Original Article

# Association Between Burnout and Intention to Emigrate in Peruvian health-care Workers ☆

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## ARTICLE INFO

## ABSTRACT

Background: Emigration of health-care workers is a problem within global health systems which affects many countries, including Peru. Several factors have caused health-care workers to emigrate, including burnout syndrome (BS). This study aims to identify the association between BS and its dimensions with the intention of physicians and nurses to emigrate from Peru in 2014.
Methods: A cross-sectional study, based on a secondary analysis of the National Survey of Health Users (ENSUSALUD - 2014) was conducted. Sampling was probabilistic, considering the 24 departments of Peru. We include the questionnaire for physicians and nurses, accounting for 5062 workers. BS was measured by the Maslach Burnout Inventory-Human Services Survey. Adjusted odds ratio (OR) was calculated using multiple logistic regression.
Results: Of the study population, 44.1% were physicians, 37.7% males, and 23.1% were working in Lima. It was found that 2.8% [95% confidence interval (CI): 2.19—3.45] of health-care workers had BS. The overall prevalence of intention to emigrate among health-care workers was 7.4% (95% CI: 6.36—8.40). Association was found between BS and intention to emigrate in Peruvian health-care workers (OR = 2.15; 95% CI: 1.05—4.40). Emotional exhaustion was the BS dimension most associated with intention to emigrate (OR = 1.80; 95% CI: 1.16—2.78).
Conclusion: Physicians and nurses from Peru who suffered from BS were more likely to have intention to emigrate. Policies should be established to reduce BS as a strategy to control "brain drain" from health-care workers of Peru.

## 1. Introduction

Migration of health-care workers has become a major issue of health systems, mainly from developing countries toward countries with higher income, producing deleterious effects on health indicators [1,2]. Although this situation is present mostly in Sub-Saharan and Caribbean regions, Peru is no exemption from this problem [3]. By 2005, in South and Central America, Peru had the greatest number of physicians practicing in a foreign country according to the total number of physicians practicing in their country of origin [4]. Peru is also a country that provides more physicians to

the medical specialization system of Spain (MIR), thus increasing the flow of immigration [5].

Determinants that influence on the decision of health workforce to immigrate have been classified as "pull" or "push" [6]. The first group refers to external variables that attract health professionals outside their country of origin, whereas the latter are conditions of the home country which entice workers to immigrate [7]. Representative pull factors include work opportunities abroad, having a medical relative already living abroad, better infrastructure in health centers, and better working and living conditions [8—10]. In the same way, some push factors include unmotivated working

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☆ This study included a representative sample of Peruvian health-care workers and describes the association between burnout syndrome and intention to emigrate which has not been studied in our continent yet.

conditions, lack of facilities and equipment for the development of professional career, job dissatisfaction, low wages, workload, and occupational stress [10−13]. Work-related "push" determinants have been associated with psychological problems among these professionals [10−13]. In this setting, one of the factors recently found associated among health-care professionals is burnout syndrome (BS), which is defined as work-related fatigue and frustration marked by three dimensions described in the Maslach Burnout Inventory: emotional exhaustion, depersonalization, and reduced personal accomplishment [14−16]. This syndrome has also been defined as a state of exhaustion, developed in a highly stressful and frustrating work environment, in which the individual is cynical about the value of his occupation and doubtful of his capacity to perform results [17]. In that sense, professionals suffering from BS are less engaged and committed with their job and are more likely to leave their current job or their profession [18].

BS has been poorly studied as an associated factor with the intention to emigrate in health-care workers [16]. To the best of our knowledge, an investigation exploring intention of health-care workers to emigrate and its association with BS and other determinants that might be related does not exist in Latin America. This aspect is alarming as emigration of health-care workers represents a public health issue and is included in the priorities of scientific research in Peru [19,20]. Thus, the present study is intended to identify the association between the BS and its dimensions with the intention to emigrate in health-care workers from Peru in 2014.

## 2. Materials and methods

### 2.1. Participants and procedure

A cross-sectional analytical study was performed using secondary data from the National Survey of Health Users of 2014 (ENSUSALUD 2014), which was developed by the National Superintendence of Health (SUSALUD) and the National Institute of Statistics and Informatics (INEI) [http://portales.susalud.gob.pe/web/portal/base-de-datos]. Data were obtained from a probabilistic, two-step, stratified, and independent sampling in each department, carried out in 181 urban and rural health facilities of Peru's 24 departments [21].

Original sample was calculated to estimate the prevalence of dissatisfaction from the internal user in health institutions, at national and regional level, considering a dissatisfaction of 40%, 95% confidence level (CI), and a margin of error between 3% and 9% points by region [21]. For this study, we considered a questionnaire applied to health-care workers (physicians and nurses). Personnel were surveyed in establishments of the Peruvian Ministry of Health (MINSA), EsSalud (social security), private clinics, and army health centers (included armed forces and police) in Peru during the year 2014. The total population was 5067 health-care workers [21]. We excluded five persons for incorrect filling of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS).

The execution of fieldwork was conducted by the National Directorate of Census and surveys (DNCE) and was carried out from 24th March to 7th May in 2014. Surveys were conducted by previously trained personnel. The response rate was 94.1% [21].

Data are public and available anonymously on the website of the INEI: http://iinei.inei.gob.pe/microdatos/. For this study, approval was given by the Ethics and Research Committee of Universidad Peruana de Ciencias Aplicadas (PI246).

### 2.2. Power calculation

Using PASS v13.0 program (NCSS, LLC), a power higher than 80% was calculated for detecting odds ratio (OR) values of 2.3 or above, if fit with cases of BS; and OR equal to or greater than 1.5 for independent dimensions of the MBI-HSS. The total size of available doctor and nurse (n = 5,067) participants was considered, with an estimated BS prevalence of 4.3% [22], a 95% CI, and a prevalence of intention to emigrate in the original study 6.1% and 0.4 R-squared with 95% CI.

