

Prevalence of Psychological Distress and Burnout among Physicians, Nurses, and Health Professionals during the COVID-19 Pandemic: A Comparative Cross-Sectional Multicentre Study

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Received: 03 Jan 2024; Accepted: 08 Feb 2024; Published: 15 Feb 2024

Citation: Kousouri M, Mabila CN, Nahmani A, et al. Prevalence of Psychological Distress and Burnout among Physicians, Nurses, and Health Professionals during the COVID-19 Pandemic: A Comparative Cross-Sectional Multicentre Study. *Int J Psychiatr Res.* 2024; 7(1): 1-8.

Introduction

The spread of a novel coronavirus (COVID-19) at the end of 2019 prompted a severe global health crisis [1]. The clinical manifestations of COVID-19 vary from mild respiratory tract symptoms to severe acute respiratory syndrome, and a substantial proportion of patients develop long-term complications [2]. The fast transmission speed of COVID-19 was a challenge for national healthcare systems and meant that the disease was quickly declared a pandemic [3], with the implementation of multiple safety measures including quarantine, isolation, and social distancing.

There have been several pandemics during the last two decades, including the severe acute respiratory syndrome coronavirus in 2002 [4], H1N1 influenza in 2009 [5], the Middle East respiratory syndrome coronavirus in 2012 [6], Ebola virus disease in 2013 [7], and Zika virus in 2015 [8]. All these health crises demanded an immediate and holistic response from healthcare systems, which had a detrimental effect on healthcare worker (HCW) mental health [9]. Constant anxiety, insomnia, depression, and burnout syndrome are strongly associated with work-related stress in work environments characterized by high workload, poor organization, and lack of rewards.

The magnitude of the COVID-19 pandemic was greater than that of many previous pandemics. COVID-19 spread to every country in the world and resulted in almost 600 million confirmed cases and 6.6 million deaths ("World Health Organisation, WHO Coronavirus (COVID-19) Dashboard,"). At the beginning of the pandemic, the unknown nature of the disease, the existence of only symptomatic treatments, fear of infection, and lack of protective measures meant that HCW faced difficulties balancing their personal, ethical, and professional responsibilities.

The psychological concept of burnout is a negative response to chronic workplace stress. The concept is relevant to all workplaces but in the late 1960s it began to be applied to HCW, who spend considerable time in intense contact with others [10]. A systematic review published just before the COVID-19 pandemic [11], concluded that more than half of the participants had already experienced burnout in many hospitals and in numerous countries.

HCW in mental healthcare institutions face particular workplace challenges. The stigma of mental health work, the need to establish therapeutic relationships with patients, threats of violence from patients, and the threat of patient suicide are factors that make

HCW in these institutions more vulnerable to burnout than other HCW [12]. Moreover, at the beginning of the COVID-19 pandemic, attention was focused on general healthcare settings that provided first-line treatment for adult inpatients; less attention was paid to HCW specializing in mental health.

The aim of the present study was to: (1) compare the extent of burnout in a large representative sample of healthcare personnel working in two public hospitals in Paris: one general university hospital with substantial experience in crisis treatment and one psychiatric reference hospital that treated all psychiatric patients with COVID-19 in northern Paris, and (2) explore factors associated with burnout by considering personal and work-related characteristics, as well as COVID-related factors.

