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The psychological experience of medical rescuers during the COVID-19 pandemic

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Abstract: Medical rescuers are the frontline for COVID-19 and their psychological experience and health are major concerns to our society and healthcare system. This study aims to understand how medical rescuers psychologically experienced this pandemic and explore the contributing variables to COVID-19 anxiety. Portuguese medical rescuers (*n* = 203) answered questions about their COVID-19 experience, the COVID-19 Anxiety Scale, Patient-Health Questionnaire, Perceived Stress Scale, Obsessive-Compulsive Inventory, and Well-Being Questionnaire. Rescuers presented low COVID-19 anxiety and low-moderate levels of fear. Most already faced or were facing changes in their job-related tasks, did not change household and did not feel stigma/discrimination. COVID-19 workplace security measures were considered moderately adequate and low anxiety, depression and obsessive-compulsive symptoms, low to moderate stress and moderate well-being were found. Only COVID-19 fear and security measures, anxiety, depression and obsessive-compulsive symptoms explained COVID-19 anxiety. Overall, findings showed these rescuers were psychologically well adjusted during the pandemic's initial stages.

Keywords: *COVID-19 pandemic; medical rescuers; psychological experience; mental health.*

The world is facing a novel type of previously unknown infectious disease: the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also referred to as coronavirus disease 2019 or COVID-19 (Li et al., 2020). COVID-19 spread at alarming rates and the World Health Organization declared a pandemic on March 11, 2020 (WHO, 2020). Since then, and across different waves, many efforts have been made to understand how COVID-19 is psychologically experienced. This is especially relevant to healthcare workers in the frontline of this challenging situation, whose working conditions suffered massive and abrupt changes (EU-OSHA, 2020; EUROFOUND, 2020, 2021). Thus, how they are psychologically experiencing the COVID-19 pandemic is an urgent and major concern due to the potential development of mental health problems (e.g., Busch et al., 2021; EUROFOUND, 2021; Li et al., 2021; Xiang et al., 2020).

In fact, medical rescuers are highly exposed to COVID-19 and are a population at risk for mental health problems (Kumar & Nayar, 2020; Li et al., 2021; Sinclair et al., 2020; Sirois & Owens, 2021; Weibelzahl et al., 2021). In Portugal, besides their normal tasks, they also transport suspected cases of COVID-19 and collect biological material for SARS-CoV-2 analysis. Along with the uncertainty that characterizes the COVID-19 pandemic, rescuers face many challenges such as: physical and emotional fatigue, stigma/discrimination, exposure to emotionally demanding stimuli, the use of new protective equipment and the lack thereof, excessive workload and long working hours, fear and risk of being infected and infecting their families/friends, separation from their loved ones and changing households, among many others (e.g., Almeida et al., 2020; Hamouche, 2020; Ho et al., 2020; Kang et al., 2020; Lai et al., 2020; Lau et al., 2021; Park et al., 2018; Sinclair et al., 2020). All these challenges have surfaced in an already highly stressful occupational field, with impairments on rescuers' mental health (e.g., Petrie et al., 2018).

This pandemic has shown to have a unique impact on rescuers' mental health. Among the variables most frequently studied during pandemics or similar situations are anxiety, depression and stress (APA, 2014; Beck, 1963; Beck & Clark, 1997; Everly & Mitchell, 1997). During the COVID-19 pandemic, mild to moderate levels were found for healthcare workers (Buselli et al., 2020; Giusti et al., 2020; de Pinho et al., 2021; Zhang et al., 2020). Li and colleagues (2021), in a meta-analysis with 97, 333 healthcare workers, found the prevalence of 22.1% for anxiety and 21.7% for depression. Well-being and obsessions-compulsions, however, were scarcely studied (APA, 2014; WHO, 2006). During this pandemic, the worst levels of subjective well-being were found in adults, when compared to reports from the previous year

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(Fujiwara et al., 2020). Other studies found good levels of well-being with healthcare workers (Almeida et al., 2020; Greenberg et al., 2021). Low levels of obsessive-compulsive symptoms were found in hospital staff (Turan et al., 2021; Zhang, Wang, et al., 2020), as well as more compulsive handwashing than in the general public (Mrklas et al., 2020).