### 2.3. Variables

The questionnaire consisted of 53 questions divided into 10 chapters [19]. Variables considered in the study were sociodemographic (age, gender, residence in Lima, and living place); family (living with the family and being financially dependent on the health worker); employment (profession, health institution, working hours per week, category of establishment, total monthly income, time working on the establishment, time working in health care, and job satisfaction), and academics (specialty).

Numeric variables, including age, time working on the establishment, time working in the health care, and working hours per week, were categorized by tertiles. With regard to categorical variables, monthly income was categorized in less than 2,000 soles (<700 USD), 2,000−3,000 soles (700−1,060 USD), 3,000−5,000 soles (1,060−1,760 USD), and more than 5,000 soles (>1,760 USD). The variable "category of establishment" was grouped according to levels of complexity; "Live with family", "Lima", and "financially dependent on health worker" were dichotomized, whereas the variable "living place" was categorized into "own", "rented", "mortgaged", or "ceded". The study population has been described in the study by Maticorena-Quevedo et al [23].

Intention to emigrate was defined as planning to settle in a foreign location. The variable was measured by the answer of two questions in the questionnaire. The first was "Do you have plans to migrate to another place?", and the second was "What department or countries have you planned to migrate to?" To be considered as a person who is intended to emigrate, the individual must answer "yes" to the first question and enter the country of destination in the second.

The BS was measured in the questionnaire by the Spanish version of the MBI-HSS, which consists of 22 items, scored from 0 to 6 in the Likert scale. Values in each subscale were considered by cutoff points suggested by Maslach et al according to the results of their research in North American population [15]. These are emotional exhaustion, which consists of nine items and a Cronbach's alpha of 0.84; depersonalization, which consists of five items with Cronbach's alpha of 0.71; and personal accomplishment, which consists of eight items with Cronbach's alpha of 0.75 [15].

Although there are several ways to analyze BS in health professionals [23], for purposes of this study, two ways were considered: the presence of the syndrome and high value of each subscale independently. For emotional exhaustion, the subscale is considered high, for a value greater than 26; medium, for a value from 19 to 26; and low, for a value less than 19 [15]. For personal accomplishment, a value greater than 9 was considered high, 6−9 was considered medium, and less than 6 was considered low [15]; and for depersonalization, a value less than 34 was considered low, 34−39 was considered medium, and greater than 39 was considered high [15]. Individuals with high scores on the subscales of emotional exhaustion and depersonalization, along with low scores on personal accomplishment, were categorized as having BS [15].

### 2.4. Analysis of data

Database was exported from SPSS 16 (IBM SPSS) to STATA® (statCorp, Texas,US) 14.0. Mean and standard deviation for numerical variables and percentages for categorical variables were calculated in descriptive analysis. Prevalence with CIs was

calculated using sampling weights for intention to emigrate and BS. Association between variables and the intention to emigrate was calculated using $\chi^2$ test and crude OR by simple logistic regression. Finally, all variables were included in a complete model with BS and then were reduced using manual stepwise backward technique with multiple logistic regression. Then, all variables included in the final model with BS were replicated in models with three subscales of BS (emotional exhaustion, personal accomplishment, and depersonalization). All analyses were performed using sampling weights with *svy* command. A *p* value <0.001 was statistically significant. Final model goodness of fit was assessed with Hosmer−Lemeshow test.

## 3. Results

### 3.1. Characteristics of study population

Sociodemographic characteristics of study population are shown in Table 1. Minimum age among participants was 23 and maximum 83, with an average of 44 years and standard deviation of 10.9. Physicians accounted for 44.1% of the population, and 57.6% of the studied professionals had a specialty. Besides, 10.9% of professionals were working at primary care centers. A proportion of 23.1% of the population resided in Lima. The average of work hours per week was 45.8, and the standard deviation was 14.3. The average and standard deviation of the time in health care were 16.5 years and 10.1, respectively. Similarly, the average of the time in the establishment was 11.0, and the standard deviation was 9.90.

### 3.2. Burnout syndrome

Prevalence of BS and its scales is showed in Table 2. It was found that 2.8% of health-care workers were suffering from BS. The percentage of physicians who scored high levels of emotional exhaustion and depersonalization was higher than that of nurses, and a higher prevalence of BS syndrome was found among them (3.7 vs. 2.1%). The cronbach's alpha results for emotional exhaustion, depersonalization, and personal accomplishment were 0.84, 0.71, and 0.75, respectively.

On the other hand, professionals working in Metropolitan Lima and specialized professionals presented higher percentages of BS. The prevalence of BS was lower among workers from army than among those in other institutions. Health workers with lower job satisfaction presented a higher prevalence of BS (7.7% vs. 1.2%) and all its subscales. Finally, professionals who lived in a rented property, as well as, those with fewer years of working in a health facility showed higher frequencies of BS.

### 3.3. Intention to emigrate

Intention to emigrate among health professionals and its characteristics are shown in Table 3. A proportion of 7.4% of health professionals surveyed have the intention to emigrate. The countries where physicians were planning to emigrate in higher percentages were Spain (26.2%), Brazil (24.0%), and the United States (20.2%); and nurses were planning to emigrate to the United States (20.0%), Italy (17.6%), and Spain (15.2%). The average time in which they had planned to emigrate was 2.4 years, and the main motives were as follows: familiar (33.0%) and academics (12.19%).

