

Association between job satisfaction and organizational commitment among physicians who treated patients during the COVID-19 pandemic at Hospital Nacional Daniel Alcides Carrión, 2020-2021

Juan M. Robles Cuadros* ^{1,2,a}; Maritza Dorila Placencia Medina ^{3,b}; Ricardo Carreño Escobedo ^{3,c}

ABSTRACT

Objective: To determine the association between organizational commitment and job satisfaction among physicians who treated COVID-19 patients at Hospital Nacional Daniel Alcides Carrión from 2020 to 2021.

Materials and methods: A cross-sectional and analytical study which involved 194 physicians. Job satisfaction and organizational commitment were measured using the Minnesota Satisfaction Questionnaire and Meyer and Allen's Three Component Model of Commitment. Based on the scores and the Likert scale, the variables were categorized as high, moderate or low.

Results: A total of 71 % of physicians reported intrinsic job satisfaction and 93 % exhibited affective and continuance organizational commitment at the hospital. Physicians with a strong sense of achievement were 2.71 times more likely to experience job satisfaction and feel proud to work at the institution (CI: 1.05-7.03). Physicians satisfied with the way their boss treated employees and wishing to remain at the institution were associated with an odds ratio (OR) of 3.26 (CI: 1.50-7.24). Agreement with institutional policies and a sense of loyalty to the institution had an OR of 3.25 (CI: 1.40-17.23). Self-taught physicians who felt that they owed a lot to the institution had an OR of 2.55 (CI: 1.31-4.94). Multivariate analysis showed higher job satisfaction among males (OR: 2.40 [CI: 1.15-5.00]), those having received full personal protective equipment (OR: 9.68 [CI: 3.01-31.12]) and those having obtained timely economic incentives (OR: 4.52 [CI: 1.76-11.53]).

Conclusions: Job satisfaction is directly proportional to physicians' organizational commitment. The higher the job satisfaction among employees, the stronger their commitment to their institution. Likewise, being male, receiving full personal protective equipment and obtaining timely economic incentives were strongly associated with higher job satisfaction.

Keywords: Job Satisfaction; Work Engagement; Association; COVID-19; Health Personnel (Source: MeSH NLM).

INTRODUCTION

Between 2020 and 2021, the COVID-19 pandemic, caused by SARS-CoV-2, led to major changes in the health of both the general population and healthcare personnel ⁽¹⁾.

By early 2020, global reports had confirmed 17,016,007 cases, including 422,183 in Peru. The case fatality rates stood at 3.90 % worldwide and 4.60 % in Peru ⁽²⁾. In March 2020, Peru reported its first COVID-19 case and a week later the World Health Organization (WHO) issued a pandemic alert ⁽³⁾. The COVID-19 pandemic affected all sectors of the country—political, social, labor and, most notably, healthcare. Hospitals lacked contingency plans for medicines, logistics and properly trained healthcare personnel to treat these patients. This issue was addressed in García et al.'s article entitled *Contraste de un modelo del compromiso laboral en centros de salud pública (Contrast of a model of work commitment in public health centers)* ⁽⁴⁾. The labor sector also experienced significant changes in working conditions, including layoffs and temporary suspensions of physicians employed in hospitals ⁽⁵⁾. According to Instituto Peruano de Economía (IPE - Peruvian Institute of Economics), 1.1 million jobs were lost in Lima Metropolitan Area in 2020, and Instituto Nacional de Estadística e Informática (INEI - National Institute of Statistics and Informatics) reported a 13.10 % decline in employment from October to December 2020 ⁽⁶⁾. Additionally, Encuesta Nacional de Hogares (ENAH - National Household Survey) indicated that, during the second quarter of 2020, the highest unemployment rate was observed among males aged 25 to 44 in urban areas (49 %) and the service sector (56.60 %) ⁽⁷⁾. Despite these challenges, many physicians worked tirelessly, demonstrating their service-oriented vocation and organizational commitment, which could be reflected in their level of job satisfaction.

1 Universidad Peruana de Ciencias Aplicadas. Lima, Peru.

2 Clínica San Gabriel. Lima, Peru.

3 Universidad Nacional Mayor de San Marcos. Lima, Peru.

^a Physician with a specialization in General Surgery; ^b PhD in Pharmacy and Biochemistry; ^c PhD in Medicine and epidemiologist.

*Corresponding author.

Employees' job satisfaction contributes to improved public service, as well as greater competence and efficiency in their field of work. Durham, Smith⁽⁸⁾ defined job satisfaction as a set of positive attitudes toward work and the work environment. Robbins, Judge⁽⁹⁾ argued that these attitudes are shaped by employees' beliefs and values developed in their workplace, as well as key institutional factors that promote job satisfaction, such as a positive organizational climate, adequate remuneration, employee recognition and a positive work environment. Herzberg's Two-Factor Theory⁽¹⁰⁾ distinguishes between extrinsic and intrinsic motivators in the workplace. Extrinsic factors—such as adequate salary and wages, company policies, availability of resources, technical supervision, relationships with supervisors and colleagues, opportunities for career advancement, positive interactions with clients or users, and job security—serve to prevent dissatisfaction. In contrast, intrinsic factors—such as recognition for achievement, responsibility, opportunities for career advancement and work itself—are key drivers that foster satisfaction.

Organizational commitment refers to the bond that links employees to their organization. It plays a key role in determining employees' performance and overall outcomes. In healthcare settings, it has a direct impact on both patient health and satisfaction. Khalip⁽¹¹⁾ proposed a three-component model of organizational commitment: affective commitment, which reflects commitment based on emotional ties employees develop with the organization as a result of positive work experiences; normative commitment, which reflects commitment based on a sense of obligation toward the organization based on norms of reciprocity; and continuance commitment, which reflects commitment based on the perceived economic and social costs of leaving the organization.