Methods

Study Design, Setting, and Participants

We conducted an anonymous cross-sectional survey. Participants comprised all HCW working in the intensive care unit (ICU), the hepato-gastro-enterology department, the endocrinology department, and the radiology department of the Bichat Claude-Bernard University Hospital and all HCW working in all four departments of the Roger Prévôt Public Psychiatric Hospital in Paris, France. The survey was comprehensively developed by a statistics expert. All survey instructions and instruments were in French. Participants from all departments were asked to attend two meetings in April 2020; at the first meeting, information about the study was provided and at the second meeting, completed surveys were collected. The meetings were organized to fit in with the work schedules of all participants. We focused on HCW in the four occupations that comprise primary care teams: providers (physicians, nurse practitioners, and physician assistants), registered nurses, clinical associates (e.g., licensed practical nurses, medical technicians), and administrative clerks. We chose the ICU department because ICU teams constituted front-line workers during the COVID-19 pandemic. We chose the two medical departments because their teams often have to support emergency department HCW. Finally, we chose a psychiatric public hospital and not a psychiatric department to avoid the statistical bias that can insert the direct implication that has a medical department in the organization of a general hospital. No financial incentives were provided for survey participation. The survey items assessed participant demographics such as gender, job category, affiliation, years of experience, and work-related factors (i.e., the busiest period of COVID-19-related work, the number of working days per week during the busiest period, subjective sense of being overwhelmed or supported, assessed using a 6-point Likert scale). To ensure participants' anonymity, age was recorded in 5-year categories.

Measurements

Maslach Burnout Inventory (MBI)

The 22-point MBI [13,14] was used. The MBI assesses three dimensions of the burnout syndrome: emotional exhaustion (EE), which includes feelings resulting from the exhaustion

of emotional resources (9 items); depersonalization (DP) or cynicism, which measures an impersonal and carefree attitude to people (5 items); and personal achievement, which measures feelings of competence and success in working with other people (8 items). The MBI items are assessed on a 7-point frequency scale from "never" to "every day" and the total score for each dimension is categorized as low, average, or high. The scores on each subscale are not combined into a global score: they are considered separately and have different cutoff points. We used a validated French version of the MBI [15,16]. Burnout was defined as a high level of EE (score >27) and/or a high level of DP (score >10). We separately considered the frequency of participants with a low sense of personal accomplishment (PA) (score <31) [17]. Maslach et al. [14] noted that PA is an independent subscale that does not correlate with the EE and DP subscales. Thus, we did not include low PA scores (≤ 33 , the most commonly used cutoff) as a definition of burnout.

General Health Questionnaire (GHQ-12)

The GHQ-12(Reid, 1973) assesses minor psychological distress. It can be used both to identify individuals with a diagnosable psychiatric disorder or as a general measure of psychiatric well-being [18]. Psychological distress is evaluated on three dimensions: GHQ-1 (social dysfunction and anhedonia; 6 items), GHQ-2 (depression and anxiety; 4 items), and GHQ-3 (loss of confidence; 2 items) [19].

We used a bimodal scaling system, in which the four options for each question are scored 0, 0, 1, and 1, respectively. A score of >4 indicates a strong probability of clinically significant psychological distress. We used a validated French version of the GHQ-12 [20].

Statistical analysis

Statistical analysis was conducted using the Statistical Package for the Social Sciences (version 10.0; SPSS Inc., Chicago, IL, USA). The data were presented as frequency (qualitative variables), mean, and standard deviation (quantitative variables).

Student's t-tests were performed to examine the differences in continuous variables. The significance of the difference in categorical variables was assessed using the chi-square test. First, a descriptive analysis of the most representative variables was developed considering sociodemographic aspects. Differences between groups were calculated using chi-square analyses. Qualitative variables were subsequently compared using chi-square or Fisher exact tests. Specific differences between the means were examined using the t-test. Afterwards we studied the association between each area of burn-out and each factor of the independent variables by estimating unadjusted ORs and 95% CIs using univariate logistic regression models. And subsequently, multivariate logistic regression models for the same outcomes yielded adjusted ORs and 95% CIs. The alpha level was set to 0.05 for all effects.

Ethical Approval

The study protocol was approved by the institutional review board

of Sigmund Freud Private University (reference no. 2020-015). All research methods were performed in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Completion of the surveys was deemed to indicate participant consent.

Results

Sample characteristics and response rates

A total of 428 of 631 (67.8%) HCW in the targeted departments completed the questionnaires.

A total of 182 of 205 (88.7%) HCW in Roger Prévôt Public Psychiatric Hospital completed the questionnaires and 246 of 426 (57.7%) HCW in Bichat Claude-Bernard University Hospital completed the questionnaires.

