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Psychological distress of mental health workers during the COVID-19 pandemic: A comparison with the general population in high- and low-incidence regions

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Abstract

Objective: Despite their essential role during this health crisis, little is known about the psychological distress of mental health workers (MHW).

Method: A total of 616 MHW and 658 workers from the general population (GP) completed an online survey including depressive, anxiety, irritability, loneliness, and resilience measures.

Results: Overall, MHW had fewer cases with above cut-off clinically significant depression (19% MHW vs. 27%) or anxiety (16% MHW vs. 29%) than the GP. MHW in high-incidence regions of COVID-19 cases displayed the same levels of depressive and anxiety symptoms than the GP and higher levels compared to MHW from low-incidence regions. MHW in high-incidence regions presented higher levels of irritability and lower levels of resilience than the MHW in low-incidence regions. Moreover, MHW in high-incidence regions reported more feelings of loneliness than all other groups.

Conclusion: Implications for social and organizational preventive strategies to minimize the distress of MHW in times of crisis are discussed.

1 | INTRODUCTION

The coronavirus disease (COVID-19) pandemic is a global health crisis which, as of July 26, 2021, had claimed more than 4.1 million lives and infected more than 194 million people worldwide (World Health Organization [WHO], 2020). This pandemic has not only threatened our physical health but has also disrupted many facets of our daily lives (e.g., social, financial, marital/familial). The implementation of unprecedented strict social distancing and isolation measures aimed at controlling the outbreak has been associated, in cross-sectional studies, with considerable psychological distress (Alzueta et al., 2020; Rajkumar, 2020): anxiety (Asmundson & Taylor, 2020; Dubey et al., 2020; Li et al., 2020), depression (Yao et al., 2020; Zhang et al., 2020), avoidance and compulsive behaviors (Holmes et al., 2020; Kar et al., 2020), loneliness and social withdrawal behaviors (Banerjee & Rai, 2020; Berg-Weger & Morley, 2020; Holmes et al., 2020), increased alcohol consumption (Clay & Parker, 2020; Da et al., 2020), chronic stress (Dubey et al., 2020; Fitzpatrick et al., 2020), and increasing levels of domestic violence and separation (Abramson, 2020; Campbell, 2020; Lebow, 2020).

Considering that the COVID-19 pandemic yielded greater needs in mental health, the role of mental health workers (MHW) is of critical importance now more than ever (Grover et al., 2020). Throughout the pandemic, MHW, such as psychologists, social workers, psychosocial counselors, and psychiatrists, have been considered essential service workers and have had to support and treat individuals for whom psychological distress emerged in response to or was exacerbated by the current conditions. Multiple studies have demonstrated how health professionals (e.g., nurses, physicians, medical staff, orderlies) worldwide are experiencing sustained and high levels of stress since the onset of the current pandemic and are at higher risk of poorer mental health compared to the general population, with depression and anxiety at its forefront (for a review, see Pappa et al., 2020). While most MHW were not directly on the frontline with healthcare workers treating COVID patients, they were all confronted on a daily basis with the complex challenges of dealing with the unrelenting psychological distress of others, potential increases in professional mandates, and disruptive organizational adaptations, while also coping with their own COVID-related fears and stressors. Despite that MHW have a key role in minimizing the population's psychological and psychiatric effects of the COVID-19 pandemic, the mental health of these professionals has received little public and scientific attention (da Silva & Neto, 2020). In fact, to the best of our knowledge, only two studies have examined the effects of the COVID-19 pandemic on the mental health of MHW. The first examined vicarious trauma of psychotherapists and found that younger, less experienced therapists were at a greater risk of vicarious trauma (Aafjes-van Doorn et al., 2020). The second examined perceived stress and job-related anxiety in psychotherapists and found that their stress-level, but not their job-related anxiety, was higher than that of the general population (Probst et al., 2020). While these two studies are useful to understand how MHW have adapted to the pandemic, they have not investigated key mental health indicators such as depressive and anxiety symptoms and did not consider the exposure-related consequences and constraints on the participants' lives. Moreover, it is unknown whether the effect of the pandemic is more important in regions of high incidence of COVID-19 versus lower incidence regions. As mental well-being is a key determinant of MHW's ability to deliver high-quality care (Laverdière et al., 2018; Salyers et al., 2017), developing a mental health profile of MHW in the face of the COVID-19 pandemic is paramount.

Even before the COVID-19 pandemic, our knowledge of MHW's mental health had not been fully investigated, and available findings had often been contradictory. On one hand, some studies indicate that MHW typically report better psychological adjustment than the general population, potentially because of their greater coping and regulation strategies and professional knowledge on how to best activate and maintain these strategies. For instance, Elliot and Guy (1993) have shown that, despite the fact that psychotherapists reported higher rates of trauma in childhood than did other

professionals, they experienced less anxiety, depression, dissociation, sleep disturbance, and impairment in interpersonal relationships than did participants from other professions. Even though their findings relied on small sample size (*n* = 56), Koller and Hicks (2016) also reported that MHW displayed significantly higher scores on psychological well-being, optimism, hope, and positive emotional coping strategies than general population workers. Norcross et al. (1986) showed that psychologists exhibited a larger repertoire of coping strategies to face psychological distress compared to laypersons. Manning-Jones et al. (2016) also showed that psychologists and counselors may have better coping attitudes than other professionals (e.g., doctors and nurses) as they reported using more adaptive coping strategies (use of self-care, supervision, and support). Finally, Norcross (2005) found that MHWs were more likely to seek psychotherapy than the general population, which may provide them with the additional emotional and cognitive resources and support to deal with adversity when it arises. Additional studies found similar results in the context of acute stressful events. For example, Dekel et al. (2007) investigated social workers' psychological adjustment after providing emergency treatment to victims of terrorist attacks in Israel. Of importance, in this study, the social workers had also experienced the attacks themselves. Their results indicated that social workers' distress was significantly lower than the general population on all measures, with the exception of anxiety and phobia (Dekel et al., 2007).

On the other hand, several studies indicate that MHW are not invulnerable, as they may be susceptible to experience severe symptoms of burnout, compassion fatigue, vicarious traumatization, and severe emotional exhaustion (Ben-Zur & Michael, 2007; Cocker & Joss, 2016; Figley, 2002; Lloyd et al., 2002). Indeed, several studies have identified unique stressors to the mental health professions and underlined how emotionally draining this study can be (Bria et al., 2012; Rössler, 2012). MHW that are in constant contact with the emotional distress displayed by others can also be subject to increased risk of frustration, helplessness feelings, suicidal thoughts, and professional turnovers (Elwood et al., 2011; Ewer et al., 2015; Firth-Cozens, 2007; Hannigan et al., 2004; Huggard et al., 2017; Kleespies et al., 2011; Lee et al., 2019; Ramberg & Wasserman, 2000)

The challenges related to the current pandemic crisis in MHW's personal and professional lives, along with the additional emotional labor associated with their work under the present conditions are hypothesized to affect MHW's efficacy, judgment, and resilience at a time when these traits and abilities are needed most (Burns & Machin, 2013; Coster & Schwebel, 1997). It is, therefore, crucial to examine whether MHW experience more, less, or similar levels of psychological distress than the general population. In other words, we raise the following question: Do MHW's professional skills, competencies, and experience play a role in protecting their mental health from COVID-19's known negative impacts? Or, on the contrary, does the current situation and its organizational stressors exacerbate the risks of MHW's already emotionally demanding work?

To clarify this issue, the objective of the present study was to evaluate psychological distress among MHW during the COVID-19 pandemic. To do so, a sample of MHW was compared to a sample of workers drawn from the general population on distress measures (i.e., anxiety and depressive symptoms, irritability, and loneliness) and on resilience. Because greater differences may arise based on the severity of the sanitary measures imposed to control the spread of the virus and on the level of chronic stress that ensue, we further examined whether regional zones characterized by higher or lower incidence of COVID-19 cases could account for potential differences in mental health symptoms. At the time of data collection, the selected high-incidence regions (Greater Montreal, Canada) were characterized by the highest rate of COVID-19 cases and deaths in the country, indoor and outdoor gatherings were completely prohibited, all nonessential businesses (including restaurants, bars, and gyms) were closed, places of worship, schools and parks were also closed, and patients with COVID-19 had to be transferred to other regions to relieve some pressure on the health system. These measures were in stark contrast to those in low-incidence regions where less strict measures were implemented and for shorter periods. By the time of the study, schools and businesses had reopened and they were allowed gatherings outdoors and eventually indoors. These regions were clearly delimited.

