0.99 (0.97–0.99)	0.99 (0.97–1.01)
Passive coping, $M$ ( $SD$ )	24.2 (7.9)	18.3 (5.6)	1.14 (1.10–1.18)	1.12 (1.08–1.17)
Profession				
Doctors	34 (54.0)	1160 (49.6)	1 [Reference]	1 [Reference]
Nurses	29 (46.0)	1181 (50.4)	0.84 (0.51–1.38)	0.87 (0.51–1.48)
Income				
$< \$1000$	22 (34.9)	806 (34.4)	1 [Reference]	1 [Reference]
$\geq \$1000$	41 (65.1)	1535 (65.6)	0.98 (0.58–1.65)	1.13 (0.64–2.00)
Professional experience				
$\leq 10$ years	41 (65.1)	1089 (46.5)	1 [Reference]	1 [Reference]
$> 10$ years	22 (34.9)	1252 (53.5)	0.47 (0.28–0.79)	0.55 (0.32–0.95)
Appointment				
Part time	12 (19.0)	556 (23.8)	1 [Reference]	1 [Reference]
Full time	51 (81.0)	1785 (76.2)	1.32 (0.70–2.50)	0.82 (0.41–1.62)
Daily workday				
$\leq 8$ h	43 (68.3)	1657 (70.8)	1 [Reference]	1 [Reference]
$> 8$ h	20 (31.7)	684 (29.2)	1.13 (0.66–1.93)	1.04 (0.59–1.84)
Sector in which they work				
Public	31 (49.2)	1282 (54.8)	1 [Reference]	1 [Reference]
Private/mixed	32 (50.8)	1059 (45.2)	1.25 (0.76–2.06)	1.13 (0.66–1.93)
Shifts				
No shifts	2 (3.2)	138 (5.9)	1 [Reference]	1 [Reference]
With shifts	61 (96.8)	2203 (94.1)	1.91 (0.46–7.90)	1.69 (0.40–7.24)
Direct attention				
$\leq 50\%$	7 (11.1)	234 (10.0)	1 [Reference]	1 [Reference]
$> 50\%$	56 (88.9)	2107 (90.0)	0.89 (0.40–1.97)	0.59 (0.25–1.36)
No. of patients/day				
0–17 patients	35 (58.3)	1138 (50.6)	1 [Reference]	1 [Reference]
$\geq 18$ patients	25 (41.7)	1110 (49.4)	0.76 (0.46–1.25)	0.69 (0.40–1.16)
Institutional resources available				
No	40 (63.5)	1296 (55.4)	1 [Reference]	1 [Reference]
Yes	23 (36.5)	1045 (44.6)	0.71 (0.42–1.20)	0.79 (0.46–1.37)

Note. OR = Odds Ratio; CI = Confidence interval.

**Table 5**  
Correlates of burnout subscales among healthcare professionals ( $N = 2404$ ).

Characteristic	Emotional exhaustion			Depersonalization			Personal accomplishment		
	High $n$ (%)	Medium/low $n$ (%)	Adjusted OR (95% CI)	High $n$ (%)	Medium/low $n$ (%)	Adjusted OR (95% CI)	Low $n$ (%)	Medium/high $n$ (%)	Adjusted OR (95% CI)
Marital status									
Without partner	172 (41.5)	172 (41.5)	1 [Ref]	147 (45.2)	786 (37.8)	1 [Ref]	184 (42.0)	749 (38.1)	1 [Ref]
With partner	242 (58.5)	242 (58.5)	0.91 (0.72–1.16)	178 (54.8)	1293 (62.2)	0.90 (0.70–1.18)	254 (58.0)	1217 (61.9)	1.02 (0.81–1.27)
Ethnicity									
Mestizo	366 (88.4)	1837 (92.3)	1 [Ref]	285 (87.7)	1918 (92.3)	1 [Ref]	382 (87.2)	11821 (92.6)	1 [Ref]
Other ethnicities	48 (11.6)	153 (7.7)	1.60 (1.09–2.36)	40 (12.3)	161 (7.7)	1.58 (1.05–2.36)	56 (12.8)	145 (7.4)	2.00 (1.41–2.84)
Probable case									
No	29 (7.0)	779 (39.1)	1 [Ref]	43 (13.2)	765 (36.8)	1 [Ref]	100 (22.8)	708 (36.0)	1 [Ref]
Yes	385 (93.0)	1211 (60.9)	6.66 (4.43–10.01)	282 (86.8)	1314 (63.2)	2.87 (2.02–4.09)	338 (77.2)	1258 (64.0)	1.64 (1.27–2.13)
Social support, $M$ ( $SD$ )	72.0 (18.4)	73.3 (19.1)	1.00 (0.99–1.01)	72.3 (18.3)	73.2 (19.1)	1.00 (0.99–1.01)	68.7 (19.5)	74.1 (18.7)	0.99 (0.98–0.99)
Passive coping, $M$ ( $SD$ )	21.9 (6.4)	17.7 (5.3)	1.10 (1.08–1.12)	21.8 (6.9)	17.9 (5.4)	1.09 (1.07–1.11)	19.8 (6.4)	18.1 (5.5)	1.04 (1.02–1.06)
Profession									
Doctors	244 (58.9)	950 (47.7)	1 [Ref]	172 (52.9)	1022 (49.2)	1 [Ref]	170 (38.8)	1024 (52.1)	1 [Ref]
Nurses	170 (41.1)	1040 (52.3)	0.63 (0.49–0.82)	153 (47.1)	1057 (50.8)	1.01 (0.75–1.32)	268 (61.2)	942 (47.9)	1.53 (1.20–1.94)
Income									
<\$1000	127 (30.7)	701 (35.2)	1 [Ref]	121 (37.2)	707 (34.0)	1 [Ref]	194 (44.3)	634 (32.2)	1 [Ref]
≥\$1000	287 (69.3)	1289 (64.8)	1.18 (0.90–1.55)	204 (62.8)	1372 (66.0)	0.96 (0.72–1.28)	244 (55.7)	1332 (67.8)	0.76 (0.60–0.97)
Professional experience									
≤10 years	237 (57.2)	893 (44.9)	1 [Ref]	200 (61.5)	930 (44.7)	1 [Ref]	235 (53.7)	895 (45.5)	1 [Ref]
>10 years	177 (42.8)	1097 (55.1)	0.65 (0.51–0.83)	125 (38.5)	1149 (55.3)	0.59 (0.45–0.77)	203 (46.3)	1071 (54.5)	0.74 (0.59–0.93)
Appointment									
Part time	75 (18.1)	493 (24.8)	1 [Ref]	67 (20.6)	501 (24.1)	1 [Ref]	111 (25.3)	457 (23.2)	1 [Ref]
Full time	339 (81.9)	1497 (75.2)	0.76 (0.57–1.02)	258 (79.4)	1578 (75.9)	0.90 (0.67–1.23)	327 (74.7)	1509 (76.8)	1.23 (0.95–1.59)
Daily workday									
≤8 h	283 (68.4)	1417 (71.2)	1 [Ref]	206 (63.4)	1494 (71.9)	1 [Ref]	314 (71.7)	1386 (70.5)	1 [Ref]
>8 h	131 (31.6)	573 (28.8)	0.92 (0.70–1.19)	119 (36.6)	585 (28.1)	1.34 (0.99–1.64)	124 (28.3)	580 (29.5)	1.15 (0.89–1.50)
Sector which they work									
Public	221 (53.4)	1082 (54.9)	1 [Ref]	169 (52.0)	1144 (55.0)	1 [Ref]	256 (58.4)	1057 (53.8)	1 [Ref]
Private/mixed	193 (46.6)	898 (45.1)	0.97 (0.76–1.25)	156 (48.0)	935 (45.0)	0.99 (0.76–1.30)	182 (41.6)	909 (46.2)	0.88 (0.70–1.11)
Shifts									
No shifts	21 (5.1)	119 (6.0)	1 [Ref]	19 (5.8)	121 (5.8)	1 [Ref]	22 (5.0)	118 (6.0)	1 [Ref]
With shifts	393 (94.9)	1871 (94.0)	1.29 (0.76–2.17)	306 (94.2)	1958 (94.2)	0.90 (0.53–1.52)	416 (95.0)	1848 (94.0)	1.02 (0.63–1.65)
Direct attention									
≤50%	36 (8.7)	205 (10.3)	1 [Ref]	27 (8.3)	214 (10.3)	1 [Ref]	47 (10.7)	194 (9.9)	1 [Ref]
>50%	378 (91.3)	1785 (89.7)	1.05 (0.70–1.58)	298 (91.7)	1865 (89.7)	1.08 (0.69–1.70)	391 (89.3)	1772 (90.1)	0.87 (0.61–1.24)
No. of patients/day									
0–17 patients	195 (48.6)	978 (51.3)	1 [Ref]	141 (45.2)	1032 (51.7)	1 [Ref]	229 (55.4)	944 (49.8)	1 [Ref]
≥18 patients	206 (51.4)	929 (48.7)	1.05 (0.84–1.33)	171 (54.8)	964 (48.3)	1.29 (1.01–1.66)	184 (44.6)	951 (50.2)	0.84 (0.65–1.05)
Institutional resources available									
No	168 (40.6)	900 (45.2)	1 [Ref]	135 (41.5)	933 (44.9)	1 [Ref]	189 (43.2)	879 (44.7)	1 [Ref]
Yes	246 (59.4)	1090 (54.8)	0.96 (0.76–1.22)	190 (58.5)	1146 (55.1)	0.91 (0.76–1.27)	249 (56.8)	1087 (55.3)	1.00 (0.80–1.25)

