Original Research Article

Post-COVID job Stressors and Their Predictive Role on Mental Health: A Cross-Sectional Analysis Between Physicians and Nurses

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Abstract

Introduction: Health care providers face heightened stress and increased rates of anxiety and depression post-COVID-19. The pandemic, officially declared over in May 2023, continues to impact their wellbeing significantly, with ongoing mental health monitoring and tailored interventions crucial for support.
Objectives: The aim of this study was to describe the frequency of job stressors in a sample of Spanish health care providers post-COVID and to explore potential differences between physicians and nurses, hypothesizing that while both professional categories could experience similar job stressors, some of them could have a differential impact on the mental health of each subgroup.
Methods: This cross-sectional substudy is part of the MINDxYOU project. The data were collected from 191 health care providers from two regions in Spain. Participants completed the UNIPSICO test battery, used to assess job stressors, and questionnaires to evaluate perceived stress, depressive symptomatology, anxiety, and resilience. Descriptive analyses, bivariate correlations, and linear regression models were performed to compare the two professions that were the most representative of our sample: physicians (n = 82) and nurses (n = 54).
Results: The most frequent job stressors were workload, lack of positive feedback, and inequity in social interactions. Physicians reported worse outcomes in terms of workload, autonomy, role conflicts, inequity in social interactions, and work-family balance compared to nurses. Mobbing, despite not being very frequent, significantly predicted different mental health outcomes for both physicians and nurses. Inequity in social interactions and job satisfaction were significant predictors of physicians' mental health, while role ambiguity, interpersonal conflicts, and career turnover intentions predicted nurses' mental health.
Conclusion: As hypothesized, our findings highlight that certain job stressors (i.e., inequity in social interactions, conflicts in the workplace) might be affecting physicians' and nurses' mental health differently. Therefore, effective strategies addressing each subgroup's specific stressors would be necessary to prevent the development of burnout syndrome and other serious mental health conditions associated with occupational stress. These strategies would imply organizational changes in most cases.

Keywords

Job stress, occupational stress, health care professionals, nurses, physicians

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Introduction

Health care providers often experience high levels of sustained stress that present a risk factor for developing mental health problems (Cullen et al., 2020; Williamson et al., 2018). Despite their typically notable levels of resilience, the prevalence of anxiety and depressive disorders among these professionals has increased as a consequence of the COVID-19 pandemic, which exposed many health care workers to extremely difficult situations and forced them to make extra efforts (Greenberg et al., 2020; Karasu et al., 2021; Zenani et al., 2022). Although the pandemic was declared officially over in May 2023, it had profound effects on health care providers' wellbeing that are potentially long-lasting in many cases (Kian et al., 2023); for instance, Topuz et al. (2023) found that almost 40% of their sample of health care professionals were experiencing constant anxiety in the post-COVID-19 period, which highlights the need to continue to monitor their mental health so that effective strategies can be adopted when needed.

Review of Literature

According to the job demands-control-support model (Karasek & Theorell, 1990), excessive job demands or pressures (both physical and psychosocial) can have an impact on stress levels, although not as much as the sense of lack of control over the demands that are presented. In this regard, health care providers are subjected to a large number of different potential sources of stress in the workplace (i.e., job stressors). High workload, which in some cases includes night shifts, is commonly identified as one of the main stressors (Lamb et al., 2022; Marvaldi et al., 2021; Singh et al., 2020). Moreover, availability of resources (both human and technical) is a frequent concern for health care providers (Panagioti et al., 2018; Power, 2018; Singh et al., 2020). Additionally, they are exposed to interpersonal conflicts not only with patients—which have become increasingly common in the workplace (Chirico et al., 2022)—but also with supervisors and coworkers (Almost et al., 2016). In this context, high rates of mobbing have been reported among health workers in different health care settings (Bambi et al., 2018; Chatziioannidis et al., 2018; Fullerton et al., 2019; Norton et al., 2017).

Other aspects that have been identified as relevant in terms of health care provider work stress include loss of autonomy (i.e., not having freedom to choose how to do their work), role conflicts (i.e., being subjected to conflicting demands in relation to their position within the organization), and role ambiguity (i.e., not knowing precisely what they are expected to do) (Panagioti et al., 2018; Tarrant & Sabo, 2010). The lack of social support—from coworkers, supervisors, and the institution—is also a source of stress for health care professionals (Leo et al., 2021), and a particularly important one according to the job demands-control-support model (Dewe et al., 2012), as are feelings of inequity in their social interactions (i.e., perceptions of not being fairly compensated for their efforts in the workplace) (Foà et al., 2020; Guttormson et al., 2022) and the lack of adequate feedback from coworkers and supervisors (Naburi et al., 2017). For many health care professionals, work-family balance is also problematic (Singh et al., 2020), and some professionals also report concerns over their job stability and doubts regarding their possibilities of obtaining a promotion in the future, which are aspects that can also contribute to their stress.

On the whole, these job stressors and others can contribute to diminishing job satisfaction (Liu et al., 2019; Naburi et al., 2017), which, together with psychological distress, has been identified as a clear indicator of absenteeism and turnover intention in health care workers (Chirico et al., 2021; Lavoie-Tremblay et al., 2022). A number of recent studies have reported very high rates of turnover intention among these professionals (Lee, 2022; Poon et al., 2022), as well as an increase in the so-called "quiet quitting" post-COVID (i.e., employees limiting their efforts to fulfill assigned tasks), which indicates a psychological detachment from job-related responsibilities (Kang et al., 2023). Altogether, it seems clear that the mental health of health care providers is not only a problem for the individual but also one with organizational and societal implications. It is therefore crucial to clearly determine the job stressors affecting the mental health of these professionals so that effective strategies can be adopted, both to improve their wellbeing and to prevent a potential shortage of professionals (López-Del-Hoyo et al., 2023).

The primary aim of the present study was to describe the frequency of different job stressors in a sample of Spanish health care providers post-COVID. Considering that professionals may experience different degrees of some job stressors depending on their tasks and roles within their institution, as a secondary aim, the present work compared two subsamples (physicians vs. nurses) in order to determine the most frequent job stressors in each case and which of those were the strongest predictors of the professionals' mental health in terms of perceived stress, depressive symptomatology, anxiety, and resilience. A number of previous studies have compared both professionals. For instance, Llorca-Rubio (2017) found no significant differences between nurses and physicians in terms of the typology of job stressors to which they were exposed; however, some stressors could be stronger predictors of mental health outcomes in each case: perceived inequity in social interactions could be particularly relevant for physicians' mental health (Rivas-García et al., 2023), while the presence of conflicts in the workplace could be the strongest predictor of nurses' wellbeing (Roelen et al., 2018). Based on previous research conducted on Spanish health care professionals during the pandemic, stress levels were expected to be moderate-high in our sample, with no significant differences between nurses and

physicians (Ruiz-Fernández et al., 2020). Anxiety and depressive symptoms could be higher among nurses, according to the results reported by studies conducted during the pandemic (Cai et al., 2020; Cao et al., 2020; Lai et al., 2020), whereas resilience could be lower among these professionals (Marzo et al., 2022).

Methods

Design

Health care providers working in different health facilities of two Spanish regions (Aragon and Andalusia) who were enrolled in the MINDxYOU project (NCT05436717) were invited to participate in this cross-sectional substudy. The purpose of the MINDxYOU project is to study both the effectiveness and implementation of an online intervention to reduce stress and promote mental health among health care professionals (López-del-Hoyo et al., 2022). Following a stepped-wedge design, all the study participants started in a control phase that lasted 8 weeks. The data presented in this substudy were gathered during this phase.

Research Questions

Which are the most common job stressors among Spanish health care workers post-COVID? Are physicians and nurses exposed to different types of stressors? Can such stressors predict mental health outcomes such as perceived stress, anxiety, depressive symptomatology, and resilience?

Sample

The sample size of the MINDxYOU study was calculated following the recommendations for stepped-wedge designs (Hemming & Taljaard, 2016). Considering a moderate effect size ($d = 0.50$) of the intervention on the primary outcome (i.e., perceived stress), a statistical power of 80%, an alpha level of 0.050, an intraclass correlation coefficient of 0.04, and 6 clusters, as well as a 20% attrition rate, the total sample required for this study was 180 participants. However, given the high interest shown in participating in this project, this number was far exceeded and resulted in a total of 340 participants at baseline, 191 of whom agreed to participate in the present cross-sectional substudy, which was presented as an optional additional assessment.

Inclusion/Exclusion Criteria

Between October 2022 and February 2023, participants in the MINDxYOU project underwent a telephonic screening process performed by a mental health specialist in order to rule out the presence of severe mental disorders—depressive disorders, suicidal tendencies, bipolar disorders, panic disorders, anxiety or stress-related disorders, obsessive-compulsive disorders, and substance-related disorders—using the MINI v7.0.2 diagnostic interview (Sheehan et al., 1998), as well as other disorders that could affect the central nervous system and other medical, infectious, or degenerative illnesses that were not under control. The screening process also involved verification of the following inclusion criteria: (1) employment as a physician, nurse, physiotherapist, psychologist, nursing assistant, ambulance technician; an intern in any health-related profession; or employment in a nursing home assisting patients; (2) aged between 18 and 70; (3) ability to understand Spanish; (4) digital literacy and access to a smartphone, tablet, or personal computer with Internet connection; and (5) prospects of continued employment at the same health facility for the following 6 months.

Institutional Review Board Approval and Informed Consent

All the participants had previously received information about the study, which was also clearly presented on the project website (www.mindxyou.es), and electronically signed an informed consent form to participate. The assessment was conducted using Survey Monkey between March and April 2023, when all participants were allocated to the control phase of the study.

This study's reporting conforms to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement, guidelines for reporting cross-sectional studies. The substudy was conducted in accordance with the 1964 Declaration of Helsinki and its most recent amendments (7th revision, adopted by the 64th World Medical Association General Assembly, Fortaleza, Brazil). The study participants did not receive any compensation for taking part in this project, and all the data collected comply with the provisions of the Spanish Data Protection and Digital Rights Act 3/2018 (LOPD), which adapts Spanish legislation to the European Union's General Data Protection Regulation (GDPR). The Research Ethics Committee of the Autonomous Community of Aragon and the Ethics and Research Committee of Northeast Malaga evaluated and approved the study protocol in July 2022 (PI22/341).

Measures

The UNIPSICO test battery (Gil-Monte, 2016; Gil-Monte et al., 2016) was used to evaluate specific job stressors. This validated battery (included as supplementary table 1 in its original form, in Spanish) was developed to assess psychosocial factors affecting health care providers' mental health, and it has always presented good psychometric properties when used previously in different studies (Lavarello-Salinas, 2022; Llorca-Rubio, 2017). We followed the methods described in

Table 1. Sociodemographic Characteristics of the Sample.

	Total sample (N = 191)
Age, M (SD)	46.99 (10.25)
Sex, n (%)	
Male	29 (15.2%)
Female	162 (84.8%)
Marital status, n (%)	
Single	35 (18.3%)
Married	145 (75.9%)
Divorced	10 (5.2%)
Widowed	1 (0.5%)
Level of studies, n (%)	
Primary	8 (4.2%)
Secondary	10 (5.2%)
University	169 (88.5%)
Income, n (%)	
Less than the minimum wage	3 (1.6%)
1–2 times the minimum wage	75 (39.3%)
2–3 times the minimum wage	69 (36.1%)
More than 3 times the minimum wage	44 (23%)
Region, n (%)	
Aragon	106 (55.8%)
Andalusia	84 (44.2%)
Profession, n (%)	
Physician	82 (42.9%)
Nurse	54 (28.3%)
Psychologist	9 (4.7%)
Nursing assistant	18 (9.4%)
Physiotherapist	11 (5.8%)
Others	17 (8.9%)
Health facility, n (%)	
Primary care center	52 (27.2%)
Hospital	90 (47.1%)
Nursing home	25 (13.1%)
Others	24 (12.6%)
Type of contract, n (%)	
Permanent public sector employee	97 (50.8%)
Indefinite contract	29 (15.2%)
Temporary (more than 6 months)	23 (12%)
Temporary (less than 6 months)	8 (4.2%)
Project-based contract	1 (0.5%)
Freelance	1 (0.5%)
Others	32 (16.8%)
Intern in any health-related profession, n (%)	14 (7.3%)
Management position, n (%)	29 (15.2%)

Note. These results are reported without including missing data that was present in some study variables: age (n = 190), level of studies (n = 187) and region (n = 190).

Llorca-Rubio (2017), using 52 items distributed into 9 subscales (*autonomy, role conflict, role ambiguity, positive and negative feedback, workload, social support, interpersonal conflicts, inequity in social interactions,* and *resource availability*), in addition to 2 questions regarding *turnover intention* (organization and career) and measures of *work-family balance* (Netemeyer et al., 1996), *job satisfaction* (Gil-Monte, 2016), and the UNIPSICO 23-item scale to assess the frequency and interference of *mobbing* (Carretero & Luciano, 2013; Domínguez et al., 2011). Participants were also asked about how concerned they felt about their work stability and their expectations of being promoted in the future. The internal consistency of each measure in our sample ranged from acceptable (α = .715 in *positive feedback)* to excellent (α = .922 in *inequity in social interactions*), except for *autonomy* (α = .513) and *negative feedback* (α = .656).

For every subscale, a total score was obtained by calculating the average of the items. The scores ranged between 0 and 4, with 2 indicating a moderate level in every case. In some subscales, higher values implied a positive outcome (i.e., higher *autonomy*, lack of *role ambiguity*, more frequent *positive feedback* and *social support*, higher availability of *resources*, and a higher degree of *job satisfaction*); in the remaining subscales, higher scores reflected negative outcomes.

As part of the MINDxYOU project, every participant was asked to provide sociodemographic information (i.e., age, sex, marital status, studies, income) and answer job-related questions (i.e., profession, health facility, type of contract, management position, whether or not on a residency program), as well as the following questionnaires: the *Perceived Stress Questionnaire* (PSS-10; Cohen et al., 1983), the *Patient Health Questionnaire-9* (PHQ-9; Kroenke et al., 2001), the *General Anxiety Disorder-7* (GAD-7; Spitzer et al., 2006), and the *Connor-Davidson Resilience Scale* (CD-RISC; Connor et al., 2003). Higher scores in these questionnaires indicate higher levels of perceived stress, depressive symptomatology, anxiety, and resilience, respectively. The Spanish adaptation of each questionnaire was used, all of which showed good psychometric properties, including high internal consistency: $\alpha_{PSS-10} = 0.82$ (Remor, 2006); $\alpha_{PHQ-9} = 0.88$; (Diez-Quevedo et al., 2001); $\alpha_{GAD-7} = 0.89$ (García-Campayo et al., 2010); $\alpha_{CD-RISC} = 0.86$ (García León et al., 2018).

Data Analysis

Sociodemographic characteristics of the sample and the study variables were described using the mean (*M*) and standard deviation (*SD*), or the frequency and percentage when appropriate. Given that most of the health care workers were either physicians or nurses, these subgroups were compared in every variable using Student's *t* or the Chi squared test when appropriate.

Different multivariate linear regression models were carried out with two subsamples (nurses and physicians) and for different dependent variables (PSS-10, PHQ-9, GAD-7, and CD-RISC). The job stressors (UNIPSICO test battery subscales and complementary questionnaires) along with the two questions about turnover intentions were analyzed as potential predictors. Bivariate correlations were calculated before conducting linear regression models and all

the significant independent variables were included in the models following a forward stepwise method. The normality of each model was assessed using the Shapiro-Wilk test; when the normality of the residuals assumption was not met, we carried out logarithmic transformations, and a robust regression model (with the *robustbase* package and the *lmrob* function in R) was conducted in one case (CR-RISC in the subsample of nurses) in which normality was not met after the logarithmic transformation.

We conducted a sensitivity analysis of the multivariate regression models using G*Power 3.1.9.2 for each population (Nurses = 52 or Physicians = 82), with an alpha of 0.05, a power of 0.80, and for the different predictors of the final models depending on each dependent variable. An alpha level of 0.05 was set in all the analyses, which were performed using the SPSSv27.0 and R 4.3.0 statistical software packages.

Results

Sample Characteristics

Most of the 191 health care professionals who completed the survey were middle-aged women, married, with completed university studies and a salary equivalent to 1–3 times the minimum wage. Participants were similarly distributed in the two Spanish regions included in the study. Physicians and nurses accounted for the highest proportion of the sample (around 70%), with hospitals being the most common workplace, followed by primary care centers. Half of the sample were permanent public sector employees; a small number were interns in any health-related profession; and most participants did not occupy any management positions. These results are detailed in Table 1.

Job Stressors and Mental Health Outcomes

As shown in Table 2, our sample presented low frequency of stressors such *negative feedback* and *interpersonal conflicts*. *Mobbing* was also infrequent, although its interference was moderate. Problems with *work-family balance* and *role conflicts* were more common, while *inequity in social interactions* and *workload* were the most frequent stressors. Health care professionals also reported a relatively low level of *positive feedback* and a moderate level of *resource availability* and *social support*. They presented a relatively high level of *autonomy,* (lack of) *role ambiguity* and, overall, a moderate level of *job satisfaction*. *Turnover intentions* were low; more individuals were considering leaving their organization ($n = 29$, 15.7%) rather than their profession ($n = 14$, 7.6%). Study participants manifested a low level of concern related to their job stability, and most reported not knowing when their next promotion could take place. With regard to mental health outcomes, study participants showed moderate levels of perceived stress, low levels of depressive symptomatology and anxiety, and a notable degree of resilience (see Table 2).

Differences Between Physicians and Nurses in Job Stressors and Mental Health Outcomes

The sociodemographic profile of physicians and nurses was similar, although the latter were older ($t = -1.98$, $p = .050$) and had a lower income ($\chi^2 = 46.70$, $p < .001$). There were more interns among the physicians ($\chi^2 = 10.28$, $p = .001$), among whom management positions were slightly more common ($\chi^2 = 3.80$, $p = .051$). Both subgroups were equivalent in the remaining sociodemographic and job-related variables (all p values > .050).

As detailed in Table 2, certain differences were found in job stressors: *autonomy* was significantly lower for physicians, and *workload* was significantly higher among them, as well as problems with *work-family balance*, *role conflict*, and *inequity in social interactions*. Physicians also showed stronger intentions to leave their current organization within the following year, although no significant differences regarding career turnover intentions were observed. No other differences were found for the other job stressors assessed between the subgroups, or for mental health-related outcomes or for concerns regarding job stability (all p values > .050). Regarding job expectations, nurses were more likely to think that they would be promoted within the following year, while physicians tended to think that their promotion would occur in the longer term or never.

Predictive Variables of Mental Health Outcomes for Physicians and Nurses

The correlations between the study variables were statistically significant in almost every case, and always in the expected direction (see Supplementary table 2). Table 3 (complemented with Supplementary table 3) shows the linear regression models for both physicians and nurses. Perceived stress (PSS-10) was significantly predicted by *inequity in social interactions* and *job satisfaction* in the case of physicians, while for nurses, the predictive variables were *interpersonal conflicts* and *role ambiguity*. Depressive symptomatology (PHQ-9) was predicted by *job satisfaction* in physicians, and by *career turnover intentions* in nurses. Anxiety levels (GAD-7) were predicted by *mobbing* (frequency) and *inequity in social interactions* in the sample of physicians, while *career turnover intentions*, *interpersonal conflicts*, and *role ambiguity* were the predictors for nurses. Finally, regarding resilience (CD-RISC), *job satisfaction* was the only predictor in physicians, and it was predicted by the frequency of *mobbing* and *role ambiguity* in nurses.

Table 2. Job Stressors and Mental Health-Related Outcomes of the Study Sample, and Differences Between Physicians and Nurses.

	Total sample (N = 191)	Physicians (n = 82)	Nurses (n = 52)	t or χ² (p value)
UNIPSICO: Autonomy, M (SD) [0–4]	2.47 (0.62)	2.33 (0.57)	2.60 (0.68)	−2.48 (.014)
UNIPSICO: Role conflict, M (SD) [0–4]	1.76 (0.72)	1.91 (0.64)	1.63 (0.79)	2.25 (.026)
UNIPSICO: Role ambiguity, M (SD) [0–4]	2.94 (0.68)	2.86 (0.57)	2.99 (0.77)	−1.10 (.302)
UNIPSICO: Feedback, M (SD) [0–4]				
Positive feedback	1.43 (0.72)	1.34 (0.62)	1.38 (0.67)	−0.30 (.765)
Negative feedback	0.85 (0.57)	0.88 (0.54)	0.85 (0.55)	0.32 (.749)
UNIPSICO: Workload, M (SD) [0–4]	2.37 (0.78)	2.69 (0.63)	2.17 (0.82)	3.94 (<.001)
UNIPSICO: Social support, M (SD) [0–4]	2.14 (0.75)	2.04 (0.70)	2.12 (0.71)	−0.69 (.493)
UNIPSICO: Interpersonal conflicts, M (SD) [0–4]	0.86 (0.50)	0.92 (0.44)	0.86 (0.55)	0.67 (.507)
UNIPSICO: Inequity in social interactions, M (SD) [0–4]	2.28 (0.98)	2.56 (0.84)	2.08 (1.07)	2.94 (.006)
UNIPSICO: Resource availability, M (SD) [0–4]	1.93 (0.68)	1.82 (0.63)	2.01 (0.62)	−1.71 (.090)
Turnover intention (career), n (%)				1.75 (.782)
Definitely continuing	125 (67.6%)	50 (62.5%)	35 (70%)	
Probably continuing	32 (17.3%)	18 (22.5%)	7 (14%)	
Possibly continuing	14 (7.6%)	6 (7.5%)	5 (10%)	
Possibly leaving	7 (3.8%)	4 (5%)	2 (4%)	
Probably leaving	2 (1.1%)	0 (0%)	0 (0%)	
Definitely leaving	5 (2.7%)	2 (2.5%)	1 (2%)	
Turnover intention (organization), n (%)				12.44 (.029)
Definitely continuing	94 (50.8%)	37 (46.3%)	28 (56%)	
Probably continuing	42 (22.7%)	17 (21.3%)	15 (30%)	
Possibly continuing	20 (10.8%)	9 (11.3%)	3 (6%)	
Possibly leaving	17 (9.2%)	11 (13.8%)	1 (2%)	
Probably leaving	7 (3.8%)	5 (6.3%)	0 (0%)	
Definitely leaving	5 (2.7%)	1 (1.3%)	3 (6%)	
Work-family balance, M (SD) [0–4]	1.54 (0.74)	1.80 (0.73)	1.51 (0.66)	2.39 (.018)
Job satisfaction, M (SD) [0–4]	2.18 (0.68)	2.12 (0.68)	2.24 (0.61)	−1.02 (.308)
UNIPSICO-Mobbing, M (SD) [0–4]				
Frequency	0.36 (0.35)	0.39 (0.33)	0.34 (0.35)	0.93 (.354)
Interference	2.18 (1.01)	2.19 (1.06)	2.19 (1.03)	0.00 (.999)
Worries over job stability, M (SD) [0–4]	0.97 (1.32)	1.09 (1.38)	0.74 (1.23)	1.50 (.136)
Expected promotion, n (%)				15.29 (.004)
Within next year	53 (28%)	16 (19.8%)	16 (30.2%)	
Within the next 5 years	12 (6.3%)	11 (13.6%)	0 (0%)	
After 5 years	26 (13.8%)	14 (17.3%)	6 (11.3%)	
Never	20 (10.6%)	13 (16%)	3 (5.7%)	
Do not know	78 (41.3%)	27 (33.3%)	28 (52.8%)	
PSS-10, M (SD) [0–40]	16.96 (6.42)	18.11 (5.57)	16.07 (7.44)	1.72 (.089)
PHQ-9, M (SD) [0–27]	6.50 (4.55)	6.66 (4.50)	6.69 (5.17)	−0.03 (.975)
GAD-7, M (SD) [0–21]	7.22 (4.29)	7.55 (4.52)	7.26 (4.29)	0.37 (.710)
CD-RISC, M (SD) [0–40]	27.46 (7.51)	27.54 (7.14)	26.59 (8.01)	0.72 (.474)

Note. These results are reported without including missing data that was present in some study variables: social support (n = 190), interpersonal conflicts (n = 190), work-family balance (n = 190), inequity in social interactions (n = 190), availability of resources (n = 190), satisfaction (n = 190), and mobbing (n = 188).

Discussion

The findings of this study indicate that the most frequent job stressors in our sample of health care providers were workload, lack of positive feedback, and inequity in social interactions, which had previously been identified in a study conducted on Spanish health care workers (Llorca-Rubio, 2017) as well as in other studies (Bambi et al., 2018; Guttormson et al., 2022; Lamb et al., 2022; Marvaldi et al., 2021; Naburi et al., 2017; Singh et al., 2020) as significant contributors to stress and mental health problems in health workers. The moderate levels of perceived stress reported in our study seem to support this association. Addressing these job stressors would require the implementation of organizational strategies: investing in human resources would possibly be the most effective action to reduce workload, while communication and leadership training could be

Table 3. Linear Regression Models (Forward Stepwise Method) for Physicians and Nurses.

	B	SE	t	p
Physicians				
Model 1: PSS-10				
Intercept	17.65	3.57	4.95	<.001
Inequity in social interactions	2.00	0.79	2.54	.013
Job satisfaction	−2.25	0.99	−2.27	.027
Model 2: PHQ-9 *				
Intercept	2.66	0.25	10.69	< .001
Job satisfaction	−0.45	0.11	−3.96	< .001
Model 3: GAD-7				
Intercept	2.26	1.66	1.36	.177
Mobbing-frequency	3.56	1.68	2.12	.038
Inequity in social interactions	1.41	0.68	2.07	.043
Model 4: CD-RISC				
Intercept	19.15	2.70	7.09	< .001
Job satisfaction	3.98	1.24	3.20	.002
Nurses				
Model 5: PSS-10 *				
Intercept	3.01	0.31	9.60	< .001
Interpersonal conflicts	0.49	0.13	3.68	.001
Role ambiguity	−0.27	0.10	−2.77	.009
Model 6: PHQ-9 *				
Intercept	1.35	0.19	6.96	< .001
Career turnover intentions	0.28	0.10	2.78	.009
Model 7: GAD-7				
Intercept	7.40	2.35	3.14	.003
Career turnover intentions	1.21	0.52	2.34	.025
Interpersonal conflicts	2.52	0.88	2.87	.007
Role ambiguity	−1.38	0.65	−2.13	.040
Model 8: CD-RISC[†]				
Intercept	20.21	4.04	5.01	< .001
Mobbing-frequency	−6.71	2.02	−3.33	.001
Role ambiguity	3.22	1.06	3.04	.003

Note. * means that the model was calculated after conducting a logarithmic transformation on the dependent variable to meet the normality criterion. [†]means that a robust linear regression was conducted since normality was not met even after the logarithmic transformation. Further data of each model can be found in Supplementary table 3.

effective for improving communication and teamwork, and for reducing feelings of not being fairly compensated among the workers (Bakker et al., 2022; Mai et al., 2021). These measures could help to increase the sense of control that health workers have over their job-related demands and enhance social support in the workplace, both key aspects according to the job demands-control-support model (Dewe et al., 2012).

Furthermore, a number of positive outcomes were found with regard to job stressors. Again in line with Llorca-Rubio (2017), these were relatively good levels of autonomy and work-family balance, lack of role ambiguity, low frequency of negative feedback, and very infrequent interpersonal conflicts and mobbing. These are all variables that are clearly associated with good mental health outcomes (Almost et al., 2016; Bambi et al., 2018; Naburi et al., 2017; Panagioti et al., 2018; Singh et al., 2020; Tarrant & Sabo, 2010), which is consistent with the low levels of depressive and anxiety symptomatology observed in our study. Also, the notable levels of resilience reported by our study participants might be responsible for their relatively good mental health, since resilience has been clearly identified as a moderator of mental health in health care workers (Kunzler et al., 2020; Zenani et al., 2022). In contrast, role conflicts, social support, and resource availability, which have also been associated with health care providers' mental health, presented moderate levels. Job stability was not a concern among our participants, and most did not have clear promotion expectations.

Job satisfaction was moderate, similar to that reported in a previous work (Llorca-Rubio, 2017), which might be a result of a balance between the negative effects produced by the most frequent job stressors (i.e., workload, lack of positive feedback, and inequity in social interactions) and the protective effects of the abovementioned factors (e.g., autonomy and low frequency of conflicts). All these results are consistent with the turnover intentions reported, since a small proportion of the study participants were considering leaving their organization within the following year (around 16%), and even fewer had career turnover intentions (around 7%). These positive job-related outcomes—which, in turn, are associated with the relatively good mental health presented by our sample—can be considered at least partially related to the ending of the COVID-19 pandemic, since similar studies conducted in the previous years reported much worse results (Lee, 2022; Poon et al., 2022). Nonetheless, different authors have suggested that the effects of the pandemic on health care workers' wellbeing could be deep and lasting (Kian et al., 2023; Topuz et al., 2023), which could imply that our results may also be partially due to the characteristics of our sample (i.e., mostly healthy, functional professionals with stable employment).

When comparing physicians and nurses, the two most represented professions in the sample, some unexpected differences were observed regarding the frequency of job stressors based on the study by Llorca-Rubio (2017): physicians reported worse outcomes in terms of workload, autonomy, role conflicts, inequity in social interactions, and work-family balance. While some previous studies had reported that nurses experience some of these stressors in a high frequency (Guttormson et al., 2022; Ljevak et al., 2020; Piotrowski et al., 2022; Sarabia-Cobo et al., 2021), our results suggest that physicians are struggling more with these issues. They also presented stronger intentions to leave their current organization within the following year compared to nurses, and although no differences were observed in terms of career turnover intentions or mental health-related outcomes (i.e., perceived stress, anxiety and depressive symptoms, and resilience), these findings should alert us to the possible exposure of Spanish physicians to

certain job stressors at a frequency that, if sustained in the medium-long term, could contribute to the development of burnout syndrome and other serious mental health conditions associated with occupational stress, as reported in other studies. Policies aimed at enhancing resources in the Spanish health system are crucial for physicians and nurses —as well as other health workers—to be provided with safe, stimulating, and rewarding job positions in which job stressors are regularly monitored and organizationally addressed when required.

According to our findings, mobbing, despite not occurring very frequently compared to reports by previous studies (Bambi et al., 2018; Chatziioannidis et al., 2018; Fullerton et al., 2019; Norton et al., 2017), was the only significant predictor of mental health outcomes shared by physicians and nurses, which is in line with previous studies (Izdebski et al., 2023). The other predictive variables were different for each subgroup: inequity in social interactions and job satisfaction were significant predictors of physicians' mental health outcomes, while these were role ambiguity, interpersonal conflicts, and career turnover intentions in the case of nurses. Our findings could suggest that physicians and nurses may assign a different value to certain stressors, leading to a situation in which some of them are more impactful on their mental health than others. For instance, some previous studies have observed that being acknowledged by peers and the institution is highly valued by physicians (Rivas-García et al., 2023), while the presence of conflicts in the workplace might be particularly relevant for nurses' mental health (Roelen et al., 2018). Nevertheless, further evidence is required to assess the validity of this hypothesis.

Strengths and Limitations

The current study addresses the mental health of healthcare workers, a topic previously underexplored prior to the pandemic. Our findings emphasize the need to recognize specific stressors affecting these professionals to tailor effective interventions rather than relying on generic approaches. However, certain limitations must be taken into consideration when interpreting these findings. The first and most notable is that, as previously mentioned, this substudy was conducted with participants of the MINDxYOU project, for which a number of strict exclusion criteria (e.g., not presenting with severe mental health conditions, prospects of continued employment at the same facility for the following 6 months) were applied. Thus, our sample might not be fully representative of Spanish health care providers, owing to the likely overrepresentation of healthy individuals in stable employment. This could partially explain the relatively low levels of psychopathological symptomatology that were present in our sample, compared to those reported in previous studies. Moreover, the present study is exploratory in nature and is based on a questionnaire that participants of the MINDxYOU study completed optionally, hence no prior sample size calculation was performed. On the other hand, our results are based on self-reported measures, and therefore some bias is expected. Future studies conducted on larger samples of health care providers are required to provide a deeper understanding of job stressors in health care settings and, in turn, there is a need for adequate strategies for the promotion of good mental health in health care professionals.

Implications for Practice

The relevance of the present study lies in its research topic: the mental health of health providers in Spain post-COVID. Notable distinctions were observed in our study in relation to the specific job stressors impacting the mental wellbeing of physicians and nurses. This indicates that efforts to enhance the overall welfare of health care practitioners should not follow a one-size-fits-all approach. Instead, tailored strategies should be developed in order to address the primary stressors prevalent within each professional group's work environment. These strategies, which often entail changes within the organizational framework, should concentrate on bolstering a sense of fairness and job satisfaction among physicians, while concurrently alleviating issues of role ambiguity and conflict for nurses. Furthermore, it was determined that the frequency of workplace bullying significantly predicted mental health outcomes within both subsets. Consequently, health care institutions must give special attention to this matter, ensuring open and effective lines of communication with employees and fostering a workplace culture that prioritizes their wellbeing.

Conclusions

Pinpointing specific stressors associated with particular occupations could serve as a pivotal step in devising and enacting effective measures to foster mental wellbeing within the workplace. This study has discerned that the mental wellbeing of nurses and physicians is influenced by distinct job-related stressors. This observation implies that employing strategies that treat all health care providers as a uniform entity may oversimplify the intricate nature of the issue at hand. The endeavor to effect organizational change is imperative in addressing some of the most prevalent job stressors (e.g., workload, autonomy, inequity). However, in light of the favorable outcomes documented, these efforts can be complemented by individually tailored approaches aimed at equipping health care professionals with enhanced resilience.

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Author Contributions

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of Conflicting Interests

Ethical Statement

This sub-study was conducted in accordance with the 1964 Declaration of Helsinki and its most recent amendments. The Research Ethics Committee of the Autonomous Community of Aragon and the Ethics and Research Committee of Northeast Malaga evaluated and approved the study protocol in July 2022 (PI22/341).

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Supplemental Material

Supplemental material for this article is available online.

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