Demographic and work-related information

Women comprised 61.8% of participants. The median age category was 35–40 years. The demographic and professional characteristics of participants in the two hospital samples are shown in Tables 1 and 2. There were substantial differences between participants in the two hospital in terms of experience, employment status, and shift work. An age distribution of the whole sample showed a wide distribution across all the age categories except that of ≥ 56 years. In terms of professional category, nurses accounted for almost 50% of the participants.

Table 1: Comparison of job characteristics for health professionals of the two institutions.

	Bichat Claude-Bernard	Roger Prévôt	p
Total participants	246	182	
Physicians	17 (6.9%)	12 (6.6%)	ns
Nurses	117 (47.5%)	76 (41.7%)	ns
Nursing assistants	53 (21.5%)	50 (27.4%)	ns
Social care workers	4 (1.6%)	7 (3.8%)	ns
Administrative workers	5 (2%)	22 (12%)	ns
Patient transport service workers	32 (13%)	3 (1.6%)	ns
Security service workers	18 (7.3%)	12 (6.6%)	ns

Table 2: Comparison of sociodemographic data for health professionals of the two institutions.

	Bichat Claude-Bernard	Roger Prévôt	p
Men/Women (percentage)	104/142 (42.2%/57.7%)	65/117 (35.7%/64.3%)	
Service setting during the pandemic			
ICU	41 (16.6%)		
Regular hospital care	152 (61.7%)	129 (70.8%)	
Health and social care centre		31 (17%)	
Administration and others	53 (21.5%)	26 (14.2%)	
Experience (years)			
Mean (SD, min–max)	16.3 (11.5, 2–38)	10.1 (7.16, 0.3–25)	<0.001

Employment status			
Temporary	61 (24.8%)	60 (32.8%)	<0.01
Permanent	175 (71.2%) 10 professionals without responses	122 (67%)	<0.01
Type of shift			
Fixed morning	152 (61.7%)	149 (81.8%)	<0.001
Fixed night	65 (26.4%)	18 (9.9%)	<0.0001
Fixed morning with night	29 (11.7%)	15 (8.3%)	ns
Total participants	246	182	

ICU, intensive care unit; SD, standard deviation.

The extent of psychological distress (MBI, GHQ-12 scores)

The prevalence of burnout is shown in Table 3 and Figure 1. A total of 145 HCW (33.9%) fulfilled the MBI criteria of having simultaneously high EE, high DP, and low PA. This number can be higher: 256 (59.8%) if we used the criteria reported by Thomas K. [21] and others researchers having said that high score for either EE or DP but not a low score in personal accomplishment scale can distinguish the clinically burned-out from the non-burned-out.

Table 3: Maslach Burnout Inventory subscale levels for the total sample and each institution.

MBI subscales	All participants n (%)	Bichat Claude-Bernard University Hospital n (%)	Roger Prévôt Public Psychiatric Hospital n (%)	p
Emotional exhaustion	428	246	182	
Low	97 (22.7)	49 (19.9)	48 (26.4)	p = 0.08
Medium	123 (28.7)	65 (26.4)	58 (31.9)	p = 0.1
High	208 (48.6)	132 (53.6)	76 (41.7)	p = 0.01
Depersonalization				
Low	112 (26.1)	84 (34.1)	28 (15.4)	p = 0.001
Medium	141 (32.9)	76 (30.9)	65 (35.7)	p = 0.2
High	175 (40.9)	86 (34.9)	89 (48.9)	p = 0.000
Personal accomplishment				
Low	126 (29.4)	52 (21.1)	74 (40.7)	p = 0.000
Medium	145 (33.9)	73 (29.7)	72 (39.5)	p = 0.02
High	157 (36.7)	121 (49.2)	36 (19.8)	p = 0.000