Note. OR = Odds Ratio; CI = Confidence interval; Ref = Reference.



with and without burnout syndrome in relation to the remaining variables evaluated (Table 4).

More specifically, as shown in Table 5 regarding the MBI subscales, the odds of suffering high emotional exhaustion were significantly greater for non-mestizos than for mestizos (adjusted OR = 1.60), for those who were possible cases of mental disorder than those who were not (adjusted OR = 6.66) and for those with a higher score in passive coping (adjusted OR = 1.10). In addition, the odds of suffering high emotional exhaustion were significantly lower for nurses than for physicians (adjusted OR = 0.63) and for professionals with > 10 years of experience than for those with 10 or less (adjusted OR = 0.65). There were no significant differences among the remaining variables.

The odds of suffering high depersonalization were significantly greater for non-mestizos than for mestizos (adjusted OR = 1.58), for those participants who were considered a possible case than those that did not fall in this category (adjusted OR = 2.87), for those with a higher score in passive coping (adjusted OR = 1.09), and for professionals attending to > 18 patients a day than those attending to 17 or less (adjusted OR = 1.29); while were significantly lower for professionals with > 10 years of experience than for those with 10 or less (adjusted OR = 0.59). There were no significant differences in the remaining variables analyzed.

The odds of experiencing reduced personal accomplishment were significantly greater in non-mestizos than in mestizos (adjusted OR = 2.00), for those who were a possible case (adjusted OR = 1.64), for those with a higher score in passive coping (adjusted OR = 1.04), and for nurses compared to physicians (adjusted OR = 1.53). The odds of experiencing reduced personal accomplishment were significantly lower for those with more social support (adjusted OR = 0.99), those professionals with a monthly income of \$1000 or more compared to those who make less than \$1000 (adjusted OR = 0.76) and for those who had > 10 years of experience in the profession (adjusted OR = 0.74). There were no significant differences in the remaining variables analyzed.

#### 4. Discussion

This study examined the prevalence of burnout syndrome and its correlates in a national population of healthcare professionals who work in the health institutions in the capitals of the 24 provinces of Ecuador. We found that 2.6% of professionals were suffering from burnout syndrome. Given that the data included only professionals who were actively working, this prevalence indicates that a number of professionals who experience the syndrome continue to work, which is worrisome due to the well-known impact of burnout on the quality of patient care [13]. However, it is slightly lower than that found in other European studies that used the same definition of burnout, ranging from 4.1% in family physicians [19] to 9.0% in intensive care unit professionals [22]. A possible explanation for these differences in prevalence are the differences in the social and economic situation surrounding the Ecuadorian health professional compared to other countries. Thus, harsher working and personal conditions may be perceived as less stressful in countries with lower levels of well-being. In fact, in a study that compared the prevalence of burnout in 15 Hispanic-American countries and Spain, found that countries with lower economic development, higher infant mortality rate and lower life expectancy had lower prevalence of burnout among health professionals compared to countries with greater economic and health development and greater awareness of labor rights [23]. Another possible explanation for the lower prevalence found in this study could be based on the relationship with the users: members of societies with lower well-being and social protection may have lower expectations for the health system and as a result, be less demanding. In addition, the prevalence found in this study was also slightly lower than the 4.0% found in the only study conducted with Ecuadorian professionals [23]. However, in that study the sample was not systematically selected nationwide and used different

cut-off points to determine MBI dimensions (based on tertiles), which may produce variations in the results and makes comparisons between the studies difficult.

Considering the dimensions of burnout, 17.2% of health professionals presented high emotional exhaustion, 13.5% high depersonalization and 18.2% low personal accomplishment, indicating that there are high levels of subclinical burnout. Previous studies have also found high rates of emotional exhaustion, depersonalization, and low personal accomplishment in healthcare professionals, ranging from 20.5% to 59.0% in emotional exhaustion, between 7.6% and 61.0% in depersonalization and between 16.7% and 49.0% in reduced personal accomplishment [18–22,36].