Overall, MHW typically display better mental health than the general population, presumably because of their greater coping capacities. At the same time, MHW in constant contact with the emotional distress of others might be more vulnerable to compassion fatigue in times of stress. Given this mixed literature and the novelty of the current COVID-19

crisis, we did not make specific hypotheses regarding which population would display greater distress and lower resources. However, we expected individuals in high-incidence regions to display greater symptoms and lower resources (lower resilience, more loneliness) than those in low-incidence regions (e.g., Lai et al., 2020).

2 | METHOD

2.1 | Participants

A total of 1274 workers completed an online survey (616 MHW vs. 658 workers from the general population) between May 1st and July 20th 2020. Inclusion criteria for both MHW and other workers from the general population were to be 20 years old or more, to be currently working and to not have experienced temporary or permanent work stoppage due to COVID-19. Among MHW, 204 were psychologists (33.1%), 137 psychosocial counselors (22.2%), 74 social workers (12.0%), 55 clinical counselors (8.9%), and 146 (23.8%) were other types of mental health providers (e.g., psychiatrists, art therapists, criminologists). Using participants' reported postal code, participants were classified according to their geographic locations as either living in an area of high or low incidence of COVID-19 cases. At the start of the study on May 30th, 2020, there were 1227 COVID-19 cases per 100,000 persons in the Greater Montreal (Montreal and Laval), 672 cases per 100,000 persons in regions surrounding Montréal and 224 cases per 100,000 persons in other Quebec regions (Institut National de Santé Publique du Québec, 2020). There were thus twice as many cases of COVID-19 in Greater Montreal than in the second most affected regions in the province and more than five times that of other regions.

2.2 | Procedure

Two different recruitment strategies were used in this study. First, workers from the general population were recruited through social media advertisements (Facebook, Instagram). These workers were from various professions (e.g., managers, clerical workers, service, and sales). Only 7.58% of this sample from the general population reported working as mental health professionals and they were removed from the sample. Second, MHW were recruited by contacting various professional associations of MHW who shared our participation invitation to their members (e.g., Order of psychologists of Quebec, Order of social workers of Quebec, etc.). Included MHW consisted of psychologists, psychiatrists, therapists, counselors, and social workers.

A total of 62.1% of MHW reported that they now performed their clinical work through telehealth, whereas 37.9% were still seeing patients in person. This proportion of in-person patients was significantly higher in the low-incidence regions (41.3%) than in the high-incidence regions (30.3%), $\chi^2(1) = 6.62$; $p = 0.01$. However, even after accounting for regions, there were no significant differences in mental health outcomes when comparing those working via telehealth to those still providing face-to-face interventions, Also, there was no significant Teleworking × Regions interaction for all outcomes. Therefore, this variable will not be further investigated. This project was approved by the research ethics board of the university and participants signed an informed consent form.

2.3 | Measures

2.3.1 | Demographic information

Age, biological sex, education (graduate degree or not), marital status (single or in a romantic relationship), prior self-reported diagnosis of an emotional disorder (depression, anxiety, or any other emotional disorders that required treatment), number of health-related vulnerabilities to known complications of COVID-19 (hypertension, cardiac

disease, immune disease, diabetes, obesity), and number of constraints experienced due to COVID-19 confinement and social distancing measures (presence of children at home due to school closure, salary reduction, cancellation of important events like a marriage, medical appointments, travels reduction in health services, quarantine, interdictions to visit senior relatives) were collected.

2.3.2 | Fear of COVID-19 for the community

A short two-item measure devised for the purpose of the present study assessed the participants' COVID-19 related fear for their community. The items "I am afraid for the health of people in my community" and "I am afraid for the lives of people in my community" were responded to by the participants on a Likert scale ranging from 1 "Strongly disagree" to 7 "Strongly agree." Both items were correlated at $r = 0.86$, $p < 0.001$. These items were used to assess the level of apprehension that may vary in certain regions and helped to confirm that the low- and high-incidence regions, as characterized by the official data on COVID-19 cases, would be accompanied by differences in the subjective experience of fear for communities' well-being.

2.3.3 | Depressive symptoms

Depressive symptoms were measured via the English and French versions of the Patient Health Questionnaire (PHQ-9; Carballeira et al., 2007; Kroenke et al., 2001) which assesses symptoms of depression (as described in DSM-IV) in the past 2 weeks. Participants were asked to rate nine symptom items (e.g., feeling down, depressed, or hopeless) on a Likert scale ranging from 0 = "Never" to 3 = "Almost every day". The total score ranged from 0 to 27 with a cut-off score of ≥10 for moderate or severe depression symptoms. The Cronbach's alpha for the PHQ-9 in this study was adequate ($\alpha = 0.86$).

2.3.4 | Anxiety symptoms

Anxiety symptoms were assessed via the English and French versions of the Generalized Anxiety Disorder 7 (GAD-7; Micoulaud-Franchi et al., 2016; Spitzer et al., 2006), which is a brief self-report measure assessing the presence and severity of anxiety symptoms in the past 2 weeks. Participants rated seven symptom items (e.g., "Not being able to stop or control worrying") on a scale ranging from 0 to 3 (0 = "Not at all", 1 = "Several days", 2 = "Over half the days," and 3 = "Nearly every day"). The total score ranged from 0 to 21 with a cut-off score of ≥10 for moderate or severe anxiety disorder. The Cronbach's alpha for the GAD-7 in this study was adequate ($\alpha = 0.90$).

2.3.5 | Irritability

Irritability symptoms were assessed via the English and French versions of the Brief Irritability Test (BITe; Holtzman et al., 2015) which is a brief self-report measure assessing the degree to which participants experienced frustration and irritability in the last 2 weeks. Participants were presented with five items (e.g., "I have been grumpy" or "I have been feeling irritable") rated on a six-point Likert scale (1 = "Never", 6 = "Always"). The BITe has been validated in both healthy and patient samples and has demonstrated adequate evidence of validity and reliability (Holtzman et al., 2015). The Cronbach's alpha for the BITe in this study was adequate ($\alpha = 0.92$).

2.3.6 | Loneliness

The three-item English and French versions of the UCLA Loneliness Scale (de Grâce & Joshi, 1990; Hughes et al., 2004) were used to assess the frequency of loneliness. Participants rated each item on a three-point scale ranging from 1 "Almost Never" to 3 "Very often". Higher scores for the three items (i.e., "How often have you felt a lack of companionship", "How often have you felt left out", "How often have you felt isolated from others") indicated a more frequent feeling of loneliness. The Cronbach's alpha for the UCLA Loneliness Scale in this study was adequate ($\alpha = 0.86$).

2.3.7 | Resilience

The English and French versions of the Connor–Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003; Hébert et al., 2018) is a brief, self-rated measure of resilience. Participants were asked to indicate their degree of agreement with each of the 10 items (e.g., "I can deal with whatever comes my way", "I am not easily discouraged by failure", "I am able to handle unpleasant or painful feelings like sadness, fear, and anger") on a scale ranging from 1 to 5. The Cronbach's alpha for the CD-RISC in this study was excellent ($\alpha = 0.90$).

2.4 | Statistical analyses

Demographic variables were compared between MHW and workers from the general population using analysis of variance or the χ^2 test. A total of five 2 (Regions: High-incidence vs. Low-Incidence) × 2 (Occupation: MHW vs. Other occupation) general linear models were conducted to test the presence of mean differences in anxiety, depression, irritability, loneliness, and resilience. Anxiety, depression, and irritability were log-transformed to meet the assumption of normality of the general linear model given their positively skewed distribution. A Bonferroni adjustment of the level of significance was used to account for multiple testing ($\alpha = 0.05/5$ tests $= 0.01$). Therefore, with two-tailed testing, findings were considered statistically significant at $\alpha = 0.01$. Moreover, posthoc tests were corrected with a Bonferroni adjustment to account for multiple comparisons and effect sizes for significant differences were estimated with Cohen's d (Cohen, 1988). All analyses were performed in SPSS 27. The model was adjusted for age, biological sex, education, marital status (single or in a romantic relationship), prior diagnosis of an emotional disorder (depression, anxiety, or other emotional disorders), number of physical vulnerabilities to COVID-19, and number of important personal constraints experienced due to COVID-19.