Being a physician (OR = 1.93; 95% CI: 1.53−2.45), living with family (OR = 2.18; 95% CI: 1.65−2.88), living in Metropolitan Lima (OR = 1.71; 95% CI: 1.33−2.19), aged less than 39 years (OR = 2.10; 95% CI: 1.56−2.82), working more than 48 hours per week (OR = 1.66; 95% CI: 1.26−2.17), working at a private institution

**Table 1**
Population characteristics of health-care workers in Peru, ENSUSALUD 2014 (n = 5,062)

| Variable | Global | Physicians | Nurses |
|---|---|---|---|
| | n = 5,062 (%) | n = 2,228 (%) | n = 2,834 (%) |
| **Gender** | | | |
| Male | 1,907 (37.7) | 1,697 (76.2) | 210 (7.4) |
| Female | 3,155 (62.3) | 531 (23.8) | 2,624 (92.6) |
| **Age** | | | |
| <39 years | 1,795 (35.5) | 718 (32.2)0 | 1,077 (38.0) |
| 39−50 years | 1,698 (33.5) | 756 (33.9) | 942 (33.2) |
| >50 years | 1,569 (31.0) | 754 (33.8) | 815 (28.8) |
| **Specialty** | | | |
| Yes | 2,917 (57.6) | 1,472 (66.1) | 1,445 (51.0) |
| No | 2,145 (42.4) | 756 (33.9) | 1,389 (49.0) |
| **Metropolitan Lima** | | | |
| Yes | 1,168 (23.1) | 540 (24.2) | 628 (22.2) |
| No | 3,894 (76.9) | 1,688 (75.8) | 2,206 (77.8) |
| **Institution** | | | |
| MINSA | 2,329 (46.0) | 1,009 (45.3) | 1,320 (46.6) |
| Army | 97 (1.9) | 36 (1.6) | 61 (2.2) |
| Private | 318 (6.3) | 139 (6.2) | 179 (6.3) |
| EsSalud | 2,318 (45.8) | 1,044 (46.9) | 1,274 (45.0) |
| **Complexity level** | | | |
| I (first level) | 553 (10.9) | 248 (11.1) | 305 (10.8) |
| II (second level) | 2,630 (52.0) | 1,128 (50.6) | 1,502 (53.0) |
| III (major complexity) | 1,879 (37.1) | 852 (38.2) | 1,027 (36.2) |
| **Time in establishment** | | | |
| >15 years | 1,563 (30.9) | 625 (28.1) | 938 (33.1) |
| 5−14 years | 1,630 (32.2) | 692 (31.1) | 938 (33.1) |
| ≤4 years | 1,869 (36.9) | 911 (40.9) | 358 (33.8) |
| **Total monthly income** | | | |
| <700 USD | 994 (19.6) | 95 (4.3) | 899 (31.7) |
| 700−1,060 USD | 1,571 (31.0) | 163 (7.3) | 1,408 (49.7) |
| 1,060−1,760 USD | 1,715 (33.9) | 1,213 (54.4) | 502 (17.7) |
| >1,760 USD | 782 (15.5) | 757 (34.0) | 25 (0.9) |
| **Financially dependent on health worker** | | | |
| Yes | 523 (10.3) | 236 (10.6) | 287 (10.1) |
| No | 4,549 (89.7) | 1,992 (89.4) | 2,547 (89.9) |
| **Living with family** | | | |
| Yes | 4,398 (86.9) | 1,825 (81.9) | 2,573 (90.8) |
| No | 664 (13.1) | 403 (18.1) | 261 (9.2) |
| **Living place** | | | |
| Rented | 1,110 (21.9) | 558 (25.0) | 552 (19.5) |
| Mortgaged | 469 (9.3) | 240 (10.8) | 229 (8.1) |
| Ceded | 350 (6.9) | 129 (5.8) | 221 (7.8) |
| Owned | 3,133 (61.9) | 1,301 (58.4) | 1,832 (64.6) |
| **Time in health care** | | | |
| >20 years | 1,624 (32.1) | 725 (32.5) | 889 (31.7) |
| 11−20 years | 1,667 (32.9) | 739 (33.2) | 928 (32.8) |
| ≤10 years | 1,771 (35.0) | 764 (32.3) | 1,007 (35.5) |
| **Working hours** | | | |
| >48 hours | 1,480 (29.2) | 1,140 (51.2) | 340 (12.0) |
| 37−48 hours | 1,480 (29.2) | 587 (26.4) | 893 (31.5) |
| ≤36 hours | 2,102 (41.5) | 501 (22.5) | 1,601 (56.5) |
| **Job satisfaction** | | | |
| Dissatisfied | 798 (15.8) | 433 (19.4) | 365 (12.9) |
| Regular | 1,065 (21.0) | 461 (20.7) | 604 (21.3) |
| Satisfied | 3,199 (63.2) | 1,334 (59.9) | 1,865 (65.8) |

(OR = 1.88; 95% CI: 1.21−2.91), living in a rented property (OR = 1.46; 95% CI: 1.12−1.90), having low job satisfaction (OR = 1.50; 95% CI: 1.11−2.02), working less than 10 years in health service (OR = 3.47; 95% CI: 2.32−5.18), working less than 4 years in a health facility (OR = 3.15; 95% CI: 2.15−4.61), and having BS (OR = 2.46; 95% CI: 1.45−4.16) were associated with the intention to emigrate in the studied population.

### 3.4. BS and its scales with intention to emigrate

Intention to emigrate was associated with BS in health-care workers (OR = 2.15; 95% CI: 1.05−4.40) as shown in Table 4. In the adjusted model, the association existed. Regarding association of each subscale of BS with intention to emigrate, high