The risk factors for experiencing burnout syndrome and high emotional exhaustion, depersonalization, and reduced personal accomplishment in health professionals were being non-mestizo, being classified as a possible case of mental disorder and more passive coping, while having > 10 years of experience is a protective factor. The finding that non-mestizos had approximately threefold higher risk of experiencing burnout and around twofold higher risk of high emotional exhaustion, depersonalization and reduced personal accomplishment contrasts with the previous finding that Caucasians reported significantly more depersonalization than other ethnic groups [32]. One possible explanation is that those black professionals reported less depersonalization possibly due to a greater ethnic identification with their patients, whereas in the present study most of the professionals as well as the population of patients were mestizos [25]. In addition, given the historical trajectory of the mestizos and their exposure to the strengths of different cultures, it may be a group psychologically more resilient to adversities than non-mestizos.

The finding that health professionals classified as a probable case reported more than twenty-two-fold higher probability of burnout and around two to seven times the risk for the different subscales further supports previous research [38] that found that burnout is especially comorbid with depression [6]; however, future studies are warranted to investigate the causal ordering of psychological distress and burnout.

The finding that using more passive coping is a risk factor for high burnout, high emotional exhaustion and depersonalization and reduced personal accomplishment is consistent with a previous study [38]. Professionals who apply a passive coping style minimize distress by escaping stressful situations (e.g., avoidance, denial), making it difficult to solve problems. The prolonged existence of the problems can generate emotional exhaustion, depersonalization and reduced personal accomplishment [78].

Furthermore, the finding that a longer career is a protective factor for burnout and high emotional exhaustion, depersonalization and reduced personal accomplishment is controversial, with some agreement [42], and some disagreement [17,18] in previous work. This finding may be explained by the fact that professionals with more experience may feel higher confidence about their tasks [56]. Although, it may also be possible that this represents a cohort effect reflecting the early departure from clinical work by those staff members who eventually succumb to burnout [79].

In addition to the relationship found between these variables and burnout, which are reproduced for the emotional exhaustion, depersonalization and reduced personal accomplishment subscales, we found specific risk factors for specific subscales. We found that emotional exhaustion was significantly lower for nurses than for physicians. One possible explanation is that nurses assume a different degree of responsibility than physicians, who are forced to make more crucial decisions, under uncertainty and under pressure from departmental or hospital goals, and sometimes make mistakes that result in harm to patients [80].

The present results also showed that health professionals attending > 18 patients a day were more likely to present depersonalization. A higher ratio of patients per professional may imply higher patient mortality [11], which may favor depersonalization in professionals as a

protective mechanism. In addition, health professionals who spend less time per patient tend to investigate patients' problems less thoroughly and have less satisfied patients [81], reducing the therapeutic link and increasing insensitivity.

Reduced personal accomplishment was significantly higher for nurses than for physicians. One explanation is that while nurses face emergent and critical conditions of patients and make immediate responses, they find it is difficult to speak up to the physicians and the valuable information that they can provide from the patients is not well received by physicians [82]. In addition, reduced personal accomplishment was significantly lower for socially supported professionals, which is consistent with previous studies that found low levels of social support at work [34] associated with burnout. This could be explained by the well-known fact that social support is a factor of protection against stress [83]. On the other hand, reduced personal accomplishment was significantly lower for those who have higher incomes, which is consistent with a previous study [37]. Satisfaction with wages has been found to influence the social image of the professional and his satisfaction with his work, which in turn are predominant factors in the development of burnout [55].

Overall, the results of this study show that burnout in health professionals was associated with a greater number of personal variables (four of the five personal variables that were evaluated) compared to variables that reflect organizational aspects of the work (where it was associated with only four of the ten variables evaluated), consistent with the few studies that have included these variables [38,39].

The findings in this study have important implications for clinical practice and research. It informs about the prevalence of burnout in health professionals in Ecuador and its correlates. Our findings suggest a need to design effective interventions for the prevention and treatment of burnout that should include training in emotional regulation skills, patient awareness and techniques to cope with the demands of work.

However, these results should be interpreted within the scope of their limitations. This study was conducted using a cross-sectional design; therefore, it does not allow for the determination of causality. Future research should use a longitudinal study design. In addition, the current study utilized self-reported measures, which allow for response bias. The non-mestizo group represented a relatively small percentage of the total sample (8.4%); therefore, conclusions about them in comparison with the mestizo group should be taken with caution. Finally, the findings may not be generalizable to rural Ecuador. Despite the limitations, as far as we know, no previous study has estimated the prevalence of burnout in this country nationwide. In particular, no previous study has analyzed the psychological variables that can be related to burnout. The advantages of a large sample size and the inclusion of health institutions across the country, and a high response rate also strengthen the power of this study.

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