Moreover, to investigate whether results were sensitive to the date of completion, time of completion from the launch of the study (in days) was added as a covariate in separate analyses. Results were also analyzed with the month of completion (May, June, or July) as between factors. We also investigated whether results would differ as a function of population density instead of as a function of regions with a high or low incidence of COVID-19 cases.

3 | RESULTS

3.1 | Sample characteristics

Table 1 presents the overall demographic characteristics of the sample, means, and standard deviations of each measure of distress, including the prevalence of depression and anxiety across groups, as defined by the clinical cutoff score on the PHQ-9 and GAD-7. Overall, participants in the study had a mean age of 42.06 years

(*SD* = 12.58; range = 20–74). Most were women (*n* = 1 136; 89.2%), in a relationship (*n* = 908; 71.3%), and 43.01% had graduate-level education (masters and doctorate; *n* = 548).

As shown in Table 1, several significant differences were found in the demographic variables among groups. While there were no differences between workers or between regions in the number of constraints experienced due to the pandemic, COVID-related fear for the community was significantly greater for participants living in high-incidence regions, $t(1274) = -3.75$, $p < 0.001$.

Results also showed that 23.0% (*n* = 293) of the total sample met the PHQ-9 clinical cutoff for depression and that approximately one in five (22.4%; *n* = 286) met the GAD-7 clinical cut off for anxiety. Workers from the general population were more likely than MHW to meet the clinical cutoff for depression (27.2% vs. 18.5%; $\chi^2[1] = 13.59$; $p < 0.001$) and anxiety disorder (28.9% vs. 15.6%; $\chi^2[1] = 32.28$; $p < 0.001$). However, compared to workers who reported living in a low-incidence region, MHW living in high-incidence regions had significantly higher prevalence of clinically significant levels of depression (26.0% vs. 20.8%; $\chi^2[1] = 4.75$; $p = 0.029$) and anxiety (26.1% vs. 19.7%; $\chi^2[1] = 7.51$; $p = 0.006$) symptoms.

3.2 | Psychological distress as a function of occupation and region

Table 2 shows the results of the five 2 × 2 generalized linear models for mental health outcomes (depression, anxiety, irritability, loneliness, and resilience) across occupations (MHW vs. general population of workers) and regions (high-incidence regions vs. low-incidence regions) to test whether the differences in psychological distress between the MHW and workers from the general population varied according to regions more or less affected by the pandemic in terms of the number of COVID-19 cases. All analyses were adjusted for the control variables (i.e., age, biological sex, education, marital status, prior diagnosis of emotional disorder, physical vulnerabilities to COVID-19, and number of constraints experienced due to COVID-19). Figure 1 shows the plots of adjusted mean *z*-scores for each mental health outcome by occupation and region.

3.2.1 | Depressive symptoms

In terms of depressive symptoms, there were marginal main effects of occupations, but a significant interaction between occupations regions. Posthoc tests with Bonferroni corrections revealed that MHW from high-incidence regions had more depressive symptoms than those working in low-incidence regions $t(614) = 3.30$, $p = 0.001$, $d = 0.27$. Other types of workers' depressive symptoms did not differ between regions, $t(656) = 0.68$, $p = 0.49$. Of note, there was no significant difference in depressive symptoms between MHW and other workers in high-incidence regions, $t(545) = 0.20$, $p = 0.84$, but in low-incidence regions, MHW reported significantly less depressive symptoms than other workers, $t(725) = -4.16$, $p < 0.001$, $d = 0.31$.

3.2.2 | Anxiety symptoms

There was a main effect of occupation showing that MHW reported significantly lower anxiety symptoms than other types of workers. However, this main effect was qualified by a significant Occupations × Regions interaction. Posthoc analyses revealed that MHW in high-incidence regions reported significantly higher anxiety symptoms than MHW in low-incidence regions, $t(614) = 2.72$, $p = 0.007$, $d = 0.22$, whereas other types of workers did not differ by regions in their reported anxiety symptoms, $t(656) = 1.68$, $p = 0.094$. Again, in high-incidence regions, there was no significant difference in anxiety symptoms between MHW and other

TABLE 1 Sample characteristics and differences across occupation and region

	Total (n = 1274) M (SD)	Occupation		p[a]	Region		p[a]
		Mental health workers (n = 616) M (SD)	General population of workers (n = 658) M (SD)		High incidence (n = 547) M (SD)	Low incidence (n = 727) M (SD)	
Age (20–74)	42.06 (12.58)	40.84 (11.15)	43.21 (13.70)	**0.001**	41.40 (12.99)	42.57 (12.25)	0.101
Sex							
Female (%/n)	89.2 (1136)	89.9 (554)	88.4 (582)	0.394	87.6 (479)	90.4 (657)	0.111
Marital status							
In a relationship (%/n)	71.27 (908)	76.5 (471)	66.4 (437)	**0.000**	67.1 (367)	74.4 (541)	**0.004**
Education							
Graduate degree (%/n)	43.01 (548)	55.4 (341)	31.5 (207)	**0.000**	48.6 (282)	38.8 (266)	**0.000**
Prior emotional disorder (0-3)	0.22 (0.52)	0.15 (0.43)	0.29 (0.59)	**0.000**	0.24 (0.54)	0.21 (0.51)	0.290
Physical vulnerabilities (0-5)	0.21 (0.51)	0.18 (0.49)	0.23 (0.53)	0.099	0.20 (0.52)	0.21 (0.51)	0.524
Constraints due to COVID-19 (0-7)	1.43 (1.22)	1.43 (1.21)	1.43 (1.22)	0.980	1.38 (1.19)	1.47 (1.23)	0.215
COVID-related fear for community (1-7)	4.19 (1.55)	4.14 (1.50)	4.23 (1.60)	0.349	4.37 (1.51)	4.04 (1.56)	**0.000**
Depression (0-27)	6.44 (5.06)	5.66 (4.73)	7.18 (5.25)	**0.000**	6.90 (5.24)	6.10 (4.90)	**0.005**
Moderate or severe (%/n)	23.0 (293)	18.5 (114)	27.2 (179)	**0.000**	26.0 (142)	20.8 (151)	**0.029**
Anxiety (0–21)	6.10 (5.01)	5.22 (4.46)	6.92 (5.35)	**0.000**	6.50 (5.27)	5.80 (4.79)	**0.014**
Moderate or severe (%/n)	22.4 (286)	15.6 (96)	28.9 (190)	**0.000**	26.1 (143)	19.7 (143)	**0.006**
Irritability (1–6)	2.84 (1.09)	2.86 (1.01)	2.82 (1.16)	0.481	2.87 (1.16)	2.82 (1.04)	0.490

(Continues)

TABLE 1 (Continued)

	Total (n = 1274)	Occupation Mental health workers (n = 616)	General population of workers (n = 658)		Region High incidence (n = 547)	Low incidence (n = 727)	
	M (SD)	M (SD)	M (SD)	p[a]	M (SD)	M (SD)	p[a]
Loneliness (1–4)	2.23 (0.82)	2.39 (0.91)	2.08 (0.70)	**0.000**	2.19 (0.79)	2.26 (0.84)	0.182
Resilience (1–5)	3.72 (0.69)	3.82 (0.62)	3.63 (0.74)	**0.000**	3.67 (0.71)	3.76 (0.68)	**0.026**

Note: Bold values indicate significant results.

[a]t or χ^2.