**Table 2**
Burnout syndrome and its dimensions among health-care workers in Peru, ENSU-SALUD 2014 (n = 5,062)

| Variable | BS dimensions | | | |
|---|---|---|---|---|
| | Burnout (n = 127) | Emotional exhaustion (n = 467) | Depersonalization (n = 645) | Personal accomplishment (n = 1,024) |
| | Yes (%) | Yes (%) | Yes (%) | Yes (%) |
| **Profession** | | | | |
| Global | 127 (2.8) | 467 (10.6) | 645 (12.8) | 1,024 (19.4) |
| Physician | 74 (3.7) | 281 (14.2) | 363 (16.8) | 427 (18.1) |
| Nurse | 53 (2.1) | 186 (7.7) | 282 (9.6) | 597 (20.4) |
| **Gender** | | | | |
| Male | 74 (4.4) | 229 (13.3) | 322 (17.4) | 397 (20.2) |
| Female | 53 (1.9) | 238 (9.9) | 323 (10.1) | 627 (18.9) |
| **Age** | | | | |
| <39 years | 69 (4.9) | 212 (14.9) | 282 (17.5) | 386 (22.0) |
| 39–50 years | 37 (2.2) | 148 (9.7) | 236 (13.2) | 357 (19.9) |
| >50 years | 21 (1.3) | 107 (7.0) | 127 (7.5) | 281 (16.1) |
| **Specialty** | | | | |
| Yes | 80 (3.1) | 303 (11.3) | 399 (13.1) | 543 (18.4) |
| No | 47 (2.4) | 164 (9.5) | 246 (12.3) | 481 (21.0) |
| **Metropolitan Lima** | | | | |
| Yes | 36 (3.1) | 138 (11.8) | 150 (12.8) | 222 (19.0) |
| No | 91 (2.4) | 329 (8.9) | 495 (12.8) | 802 (20.6) |
| **Institution** | | | | |
| MINSA | 59 (2.8) | 210 (11.0) | 308 (13.2) | 503 (20.0) |
| Army | 1 (1.0) | 4 (2.6) | 4 (2.3) | 10 (8.8) |
| Privates | 7 (3.3) | 31 (9.5) | 28 (8.7) | 55 (20.6) |
| EsSalud | 60 (2.9) | 222 (10.9) | 305 (14.0) | 456 (18.7) |
| **Complexity level** | | | | |
| I (first level) | 11 (1.9) | 39 (8.2) | 47 (8.6) | 107 (20.2) |
| II (second level) | 67 (2.9) | 231 (9.2) | 340 (11.8) | 566 (21.1) |
| III (major complexity) | 49 (3.0) | 202 (11.7) | 258 (14.0) | 351 (18.3) |
| **Time in establishment** | | | | |
| >15 years | 59 (3.9) | 204 (13.6) | 282 (16.8) | 386 (7.1) |
| 5–14 years | 44 (3.2) | 160 (11.7) | 225 (13.5) | 337 (6.0) |
| ≤4 years | 24 (1.5) | 103 (6.8) | 138 (8.3) | 301 (6.2) |
| **Total monthly income** | | | | |
| <700 USD | 29 (3.7) | 79 (9.3) | 110 (11.3) | 236 (23.7) |
| 700–1,060 USD | 22 (1.4) | 93 (6.7) | 150 (8.9) | 301 (19.2) |
| 1,060–1,760 USD | 55 (3.9) | 203 (14.5) | 262 (16.8) | 356 (20.8) |
| >1,760 USD | 21 (2.0) | 92 (11.0) | 123 (13.3) | 131 (16.8) |
| **Financially dependent on health worker** | | | | |
| Yes | 17 (3.2) | 54 (10.3) | 72 (13.8) | 108 (20.7) |
| No | 110 (2.4) | 413 (9.1) | 573 (12.6) | 916 (20.2) |
| **Living with family** | | | | |
| Yes | 25 (6.0) | 68 (10.4) | 111 (19.1) | 143 (25.8) |
| No | 102 (2.4) | 399 (12.3) | 534 (12.1) | 881 (18.6) |
| **Living place** | | | | |
| Rented | 33 (3.6) | 118 (12.7) | 168 (17.2) | 246 (23.9) |
| Mortgaged | 15 (3.1) | 56 (11.7) | 69 (13.0) | 90 (18.2) |
| Ceded | 8 (2.5) | 39 (12.5) | 42 (12.1) | 64 (21.0) |
| Owned | 71 (2.6) | 254 (9.6) | 366 (11.5) | 624 (18.0) |
| **Time in health care** | | | | |
| >20 years | 64 (4.7) | 192 (13.6) | 270 (17.1) | 398 (7.6) |
| 11–20 years | 42 (2.8) | 164 (11.7) | 235 (14.3) | 336 (6.0) |
| ≤10 years | 21 (1.7) | 111 (6.9) | 140 (7.5) | 290 (5.8) |
| **Working hours** | | | | |
| >48 hours | 55 (4.2) | 208 (14.3) | 258 (16.8) | 293 (20.2) |
| 37–48 hours | 36 (2.7) | 133 (11.1) | 190 (13.1) | 293 (17.8) |
| ≤36 hours | 36 (1.8) | 126 (7.4) | 197 (9.4) | 438 (19.6) |
| **Job satisfaction** | | | | |
| Dissatisfied | 53 (7.7) | 158 (20.9) | 167 (22.1) | 218 (29.0) |
| Regular | 39 (3.9) | 136 (14.5) | 185 (16.4) | 288 (26.8) |
| Satisfied | 35 (1.2) | 173 (6.6) | 293 (9.2) | 518 (14.2) |

*analyzed by sample weights.

scores in emotional exhaustion were associated in crude and adjusted analysis, high scores in depersonalization were associated in the crude model, but not in adjusted model, and low scores in personal accomplishment were not found to be associated. A trend is evident between scales of the BS to have statistically significant values with intention of emigrate when scores are higher.

## 4. Discussion

### 4.1. Association between BS and intention to emigrate

This study shows an association between BS and intention to emigrate in health-care workers from Peru. These results are consistent with those of a study conducted in Germany, in which higher scores in any scale of the BS were associated with the desire of physicians to emigrate for work in clinical settings [16]. In the inquiry made, no other research that explores this association was found. However, literature identifies a relationship between BS and leaving current job or "turnover", leaving the clinical setting, and looking for other work opportunities [24–27]. In this regard, although association between turnover intention and intention to emigrate has not been demonstrated [28], it is considered that a part of the individuals with turnover intention have the desire of working outside their countries [29,30]. Naturally, BS could play an important role as a covariable along with economic, professional, social, political, and personal factors determining intention to emigrate [7].

Organizational factors such as a chaotic Peruvian health system could have a determinant role in the relationship between BS and intention to emigrate [31]. In addition, it is known that Peruvian health personnel is not exempt of workplace violence [32,33], which has been linked to turnover intentions among physicians [34].

BS tends to develop in a highly stressful and frustrating work environment. Similarly, in South African health workers, it was found that a higher job stress and a lower level of satisfaction with work were related to consider emigrating and changing work center; which also coincides with results showed, because BS is considered as a kind of job stress [15,35].