The prevalence of psychological morbidity evaluated using the GHQ-12 score (GHQ-12 ≥ 4) was 35.2% (151 participants). There was no significant difference in GHQ-12 scores between participants in the two hospitals. In contrast, there were significant differences between participants in the two hospitals on all MBI subscales (Table 3). Of participants, 208 (48.6%) had high scores on the EE subscale of the MBI. There was a significant difference in scores on this subscale between participants in the two hospitals (53.6% vs 41.7%, p = 0.01), with those in the general university hospital scoring highest. Of participants, 175 (40.9%) had high scores on the DP subscale of the MBI. Examination of the higher and lower cutoff values for this subscale showed a significant difference between participants in the two hospitals, with those in the psychiatric hospital scoring highest. Of participants, 126 (29.4%) had high scores on the PA subscale of the MBI (in contrast with the other subscale, a low PA score indicates burnout). On this subscale, there were significant differences between participants in

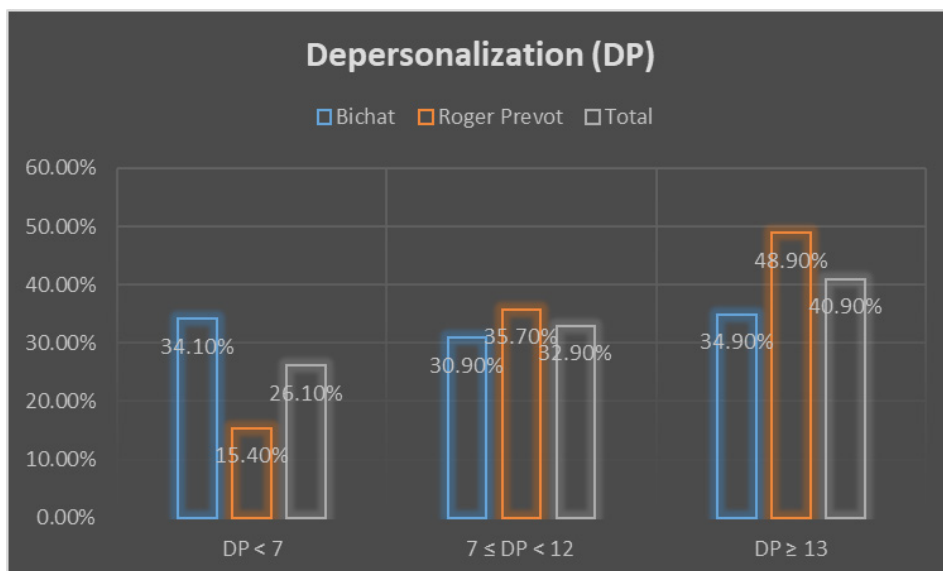
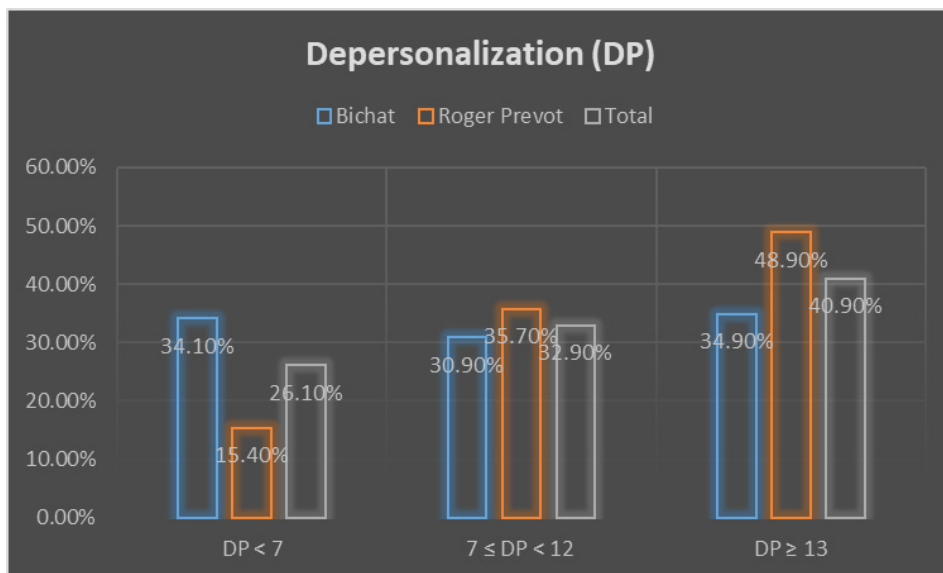
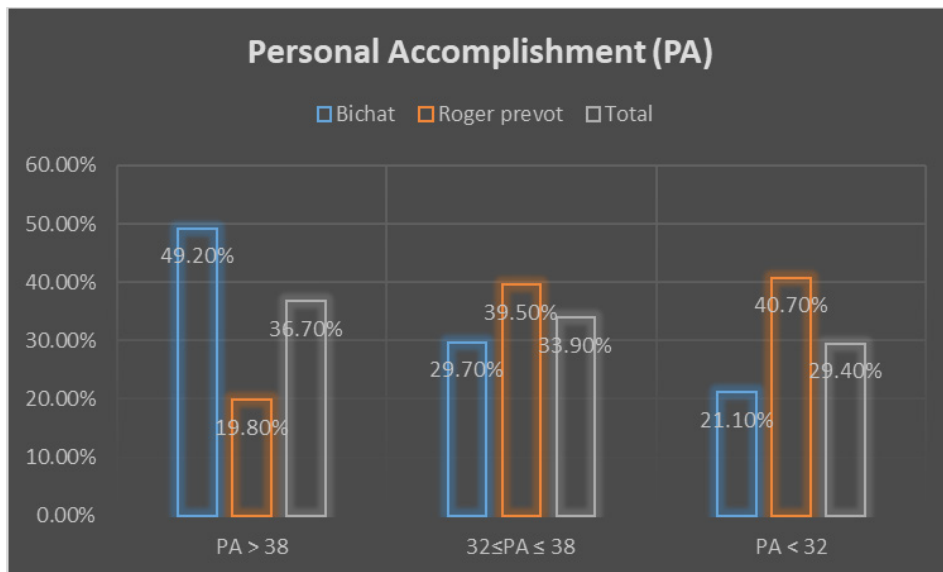