TABLE 2 Adjusted mean z-scores (with posthoc tests) and generalized linear models results for mental health outcomes as a function of occupation and region

| | High-incidence regions | | Low-incidence regions | | Main and Interaction Effects | | | | | |
| | Mental health workers (n = 185) | General population of workers (n = 362) | Mental health worker (n = 431) | General population of workers (n = 296) | Occupation | | Region | | Occupation × Region | |
	M (SE)	M (SE)	M (SE)	M (SE)	F	η2	F	η2	F	η2
Depression	0.089 (0.070)[a]	0.072 (0.049)[a]	−0.182 (0.045)[b]	0.122 (0.055)[a]	6.18*	0.005	4.00*	.003	8.73***	0.007
Anxiety	0.030 (0.071)[a]	0.064 (0.049)[a]	−0.196 (0.045)[b]	0.188 (0.055)[a]	12.86*****	0.01	.839	–	10.06***	0.008
Irritability	0.190 (0.073)[a]	−0.117 (0.051)[b]	0.011 (0.047)[b]	0.008 (0.057)[b]	6.71*	0.005	0.22	–	7.18*	0.006
Loneliness	0.408 (0.071)[a]	−0.306 (0.050)[b]	0.177 (0.045)[c]	−0.138 (0.056)[d]	77.32*****	0.058	0.19	–	13.07****	0.010
Resilience	−0.093 (0.073)[a]	−0.053 (0.051)[a]	0.188 (0.047)[b]	−0.150 (0.050)[a]	6.11*	0.005	2.53	–	10.92***	0.009

Note: Age, sex, marital status, education, prior emotional disorder, physical vulnerabilities, and constraints due to COVID-19 were controlled for in all models. Means with different superscripts (a, b, c, d) differ significantly at $p < 0.05$ following a Bonferroni correction. All dependent variables were z-scored.

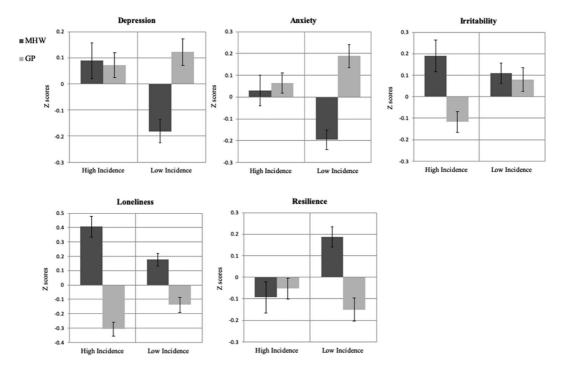$*p < 0.05$.; $**p < 0.01$.; $***p < 0.001$.

FIGURE 1 Graphical representation of the adjusted mean for psychological distress outcomes (z-scores) by Occupation and Region. Error bars are standard errors

workers, $t(545) = 0.39$, $p = 0.70$, but in low-incidence regions, MHW reported significantly less anxiety symptoms than the general population, $t(727) = -5.33$, $p < 0.001$, $d = 0.40$.

3.2.3 | Irritability

Results revealed a main effect of occupations, such that MHW were significantly more irritable than the general population workers. In addition, a significant Occupations × Regions interaction emerged. Posthoc analyses revealed that MHW in high-incidence regions, reported significantly higher irritability than those in low-incidence regions, $t(614) = 2.08$, $p = 0.037$, $d = 0.17$. Other workers in high-incidence regions did not differ from other workers in low-incidence regions, $t(656) = 1.64$, $p = 0.10$. Incidentally, in high-incidence regions, MHW reported significantly higher levels of irritability than the general population, $t(545) = 3.42$, $p < 0.001$, $d = 0.29$. In low-incidence regions, MHW and other workers did not differ significantly in their reported levels of irritability ($p = 0.96$).

3.2.4 | Loneliness

There was a significant main effect of occupations, such that other types of workers reported significantly lower loneliness than MHW. This main effect was qualified by a significant Occupations × Regions interaction. Posthoc analyses revealed that MHW in high-incidence regions reported significantly greater loneliness than MHW in low-incidence regions, $t(614) = 2.78$ $p = 0.006$, $d = 0.22$. Other workers in high-incidence regions reported lower loneliness than other workers in low-incidence regions, $t(656) = -2.27$, $p = 0.023$, $d = 0.18$). Of note, both MHW in

high- and low-incidence regions reported higher loneliness than other workers in their regions, $t(545) = 8.11$, $p < 0.001$, $d = 0.69$ and $t(725) = 4.30$, $p < 0.001$, $d = 0.32$, respectively. However, the group difference in loneliness was larger for MHW in high-incidence regions than MHW in low-incidence regions.

3.2.5 | Resilience

Analyses showed a significant main effect of occupations, such that MHW were significantly more resilient than other workers. In addition, a significant Occupations × Regions interaction emerged. Posthocs showed that MHW in high-incidence regions showed lower scores of resilience than MHW from low-incidence regions, $t(614) = -3.26$, $p < 0.001$, $d = 0.28$). The general population workers from high-incidence regions did not differ from the general population workers in low-incidence regions, in terms of their resilience scores, $t(656) = 1.26$, $p = 0.21$. MHW from low-incidence regions actually showed the highest score of resilience compared to all groups and reported significantly more resilience than other workers in low-incidence regions, $t(725) = 4.51$, $p < 0.001$, $d = 0.033$). Finally, in high-incidence regions, there was no significant difference between MHW workers and other workers in terms of resilience scores ($p = 0.66$).

3.3 | Sensitivity analyses

To test the robustness of the above-reported findings, the analyses were conducted again using the date of completion as covariate (in days) or as between factor (in months). All results remained unchanged with the inclusion of this variable in the analyses. Given that high-incidence regions include densely populated cities and that COVID-19 cases are more likely to spread in densely populated areas, these two factors may be confounded. To examine whether population density might account for the results, we reanalyzed the data from the low-incidence regions, which differed more importantly by population density, and examined whether occupation would interact with population density in these low-incidence regions. There were no interactions between occupation and density and occupation remained a significant predictor of the outcomes (except for irritability, which did not significantly differ by occupation in the low-incidence regions in the above analyses).

4 | GENERAL DISCUSSION

Studies have shown that the COVID-19 pandemic has had a profound negative impact on the population with alarming implications for individual and collective mental health and social functioning (Alzueta et al., 2020; Asmundson & Taylor, 2020; Dubey et al., 2020; Yao et al., 2020; Zhang et al., 2020). This study aimed to investigate the psychosocial burden of MHW working during the COVID-19 crisis (compared to the general population) and to test whether they were differently affected by the pandemic, depending on their geographic location (i.e., regions with higher or lower incidence of COVID-19 cases).

Some past research has shown that, in the absence of stressful events, MHW reported lower distress symptoms than the general population (Elliot & Guy, 1993; Koller & Hicks, 2016; Norcross et al., 1986). These findings were replicated in the present study, as MHW reported overall significantly lower depressive and anxiety symptoms than workers from the general population. This result was more pronounced in the low-incidence regions, with MHW reporting significantly less distress and more resilience. However, results revealed that MHW living in high-incidence regions reported levels of anxiety and depressive symptoms that were comparable to the levels of the general population. Furthermore, when compared to MHW from low-incidence regions, those in the high-incidence regions were significantly more anxious and depressed. The observation that in the context of the pandemic, MHW

from high-incidence regions reported levels of distress that were equal or higher to those of the general population suggests that MHW might be more severely impacted by the crisis. Our results are also congruent with previous studies that have shown how providing emotional help or being involved in the care of psychologically distressed patients in a stressful context can place MHW at risk of developing distress of their own (Bria et al., 2012; Cocker & Joss, 2016; Elwood et al., 2011; Hannigan et al., 2004; Huggard et al., 2017; Lee et al., 2019).

One noteworthy finding was that, across all regions, MHW reported higher levels of loneliness than workers from the general population did. This was especially true for MHW in the high-incidence region group, who reported the highest levels of loneliness among the four groups. This is worrisome considering that loneliness has been shown to be detrimental to occupational well-being (Soler-Gonzalez et al., 2017). Moreover, levels of irritability were the highest among MHW in the high-incidence region. This is consistent with previous work that has highlighted a negative association between perceived social support and hostility, and a positive association between mental fatigue and anger (Tzeletopoulou et al., 2019) for MHW.