The subscale of BS more related to the intention to emigrate was emotional exhaustion. This association was expected because it is the fundamental component of BS. Results are in line with those of the study by Pantenburg et al who found that emotional exhaustion was associated with intention to migrate to work in clinical setting and intention to leave clinical practice [36]. On the other hand, high values in depersonalization were not found associated with intention to emigrate in the adjusted model. This contrasts with findings in the German study [16]. Possible explanation for this discrepancy may be that prevalence of depersonalization found in the present study was up to four times lower.

No association between low levels of personal accomplishment and intention to emigrate was found, which agrees with the results of the study by Pantenburg et al. However, association between low levels of personal accomplishment and turnover in nurses from Turkey and health personnel from the US has been described and may be influenced by high levels of emotional exhaustion [37,38].

### 4.2. Prevalence and factor associated with intention to emigrate

In our study, overall prevalence of intention to emigrate in health-care workers was 7.4%. These results contrast with those of the research previously conducted in health-care workers in South Africa, in which it was found that 28.9% of health-care workers were considering emigrating [35]. Among physicians and nurses from Ghana and Israel, a prevalence of intention to emigrate of 23.5% and 26.5%, respectively, has also been reported [9,39]. These numbers are considerably higher than those in the Peruvian population and could be explained by conditions such as less job security, lower income, and increased recruitment of staff in the previously mentioned countries [9,40]. Moreover, in the present study, overall prevalence of intention to emigrate in health professionals from public sector was lower than that among those in

**Table 3**
Intention to emigrate among health-care workers in Peru, ENSUSALUD 2014 (n = 5,062)

| Variable | Emigration intention | | | Crude model |
|---|---|---|---|---|
| | Yes (n = 308) | No (n = 4,754) | P | OR (95% CI) |
| | n (%) | n (%) | | |
| **Profession** | | | <0.001 | |
| Physician | 183 (9.7) | 2,045 (90.3) | | 1.93 (1.53−2.45) |
| Nurse | 125 (5.5) | 2,709 (94.5) | | Reference |
| **Gender** | | | 0.503 | |
| Male | 129 (7.8) | 1,778 (92.2) | | 1.20 (0.95−1.52) |
| Female | 179 (7.1) | 2,976 (92.9) | | Reference |
| **Age** | | | <0.001 | |
| <39 years | 154 (10.9) | 1,641 (89.1) | | 2.10 (1.56−2.82) |
| 39−50 years | 87 (6.4) | 1,611 (93.6) | | 1.21 (0.87−1.67) |
| >50 years | 67 (4.6) | 1,502 (95.4) | | Reference |
| **Specialty** | | | 0.002 | |
| Yes | 155 (6.1) | 2,762 (93.9) | | 0.73 (0.58−0.92) |
| No | 153 (9.5) | 1,992 (90.5) | | Reference |
| **Metropolitan Lima** | | | <0.001 | |
| Yes | 102 (8.7) | 1,066 (91.3) | | 1.71 (1.33−2.19) |
| No | 206 (5.3) | 3,688 (94.7) | | Reference |
| **Institution** | | | 0.017 | |
| MINSA | 167 (8.1) | 2,162 (91.8) | | 1.56 (1.22−2.00) |
| Army | 5 (4.2) | 92 (95.8) | | 1.10 (0.43−2.76) |
| Privates | 27 (10.6) | 291 (89.4) | | 1.88 (1.21−2.91) |
| EsSalud | 109 (5.6) | 2,209 (94.4) | | Reference |
| **Complexity level** | | | 0.145 | |
| I (first level) | 132 (7.0) | 1,747 (93.0) | | 0.85 (0.59−1.21) |
| II (second level) | 131 (5.0) | 2,499 (95.0) | | 0.59 (0.41−0.84) |
| III (major complexity) | 45 (8.1) | 508 (91.9) | | Reference |
| **Time in establishment** | | | <0.001 | |
| >15 years | 176 (12) | 1,693 (88) | | 3.15 (2.15−4.61) |
| 5−14 years | 76 (6.4) | 1,554 (93.6) | | 1.42 (0.93−2.20) |
| ≤4 years | 56 (3.8) | 1,507 (96.2) | | Reference |
| **Burnout syndrome** | | | 0.008 | |
| Yes | 17 (15.8) | 110 (84.2) | | 2.46 (1.45−4.16) |
| No | 291 (7.14) | 4,644 (92.9) | | Reference |
| **Total monthly income** | | | 0.056 | |
| <700 USD | 66 (7.8) | 928 (92.1) | | 1.03 (0.73−1.45) |
| 700−1,060 USD | 72 (5.7) | 1,499 (94.3) | | 0.67 (0.46−0.97) |
| 1,060−1,760 USD | 118 (9.0) | 1,597 (91.0) | | 0.99 (0.68−1.45) |
| >1,760 USD | 52 (6.4) | 730 (93.6) | | Reference |
| **Financially dependent on health worker** | | | 0.093 | |
| Yes | 261 (7.0) | 4,278 (93.0) | | 1.41 (0.94−2.13) |
| No | 47 (9.7) | 476 (90.3) | | Reference |
| **Living with family** | | | <0.001 | |
| Yes | 73 (12.5) | 591 (93.2) | | 2.18 (1.65−2.88) |
| No | 235 (6.8) | 4,163 (93.2) | | Reference |
| **Living place** | | | 0.002 | |
| Rented | 90 (11.4) | 1,020 (88.6) | | 1.46 (1.12−1.90) |
| Mortgaged | 28 (7.6) | 441 (92.4) | | 1.05 (0.69−1.58) |
| Ceded | 12 (5.1) | 338 (95.0) | | 0.59 (0.32−1.06) |
| Owned | 178 (6.3) | 2,955 (93.7) | | Reference |
| **Time in health care** | | | <0.001 | |
| >20 years | 162 (12.2) | 1,609 (87.9) | | 3.47 (2.32−5.18) |
| 11−20 years | 80 (5.9) | 1,587 (94.1) | | 1.74 (1.10−2.72) |
| ≤ 10 years | 66 (4.2) | 1,558 (95.8) | | Reference |
| **Working hours** | | | 0.017 | |
| >48 hours | 121 (9.4) | 1,359 (90.6) | | 1.66 (1.26−2.17) |
| 37−48 hours | 80 (7.1) | 1,400 (92.9) | | 1.06 (0.79−1.43) |
| ≤36 hours | 107 (6.0) | 1,995 (94.0) | | Reference |
| **Job satisfaction** | | | 0.006 | |
| Dissatisfied | 62 (10.2) | 736 (89.8) | | 1.50 (1.11−2.02) |
| Regular | 76 (9.0) | 989 (91.0) | | 1.36 (1.03−1.81) |
| Satisfied | 170 (6.1) | 3,029 (93.9) | | Reference |