Figure 1: Histograms of Maslach Burnout Inventory subscale scores for the two samples.

Table 4: Distribution of MBI mean subscale scores according to job and sociodemographic characteristics.

Characteristics	n	Emotional exhaustion		Depersonalization		Personal accomplishment	
		Mean	p	Mean	p	Mean (SD)	p
Gender							
Male	169	26.8		9.6		31.6	
Female	259	29.8	0.04	10.7	0.07	33.5	0.03
Age (years)							
20 – < 40	135	24.5		9.1		33.9	
40–50	191	25.9		11.8		29.8	
>50	102	32.1	0.03	11.2	0.3	35.6	0.02
Occupation							
Physician	29	26.8		9.8		21.7	
Nurse	193	34.9		12.8		18.8	
Nursing assistant	53	33.8		13.1		33	
Social care	11	23.9		8.7		32.8	
Administration	27	21.9	0.01	7	0.01	31.9	0.001
Patient transport service	35	31.1		9.1		30.9	
Security services	30	25.9		8.1		32.9	
Service setting during the pandemic							
ICU	41	27.6		8.6		35.9	
Regular hospital care	191	31.8		12.8		27.2	
Psychiatric department	135	35.9		15.8		24.7	
Health and social care centre	23	25.9	0.001	8.7	0.000	34.8	0.00
Administration and others	38	23.8		7.9		32.9	
Professional experience (years)							
<2	35	30.4		9.8		30.8	
2– < 5	68	28.8		7.3		33.9	
5–15	102	33.7	0.03	12.3	0.04	25.8	0.02
>15	223	31.7		13.8		26.9	
Employment status							
Permanent	341	27.5		10.1		32.4	
Temporary	87	36.1	0.00	13.8	0.00	25.6	0.00
Type of shift							
Fixed morning	198	26.8		10.6		28.8	
Fixed night	89	39.8		17.9		25.8	
Fixed morning with night	141	32.1	0.00	12.8	0.00	30.5	0.00

ICU, intensive care unit; MBI, Maslach Burnout Inventory; SD, standard deviation.

the two hospitals for all cutoff points, with those in the psychiatric hospital scoring lowest.

We stratified participants according to different independent variables that we aimed to evaluate (Table 4). Female participants had higher EE and DP scores than male participants. Regarding age, older participants showed the highest scores on the EE subscale but better scores on the PA subscale.

Regarding occupational type, nursing assistants had the highest scores on the EE and DP subscales and nurses had the lowest score on the PA subscale. It is noteworthy that ICU personnel had better scores on all MBI subscales, but 32.4% scored >4 on the GHQ-12.

Number of years of professional experience was directly correlated with higher EE and DP scores. In addition, temporary employment status and fixed night shift status correlated with higher scores on the EE and DP subscales and lower scores on the PA subscale.

Multivariate Logistic Regression Analysis

The results of the multivariate logistic regression analysis are shown in Table 5. The adjusted odd ratios indicated that being a nurse (2.1; 95% confidence interval [CI] 1.8–3.1) working in

the psychiatric hospital (2.3; 95% CI 1.8–4.5), working in regular hospital care (2.1; 95% CI 1.6–3.1), working on fixed night shifts (2; 95% CI 1.8–2.8), and temporary employment status (1.8; 95% CI 1.2–2.1) increased the risk of EE.

Almost the same pattern was observed for the risk of high cynicism (DP). The HW of the psychiatric hospital presents more cynicism than in the general hospital (2.1; 95% CI 1.6–3.1) = The risk of experiencing low PA was higher in nurses (2.4; 95% CI 1.5–3.7), those working in regular hospital care (2.2; 95% CI 1.9–3.5), fixed night shift workers (1.8; 95% CI 1.1–2.3), and those with temporary employment status (2.1; 95% CI 1.4–2.5). Contrarily, working in administration or in social care services was associated with a lower risk of expression of EE or DP.

Discussion

France is a high-income country with universal healthcare coverage (Sécurité Sociale) for almost 88% of the population, which is rare among global healthcare systems [22]. In 2019, €167.0 billion was reimbursed by general national health insurance across the whole population [23]. Consequently, the French population has very high expectations and trust regarding the healthcare system.

Table 5: Multivariate logistic regression results for MBI subscale scores according to job and sociodemographic characteristics.

Characteristics	n (%)	Emotional exhaustion		Depersonalization		Personal accomplishment	
		Adjusted OR (95% CI)	p	Adjusted OR (95% CI)	p	Adjusted OR (95% CI)	p
Gender							
Male	169	[Ref.]		[Ref.]		[Ref.]	
Female	259	1.41 (1.1–1.6)	0.031	1.09 (0.7–1.5)	0.2	0.8 (0.6–1.07)	0.08
Age (years)							
20–40	135	[Ref.]		[Ref.]		[Ref.]	
40–50	191	1.2 (0.95–1.4)	0.04	1.4 (0.8–1.9)	0.03	0.8 (0.4–1.1)	
>50	102	1.09 (0.8–1.45)		1.2 (0.7–1.5)		1.5 (1.1–2.1)	0.03
Occupation							
Physician	29	[Ref.]		[Ref.]		[Ref.]	
Nurse	193	2.1 (1.8–3.1)		2.3 (2.1–2.9)		2.4 (1.5–3.7)	
Nursing assistant	53	1.9 (1.6–2.5)		2.5 (2–4.5)		1.8 (1.2–2.8)	
Social care	11	0.8 (0.3–1.1)	0.001	0.9 (0.6–1.4)	0.001	0.8 (0.5–1.4)	>0.00
Administration	27	0.7 (0.2–0.9)		0.8 (0.5–1.4)		0.5 (0.6–1.4)	
Patient transport service	35	1.1 (0.7–1.3)		0.6 (0.3–1.1)		0.6 (0.3–1.2)	
Security services	30	0.9 (0.6–1.2)		0.9 (0.4–1.5)		0.7 (0.3–0.9)	
Service setting during the pandemic							
ICU	41	[Ref.]		[Ref.]		[Ref.]	
Regular hospital care	191	2.1 (1.6–3.1)		1.8 (0.9–2.7)		2.2 (1.9–3.5)	
Psychiatric department	135	2.3 (1.8–4.5)	0.001	2.1 (1.6–3.1)	>0.00	1.8 (1.2–2.6)	>0.00
Health and social care centre	23	0.8 (0.4–1.3)		0.7 (0.2–1.4)		0.9 (0.6–1.4)	
Administration and others	38	0.7 (0.4–0.9)		0.6 (0.4–0.9)		0.7 (0.5–1.1)	
Professional experience (years)							
<2	35	[Ref.]		[Ref.]		[Ref.]	
2–5	68	0.8 (0.5–1.2)		0.6 (0.4–1)		0.7 (0.5–1.2)	
5–15	102	1.7 (1.2–1.9)	0.06	1.3 (0.7–1.1)	0.3	1.8 (1.1–2.2)	0.3
>15	223	1.6 (1.1–1.8)		1.8 (0.9–2.1)		1.3 (0.9–1.8)	
Employment status							
Permanent	341	[Ref.]		[Ref.]		[Ref.]	
Temporary	87	1.8 (1.2–2.3)	0.02	1.2 (0.9–1.6)	0.6	2.1 (1.4–2.5)	0.04
Type of shift							
Fixed morning	198	[Ref.]		[Ref.]		[Ref.]	
Fixed night	89	2 (1.8–2.8)	0.01	2.3 (1.8–2.7)	0.03	1.8 (1.1–2.3)	0.02
Fixed morning with night	141	1.8 (1.2–2.1)		1.8 (1.2–2.4)		1.2 (0.5–1.7)	

CI, confidence interval; ICU, intensive care unit; MBI, Maslach Burnout Inventory; OR, odds ratio; Ref., reference.

The COVID-19 pandemic placed substantial economic pressure on this publicly financed general healthcare system, and the resilience of the system was totally dependent (especially at the start of the pandemic) on the ability of HCW to restructure direct patient care by providing up-to-date health-related information, promoting infection prevention and vaccination measures, designating administrative leadership, and managing all the other essential public health issues not related to the pandemic. Both at the start of the pandemic and many months after, many changes occurred in the healthcare system, such as job reorganization, departmental changes, suspension or expansion of departments, and changes in day and night shift schedules. These changes affected all HCW. The main aim of the present study was to compare all aspects of psychological distress experienced by HCW in one psychiatric and one general hospital funded by the national healthcare system in France. These two hospitals were selected to evaluate the effects of the experience and the expression of burnout in HCW. Bichat Claude-Bernard University Hospital is a tertiary institution with three main departments (medical, surgical, and cardiac) as well as a large infectious diseases department that is responsible for the management of infectious and tropical diseases under the direction of the Ministry of Public Health. In contrast, the Roger Prévôt Public Psychiatric Hospital is a specialist mental health

hospital that provides care to patients in northern Paris. During the COVID-19 pandemic all clinical COVID-19 cases in northern Paris presenting with psychiatric symptomatology were treated at the Roger Prévôt Hospital.

We observed that HCW showed a high frequency of burnout. Of the total participants, 48.6%, 40.9%, and 29.4%, respectively, exceeded the “high” cutoff level for EE and DP and exceeded the “low” cutoff level for PA. A meta-analysis of studies of burnout in HCW published in 2018 [12] (1 year before the COVID-19 pandemic) found slightly lower prevalence for EE (i.e., above the “high” cutoff for EE) (40% vs 48.6%) and much lower prevalence for DP (i.e., above the “high” cutoff for DP) (22% vs 40.9%) and PA (i.e., above the cutoff for low levels of PA) (19% vs 29.4%). Compared with pre-pandemic levels, psychological distress levels, as evaluated with the GHQ-12, seem slightly higher after the pandemic (29.5% [24] and 25.4% [25] vs 32.4% in the present study).

This predominance of healthcare professionals is attributable to the characteristics of this pandemic, notably its rapid spread, uncertain scientific knowledge, severity of symptoms, contamination and deaths among caregivers; these factors weigh down the potential psychic impact on healthcare professionals [26]. Some authors

have noted that the workstation is considered to be at risk, as contact with contaminated patients can increase infection-related anxiety, feelings of exhaustion and being overwhelmed at work, and even the onset of psychiatric manifestations, notably those of post-traumatic stress disorder (PTSD).

In addition, for caregivers working in psychiatric hospitals, the fact that they have to deal with a particularly difficult category of patients, due to psychiatric disorders that make it virtually impossible to comply with barrier measures, is a factor that increases psychological distress, which may explain the high incidence of burnout.

Another interesting finding in this study was the difference between participants in the two hospitals. There was a statistically significant difference on all subscales of the MBI but no significant difference in the number of participants who obtained GHQ-12 scores >4. This equitable distribution of risk among healthcare professionals between the two hospitals has already been noted in previous epidemics, including influenza A H1N1 and SARS-COV-1. The increased risk of PTSD may only concern professionals working in care units dedicated to infected patients [27,28]. In the medium and long term, these caregivers develop symptoms of burnout, psychological distress, PTSD and addictive behaviours (nicotine, alcohol) [26]. Research into the impact of the two major pandemics of 2003 and 2009 on the mental health of hospital-based carers has identified a number of factors precipitating the onset of psychological disorders of an essentially anxious, depressive or PTSD nature. The fear of neglecting colleagues and patients, by putting them at risk, has also been reported [30]. Nurses have been shown to be the most vulnerable, with more marked infection-focused anxiety with an increased risk of psychiatric morbidity [31-34], although some studies have shown that doctors are more vulnerable [35].

High EE was most frequently reported in participants in the general university hospital (53.6% vs 41.7%, Table 3). In contrast, higher DP scores (48.9% vs 34.9%, Table 3) and lower PA scores (40.7% vs 21.1%, Table 3) were observed in participants in the psychiatric hospital. The general hospital used in this study is the reference hospital in Paris for crisis care. The HCW in this hospital are directly involved in crisis management and have a greater sense of control of their situation. It is noteworthy that the findings indicate that working in an ICU is a protective factor against burnout (Table 5), although this might not be true for all HCW.

Burnout is a pathological condition that occurs after exposure to chronic stress and is therefore not the first indicator of the effects of pandemics on mental health [36]. The lack of difference in the GHQ-12 scores between participants in the two hospitals confirms this. We found that factors associated with higher burnout scores were fewer years of professional experience, working in regular hospital care, being a nurse, changes in working hours or working only fixed night shifts, temporary job status, and sex (in the present study, being a women).

Conclusion

The aim of this study was to compare the extent of burnout and explore associated factors among HCW in psychiatric and general hospitals in the French national healthcare system during the COVID-19 pandemic. The results showed a higher frequency of psychological distress and hence burnout during this pandemic compared with the pre-COVID-19 period. We also found that HCW who experienced a lack of support in the workplace were more likely to have experienced burnout.

There is no doubt that burnout is currently a growing concern for individuals and healthcare organizations. The literature suggests that healthcare organizations can support their staff and thus reduce burnout by creating policies to protect them. They need to detect any risk of burnout and teach new strategies to ensure their well-being. These strategies could include self-care techniques, access to psychosocial and psychological support, helping caregivers to prevent burnout and reduce feelings of uncertainty and fear, to improve crisis management during pandemics. There were some study limitations. This was a cross-sectional study conducted during the first wave of the pandemic. However, there is evidence that there may be a time delay in the effects of stressful working conditions [37].

Acknowledgement

We thank Diane Williams, PhD, from Edanz (<https://www.edanz.com/ac>) for editing a draft of this manuscript. We also thanks Sarah Kataoui and Florentin Faye students in Clinical Psychology involving in the creation of data modeling.

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