A source of concern is that MHW from high-incidence regions (who theoretically should have the same personal adaptive resources as MHW from low-incidence regions) appear to be less effective at using these resources, and present lower levels of resilience. Recent research has suggested that resilience may protect from depression and anxiety during the current COVID-19 pandemic in both healthcare providers and in the general population (Barzilay et al., 2020). While resilience is often pictured as a stable trait (Block & Kremen, 1996), it is in fact a positive orientation toward life-changing circumstances, and this orientation can change over time and can be altered by prolonged stress (Connor & Davidson, 2003). Thus, while a resilient attitude can play a significant role in circumventing the negative effects of MHW's work-related stress in intrinsically challenging environments when coping is appropriate (Collins, 2007; Kinman & Grant, 2011), too much unregulated stress may also decrease resilience over time. Therefore, MHW that face greater stress in regions with a high incidence of COVID-19 cases may be at risk of seeing their resilience decrease and their psychological distress increase. Future research is needed, however, to better investigate this potential feedback loop between managed and unmanaged stress and resilience.

Overall and considering the several control variables used in the present study (i.e., age, biological sex, education, marital status, prior diagnosis of emotional disorder, physical vulnerabilities to COVID-19, number of personal constraints experienced due to COVID-19, and population density), we speculate that the differences between MHW working in high- and low-incidence regions could be explained by three possible factors. First, MHW in high-incidence regions could be more exposed to chronic professional stressors brought on by the pandemic (e.g., more requests, more contact with patients who are more distressed and who present more serious and complex problems, changing procedures, lack of control on the working process, organizational stressors, and less gratification and job satisfaction). In this context of chronic stress, multiple external demands to adapt to ever expanding needs, requests, restrictions, and changes at work may represent an additional burden to MHW in high-incidence regions. The pandemic has called for great occupational reorganization from MHW, with novel and heavier tasks and sometimes unpredictable changes in the type of work requested from them in at-risk areas. Interestingly, although MHW in high-incidence regions largely turned to telehealth for their clinical practice (consistent with Pierce et al., 2020; Piotrowski, 2021), this was not associated with differences in distress levels. This finding is in line with recent studies (Békés et al., 2020; Probst et al., 2020). Future studies should investigate whether the numerous changes and the accumulation of demands might have contributed to increased distress.

Second, it is also plausible that the MHW in high-incidence regions may be surrounded by more stressed, worried, and exhausted staff and professional networks, which diminishes the quantity and quality of social support they receive. Social support has been shown to be particularly important in reducing distress and maximizing resilience of humanitarian workers, first responders, and victims in times of adversity (Brewin et al., 2000; Eriksson et al., 2009; Kaspersen et al., 2003; Prati & Pietrantoni, 2010). Therefore, it is possible that this poorer social support (or lack thereof) may have contributed to exacerbating distress among MHWs in high-incidence regions.

Finally, the third possible factor that may account for the differences between MHW from high and low-incidence is the fact that MHW find themselves in the highly unusual and complex situation of treating patients who are experiencing many stressful aspects of the current social crisis that MHW are themselves experiencing in their personal life. The current pandemic is unprecedented in scope with MHW facing the same reality and associated challenges of quarantine, isolation, and social distancing as their patients. It has been previously hypothesized that when MHW and their patients share similar experiences on a personal level (e.g., divorce, child with an illness, experiences of trauma (Bell & Robinson, 2013; DeGeorge & Constantino, 2012) or on a collective level (following natural disasters; Boulanger, 2013; Jaimes et al., 2019), it can cause a negative dynamic that affects their efficacy, empathy, and increases risks of burnout, vicarious trauma, and compassion fatigue. However, there is very little empirical evidence on the experience of MHW in shared contexts when facing a crisis. The present study is the first to our knowledge to unveil this reality within such a global context.

Moreover, MHW work in jobs that promote or even encourage contact with the plight of others, which is not the case for most other jobs. Thus, MHW are not just surrounded by more stressed people, they must also support and treat patients who are suffering more and who present more complex and treatment-resistant problems (Brillon, 2020; Posluns & Gall, 2020).

Our results showed that MHW in high-incidence regions exhibited more distress than their colleagues in low-incidence regions. Consequently, these results stress the importance of implementing measures specifically targeting MHW in high-incidence regions to mitigate their anxiety and depressive symptoms, counter their loneliness and irritability, and maximize their resilience. Indeed, similarly to several authors who have highlighted the importance of implementing prevention strategies for MHW (Aarons et al., 2012; Bloomquist et al., 2015; Brillon, 2020; Lynch et al., 2005; Surya et al., 2017), we recommend that specific measures be put in place, such as regular peer-support meetings, promotion of self-care behaviors, activities fostering social support, as well as positive team building activities in community organizations, mental health clinics, psychological units, and psychiatric hospitals in high-incidence regions. Moreover, more than ever, an implementation of strategies, such as reducing MHW's work overload, teaching them social support enhancement skills, offering free clinical supervision sessions, and increasing their work's recognition and appreciation, is crucial (Morse et al., 2012). These measures have been proposed as being effective in reducing the risks of distress, burnout, compassion fatigue, isolation, and sick leave among MHW and humanitarian workers (Barnett et al., 2007; Bloomquist et al., 2015; Brooks et al., 2015; Comoretto et al., 2015; Posluns & Gall, 2020) and can be leveraged as preventive measures in the face of future waves of COVID-19 or in the face of another social crisis of similar magnitude.

4.1 | Future directions

Our study calls for a more in-depth investigation of having to support and treat the mental health of the population while working in a shared context, such as a global pandemic. There is a need for a better understanding of MHW's emotional distress and the contexts in which this distress is more likely to emerge. Moreover, we need to better identify personal and organization-based strategies that could protect or exacerbate the vulnerability of MHW in case of another social crisis. As such, emotional regulation abilities, psychological flexibility, and coping strategies have been stressed as significant protective factors against MHW's distress in past studies (Biron & Van Veldhoven, 2012; Cengil, 2019; Collins, 2008; Pow & Cashwell, 2017; Rodriguez & Carlotto, 2017). We also know that low job and salary satisfaction and the use of passive coping strategies predict greater emotional exhaustion among child protection workers and in-home caregivers (Jenaro et al., 2007). Moreover, past research has also shown that people who present an integrative regulation style tend to accept and tolerate negative events or emotions without feeling overwhelmed, disorganized, or defensive. These skills are linked to psychological well-being and growth over time (Houle & Philippe, 2020), even throughout stressful collective events, such as natural disasters (Philippe & Houle, 2020). Other potential protective factors, such as self-care practices, should also be empirically examined

(Barnett et al., 2007; Bloomquist et al., 2015; Bober et al., 2006; Posluns & Gall, 2020; Saakvitne & Pearlman, 1996). Further research on these personal protective behaviors will help develop more effective and more specific prevention and treatment strategies for MHW in distress.

5 | LIMITATIONS

The findings of this study should be interpreted with the following limitations in mind. First, although we controlled for several confounding variables (i.e., age, biological sex, education, marital status, prior diagnosis of emotional disorder, physical vulnerabilities to COVID-19, number of personal constraints due to the pandemic, and population density), without prepandemic data, it is not possible to infer causal inferences and attribute the findings to the COVID-19 crisis. Indeed, as our study used a cross-sectional design, we need to be cautious in interpreting regional differences as we do not know whether these gaps are attributable to the pandemic or whether they existed before. It remains possible that other noncontrolled confounds are at play and that the occupation or region factors only acted as proxies for these confounds. Second, our sample from the general population was not a fully representative one and was potentially biased by the characteristics of social media users interested in participating in psychological studies. The external validity of this general population should therefore be interpreted with caution. Third, indicators of psychological distress were assessed using self-report measures only. Individuals, even MHW, can sometimes have limited self-knowledge, and clinician-administered assessments is a more objective way of assessing symptoms of mental health (Donaldson & Grant-Vallone, 2002; Paulhus & Vazire, 2007; Spector, 1994). Fourth, self-selection biases (nonresponders maybe not interested or too stressed to participate) could have constrained the generalization of our results. This limitation is exacerbated by the fact that it was impossible to assess the response rates due to the online nature of our survey.

6 | CONCLUSION

Altogether, our study showed preliminary evidence that MHW in areas particularly affected by COVID-19 displayed similar or higher levels of psychological distress (greater depression, anxiety, irritability, and loneliness, and lower resilience) as the general population. Our study provides interesting leads in terms of clinical and social implications. Considering that the COVID-19 pandemic is accompanied by an onslaught of mental health needs in the population, which many believe will last for years after the disease has subsided (Asmundson & Taylor, 2020), it is crucial to address the specific psychological needs of the MHW who are responsible for providing health services in the general population. This could help prevent the deleterious effects of future waves in the fight against COVID-19 or of similar collective stressful events.

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REFERENCES

Aafjes-van Doorn, K., Békés, V., Prout, T. A., & Hoffman, L. (2020). Psychotherapists' vicarious traumatization during the COVID-19 pandemic. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(S1), S148–S150. https://doi.org/10.1037/tra0000868

Aarons, G. A., Fettes, D. L., Sommerfeld, D. H., & Palinkas, L. A. (2012). Mixed methods for implementation research: Application to evidence-based practice implementation and staff turnover in community-based organizations providing child welfare services. *Child maltreatment*, 17(1), 67–79. https://doi.org/10.1177/1077559511426908

Abramson, A. (2020). *How COVID-19 may increase domestic violence and child abuse.* http://www.apa.org/topics/covid-19/domestic-violence-child-abuse

Alzueta, E., Perrin, P., Baker, F. C., Caffarra, S., Ramos-Usuga, D., Yuksel, D., & Arango-Lasprilla, J. C. (2020). How the COVID-19 pandemic has changed our lives: A study of psychological correlates across 59 countries. *Journal of Clinical Psychology*, 77(3), 556–570. https://doi.org/10.1002/jclp.23082

Asmundson, G. J., & Taylor, S. (2020). How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know. *Journal of Anxiety Disorders*, 71, 102211. https://doi.org/10.1016/j.janxdis.2020.102211

Banerjee, D., & Rai, M. (2020). Social isolation in Covid-19: The impact of loneliness. *International Journal of Social Psychiatry*, 66(6), 525–527. https://doi.org/10.1177/0020764020922269

Barnett, J. E., Baker, E. K., Elman, N. S., & Schoener, G. R. (2007). In pursuit of wellness: The self-care imperative. *Professional Psychology: Research and Practice*, 38(6), 603–612. https://doi.org/10.1037/0735-7028.38.6.603

Barzilay, R., Moore, T. M., Greenberg, D. M., DiDomenico, G. E., Brown, L. A., White, L. K., Gur, R. C., & Gur, R. E. (2020). Resilience, COVID-19-related stress, anxiety and depression during the pandemic in a large population enriched for healthcare providers. *Translational Psychiatry*, 10(1), 1–8. https://doi.org/10.1038/s41398-020-00982-4

Bell, C. H., & Robinson, III, E. H. (2013). Shared trauma in counseling: Information and implications for counselors. *Journal of Mental Health Counseling*, 35(4), 310–323. https://doi.org/10.17744/mehc.35.4.7v33258020948502

Ben-Zur, H., & Michael, K. (2007). Burnout, social support, and coping at work among social workers, psychologists, and nurses: The role of challenge/control appraisals. *Social Work in Health Care*, 45(4), 63–82. https://doi.org/10.1300/j010v45n04_04

Berg-Weger, M., & Morley, J. E. (2020). Loneliness and social isolation in older adults during the Covid-19 pandemic: Implications for gerontological social work. *The Journal of Nutrition, Health & Aging*, 24(5), 456–458. https://doi.org/10.1007/s12603-020-1366-8

Biron, M., & Van Veldhoven, M. (2012). Emotional labour in service work: Psychological flexibility and emotion regulation. *Human Relations*, 65(10), 1259–1282. https://doi.org/10.1177/0018726712447832

Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology*, 70, 349–361. https://doi.org/10.1037/0022-3514.70.2.349

Bloomquist, K. R., Wood, L., Friedmeyer-Trainor, K., & Kim, H. W. (2015). Self-care and professional quality of life: Predictive factors among MSW practitioners. *Advances in Social Work*, 16(2), 292–311. https://doi.org/10.18060/18760

Bober, T., Regehr, C., & Zhou, Y. R. (2006). Development of the coping strategies inventory for trauma counselors. *Journal of Loss and Trauma*, 11(1), 71–83. https://doi.org/10.1080/153250-20500358225

Boulanger, G. (2013). Fearful symmetry: Shared trauma in New Orleans after Hurricane Katrina. *Psychoanalytic Dialogues*, 23(1), 31–44. https://doi.org/10.1080/10481885.2013.752700

Brewin, C. R., Bernice, A., & John, D. A. (2000). Meta-analysis of risk factors for posttraumatic stress disorder among trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68(5), 748–766. https://doi.org/10.1037/0022-006x.68.5.748

Bria, M., Baban, A., & Dumitrascu, D. L. (2012). Systematic review of burnout risk factors among European healthcare professionals. *Cognition, Brain, Behavior: An Interdisciplinary Journal*, 16(3), 423–452.

Brillon, P. (2020). *Entretenir ma vitalité d'aidant: Guide pour prévenir la fatigue de compassion et la détresse professionnelle (Maintaining our vitality as caregivers: A guide to preventing compassion fatigue and job distress)*. Editions de l'Homme.

Brooks, S. K., Dunn, R., Sage, C. A. M., Amlôt, R., Greenberg, N., & Rubin, G. J. (2015). Risk and resilience factors affecting the psychological wellbeing of individuals deployed in humanitarian relief roles after a disaster. *Journal of Mental Health*, 24(6), 385–413. https://doi.org/10.3109/09638237.2015.1057334

Burns, R. A., & Machin, M. A. (2013). Psychological wellbeing and the diathesis-stress hypothesis model: The role of psychological functioning and quality of relations in promoting subjective well-being in a life events study. *Personality and Individual Differences*, 54(3), 321–326. https://doi.org/10.1016/j.paid.2012.09.017

Békés, V., Aafjes–van Doorn, K., Prout, T. A., & Hoffman, L. (2020). Stretching the analytic frame: Analytic therapists' experiences with remote therapy during Covid-19. *Journal of the American Psychoanalytic Association*, 68(3), 437–446.

Campbell, A. M. (2020). An increasing risk of family violence during the Covid-19 pandemic: Strengthening community collaborations to save lives. *Forensic Science International: Reports*, 2, 100089. https://doi.org/10.1016/j.fsir.2020.100089

Carballeira, Y., Dumont, P., Borgacci, S., Rentsch, D., de Tonnac, N., Archinard, M., & Andreoli, A. (2007). Criterion validity of the French version of Patient Health Questionnaire (PHQ) in a hospital department of internal medicine. *Psychology and Psychotherapy: Theory, Research and Practice*, 80(1), 69–77. https://doi.org/10.1348/147608306X103641

Cengil, A. C. (2019). *Secondary traumatic stress among mental health workers in Turkey: Moderating role of emotion regulation on the relationship between empathy and secondary traumatic stress*. [Master thesis, Istanbul University].

Clay, J. M., & Parker, M. O. (2020). Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis? *The Lancet Public Health*, 5(5):e259. https://doi.org/10.1016/S2468-2667(20)30088-8

Cocker, F., & Joss, N. (2016). Compassion fatigue among healthcare, emergency and community service workers: A systematic review. *International Journal of Environmental Research and Public Health*, 13(6), 618. https://doi.org/10.3390/ijerph13060618

Cohen, J.(1988). Statistical power analysis for the behavioral sciences (2nd ed.). : Lawrence Earlbaum Associates.

Collins, S. (2007). Social workers, resilience, positive emotions and optimism. *Practice: Social Work in Action*, 19(4), 255–269. https://doi.org/10.1080/09503150701728186

Collins, S. (2008). Statutory social workers: Stress, job satisfaction, coping, social support and individual differences. *British Journal of Social Work*, 38, 1173–1193. https://doi.org/10.1093/bjsw/bcm047

Comoretto, A., Crichton, N., & Albery, I. (2015). Resilience in humanitarian id workers: Understanding processes of development. *Transactions on Occupational Ergonomics and Human Factors*, 3(3-4), 197–209. https://doi.org/10.1080/21577323.2015.1093565

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. https://doi.org/10.1002/da.10113

Coster, J. S., & Schwebel, M. (1997). Well-functioning in professional psychologists. *Professional Psychology: Research and Practice*, 28(1), 5–13. https://doi.org/10.1037/0735-7028.28.1.5

Da, B. L., Im, G. Y., & Schiano, T. D. (2020). Coronavirus disease hangover: A rising tide of alcohol use disorder and alcohol-associated liver disease. *Hepatology*, 72, 1102–1108. https://doi.org/10.1002/hep.31307

da Silva, F. C. T., & Neto, M. L. R. (2020). Psychological effects caused by the COVID-19 pandemic in health professionals: A systematic review with meta-analysis. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 104, 110062. https://doi.org/10.1016/j.pnpbp.2020.110062

DeGeorge, J., & Constantino, M. J. (2012). Perceptions of analogue therapist empathy as a function of salient experience similarity. *Journal of Psychotherapy Integration*, 22(1), 52–59. https://doi.org/10.1037/a0027365

de Grâce, G., & Joshi, P. (1990). Adaptation Française de l'Échelle de Solitude UCLA Auprès des Personnes Agées. *IVe Congrès international francophone de gérontologie*: Montréal.

Dekel, R., Hantman, S., Ginzburg, K., & Solomon, Z. (2007). The cost of caring? Social workers in hospitals confront ongoing terrorism. *British Journal of Social Work*, 37(7), 1247–1261. https://doi.org/10.1093/bjsw/bcl081

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology*, 17(2), 245–260.

Dubey, S., Biswas, P., Ghosh, R., Chatterjee, S., Dubey, M. J., Chatterjee, S., Lahiri, D., & Lavie, C. J. (2020). Psychosocial impact of COVID-19. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 779–788. https://doi.org/10.26524/royal.37.15

Elliot, D. M., & Guy, J. D. (1993). Mental health professionals: Childhood trauma and adult functioning. *Professional Psychology: Research and Practice*, 24(1), 83–90. https://doi.org/10.1037/0735-7028.24.1.83

Elwood, L. S., Mott, J., Lohr, J. M., & Galovski, T. E. (2011). Secondary trauma symptoms in clinicians: A critical review of the construct, specificity, and implications for trauma-focused treatment. *Clinical Psychology Review*, 31(1), 25–36. https://doi.org/10.1016/j.cpr.2010.09.004

Eriksson, C. B., Bjorck, J. P., Larson, L. C., Walling, S. M., Trice, G. A., Fawcett, J., Abernethy, A. D., & Foy, D. W. (2009). Social support, organizational support, and religious support in relation to burnout in expatriate humanitarian aid workers. *Mental Health, Religion, et Culture*, *12*(7), 671–686. https://doi.org/10.1080/13674670903029146

Ewer, P. L., Teesson, M., Sannibale, C., Roche, A., & Mills, K. L. (2015). The prevalence and correlates of secondary traumatic stress among alcohol and other drug workers in Australia. *Drug and Alcohol Review*, *34*(3), 252–258. https://doi.org/10.1111/dar.12204

Figley, C. R. (2002). *Treating compassion fatigue*. Routledge.

Firth-Cozens, J. (2007). Improving the health of psychiatrists. *Advances in Psychiatric Treatment*, *13*(1), 161–168. https://doi.org/10.1192/apt.bp.106.003277

Fitzpatrick, K. M., Harris, C., & Drawve, G. (2020). Fear of COVID-19 and the mental health consequences in America. *Psychological Trauma: Theory, Research, Practice*, *12*(1), S17–S21. https://doi.org/10.1037/tra0000924

Grover, S., Mehra, A., Sahoo, S., Avasthi, A., Tripathi, A., D'Souza, A., Saha, G., Jagadhisha, A., Gowda, M., Vaishnav, M., Singh, O., Dalal, P. K., & Kumar, P. (2020). State of mental health services in various training centers in India during the lockdown and COVID-19 pandemic. *Indian Journal of Psychiatry*, *62*(4), 363–369. https://doi.org/10.4103/psychiatry.indianjpsychiatry_567_20

Hannigan, B., Edwards, D., & Burnard, P. (2004). Stress and stress management in clinical psychology: Findings from a systematic review. *Journal of Mental Health*, *13*(3), 235–245. https://doi.org/10.1080/09638230410001700871

Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., Ballard, C., Christensen, H., Cohen Silver, R., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I., Michie, S., Przybylski, A. K., Shafran, R., Sweeney, A., ... Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. *The Lancet Psychiatry*, *7*, 547–560. https://doi.org/10.1016/S2215-0366(20)30168-1

Holtzman, S., O'Connor, B. P., Barata, P. C., & Stewart, D. E. (2015). The Brief Irritability Test (BITe) A measure of irritability for use among men and women. *Assessment*, *22*(1), 101–115. https://doi.org/10.1177/1073191114533814

Houle, I., & Philippe, F. L. (2020). Can the negative be positive? Or how emotion regulation and integration of negative memories can positively affect well-being. *Journal of Personality*, *88*(5), 965–977. https://doi.org/10.1111/jopy.12544

Huggard, P., Law, J., & Newcombe, D. (2017). A systematic review exploring the presence of vicarious trauma, compassion fatigue, and secondary traumatic stress in alcohol and other drug clinicians. *Australian Journal of Disaster & Trauma Studies*, *21*(2), 65–72.

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging*, *26*(6), 655–672. https://doi.org/10.1177/0164027504268574

Hébert, M., Parent, N., Simard, C., & Laverdière, A. (2018). Validation of the French Canadian version of the brief Connor–Davidson Resilience Scale (CD-RISC 10). *Canadian Journal of Behavioural Science*, *50*(1), 9–16. https://doi.org/10.1037/cbs0000092

Institut National de Santé Publique du Québec. (2020). Public Health Expertise and Reference center. https://www.inspq.qc.ca

Jaimes, A., Hassan, G., & Rousseau, C. (2019). Hurtful gifts? Trauma and growth transmission among local clinicians in postearthquake Haiti. *Journal of Traumatic Stress*, *32*(2), 186–195. https://doi.org/10.1002/jts.22400

Jenaro, C., Flores, N., & Arias, B. (2007). Burnout and coping in human service practitioners. *Professional Psychology: Research and Practice*, *38*(1), 80–87. https://doi.org/10.1037/0735-7028.38.1.80

Kar, S. K., Arafat, S. Y., Kabir, R., Sharma, P., & Saxena, S. K. (2020). Coping with mental health challenges during COVID-19, *Coronavirus disease 2019 (COVID-19)* (pp. 199–213). Springer. https://doi.org/10.1007/978-981-15-4814-7_16

Kaspersen, M., Matthiesen, S. B., & Gotestam, K. G. (2003). Social network as a moderator in the relation between trauma exposure and trauma reaction: A survey among UN soldiers and relief workers. *Scandinavian Journal of Psychology*, *44*(5), 415–423. https://doi.org/10.1046/j.1467-9450.2003.00362.x

Kinman, G., & Grant, L. (2011). Exploring stress resilience in trainee social workers: The role of emotional and social competencies. *British Journal of Social Work*, *41*(2), 261–275. https://doi.org/10.1093/bjsw/bcq088

Kleespies, P. M., Van Orden, K. A., Bongar, B., Bridgeman, D., Bufka, L. F., Galper, D. I., Hillbrand, M., & Yufit, R. I. (2011). Psychologist suicide: Incidence, impact, and suggestions for prevention, intervention, and postvention. *Professional Psychology: Research and Practice*, *42*(3), 244–251. https://doi.org/10.1037/a0022805

Koller, S. L., & Hicks, R. E. (2016). Psychological capital qualities and psychological well-being in Australian mental health professionals. *International Journal of Psychological Studies*, *8*(2), 41–53. https://doi.org/10.5539/ijps.v8n2p41

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Laverdière, O., Kealy, D., Ogrodniczuk, J. S., & Morin, A. J. (2018). Psychological health profiles of Canadian psychotherapists: A wake up call on psychotherapists' mental health. *Canadian Psychology/psychologie canadienne*, *59*(4), 315.

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Wu, J., Du, H., Chen, T., Li, R., Tan, H., Kang, L., Yao, L., Haung, M., Wang, H., Wang, G., Liu, Z., & Hu, S.(2020). Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Netw Open*, *3*(3), e203976. https://doi.org/10.1001/jamanetworkopen.2020.3976

Lebow, J. L. (2020). The challenges of COVID-19 for divorcing and post-divorce families. *Family Process*, *59*(3), 967–973. https://doi.org/10.1111/famp.12574

Lee, Y. R., Lee, J. Y., Kim, J. M., Shin, I. S., Yoon, J. S., & Kim, S. W. (2019). A comparative study of burnout, stress, and resilience among emotional workers. *Psychiatry Investigation*, *16*(9), 686–694. https://doi.org/10.30773/pi.2019.07.10

Li, W., Yang, Y., Liu, Z. H., Zhao, Y. J., Zhang, Q., Zhang, L., Cheung, T., & Xiang, Y. T. (2020). Progression of mental health services during the COVID-19 outbreak in China. *International Journal of Biological Sciences*, *16*(10), 1732–1738. https://doi.org/10.7150/ijbs.45120

Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: A review. *Journal of Mental Health*, *11*(3), 255–265. https://doi.org/10.1080/09638230020023642

Lynch, Jr., M. F., Plant, R. W., & Ryan, R. M. (2005). Psychological needs and threat to safety: Implications for staff and patients in a psychiatric hospital for youth. *Professional Psychology: Research and Practice*, *36*(4), 415–425. https://doi.org/10.1037/0735-7028.36.4.415

Manning-Jones, S., de Terte, I., & Stephens, C. (2016). Secondary traumatic stress, vicarious posttraumatic growth, and coping among health professionals: A comparison study. *New Zealand Journal of Psychology (Online)*, *45*(1), 20–29.

Micoulaud-Franchi, J. A., Lagarde, S., Barkate, G., Dufournet, B., Besancon, C., Trébuchon-Da Fonseca, A., Gavaret, M., Bartolomei, F., Bonini, F., & McGonigal, A. (2016). Rapid detection of generalized anxiety disorder and major depression in epilepsy: Validation of the GAD-7 as a complementary tool to the NDDI-E in a French sample. *Epilepsy & Behavior*, *57*, 211–216. https://doi.org/10.1016/j.yebeh.2016.02.015

Morse, G., Salyers, M. P., Rollins, A. L., Monroe-DeVita, M., & Pfahler, C. (2012). Burnout in mental health services: A review of the problem and its remediation. *Administration and Policy in Mental Health and Mental Health Services Research*, *39*(5), 341–352. https://doi.org/10.1007/s10488-011-0352-1

Norcross, J. C. (2005). The psychotherapist's own psychotherapy: Educating and developing psychologists. *American Psychologist*, *60*, 840–850. https://doi.org/10.1037/0003-066x.60.8.840

Norcross, J. C., Prochaska, J. O., & Diclemente, C. C. (1986). Self-change of psychological distress: Laypersons' vs. psychologists' coping strategies. *Journal of Clinical Psychology*, *42*(5), 834–840. https://doi.org/10.1002/1097-4679(198609)42:5<834::aid-jclp2270420527>3.0.co;2-a

Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsi, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, Behavior, and Immunity*, *88*, 901–907. https://doi.org/10.1016/j.bbi.2020.05.026

Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 224–239). Guilford Press.

Philippe, F. L., & Houle, I. (2020). Cognitive integration of personal or public events affects mental health: Examining memory networks in a case of natural flooding disaster. *Journal of Personality*, *88*(5), 861–873. https://doi.org/10.1111/jopy.12531

Pierce, B. S., Perrin, P. B., Tyler, C. M., McKee, G. B., & Watson, J. D. (2020). The COVID-19 telepsychology revolution: A national study of pandemic-based changes in US mental health care delivery. *American Psychologist*, *76*(1), 14–25. https://doi.org/10.1037/amp0000722

Piotrowski, C.(2021). COVID-19: An exploratory bibliometric analysis of research indexed in PsycINFO. *North American Journal of Psychology*, *23*(1), 115–120.

Posluns, K., & Gall, T. L. (2020). Dear mental health practitioners, take care of yourselves: A literature review on self-care. *International Journal for the Advancement of Counselling*, *42*(1), 1–20. https://doi.org/10.1007/s10447-019-09382-w

Pow, A. M., & Cashwell, C. S. (2017). Posttraumatic stress disorder and emotion-focused coping among disaster mental health counselors. *Journal of Counseling & Development*, *95*(3), 322–331. https://doi.org/10.1002/jcad.12146

Prati, G., & Pietrantoni, L. (2010). The relation of perceived and received social support to mental health among first responders: A meta-analytic review. *Journal of Community Psychology*, *38*, 403–417. https://doi.org/10.1002/jcop.20371

Probst, T., Humer, E., Stippl, P., & Pieh, C. (2020). Being a psychotherapist in times of the novel coronavirus disease. *Frontiers in Psychology*, *11*, 559100. https://doi.org/10.3389/fpsyg.2020.559100

Rajkumar, R. P. (2020). COVID-19 and mental health: A review of the existing literature. *Asian Journal of Psychiatry*, *52*, 102066. https://doi.org/10.1016/j.ajp.2020.102066

Ramberg, I. L., & Wasserman, D. (2000). Prevalence of reported suicidal behavior in the general population and mental health-care staff. *Psychological Medicine*, *30*(5), 1189–1196. https://doi.org/10.1017/s003329179900238x

Rodriguez, S. Y. S., & Carlotto, M. S. (2017). Predictors of burnout syndrome in psychologists. *Estudos de Psicologia*, *34*(1), 141–150. https://doi.org/10.1590/1982-02752017000100014

Rössler, W. (2012). Stress, burnout, and job dissatisfaction in mental health workers. *European Archives of Psychiatry and Clinical Neuroscience*, *262*(2), 65–69. https://doi.org/10.1007/s00406-012-0353-4

Saakvitne, K. W., & Pearlman, L. A. (1996). *Transforming the pain: A workbook on vicarious traumatization*. WW Norton & Co.

Salyers, M. P., Bonfils, K. A., Luther, L., Firmin, R. L., White, D. A., Adams, E. L., & Rollins, A. L.(2017). The relationship between professional burnout and quality and safety in healthcare: A meta-analysis. *Journal of General Internal Medicine*, *32*, 475–482. https://doi.org/10.1007/s11606-016-3886-9

Soler-Gonzalez, J., San-Martín, M., Delgado-Bolton, R., & Vivanco, L. (2017). Human connections and their roles in the occupational well-being of healthcare professionals: A study on loneliness and empathy. *Frontiers in Psychology*, *8*, 1475. https://doi.org/10.3389/fpsyg.2017.01475

Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of Organizational Behavior*, *15*(5), 385–392. https://doi.org/10.1002/job.4030150503

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097. https://doi.org/10.1001/archinte.166.10.1092

Surya, M., Jaff, D., Stilwell, B., & Schubert, J. (2017). The importance of mental well-being for health professionals during complex emergencies: It is time we take it seriously. *JHSP Journal*, *5*(2), 188–196. https://doi.org/10.9745/ghsp-d-17-00017

Tzeletopoulou, A., Alikari, V., Krikelis, M. I., Zyga, S., Tsironi, M., Lavdaniti, M., & Theofilou, P. (2019). Fatigue and perceived social support as predictive factors for aggressive behaviors among mental healthcare professionals. *Archives of Hellenic Medicine*, *36*(6), 792–799.

World Health Organization. 2020. https://covid19.who.int/

Yao, H., Chen, J., & Xu, Y. (2020). Patients with mental health disorders in the COVID-19 epidemic. *The Lancet*, *7*(4):21. https://doi.org/10.1016/S2215-0366(20)30090-0

Zhang, J., Lu, H., Zeng, H., Zhang, S., Du, Q., Jiang, T., & Du, B. (2020). The differential psychological distress of populations affected by the COVID-19 pandemic. *Brain, Behavior, and Immunity*, *87*, 49–50. https://doi.org/10.1016/j.bbi.2020.04.031