*analyzed by sample weights.
CI, confidence interval; OR, odds ratio.

private sector, which we assume could be explained by higher aspirations and desire to improve among professionals working in private sector [35].

In Peru, prevalence of intention to emigrate among physicians (9.7%) resembles to emigration concretized by graduates from medical faculty at a public university [41], showing a possible connection between intention to emigrate and emigration concretized by medical personnel. Conversely, intention to emigrate in medical students of the last year was 38.3%, which is almost five times higher than prevalence found in our study [21,42]. A likely explanation is that the study only considered one public university from Lima, and this population may have higher labor and economic aspirations [3,42].

Regarding associated factors with intention to emigrate in health-care workers, other studies have mentioned that the younger age, being male, being single, and having low job satisfaction and low wages are related with this intention [35,43]. In the present study, coinciding with that mentioned previously, it was found that younger age (less than 39 years) and low job satisfaction were associated with the intention to emigrate. The former could be explained by the fact that younger health-care workers are usually not established economically and that low job satisfaction reinforces the idea of changing the workplace. In addition, another important association was living with family, which makes it difficult to leave because it represents a dramatical modification in their lifestyle. In contrast, this variable has been associated with a lower likelihood of having intention to emigrate in health personnel [16].

### 4.3. Prevalence of BS and its scales

BS prevalence in health personnel found in our study was 2.8%. This frequency is lower than that found in studies with probability and nonprobability samples of health personnel in Peru and other countries such as South America and Europe [23]. Even though employment status and remuneration of health professionals in Peru are not optimal [31], low prevalence mentioned could be explained by characteristics of the population tested, which represents all health professionals in the country and not only population at risk of BS. It is also relevant that the highest prevalence of BS found in the study among health workers of younger age; male; with specialty, family burden, and low job satisfaction; and working longer hours, which are known to be variables related to BS [11,44].

### 4.4. Strengths and limitations

Despite having performed multivariate analysis with different adjustment variables, there are other confounding factors that may have not been considered such as violence against health personnel, having a foreign nationality, having a full-time job, working in rural region, etc. Moreover, the intention to emigrate has not been evaluated in depth; that is to say, health personnel who reported having plans to emigrate were identified, but other specific actions related to this desire were not investigated. However, variable exposed reflects the feelings of the individuals.

In addition, BS was measured by MBI-HSS, which is considered the gold standard for health personnel and is used more extensively around the globe; however, this instrument is not specific to Peruvian population.

**Table 4**
Association between emigration intention with BS and its scales in health-care workers. ENSUSALUD 2014

| BS and dimensions | Intention to emigrate | Crude | | Adjusted* | |
|---|---|---|---|---|---|
| | n = 308 (%) | OR (95% CI) | | OR (95% CI) | |
| **Burnout syndrome**** | | | | | |
| Yes | 17 (6.0) | 2.46 (1.45−4.16) | | 2.15 (1.05−4.40) | |
| No | 291 (94.0) | 1.00 | Ref | 1.00 | Ref |
| **Emotional exhaustion**** | | | | | |
| High score | 51 (18.7) | 2.21 (1.60−3.06) | | 1.80 (1.16−2.78) | |
| Moderate score | 49 (17.0) | 1.54 (1.12−2.13) | | 1.61 (0.94−2.15) | |
| Low score | 208 (64.3) | 1.00 | Ref | 1.00 | Ref |
| **Depersonalization**** | | | | | |
| High score | 52 (16.5) | 1.45 (1.06−1.99) | | 1.21 (0.79−1.88) | |
| Moderate score | 39 (15.5) | 1.17 (0.82−1.67) | | 1.40 (0.90−2.19) | |
| Low score | 217 (68.0) | 1.00 | Ref | 1.00 | Ref |
| **Personal accomplishment**** | | | | | |
| High score | 65 (23.0) | 1.06 (0.79−1.44) | | 1.33 (0.90−1.96) | |
| Moderate score | 90 (31.3) | 1.02 (0.78−1.33) | | 1.07 (0.75−1.54) | |
| Low score | 153 (45.7) | 1.00 | Ref | 1.00 | Ref |

BS, burnout syndrome; CI, confidence interval; OR, odds ratio.
* Adjusted by age, gender, time in establishment, profession, specialty, Metropolitan Lima, institution, and category.
** Analyzed by sample weights.

### 4.5. Implications

While relationship between BS and intention to leave the job (turnover) is well established [29], our study shows association between this syndrome and intention to emigrate. Thus, it highlights the impact of this syndrome that could eventually lead to the final departure of health personnel from the system in which they perform.

It would be advisable to take measures that focus on reducing prevalence of BS and, as a consequence, decrease the actual "brain drain". In that sense, it is essential to take action to not only improve working conditions, rise wages, and promote staff training but also pay special attention to emotional exhaustion as a fundamental component of BS [45,46]; for example, now, evidence shows mobbing and violence against health personnel. Although frequencies found in BS and intention to emigrate are low compared with those in other populations, these issues can impact significantly on population health because of not only quality of care but also decreasing density of health workers along the country.

Burned out physicians and nurses, working in Peruvian health facilities, could be more likely to have intention to emigrate, with emotional exhaustion being the only scale associated with this intention. Therefore, it is necessary to consider strategies such as cognitive therapy and stress management and establish well-being programs to reduce levels of BS as part of the policies intended to reduce "brain drain" of health personnel in Peru. Similarly, studies assessing the rate of emigration concretized among these personnel and its association with BS are necessary.

### Conflict of interest

The authors do not have any conflict of interest.

### References

[1] Dovlo D. Taking more than a fair share? The migration of health professionals from poor to rich countries. PLoS Med 2005;2(5):e109. https://doi.org/10.1371/journal.pmed.0020109.
[2] Pang T, Lansang MA, Haines A. Brain drain and health professionals. BMJ 2002;324(7336):499−500. https://doi.org/10.1136/bmj.324.7336.499.
[3] Lofters AK. The "brain drain" of health care workers: causes, solutions and the example of Jamaica. Can J Public Health 2012;103(5):e376−8. PMID=23617992.001.
[4] Mullan F. The metrics of the physician brain drain. N Engl J Med 2005;353(17): 1810−8. https://doi.org/10.1056/NEJMsa050004.
[5] Bernardini-Zambrini DA, García Gutierrez JF, Mayta-Tristán P. Migración de médicos peruanos a España, 2005-2009. Rev Peru Med Exp Salud Publica 2011;28:694−5. https://doi.org/10.1590/s1726-46342011000400024.
[6] Aluttis C, Bishaw T, Frank MW. The workforce for health in a globalized context − global shortages and international migration. Glob Health Action 2014;7. https://doi.org/10.3402/gha.v7.23611.
[7] Dywili S, Bonner A, O'Brien L. Why do nurses migrate? - a review of recent literature. J Nurs Manag 2013;21(3):511−20. https://doi.org/10.1111/j.1365-2834.2011.01318.x.
[8] Poppe A, Jirovsky E, Blacklock C, Laxmikanth P, Moosa S, De Maeseneer J, Kutalek R. Why sub-Saharan African health workers migrate to European countries that do not actively recruit: a qualitative study post-migration. Glob Health Action 2014;7:24071. https://doi.org/10.3402/gha.v7.24071.
[9] Opoku ST, Apenteng BA. Seeking greener pastures? The relationship between career satisfaction and the intention to emigrate: a survey of Ghanaian physicians. Int Health 2014;6(3):208−12. https://doi.org/10.1093/inthealth/ihu030.
[10] Stilwell B, Diallo K, Zurn P, Vujicic M, Adams O, Dal Poz M. Migration of health-care workers from developing countries: strategic approaches to its management. Bull World Health Organ 2004;82(8):595−600. Available from: http://www.who.int/bulletin/volumes/82/8/595.pdf.
[11] Xie Z, Wang A, Chen B. Nurse burnout and its association with occupational stress in a cross-sectional study in Shanghai. J Adv Nurs 2011;67(7):1537−46. https://doi.org/10.1111/j.1365-2648.2010.05576.
[12] Davey MM, Cummings G, Newburn-Cook CV, Lo EA. Predictors of nurse absenteeism in hospitals: a systematic review. J Nurs Manag 2009;17(3):312−30. https://doi.org/10.1111/j.1365-2834.2008.00958.x.
[13] Sjögren K, Fochsen G, Josephson M, Lagerström M. Reasons for leaving nursing care and improvements needed for considering a return: a study among Swedish nursing personnel. Int J Nurs Stud 2005;42(7):751−8. https://doi.org/10.1016/j.ijnurstu.2004.11.001.
[14] Loubon CO, Salas R, Correa R. Aspectos epidemiológicos del síndrome de burnout en el personal sanitario. Hospital aquilino tejeira. Febrero-marzo 2011. Arch Med 2011;7(2):1−7. https://doi.org/10.3823/072.
[15] Maslach C, Jackson SE, Leiter MP. Maslach burnout inventory manual. Palo Alto: Consulting Psychologists Press; 1996.
[16] Pantenburg B, Luppa M, Konig HH, Riedel-Heller SG. Burnout among young physicians and its association with physicians' wishes to leave: results of a survey in Saxony, Germany. J Occup Med Toxicol 2016;11:2. https://doi.org/10.1186/s12995-016-0091-z.
[17] Schaufeli WB, Leiter MP, Maslach C. Burnout: 35 years of research and practice. Career Dev Int 2009;14(3):204−20.. https://doi.org/10.1108/13620430910966406.
[18] Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. Mayo Clin Proc 2016 Nov 18. https://doi.org/10.1016/j.mayocp.2016.10.004 pii: S0025-6196(16)30625-5.
[19] Caballero P, Yagui M, Espinoza M, Castilla T, Granados A, Velásquez A, et al. Prioridades regionales y nacionales de investigación en salud, Perú 2010-2014: un proceso con enfoque participativo y descentralista. Rev Peru Med Exp Salud Publica 2010;27:398−411.. https://doi.org/10.17843/rpmesp.2010.273.1498.
[20] Sotomayor R. Globalización y la responsabilidad de los países en desarrollo: el caso de la migración de los profesionales de la salud. Rev Peru Med Exp Salud Publica 2007;24:300−6. https://doi.org/10.17843/rpmesp.2007.243.1121.

[21] INEI, SUNASA. Encuesta nacional de satisfacción de usuarios del aseguramiento universal en el Perú. Lima: Enero. 2014. Available from: http://portales.susalud.gob.pe/documents/11450/31127/01+INFORME+FINAL.pdf/79b9421f-fb3c-4683-a95e-acd644e97ce5.

[22] Grau Martin A, Flichtentrei D, Suñer R, Prats M, Braga F. Influence of personal, professional and cross-national factors in burnout syndrome in Hispanic Americans and Spanish health workers (2007). Rev Esp Salud Publica 2009;83(2):215—30. https://doi.org/10.1590/S1135-57272009000200006.

[23] Maticorena-Quevedo J, Beas R, Anduaga-Beramendi A, Mayta-Tristán P. Prevalencia del síndrome de burnout en médicos y enfermeras del Perú, Ensusalud 2014. Rev Peru Med Exp Salud Publica 2016;33(2):1—7. https://doi.org/10.17843/rpmesp.2016.332.2170.

[24] Jennings BM. Advances in patient safety work stress and burnout among nurses: role of the work environment and working conditions. In: Hughes RG, editor. Patient safety and quality: an evidence-based handbook for nurses. Rockville (MD): Agency for Healthcare Research and Quality (US). 2008 [chapter 26]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK2668/.

[25] Gyorffy Z, Girasek E. Workload, work satisfaction and burnout among Hungarian female residents. Results of representative, online survey. Orv Hetil 2014;155(46):1831—40. https://doi.org/10.1556/OH.2014.30038.

[26] Moreno-Jimenez B, Galvez-Herrer M, Rodriguez-Carvajal R, Sanz Vergel AI. A study of physicians' intention to quit: the role of burnout, commitment and difficult doctor-patient interactions. Psicothema 2012;24(2):263—70. Available from: http://www.psicothema.com/PDF/4009.pdf.

[27] Zhang Y, Feng X. The relationship between job satisfaction, burnout, and turnover intention among physicians from urban state-owned medical institutions in Hubei, China: a cross-sectional study. BMC Health Serv Res 2011;11:235. https://doi.org/10.1186/1472-6963-11-235.

[28] El-Jardali F, Dimassi H, Dumit N, Jamal D, Mouro G. A national cross-sectional study on nurses' intent to leave and job satisfaction in Lebanon: implications for policy and practice. BMC Nurs 2009;8(1):1—13. https://doi.org/10.1186/1472-6955-8-3.

[29] Gurkova E, Soosova MS, Harokova S, Ziakova K, Serfelova R, Zamboriova M. Job satisfaction and leaving intentions of Slovak and Czech nurses. Int Nurs Rev 2013;60(1):112—21. https://doi.org/10.1111/j.1466-7657.2012.01030.x.

[30] Lansiquot BA, Tullai-McGuinness S, Madigan E. Turnover intention among hospital-based registered nurses in the Eastern Caribbean. J Nurs Scholarsh 2012 Jun;44 [2016]. Available from: https://www.ncbi.nlm.nih.gov/pubmed/22486803.

[31] Arroyo J. Los sistemas descentrados de recursos humanos en salud: el caso del Perú, 1990-2005. Cien Saude Colet 2006;11:1063—72. https://doi.org/10.1590/S1413-81232006000400027.

[32] Ancalli-Calizaya F, Cohaila G, Maquera-Afaray J. Agresiones contra el trabajador de salud en Tacna, Perú. Rev Peru Med Exp Salud Publica 2012;29:415—6.

[33] Tuya-Figueroa X, Mezones-Holguín E. Violencia contra médicos: un problema por considerar en la investigación de recursos humanos en salud. Rev Peru Med Exp Salud Publica 2012;29:164—5.

[34] Heponiemi T, Kouvonen A, Virtanen M, Vanska J, Elovainio M. The prospective effects of workplace violence on physicians' job satisfaction and turnover intentions: the buffering effect of job control. BMC Health Serv Res 2014;14:19.

[35] George G, Atujuna M, Gow J. Migration of South African health workers: the extent to which financial considerations influence internal flows and external movements. BMC Health Serv Res 2013;13 [2016]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3765273/.

[36] Lee RT, Seo B, Hladkyj S, Lovell BL, Schwartzmann L. Correlates of physician burnout across regions and specialties: a meta-analysis. Hum Resour Health 2013;11 [2016]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3849515/.

[37] Goodman EA, Boss RW. Burnout dimensions and voluntary and involuntary turnover in a health care setting. J Health Hum Serv Admin 1999;21(4):462—71. Available from: http://www.jstor.org/stable/25780924.

[38] Topcu I, Turkmen E, Badir A, Goktepe N, Miral M, Albayrak S, et al. Relationship between nurses' practice environments and nursing outcomes in Turkey. Int Nurs Rev 2016. https://doi.org/10.1111/inr.12247.

[39] Hendel T, Kagan I. Professional image and intention to emigrate among Israeli nurses and nursing students. Nurse Educ Today 2011;31(3):259—62. https://doi.org/10.1016/j.nedt.2010.11.008.

[40] De Silva AP, Liyanage IK, De Silva STGR, Jayawardana MB, Liyanage CK, Karunathilake IM. Migration of Sri Lankan medical specialists. Hum Resour Health 2013;11:21. https://doi.org/10.1186/1478-4491-11-21.

[41] Huamán M, Kamimura K, Medina J, Bustíos C, Miní E, Benito M, et al. Características laborales del médico joven egresado de la Facultad de Medicina San Fernando. An Fac Med 2007;68(1). https://doi.org/10.15381/anales.v68i1.1235.

[42] Mayta-Tristán P, Dulanto-Pizzorni A. Prevalencia y factores asociados con la intención de Emigración en internos de medicina de una universidad pública, Lima 2007. Rev Per Med Exp Salud Publica 2008;25:274—8. https://doi.org/10.17843/rpmesp.2008.253.1276.

[43] Vanasse A, Scott S, Courteau J, Orzanco MG. Canadian family physicians' intentions to migrate Associated factors. Can Fam Physician 2009;55(4):396—397.e6. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2669015/.

[44] Silva SC, Nunes MA, Santana VR, Reis FP, Machado Neto J, Lima SO. Burnout syndrome in professionals of the primary healthcare network in Aracaju, Brazil. Cien Saude Colet 2015;20(10):3011—20. https://doi.org/10.1590/1413-812320152010.19912014.

[45] Eyal N, Hurst SA. Physician brain drain: can nothing be done? Public Health Ethics 2008;1(2):180—92. https://doi.org/10.1093/phe/phn026.

[46] Mayta-Tristán P, Dulanto-Pizzorni A, Miranda JJ. Low wages and brain drain: an alert from Peru. Lancet 2008;371(9624):1577. https://doi.org/10.1016/S0140-6736(08)60685-6.