Although studies exploring organizational commitment and job satisfaction among healthcare professionals and physicians in hospital settings are commonly based on correlation analyses, few have employed association analyses, according to the literature reviewed for this research. A selection of relevant studies is summarized below.

Abd-Ellatif et al.⁽¹²⁾ conducted a quantitative cross-sectional study to assess the correlation between fear of COVID-19 and job satisfaction among Egyptian physicians in 2020. They employed two questionnaires: one to measure fear of COVID-19 (seven items rated on a 5-point Likert scale) and another to assess job satisfaction (five items rated on a 5-point Likert scale). Their findings revealed no significant correlation between fear of COVID-19 and job satisfaction ($p = 0.226$), with a Spearman's correlation coefficient of -0.060 . However, they concluded that there was an inverse relationship between fear and physician satisfaction ($p < 0.001$).

Dinić et al.⁽¹³⁾ conducted a quantitative cross-sectional study aimed at exploring physicians' opinions regarding workforce management during the COVID-19 pandemic and determining its relationship with their organizational commitment in public and private hospitals in Serbia in 2020. A questionnaire—developed by the researchers and based on previous questionnaires focused on physicians' risk assessment and management of the exposure while caring for COVID-19 patients—was used to interview 1,553 physicians. The results revealed that most physicians were male, with an average age of 44 years. Physicians engaged in the fight against the spread of COVID-19 were mostly younger, lacked a specialty and had less professional experience ($p = 0.001$). Physicians who remained at their institutions to treat COVID-19 patients were 2.61 times more likely to report job dissatisfaction than those who did not treat such patients, while those relocated to another hospital were 1.38 times more likely to be dissatisfied than those who remained at their original institution ($p = 0.001$). Factors significantly correlated with physicians' organizational commitment ($p = 0.001$) included workload measurement, work fulfillment, recruitment of physicians who had not been working since the onset of the pandemic, unplanned dismissal of physicians who had been working from the start of the pandemic, performance assessment, and reward and incentive systems. This research concluded that the COVID-19 pandemic had a predominantly negative influence on physicians' working conditions, thereby affecting their extrinsic job satisfaction, as well as their normative and continuance commitment with their institutions.

Aminizadeh et al.⁽¹⁴⁾ conducted a quantitative cross-sectional study involving 200 physicians across 12 hospital emergency departments in Iran during 2020 to examine the relationship between the quality of working life and organizational commitment during the coronavirus outbreak. Two questionnaires were used: Walton's Quality of Working Life Questionnaire, which measures the quality of working life with 20 items rated on a 5-point Likert scale; and Meyer and Allen's Three Component Model of Commitment, consisting of 24 items also rated on a 5-point Likert scale. The results revealed that the normative commitment component was the most important for employees, while the emotional commitment was the least important. A significant and positive correlation between quality of working life and organizational commitment was found ($r = 0.45$; $p = 0.001$). The highest positive Spearman's correlation was observed between the skill development opportunities and continuous learning component and normative organizational commitment ($r = 0.45$, $p < 0.05$). Conversely, the lowest correlation was found between the wage and material benefits component and emotional commitment ($r = 0.02$, $p < 0.05$). The authors concluded that higher organizational commitment and better quality of working life lead to improved services for patients

and enhanced work performance. Additionally, they recommend increased coaching for medical personnel and greater involvement in hospital management to achieve better outcomes.

Yi et al. ⁽¹⁵⁾ conducted a quantitative cross-sectional study to explore the effect of organizational commitment on job satisfaction and thriving at work among healthcare professionals who cared for COVID-19 patients in 20 field hospitals in northern China during 2020. Three questionnaires were administered to 650 public health workers: the Minnesota Satisfaction Questionnaire, consisting of 20 questions across three dimensions (intrinsic, extrinsic and general) rated on a 5-point Likert scale; Meyer and Allen's Three Component Model of Commitment, with 18 questions across three dimensions with six items each also rated on a 5-point Likert scale; and the Porath et al. ⁽¹⁶⁾ questionnaire for measuring thriving at work, which contains two dimensions (vitality and learning), with five items each, and also rated on a 5-point Likert scale. The following results were obtained: 82.90% of the participants were female, with an average age of 36.6 ± 8 years. Using Pearson's correlation, thriving at work was found to have a positive and significant correlation with both organizational commitment ($r = 0.715, p < 0.001$) and job satisfaction ($r = 0.804, p < 0.001$). Additionally, a positive correlation between job satisfaction and organizational commitment was found ($r = 0.848, p < 0.001$). To further explore the correlation between these variables, a structural model was developed, subdivided into its components: thriving at work (independent variable), organizational commitment (mediating variable) and job satisfaction (dependent variable). When this structural model was applied, it became clear that only 42% of public health workers had achieved job satisfaction, organizational commitment and thriving at work during the pandemic (CI: 0.276-0.561, $p < 0.001$). The study concluded that healthcare policymakers within institutions (management) should pay close attention to the needs of healthcare personnel and provide adequate resources, thereby fostering thriving at work, reaffirming workers' commitment to the institution and, consequently, enhancing job satisfaction.

Bektaş et al. ⁽¹⁷⁾ conducted a quantitative cross-sectional study to examine the relationship between job satisfaction and organizational commitment among 236 Generation Y healthcare workers (born between 1980 and 2000) at a hospital in Turkey during 2021. Two questionnaires were administered: the Minnesota Satisfaction Questionnaire, consisting of 20 questions across three dimensions (intrinsic, extrinsic and general) rated on a 5-point Likert scale; and Meyer and Allen's Three Component Model of Commitment, which includes 18 items across three dimensions (affective, continuance and normative) also rated on a 5-point Likert scale. The results showed

that 48.50% of the participants had been working in the organization for 1 to 5 years. Pearson's correlation revealed a slight but statistically significant and positive relationship between job satisfaction (both extrinsic and intrinsic) and organizational commitment ($r > 0.4, p < 0.005$). Furthermore, logistic regression of both variables showed a strong and statistically significant relationship ($r > 0.7, p < 0.005$). The study concluded that there is a significant and positive relationship between these two variables among Generation Y healthcare workers. The authors recommended promoting intergenerational exchange of experiences and skills, as well as providing regular feedback, to achieve high hospital performance.

In summary, a healthcare worker may experience dissatisfaction with a specific position while simultaneously feeling satisfied with the organization as a whole, as they perceive the position's conditions as temporary. This creates a gap between job satisfaction and organizational commitment. Therefore, the aim of this research is to determine the association between organizational commitment and job satisfaction among physicians who treated COVID-19 patients at Hospital Nacional Daniel Alcides Carrión from 2020 to 2021. It is important to note that no previous studies have examined the relationship between these two variables among medical personnel in Peru. Given that healthcare workers were among the most exposed during the pandemic, this study offers valuable insights for further cause-and-effect research on the relationship between job satisfaction and organizational commitment, ultimately contributing to improve patient care in hospitals.

MATERIALS AND METHODS

Study design and population

A quantitative, analytical, retrospective and cross-sectional study was conducted. The study population consisted of 194 physicians who treated COVID-19 patients from March 2020 to March 2021 at Hospital Nacional Daniel Alcides Carrión in El Callao, Peru.

Variables and measurements

The unit of analysis consisted of physicians who treated COVID-19 patients. The dependent variable was job satisfaction, while the independent variables included organizational commitment, sex, age, economic incentives, receipt of personal protective equipment (PPE) and other covariates. Initially, a data collection form was used to gather sociodemographic data. This was followed by the administration of two questionnaires—Meyer and Allen's Three Component Model of Commitment and the Minnesota Satisfaction Questionnaire—to the 194 participants, after obtaining their informed consent. The inclusion criteria comprised physicians with more than one year of professional experience, who were actively employed at

the institution and directly involved in the treatment of adult COVID-19 patients. The exclusion criteria included physicians who only provided referred consultations, those who exclusively treated pediatric patients and those who offered care through teleconsultations.

The instrument used in this study consisted of three parts. The first section included a survey with 11 questions regarding sociodemographic data. The second section comprised the Spanish short version of the Minnesota Satisfaction Questionnaire ⁽¹⁸⁾, which contains 20 items rated on a 5-point Likert scale. The total score reflected the overall job satisfaction, with scores ranging from 61 to 80 indicating satisfaction and scores from 81 to 100 indicating high satisfaction. The extrinsic job satisfaction dimension included items 5, 6, 12 to 14 and 17 to 19, while the intrinsic dimension comprised items 1 to 4, 7 to 11, 15, 16 and 20. The third section consisted of a modified version of Meyer and Allen's Three Component Model of Commitment ⁽¹⁹⁾, which includes 21 items rated on a 6-point Likert scale, where 1 indicates "definitely disagree" and 6 indicates "definitely agree."

Statistical analysis

Data were analyzed using Stata 17. A descriptive analysis was performed to determine the relative and absolute frequencies of job satisfaction and organizational commitment. Measures of central tendency were calculated, and scatter plots were generated. Fisher's exact test was applied for qualitative variables, while ANOVA was used for quantitative variables. Pearson's correlation coefficient was employed to examine the relationship between the primary variables. Additionally, odds ratios (OR) were calculated to assess the associations between job satisfaction and organizational commitment, as well as between job satisfaction and sociodemographic variables.

Ethical considerations

This study was approved by two ethics committees: the Institutional Ethics and Research Committee of Instituto de Medicina Tropical (Institute of Tropical Medicine)

"Daniel Alcides Carrión" at Universidad Nacional Mayor de San Marcos (UNMSM), with certificate of ethical approval No. CIEI-2022-9, and the Ethics and Research Committee of Hospital Nacional Daniel Alcides Carrión, with certificate of ethical approval No. CEI-HNDAC. Ethical standards as outlined in the Declaration of Helsinki were adhered to throughout the research process.

RESULTS

This study presents the relationship between job satisfaction and organizational commitment among physicians who worked during the COVID-19 pandemic at a public hospital. The main findings are organized into the following areas: physicians' sociodemographic characteristics; the prevalence of job satisfaction and organizational commitment, analyzed according to their respective dimensions; and the variables associated with job satisfaction and organizational commitment.

A total of 194 physicians participated in the study by completing the questionnaires. The average age of the participants ranged from 29 to 46 years, with the majority being male (61 %). Additionally, 62 % of the participants were specialist physicians who had been working at the institution for more than one year.

Four types of employment contracts were observed, with the most common being those related to the treatment of COVID-19 patients. Overall, 53 % of participants were hired under Legislative Decree No. 276 (appointed workers), followed by 27 % under the *Contrato Administrativo de Servicios-COVID* (CAS-COVID - Administrative Services Contract-COVID). The mean number of working hours per week treating COVID-19 patients at the institution was 33 ± 17.2 , ranging from a minimum of 16 to a maximum of 50 hours. In contrast, the mean number of working hours per week in other healthcare facilities was 10.2 ± 16.8 . Among all participants, 30 % reported having received incomplete PPE or none at all. Furthermore, 85 % of the physicians confirmed receiving the COVID relief bonus provided by the government between July 2020 and March 2021 (Table 1).

Table 1. General characteristics of surveyed physicians according to job satisfaction in the treatment of COVID-19 patients

Characteristic	N (%)
Total	194 (100 %)
Age (mean \pm SD)	37.5 \pm 8.69
Sex	
Male	119 (61.30 %)
Female	75 (38.70 %)

Association between job satisfaction and organizational commitment among physicians who treated patients during the COVID-19 pandemic at Hospital Nacional Daniel Alcides Carrión, 2020-2021

Characteristic	N (%)
Marital status	
Single	105 (54.10 %)
Married	67 (34.50 %)
Widowed	0 (0 %)
Divorced	4 (2.10 %)
Cohabiting	18 (9.30 %)
Specialty	
Clinical	89 (45.90 %)
Surgical	105 (54.10 %)
Position held during the pandemic	
Resident physician	74 (38.10 %)
Specialist physician	120 (61.90 %)
Employment status	
CAS-COVID	52 (26.80 %)
CAS	18 (9.30 %)
Contract under Legislative Decree No. 276	103 (53.10 %)
Fixed-term contract	21 (10.90 %)
Years of service (mean ± SD)	7.5 ± 7.1
Hours/week treating COVID-19 patients at the institution	33.2 ± 17.2
Hours/week treating COVID-19 patients outside the institution	10.2 ± 16.8
Receipt of PPE	
Yes	134 (69.10 %)
No	60 (30.90 %)
Receipt of economic incentive for COVID-19	
Yes	164 (84.50 %)
No	30 (15.50 %)

In the descriptive analysis of organizational commitment, 91 % of physicians reported being committed to the institution during the pandemic. Regarding the dimensions of organizational

commitment, 93 % showed commitment in the affective and continuance dimensions, while 88 % demonstrated commitment in the normative dimension (Figure 1).

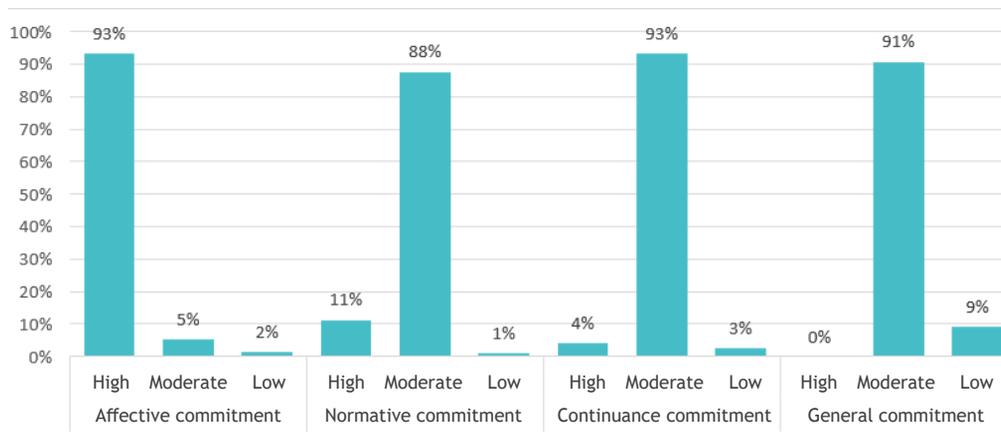


Figure 1. Frequency distribution of levels of organizational commitment across its dimensions

The descriptive analysis of job satisfaction revealed that physicians were generally satisfied with their work in the treatment of COVID-19 patients. Specifically, 71 % were

satisfied with the intrinsic, 55 % with the extrinsic and 64 % with the general dimension of job satisfaction (Figure 2).

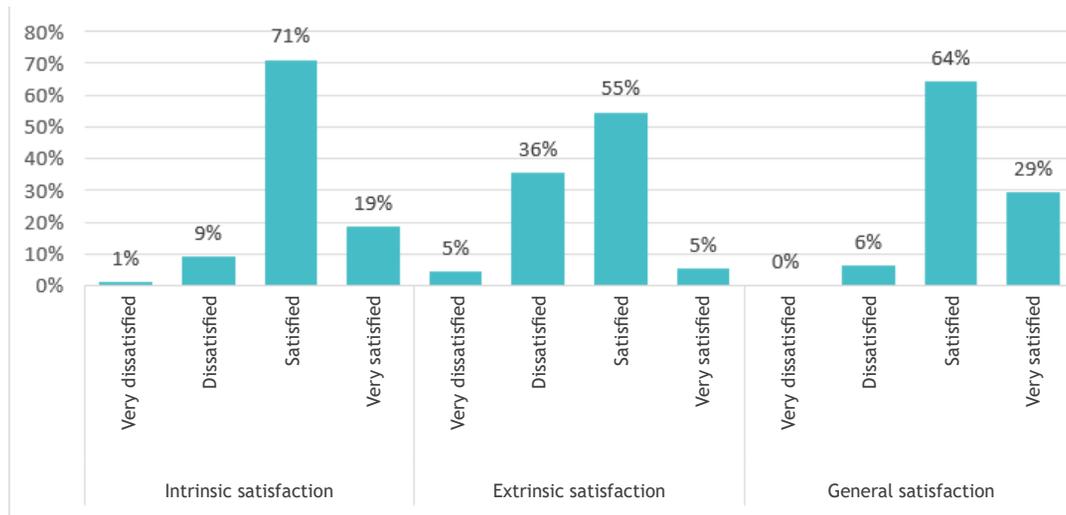
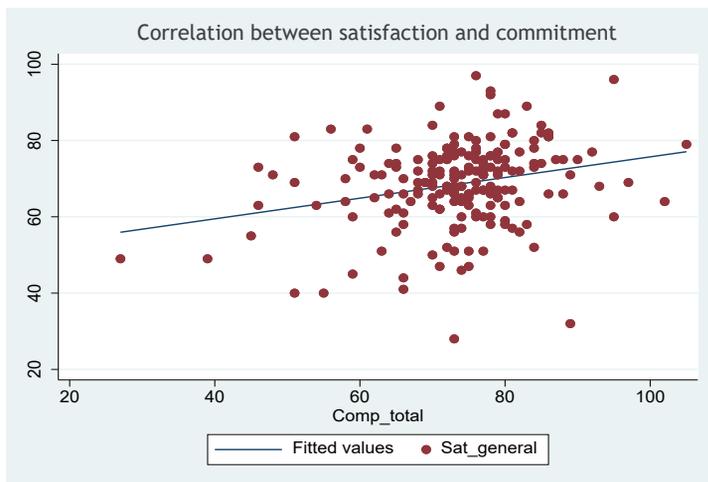


Figure 2. Frequency distribution of levels of job satisfaction across its dimensions

Association between job satisfaction and organizational commitment

Although no individuals showed a high level of organizational commitment, a statistically positive and significant correlation was found between job satisfaction and organizational commitment, with a *p* value of 0.003.

Additionally, the analysis of the numerical values of the main variables revealed a significant Pearson’s correlation ($r = 0.25, p < 0.05$), suggesting a positive relationship between job satisfaction and organizational commitment—i.e., higher job satisfaction scores tend to be associated with higher organizational commitment scores (Figure 3).



Commitment score	
Correlation results:	$r = 0.25$
	$p = 0.003$

Figure 3. Pearson’s correlation between the numerical values of job satisfaction and organizational commitment

Association between extrinsic job satisfaction and organizational commitment dimensions

In the affective dimension of organizational commitment, physicians who were satisfied with the way their boss treated employees and wished to continue their career at the institution were 3.26 times more likely to report job satisfaction (CI: 1.50-7.24) than those not wishing to do so. Additionally, physicians who regarded the institution as part of their family, rather than just their workplace, were 4.15 times more likely to report job satisfaction (CI: 1.59-11.65). The way coworkers get along with each other was also associated with a sense of feeling “at home” in the institution, with an OR of 3.56 (CI: 1.36-9.98).

In the normative dimension of organizational commitment, physicians who were satisfied with the institutional policies and felt a sense of loyalty to the institution were 3.25 times more likely to report job satisfaction compared to those who did not feel such loyalty (CI: 1.40-17.23). Furthermore, physicians who were satisfied with opportunities for career advancement and felt that they owed a lot to the institution were 2.72 times more likely to report job satisfaction (CI: 1.36-5.58).

In the continuance dimension of organizational commitment, physicians who were satisfied with their salary and workload, and remained at the institution because they believed they would not receive the same advantages and benefits elsewhere, were 2.78 times more likely to report job satisfaction compared to those dissatisfied with these factors. However, 60 % of the physicians considered leaving their jobs during the pandemic due to unsafe working conditions, despite having good salary offers (OR: 0.40; CI: 0.15-0.97).

Association between intrinsic job satisfaction and organizational commitment dimensions

In the affective dimension of organizational commitment, physicians who had the chance to work independently were 4.26 times more likely to report job satisfaction

compared to those who worked with colleagues they disliked or did not know. This sense of satisfaction was also associated with feeling proud to work at the institution (CI: 1.63-11.35). Physicians who experienced a sense of achievement at work were 2.71 times more likely to report job satisfaction and feel proud to work at the institution (CI: 1.05-7.03). Additionally, 54 % of physicians who lacked leadership opportunities reported not being emotionally committed to the institution.

The normative dimension of organizational commitment was particularly prominent in this study. It was found that when physicians had the opportunity to occasionally perform different tasks at the institution, they were more likely to feel that they owed a lot to the institution (OR: 2.55; CI: 1.31-4.94) and that it deserved their loyalty (OR: 3.24; CI: 1.58-6.64). Similarly, physicians who excelled in their work were 2.38 times more likely to feel guilty about leaving the institution (CI: 1.07-5.59). The freedom to treat COVID-19 patients was associated with a 2.74 times higher likelihood of reporting job satisfaction, reinforcing their sense of loyalty to the institution (CI: 1.32-5.63). Furthermore, using their skills in their work was significantly associated with feeling that they owed a lot to the institution, with an OR of 3.08 (CI: 1.46-6.49).

In the continuance dimension of organizational commitment, physicians who engaged in activities that aligned with their personal values and who felt they needed the job more than they wanted it were 3.39 times more likely to report job satisfaction (CI: 1.33-8.65).

The multivariate analysis revealed that the probability of job satisfaction in the treatment of COVID-19 patients was associated with the following variables: being male (OR: 2.40; CI: 1.15-5.0), having received full PPE from March 2020 to March 2021 (OR: 9.68; CI: 3.01-31.12) and having received the COVID relief bonus (OR: 4.52; CI: 1.76-11.53) (Table 2).

Table 2. Job satisfaction and sociodemographic variables (multivariate regression analysis)

Sociodemographic variable	Job satisfaction (Yes: 1, No: 0)	Bivariate regression OR (95 % CI)	Multivariate regression OR (95 % CI)
Age	The ability to stay busy at all times	3.14 (1.63-6.08)	
< 34 years	The opportunity my job gives me to hold a meaningful role within the community	2.08 (1.01-4.36)	
> 34 years	The way my boss treats employees	3.85 (2.00-7.44)	
	The ability of my supervisor to make effective decisions	2.75 (1.48-5.15)	
	The ability to carry out tasks that align with my personal values	2.16 (1.10-4.29)	

Sociodemographic variable	Job satisfaction (Yes: 1, No: 0)	Bivariate regression OR (95 % CI)	Multivariate regression OR (95 % CI)
	The job security offered by my position	2.12 (1.15-3.93)	
	The freedom to have my own judgment	2.92 (1.47-5.86)	
	The opportunity to apply my own methods	2.48 (1.29-4.75)	
	The way my coworkers get along with each other	2.61 (1.40-4.90)	
	The praise I receive for doing a good job	2.98 (1.59-5.59)	
	The sense of accomplishment I get from my job	2.16 (1.13-4.13)	
Sex			2.40 (1.15-5.00)
Male	The way the institutional policies are implemented	0.41 (0.17-0.95)	
Female	The opportunities for career advancement	0.43 (0.22-0.84)	
	The freedom to have my own judgment	0.65 (0.33-1.20)	
	The opportunity to apply my own methods	0.45 (0.29-0.87)	
	The working conditions	0.53 (0.24-1.10)	
Marital status			
Single	The way my boss treats employees	1.90 (1.01-3.59)	
Married	The way my coworkers get along with each other	2.39 (1.27-4.51)	
Cohabiting	The praise I receive for doing a good job	2.37 (1.27-4.42)	
Divorced	The sense of accomplishment I get from my job	3.22 (1.63-6.45)	
Specialty			
Clinical	The opportunity to delegate tasks to others at work	0.47 (0.24-0.91)	
Surgical	The freedom to have my own judgment	0.44 (0.21-0.87)	
	The sense of accomplishment I get from my job	0.51 (0.26-0.97)	
Employment status			
CAS	The job security offered by my position	2.41 (1.26-4.63)	
Contract under Legislative Decree No. 276	My salary and workload	0.42 (0.18-0.97)	
Fixed-term contract			
Years of service			
< 5 years	The way my boss treats employees	2.29 (1.19-4.46)	
> 5 years	The job security offered by my position	2.07 (1.11-3.88)	
	My salary and workload	0.39 (0.14-0.97)	
	The freedom to have my own judgment	2.03 (1.01-4.02)	
	The opportunity to apply my own methods	2.12 (1.08-4.20)	

Association between job satisfaction and organizational commitment among physicians who treated patients during the COVID-19 pandemic at Hospital Nacional Daniel Alcides Carrión, 2020-2021

Sociodemographic variable	Job satisfaction (Yes: 1, No: 0)	Bivariate regression OR (95 % CI)	Multivariate regression OR (95 % CI)
Hours/week treating COVID-19 patients			
< 12 hours	My salary and workload	0.42 (0.18-0.97)	
> 12 hours	The opportunity to apply my own methods	0.48 (0.24-0.94)	
Receipt of PPE			9.68 (3.01-31.12)
Yes	The job security offered by my position	2.41 (1.26-4.63)	
No	The opportunities for career advancement	0.38 (0.18-0.79)	
	The opportunity to apply my own methods	0.45 (0.23-0.89)	
	The praise I receive for doing a good job	0.25 (0.12-0.51)	
Receipt of COVID-19 relief bonus			
Yes	The ability to carry out tasks that align with my personal values	0.4 (0.17-0.98)	4.52 (1.76-11.53)
No	The opportunity to do things for other people		0.21 (0.05-0.78)
Position held during the pandemic		0.47 (0.22-0.97)	
Resident physician	The ability to stay busy at all times	2.17 (1.14-4.15)	
Specialist physician	The way my boss treats employees	2.89 (1.51-5.53)	
	The ability to carry out tasks that align with my personal values	2.89 (1.45-5.75)	
	The job security offered by my position	2.14 (1.14-4.06)	
	The freedom to have my own judgment	2.36 (1.20-4.64)	
	The opportunity to apply my own methods	2.49 (1.30-4.79)	

DISCUSSION

The COVID-19 pandemic had a significant impact on the job satisfaction and organizational commitment of healthcare professionals in hospital settings. In this study, the age of the participants ranged from 29 to 46 years, which reflects the large number of young physicians at the institution. Older physicians and those with comorbidities were assigned to remote work due to safety concerns, while the demand for patient care was rapidly increasing. Furthermore, male physicians outnumbered female physicians (119:75), a result consistent with findings reported by Almarashi, Khan ⁽²⁰⁾. Job dissatisfaction was notably prevalent among physicians who did not receive PPE while treating COVID-19 patients, with 30.90 % reporting such concern. This is somewhat lower than the findings of Alrawashdeh et al. ⁽²¹⁾, where 45.30 % of respondents reported the same issue, attributing it to insufficient resources to meet the growing patient demand. The lack of PPE was also linked to burnout syndrome ($p = 0.001$). Regarding the working hours per week treating COVID-19 patients, a weak association was observed between the number of working

hours and job satisfaction (OR: 0.48; CI: 0.24-0.94). This finding was consistent with Alrawashdeh's research, which suggested that longer working hours contributed to job dissatisfaction and an increased risk of burnout (OR: 1.58; CI: 1.02-2.47). Physicians who received economic incentives (COVID-19 relief bonus), on the other hand, were significantly more likely to report job satisfaction (OR: 4.52; CI: 1.76-11.53), a finding that aligns with that of Dinić et al. ⁽¹³⁾, who reported a significant association between economic incentives and job satisfaction ($p < 0.001$). Another notable finding in this study was the impact of working conditions. Physicians hired under CAS-COVID and Legislative Decree No. 276 were 2.41 times more likely to report satisfaction, particularly in terms of job security and the workload/salary ratio (OR: 2.41; CI: 1.26-4.63). However, studies by Giménez-Espert et al. ⁽²²⁾ and Treviño-Reyna et al. ⁽²³⁾ found weaker associations between these two variables, suggesting that instability in working conditions might limit the quality of patient care.

Job satisfaction and organizational commitment are crucial components of worker performance in any

institution⁽²⁴⁾, with extrinsic factors such as relationships with supervisors, institutional policies, salary, coworker interactions and job security playing a significant role⁽²⁵⁾. In this study, physicians who regarded their institution as part of their family were 4.15 times more likely to report job satisfaction than those who perceived it just as their workplace (OR: 4.15; CI: 1.59-11.65). Additionally, the way coworkers get along with each other was significantly associated with a sense of feeling “at home” in the institution (OR: 3.56; CI: 1.36-9.98). This is consistent with the findings of Chiang et al.⁽²⁶⁾, who reported that extrinsic satisfaction was more strongly associated with affective commitment among private hospital workers than among their public sector counterparts. In terms of normative commitment, during the pandemic, physicians who were satisfied with the institutional policies and felt a sense of loyalty to the institution were more likely to report job satisfaction (OR: 3.25; CI: 1.40-17.23). Similarly, those who had more opportunities for career advancement were 2.72 times more likely to report job satisfaction and feel that they owed a lot to the institution (OR: 2.72; CI: 1.36-5.58). This finding aligns with the work of Köse, Köse⁽²⁷⁾, who observed that Turkish physicians expressed job satisfaction due to recognition of their work during the pandemic. Regarding the association between continuance commitment and job satisfaction, physicians who remained at the institution—despite dissatisfaction with their salary or workload—because they believed they would not receive the same advantages and benefits elsewhere were 2.78 times more likely to report job satisfaction (OR: 2.78; CI: 1.30-5.96). However, 60 % of the physicians considered leaving their jobs during the pandemic due to unsafe working conditions, despite having good salary offers (OR: 0.40; CI: 0.15-0.97). Similar findings were reported by Abdelmoula⁽²⁸⁾, who also observed an association between continuance commitment and extrinsic job satisfaction.

On the other hand, intrinsic factors—closely aligned with workers’ personal values—play a key role in shaping organizational commitment. These include employee recognition, a sense of achievement at work, professional development, the chance to work independently and opportunities for career advancement⁽²⁹⁾. Physicians who had the chance to work independently were 4.26 times more likely to report job satisfaction and affective commitment. This contrasts with the study by Abdelmoula⁽³⁰⁾, which found no statistically significant association between these variables ($p = 0.005$). However, Claudine, Ngatuni⁽³¹⁾ reported a similar result, though the association was weak. In the normative commitment dimension, physicians who excelled in their work and received recognition—whether through economic incentives or other forms of acknowledgment—were 2.38 times more likely to report job satisfaction and feel guilty about leaving the institution (OR: 2.38; CI: 1.07-5.59). This result partially mirrors the findings of Wang et al.⁽³²⁾, where normative commitment

similarly prevailed among their workers, largely driven by the recognition for their achievements and the provision of economic incentives or benefits in acknowledgment of their efforts. However, with the return to normal life post-COVID-19, the reduction of these benefits had a direct impact on the physicians’ continuance commitment. A key finding in this study was the strong association between continuance commitment and job satisfaction. During the pandemic, physicians perceived their jobs more as a necessity than as a desire to remain at the institution (OR: 3.39; CI: 1.33-8.65). In this context, the study by Yu et al.⁽³³⁾ yielded similar results and conclusions. Thus, in this study, both components—and their respective dimensions—exerted either a positive or negative influence on the physicians’ behavior within the institution.

In conclusion, job satisfaction is directly proportional to organizational commitment across its various dimensions. The higher the job satisfaction among employees, the stronger their commitment to their institution. Furthermore, a significant association was observed between sociodemographic factors and job satisfaction, with the most notable predictors comprising being male, receiving full PPE and obtaining economic incentives during the treatment of COVID-19 patients throughout the study period.

Author contributions: The authors were responsible for the data collection, data analysis and writing of this manuscript.

Funding sources: The article was funded by the authors.

Conflicts of interest: The authors declare no conflicts of interest.

BIBLIOGRAPHIC REFERENCES

1. Comisión Económica para América Latina y el Caribe (CEPAL) - OPS. Informe del COVID-19: La prolongación de la crisis sanitaria y su impacto en la salud, la economía y el desarrollo social [Internet]. CEPAL; 2021. Available from: <https://www.cepal.org/es/publicaciones/47301-la-prolongacion-la-crisis-sanitaria-su-impacto-la-salud-la-economia-desarrollo>.
2. Ministerio de Salud (MINSA). Situación Actual “COVID-19” Perú - 2020 (31 julio) [Internet]. MINSA; 2020. Available from: <https://www.dge.gob.pe/portal/docs/tools/coronavirus/coronavirus310720.pdf>
3. Organización Panamericana de la Salud, Organización Mundial de la Salud. Actualización Epidemiológica: Nuevo coronavirus (COVID-19) [Internet]. OPS; 2020. Available from: <https://www.paho.org/sites/default/files/2020-02/2020-feb-14-phe-actualizacion-epi-COVID-19.pdf>
4. García Lirios C, Carreón Guillén J, Hernández Valdés J, Morales Flores ML. Contraste de un modelo del compromiso laboral en centros de salud pública. Acta Universitaria [Internet]. 2014;24(1):48-59.
5. Comisión Económica para América Latina y el Caribe (CEPAL). Los efectos económicos y sociales del COVID-19 en América Latina y

Association between job satisfaction and organizational commitment among physicians who treated patients during the COVID-19 pandemic at Hospital Nacional Daniel Alcides Carrión, 2020-2021

- el Caribe [Internet]. CEPAL; 2020. Available from: https://www.cepal.org/sites/default/files/presentation/files/200605_final_presentacion_parlamericasv_alicia_barcena.pdf
6. Instituto Peruano de Economía (IPE). 1.1 millones de empleos se perdieron en Lima en 2020 [Internet]. IPE; 2021. Available from: <https://www.ipe.org.pe/portal/1-1-millones-de-empleos-se-perdieron-en-lima-en-2020/>
 7. Gamero J, Pérez J. Perú, Impacto de la COVID 19 en el empleo y los ingresos laborales [Internet]. OIT; 2020. Available from: https://www.ilo.org/wcmsp5/groups/public/---americas/---rolima/documents/publication/wcms_756474.pdf
 8. Durham H, Smith M. El gerente eficaz. Buenos Aires: Sudamericana; 1996.
 9. Robbins SP, Judge T. Comportamiento organizacional. México: Pearson; 2017.
 10. Herzberg Z. Teoría de la Higiene. México: McGraw- Hill; 1989.
 11. Khalip NA. A three-component conceptualization of organizational commitment. *Int J Acad Res Bus Soc Sci* [Internet]. 2016;6(12):16-23.
 12. Abd-Elatif EE, Anwar MM, AlJifri AA, El Dalatony MM. Fear of COVID-19 and its impact on job satisfaction and turnover intention among Egyptian physicians. *Saf Health Work* [Internet]. 2021;12(4):490-5.
 13. Dinić M, Šantrić Miličević M, Mandić-Rajčević S, Tripković K. Health workforce management in the context of the COVID-19 pandemic: A survey of physicians in Serbia. *Int J Health Plann Manage* [Internet]. 2021;36(S1):92-111.
 14. Aminizadeh M, Saberinia A, Salahi S, Sarhadi M, Jangipour Afshar P, Sheikhbardsiri H. Quality of working life and organizational commitment of Iranian pre-hospital paramedic employees during the 2019 novel coronavirus outbreak. *Int J Healthc Manag* [Internet]. 2022;15(1):36-44.
 15. Yi M, Jiang D, Wang J, Zhang Z, Jia Y, Zhao B, et al. Relationships among thriving at work, organisational commitment and job satisfaction among Chinese front-line primary public health workers during COVID-19 pandemic: a structural equation model analysis. *BMJ Open* [Internet]. 2022;12(6):e059032.
 16. Porath C, Spreitzer G, Gibson C, Garnett FG. Thriving at work: Toward its measurement, construct validation, and theoretical refinement. *J Organ Behav* [Internet]. 2012;33(2):250-75.
 17. Bektaş G, Misirlioğlu V, İşçi E. The impact of job satisfaction on organizational commitment among generation Y healthcare employees. *Acibadem Univ Saglik Bilim Derg* [Internet]. 2021;12(4):760-7.
 18. University of Minnesota. Vocational Psychology Research: Minnesota Satisfaction Questionnaire, Spanish short version [Internet]. University of Minnesota; 1977. Available from: <https://vpr.psych.umn.edu/node/26>
 19. Zegarra del Rosario FE. Relación entre marketing interno y compromiso organizacional en el personal de salud del Hospital de San Juan de Lurigancho [graduate thesis]. Lima: UNMSM; 2014. Available from: <https://cybertesis.unmsm.edu.pe/handle/20.500.12672/3747>
 20. Almarashi AM, Khan K. Job satisfaction and organizational commitment of doctors: a case study of Saudi Arabia. *JP J Biostat* [Internet]. 2022;19:15-35.
 21. Alrawashdeh HM, Al-Tammemi AB, Alzawahreh MK, Al-Tamimi A, Elkholy M, Al Sarireh F, et al. Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. *BMC Public Health* [Internet]. 2021;21(1):811.
 22. Giménez-Espert M del C, Prado-Gascó V, Soto-Rubio A. Psychosocial risks, work engagement, and job satisfaction of nurses during COVID-19 pandemic. *Front Public Health* [Internet]. 2020;8:566896.
 23. Treviño-Reyna G, Czabanowska K, Haque S, Plepys CM, Magaña L, Middleton J. Employment outcomes and job satisfaction of international public health professionals: What lessons for public health and COVID-19 pandemic preparedness? Employment outcomes of public health graduates. *Int J Health Plann Manage* [Internet]. 2021;36(S1):124-50.
 24. Čulibrk J, Delić M, Mitrović S, Čulibrk D. Job satisfaction, organizational commitment and job involvement: The mediating role of job involvement. *Front Psychol* [Internet]. 2018;9:132.
 25. Rosta J, Aasland OG, Nylenna M. Changes in job satisfaction among doctors in Norway from 2010 to 2017: a study based on repeated surveys. *BMJ Open* [Internet]. 2019;9(9):e027891.
 26. Chiang Vega MM, Quijada García ML, Rivera Cerda MJ, Hidalgo Ortiz JP. Satisfacción laboral y compromiso organizacional: un análisis de percepción en el sector sanitario. *Salud trab (Maracay)* [Internet]. 2021;29(2):104-14.
 27. Köse SD, Köse T. The effect of job satisfaction on organizational commitment of healthcare personnel. *IOSR J Bus Manag* [Internet]. 2017;19(01):54-9.
 28. Abdelmoula L. The impact of extrinsic job satisfaction factors on the organizational commitment of accounting professionals in Tunisia. *Manag Sci Lett* [Internet]. 2020;3003-8.
 29. Gkiliati A, Saiti A. Job satisfaction in the health care sector: Empirical evidence from medical care in Greece. *Eur J Econ Bus Stud* [Internet]. 2016;5(1):7.
 30. Abdelmoula L. The impact of intrinsic satisfaction factors on affective, normative, and continuance commitment of accounting professionals in Tunisia. *J Account Manag Inf Syst* [Internet]. 2021;20(2):199-220.
 31. Claudine J, Ngatuni P. Effect of job satisfaction on organizational commitment: evidence from employees of a Special Mission Organization in Rwanda. *Huria Journal* [Internet]. 2021;28(1):127-54.
 32. Wang Q, Liu X, Wang T, Zhu Z, Yang L, Guo S, et al. Primary care provider's job satisfaction and organizational commitment after COVID-19 restrictions ended: a mixed-method study using a mediation model. *Front Psychol* [Internet]. 2022;13:873770.
 33. Yu X, Zhao Y, Li Y, Hu C, Xu H, Zhao X, et al. Factors associated with job satisfaction of frontline medical staff fighting against COVID-19: A cross-sectional study in China. *Front Public Health* [Internet]. 2020;8:426.

Corresponding author:

Juan Martín Robles Cuadros

Address: Jirón Miguel Echenique 459, Magdalena del Mar. Lima, Perú.

Telephone: +51 996 667 369

E-mail: jrobmed.3092@gmail.com

Reception date: September 19, 2023

Evaluation date: October 17, 2023

Approval date: November 2, 2023

© The journal. A publication of Universidad de San Martín de Porres, Peru.  Creative Commons License. Open access article published under the terms of Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>).

ORCID iDs

Juan M. Robles Cuadros

 <https://orcid.org/0000-0002-6911-9750>

Maritza Dorila Placencia Medina

 <https://orcid.org/0000-0003-3624-3461>

Ricardo Carreño Escobedo

 <https://orcid.org/0000-0003-3707-2764>