In depth characterization of how this pandemic was and is being psychologically experienced is warranted, even if not controlling for pre-COVID-19 data. This is especially true for medical rescuers, who work in different settings and are exposed to different stimuli than hospital staff. They are the frontline facing COVID-19 and their mental health is of major concern to prepare our healthcare system for these uncertain times and for future pandemics and epidemics (Ho et al., 2020). Thus, this exploratory study aims to understand how medical rescuers psychologically experienced the COVID-19 pandemic and what contributes to COVID-19 anxiety. It specifically aims to: characterize how rescuers lived through the pandemic; analyze their levels of anxiety, depression, stress, well-being and obsessive-compulsive symptoms; examine how these mental health variables vary according to the COVID-19 experience; and assess the contribution of sociodemographic/professional, COVID-19 experience and mental health variables to COVID-19 anxiety.

METHOD

Participants

A total of 203 workers of the Portuguese National Institute of Medical Emergency (INEM) participated. On average, they were 38.77 years old (*SD* = 5.72, 25-55) and had 10.02 years of experience within INEM (*SD* = 5.22, 0.33-31). The majority was male (*n* = 138, 68%), lived with others (*n* = 180, 89%) and had children (*n* = 134, 66%). The participants worked as pre-hospital medical technicians (*n* = 146, 72%) and nurses (*n* = 57, 28%). They were from the north of Portugal (*n* = 86, 42%), center (*n* = 48, 24%), south-Lisbon (*n* = 49, 24%) and south-Faro (*n* = 20, 10%).

Instruments

To characterize how medical rescuers experienced and lived through this pandemic, a set of 15 questions were gathered after consulting field professionals and the literature. These included yes/no questions (e.g., "As a healthcare professional during the COVID-19 pandemic, are you or were you ever a target of stigma/discrimination?"), 5-point Likert scales (e.g., "To what extent did these situations harm your well-being?"; 0 = *not at all* to 4 = *a lot*), and multiple-choice questions (e.g., "By whom?"). Instructions were changed to reflect the time lag between the beginning of the pandemic and data collection.

COVID-19 anxiety was measured with the Coronavirus Anxiety Scale (CAS; Lee, 2020). Since no Portuguese version was available at the time, three psychologists (experts on anxiety, stress and psychometrics) translated the questionnaire into Portuguese. Another non-psychologist researcher back translated the questionnaire into English and compared it with the original version. Finally, the first three researchers discussed each item with another psychologist, specialized in anxious disorders, until a lexical and cultural consensus was obtained. This scale has 5 items assessed on a 5-point Likert scale (0 = *not at all* to 4 = *nearly every day;* α = .87).

Anxiety and depression were measured by the Portuguese version of the Patient Health Questionnaire (PHQ-4; Kroenke et al., 2009; Torres et al., 2016). This instrument assesses 4 items on a 4-point Likert scale (0 = *not at all* to 3 = *nearly every day*) and each pair of items measures the frequency of anxiety and depression.

Stress was measured by 4 items of the Portuguese version of Perceived Stress Scale (PSS; Cohen et al., 1983; Trigo et al., 2010), assessing the frequency of stress on a Likert scale (0 = *never* to 4 = *very often*).

Well-being was measured by the Portuguese version of Well-Being Questionnaire (WBQ - 12; Pouwer et al., 2000; Koch et al., 2012), with 12 items that assess the level of well-being on a 4-point Likert scale (0 = *never* to 3 = *all the time*). Items are grouped into a total score and three dimensions (4 items each): positive and negative well-being, and energy.

Obsessive-compulsive symptoms were measured with the Portuguese version of Obsessive-Compulsive Inventory-Revised (OCI-R; Faria & Cardoso, 2017; Foa et al., 2002), with 18 items that assess the degree of emotional suffering related to these symptoms on a 5-point Likert scale (0 = *not at all* to 4 = *extremely*). In addition to the overall score, items are grouped in six factors (3 items each): washing, obsessing, hoarding, ordering, checking and neutralizing.

Procedures

This national study was approved by the University's Ethics Committee and by INEM. All INEM professionals received an email inviting them to participate and data were collected online in March-July

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2020. Confidentiality and anonymity were assured.

Data were analyzed with IBM SPSS (v.26) and univariate normality was confirmed (Kline, 2011). Statistical descriptive analyses, the Welch test for samples comparison (given the differences between the number of participants in both groups: Delacre et al., 2017; Ruxton, 2006), Pearson's bivariate correlations and multiple linear regression (all assumptions were assured; Durbin-Watson = 1.95) were performed. