ORIGINAL ARTICLE

Pandemic burnout and job satisfaction among doctors engaged in the SERUMS program in Ayacucho

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The present study is part of a thesis to earn the *Grado Académico de Maestro en Gerencia de Servicios de Salud* (Master's degree in Health Services Management). *Síndrome de burnout en pandemia y satisfacción laboral en médicos serumistas de Ayacucho* (Pandemic burnout and job satisfaction among doctors engaged in the SERUMS program in Ayacucho) [graduate thesis]. Lima: School of Human Medicine, Universidad de San Martín de Porres; 2022.

ABSTRACT

Objective: To determine the association between burnout syndrome (BS) and job satisfaction (JS) among doctors engaged in the SERUMS program in Ayacucho in the context of the COVID-19 pandemic.
Materials and methods: An observational, cross-sectional study was conducted, using both crude and adjusted models, to determine the association between BS, evaluated through the Maslach Burnout Inventory (MBI), and JS, assessed via the Job Satisfaction Questionnaire S20/23. The associations were expressed as prevalence ratios (PR) with their respective 95 % confidence intervals (95 % CI).
Results: Out of the 70 doctors engaged in the SERUMS program, 77.14 % were aged between 18 and 33 years, 52.86 % were males, 51.43 % had less than one year work experience and 88.57 % worked at a health center of the Ministry of Health (MINSA). The prevalence of BS was 45.71 %. The prevalence of JS was as follows: dissatisfaction 30 %, satisfaction 32.86 % and indifference 37.14 %. In the crude analysis, a statistically significant association between BS and JS was found (*PR* = 13.5; 95 % CI: 3.08-59.24) and in the analysis adjusted for sex, marital status and length of work experience, the association between BS and JS remained statistically significant (*PR* = 14.15; 95 % CI: 3.02-66.32).
Conclusions: BS is negatively associated with JS, with one in two doctors experiencing BS. Moreover, there appears to be a higher likelihood of job dissatisfaction among personnel with BS. This suggests that BS could serve as an indicator in different management areas and be considered in health management decision-making. Solving these issues could contribute to improving current working conditions and, therefore, the healthcare system.

Keywords: Burnout, Psychological; Job Satisfaction; Physicians; Pandemics; COVID-19 (Source: MeSH NLM).

INTRODUCTION

Burnout syndrome (BS) is an indicator of mental and physical exhaustion resulting from work demands or stress, with a prevalence among healthcare professionals of approximately 15 % in Spain, 14.4 % in Argentina and 7.9 % in Uruguay [(1)]. Some studies report rates as high as 76 % in smaller groups of residents during the pandemic [(2)]. Regarding job satisfaction (JS), research conducted in a region of Spain shows that 62.6 % of healthcare professionals are satisfied with their jobs [(3)].

Peru is not exempt from the issue of BS. However, statistical data on the subject remain limited. Studies indicate that BS affects between 5.6 % [(4)] and 33.3 % [(5)] of healthcare professionals. Regarding JS, one region of Peru has reported medium to high levels. While this places the country at an average level compared to others, it does not suggest these figures are ideal. Healthcare professionals could experience higher JS if certain reversible factors, such as the timely identification and management of BS, were addressed [(6)]. It should be emphasized that dissatisfaction resulting from BS can be reversed if recognized early and managed appropriately, thereby preventing the loss of valuable healthcare personnel.

The association between BS and JS has been explored in some studies, revealing a significant and negative

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relationship between the two. These studies demonstrate that the higher the level of BS, the lower the JS among professionals, as evidenced in non-pandemic contexts. The studied concepts also include the reasons contributing to dissatisfaction: workload, salary and negative attitudes within the work team [5].

In this regard, it is crucial and necessary to understand the situation in our country, particularly among primary care personnel (health posts and centers), who faced the pandemic with fewer resources compared to those in tertiary and quaternary care hospitals. In addition, it should be noted that this group already exhibited moderate levels of BS [7], which likely impacted their JS.

Thus, we are confronted with a tangible problem that warrants further study in the current context. Timely measures are needed, focusing on the association between BS and JS among primary care personnel in the department of Ayacucho, particularly doctors who are consistently exposed to diseases in their work. Consequently, the decision was made to study doctors engaged in the SERUMS program in this region, as the results could be surprising given that they are young professionals with fewer years of experience.

The novelty of this research lies in the fact that no similar study has been conducted in our country. In the context of the pandemic, only the verbal impressions of healthcare personnel are known, but there is no documented evidence of how primary care doctors experienced BS and JS.

MATERIALS AND METHODS

Study design and population

This is an observational, analytical, cross-sectional and retrospective study focusing on doctors engaged in the SERUMS program, of both sexes and of legal age, who practiced medicine in Ayacucho between July 2020 and May 2021.

The sample comprised 70 participants, following a pilot study involving 35 doctors engaged in the SERUMS program. Participants who did not provide complete data, failed to answer all the questions or worked in primary care but were not under the SERUMS program were excluded from the study.

The pilot study revealed that 66.67 % of doctors were exposed to the outcome (indicating either JS or job dissatisfaction), while 33.33 % were not exposed (indicating indifference to JS).

The sample size calculation was based on a 1:1 ratio, a 95 % confidence interval (95 % CI) and a statistical power of 80 %. Consequently, the calculated sample size was 70 participants.

Variables and measurements

Information was collected using a single personal data sheet. The Maslach Burnout Inventory (MBI) questionnaire was used to assess BS, while the Job Satisfaction Questionnaire S20/23 was employed to assess JS. Both the Spanish translation of the MBI and the administration of these questionnaires among the healthcare personnel were appropriately validated.

Statistical analysis

Chi-square tests or Fisher's exact test were used to evaluate differences between categorical variables, while Student's *t* test or Mann-Whitney *U* test were applied for numerical variables, as appropriate. The JS variable was divided into three categories: indifferent, dissatisfied and satisfied. Multinomial logistic regression models were constructed to calculate the crude prevalence ratios (cPR) and adjusted prevalence ratios (aPR), along with their respective 95 % CI. The adjustment was made with confounding variables according to epidemiological criteria as reported in other studies.

Ethical considerations

Informed consent was obtained from all the participants, and confidentiality of the data was ensured.

RESULTS

General characteristics of the participants

A total of 70 doctors engaged in the SERUMS program in Ayacucho were evaluated. The general characteristics of the respondents revealed that 52.86 % (37 participants) were males and 77.14 % (54 participants) were aged between 18 and 30 years. The majority were single, comprising 81.43 % (57 participants). Furthermore, 51.43 % (36 participants) had less than one year work experience and 88.57 % (62 participants) worked at a health center of the Ministry of Health (MINSA) (Table 1).

The prevalence of BS was 45.71 % (32 participants). Regarding JS, 37.14 % (26 participants) were indifferent, 30.00 % (21 participants) were dissatisfied and 32.86 % (23 participants) were satisfied (Table 1).

Table 1. General characteristics of doctors engaged in the SERUMS program in Ayacucho

Characteristics	TOTAL (*N* = 70)	
	n	%
Sex		
Female	33	47.14
Male	37	52.86
Age (years)		
18–30	54	77.14
31–40	16	22.86
Marital status		
Single	57	81.43
Married	9	12.86
Cohabiting	4	5.71
Work experience (years)		
< 1	36	51.43
1–3	25	35.71
> 3	9	12.86
Health system		
MINSA	62	88.57
EsSalud	6	8.57
National Police of Peru (PNP) and Peruvian Armed Forces (CCFFAA)	2	2.86
BS		
No	38	54.29
Yes	32	45.71
JS		
Indifferent	26	37.14
Dissatisfied	21	30.00
Satisfied	23	32.86

Regarding their workplace, 12 doctors engaged in the SERUMS program (17.14 %) worked in La Mar, 11 (15.71 %) in Huamanga, 10 (14.29 %) in Huanta and 8 (11.43 %) in Lucanas, collectively covering over 50 % of the population in the region.

The frequency of BS components among the participants was as follows: 61.43 % (43 participants) for emotional exhaustion, 71.43 % (50 participants) for depersonalization and 58.57 % (41 participants) for reduced personal accomplishment (Table 2).

Table 2. Frequency of BS components

Exposure	TOTAL (*N* = 70)	
	n	%
Emotional exhaustion		
No	27	38.57
Yes	43	61.43
Depersonalization		
No	20	28.57
Yes	50	71.43
Reduced personal accomplishment		
No	29	41.43
Yes	41	58.57

Differences were observed in the level of JS and each of its contributing factors. Overall, being indifferent stood out (37.14 %). In terms of supervision, the majority reported being somewhat dissatisfied (28.57 %). Regarding the physical environment, most participants reported being indifferent (27.14 %). Similarly, in terms of the benefits received, they also reported being indifferent (32.86 %). As for intrinsic JS, a predominance of being somewhat dissatisfied (25.71 %) was observed. Finally, with respect to their level of participation, being indifferent was the most common response (31.43 %).

Statistically significant differences were found in JS in relation to the characteristics of the doctors engaged in the SERUMS program concerning each BS component. Specifically, 44.19 % experiencing emotional exhaustion, 40 % exhibiting depersonalization and 48 % with reduced personal accomplishment reported higher levels of dissatisfaction. No statistically significant differences were identified for the other variables (Table 3). It is noteworthy that dissatisfied doctors engaged in the SERUMS program had a higher prevalence of each BS component compared to their satisfied and indifferent counterparts.

Table 3. General characteristics of doctors engaged in the SERUMS program according to the presence of BS

Characteristics	BS				*p* value
	No		Yes		
	n	%	*n*	%	
JS					< 0,001*
Indifferent	18	47.37	8	25.00	
Dissatisfied	3	7.89	18	56.25	
Satisfied	17	44.74	6	18.75	
Sex					0.161*
Female	15	39.47	18	56.25	
Male	23	60.53	14	43.75	
Age (years)					0.453*
18–30	28	73.68	26	81.25	
31–40	10	26.32	6	18.75	
Marital status					0.808**
Single	30	78.95	27	84.38	
Married	5	13.16	4	12.50	
Cohabiting	3	7.89	1	3.13	
Work experience (years)					
< 1	17	44.74	19	59.37	0.527**
1–3	15	39.47	10	31.25	
> 3	6	15.79	3	9.38	
Health system					
MINSA	34	89.47	28	87.50	0.303**
EsSalud	4	10.53	2	6.25	
PNP and CCFFAA	0	0.00	2	6.25	

*Chi-square test.
**Fisher's exact test.

In relation to the characteristics of the doctors engaged in the SERUMS program concerning the level of JS, statistically significant differences were only found for the presence of BS. It was observed that 56.25 % of dissatisfied professionals had a higher prevalence of BS (Table 4).

Table 4. General characteristics of doctors engaged in the SERUMS program according to each BS component

Characteristics	Emotional exhaustion					Depersonalization					Reduced personal accomplishment				
	No		Yes		*p* value	No		Yes		*p* value	No		Yes		*p* value
	n	%	*n*	%		*n*	%	*n*	%		*n*	%	*n*	%	
JS					0.005*					0.015*					<0.001*
Indifferent	13	48.15	13	30.23		10	50.00	16	32.00		15	51.72	11	26.83	
Dissatisfied	2	7.41	19	44.19		1	5.00	20	40.00		1	3.45	20	48.78	
Satisfied	12	44.44	11	25.58		9	45.00	14	28.00		13	44.83	10	24.39	
Sex					0.067*					0.449*					0.744*
Female	9	33.33	24	55.81		8	40.00	25	50.00		13	44.83	20	48.78	
Male	18	66.67	19	44.19		12	60.00	25	50.00		16	55.17	21	51.22	
Age (years)					0.920*					0.368*					0.171*
18-30	21	77.78	33	76.74		14	70.00	40	80.00		20	68.97	34	82.93	
31-40	6	22.22	10	23.26		6	30.00	10	20.00		9	31.03	7	17.07	
Marital status					0.902**					0.168**					0.230**
Single	22	81.49	35	81.40		14	70.00	43	86.00		21	72.41	36	87.80	
Married	4	14.81	5	11.62		5	25.00	4	8.00		5	17.24	4	9.76	
Cohabiting	1	3.70	3	6.98		1	5.00	3	6.00		3	10.34	1	2.44	
Work experience (years)					0.055*					0.205*					0.973*
< 1	9	33.33	27	62.79		7	35.00	29	50.00		15	51.72	21	51.22	
1-3	13	48.15	12	27.91		10	50.00	15	30.00		10	34.48	15	36.59	
> 3	5	18.52	4	9.30		3	15.00	6	12.00		4	13.79	5	12.20	
Health system					0.588**					1.000**					0.377**
MINSA	24	88.89	38	88.37		18	90.00	44	88.00		25	86.21	37	90.24	
EsSalud	3	11.11	3	6.98		2	10.00	4	8.00		4	13.79	2	4.88	
PNP and CCFFAA	0	0.00	2	4.65		0	0.00	2	4.00		0	0.00	2	4.88	

*Chi-square test.
**Fisher's exact test.

In the crude regression analysis, an association was found between job dissatisfaction and the presence of BS (*PR* = 13.50, 95 % CI: 3.08-59.24). Likewise, when evaluating this association according to each BS component, higher prevalence of dissatisfaction was observed for emotional exhaustion (*PR* = 9.50, 95 % CI: 1.83-49.33), depersonalization (*PR* = 12.50, 95 % CI: 1.44-108.19) and reduced personal accomplishment (*PR* = 27.27, 95 % CI: 3.16-235.02).

After adjusting for confounding variables such as age, sex, years of work experience and marital status based on epidemiological criteria, the association remained statistically significant, with a slight increase compared to the reference group (*PR* = 14.15, 95 % CI: 3.02-66.32). This significance was also maintained for each BS component: emotional exhaustion (*PR* = 13.58, 95 % CI: 2.15-85.66), depersonalization (*PR* = 11.62, 95 % CI: 1.31-103.26) and reduced personal accomplishment (*PR* = 36.64, 95 % CI: 3.46-346.96) (Table 5).

Table 5. Association between BS y level of JS among doctors engaged in the SERUMS program

Exposure	JS											
	Dissatisfied						Satisfied					
	Crude model[a]			Adjusted model[a,b]			Crude model[a]			Adjusted model[a,b]		
	PR	95 % CI	*p* value	*PR*	95 % CI	*p* value	*PR*	95 % CI	*p* value	*PR*	95 % CI	*p* value
BS												
No	Ref.	---	---	Ref.	---	---	Ref.	---	---	Ref.	---	---
Yes	13.50	3.08-59.24	<0.001	14.15	3.02-66.32	0.001	0.79	0.23-2.77	0.718	0.88	0.24-3.25	0.849
Emotional exhaustion												
No	Ref.	---	---	Ref.	---	---	Ref.	---	---	Ref.	---	---
Yes	9.50	1.83-49.33	0.007	13.58	2.15-85.66	0.005	0.92	0.30-2.82	0.879	1.45	0.39-5.27	0.576
Depersonalization												
No	Ref.	---	---	Ref.	---	---	Ref.	---	---	Ref.	---	---
Yes	12.50	1.44-108.19	0.022	11.62	1.31-103.26	0.028	0.97	0.31-3.07	0.962	1.02	0.30-3.46	0.980
Reduced personal accomplishment												
No	Ref.	---	---	Ref.	---	---	Ref.	---	---	Ref.	---	---
Yes	27.27	3.16-235.02	0.003	36.63	3.46-346.96	0.003	1.05	0.34-3.26	0.934	0.82	0.24-2.79	0.758

95 % CI: 95 % confidence interval; PR: prevalence ratio.
[a] Multinomial logistic regression model.
[b] Adjusted by sex, age, marital status and work experience.

DISCUSSION

The aim of this study was to measure the association between BS and JS among doctors engaged in the SERUMS program during the early years of the COVID-19 pandemic in the department of Ayacucho. After adjusting for confounding variables, an association was found between BS and JS, with dissatisfied personnel comprising the most affected group.

The study population faced the pandemic in rural areas of Peru, where logistical support was limited, and vaccines to reduce COVID-19 morbidity and mortality were not yet available. Our findings revealed an association between BS and JS, with almost 50 % of the participants experiencing BS, and more than 50 % exhibiting at least one of its three components. Within BS parameters, depersonalization emerged as the most prevalent component, affecting 71 % of the participants. This may be attributed to the heavy workload faced by these doctors at the beginning of the pandemic.

Previous literature has demonstrated a functional and negative relationship between BS and JS at both national and international levels [5]; however, most studies were conducted outside of a pandemic context. Faced with an extraordinary event like a pandemic, a lack of experience in managing such a situation was evident. Studies from Japan, Jordan and Romania [2,8,29] confirm the presence of BS, with higher prevalence during the pandemic, which aligns with our findings. In our study, the prevalence of BS was 45.71 %, a significantly higher rate compared to national-level studies in various samples, which reported prevalence rates ranging from 2.8 % to 33.3 % [5,26].

It is highlighted that, in the context of the pandemic, overburdened hospitals, low salaries and BS were factors contributing to low JS [2]. This is evident in the present study, where 30 % of the doctors engaged in the SERUMS program were dissatisfied, 37.14 % were indifferent and 32.86 % were satisfied with their working conditions at the time. These findings indicate a negative correlation with BS, suggesting that emotional exhaustion, depersonalization and reduced personal accomplishment significantly impact job perception.

Dissatisfaction could increase the prevalence of BS by 14.15 times (*PR* = 14.15, 95 % CI: 3.02-66.32), emotional exhaustion by 13.58 times (*PR* = 13.58, 95 % CI: 2.15-85.66), depersonalization

by 11.62 times (*PR* = 11.62, 95 % CI: 1.31-103.26) and reduced personal accomplishment by 36.64 times (*PR* = 36.64, 95 % CI: 3.46-346.96). However, doctors engaged in the SERUMS program experiencing BS and each of its components may face a higher risk of increased dissatisfaction. These values reflect a clear relationship between the study variables, but their temporal ambiguity prevent us from determining which precedes the other. Based on the results of the current study, longitudinal studies are needed to clarify this relationship. Although trends in previous literature suggest a negative functional relationship, further research is necessary to draw conclusions about causality.

The hypothesis of the present study was that the presence of BS among professionals was related to job dissatisfaction, and this has been confirmed by the demonstrated association between the two. Additionally, a higher prevalence of dissatisfaction was observed during the pandemic, which—although previously studied in hospital settings rather than among doctors engaged in the SERUMS program—still reflects an increase in the percentage of affected professionals.

In conclusion, an association was found between BS and JS, with one out of two doctors engaged in the SERUMS program in Ayacucho presenting this syndrome. Regarding JS, one-third of the doctors were satisfied, one-third dissatisfied and one-third indifferent. Additionally, the prevalence of dissatisfied doctors across the three components of BS was higher compared to those without BS. Our findings also suggest that doctors engaged in the SERUMS program in Ayacucho with BS are more likely to experience job dissatisfaction compared to those without BS. Thus, the prevalence of BS and JS during the pandemic was higher than in non-pandemic contexts, particularly among doctors engaged in the SERUMS program working mostly in rural areas.

This information is valuable for health services management, as reducing the prevalence of these problems would likely result in more committed healthcare personnel and lower the risk of medical errors.

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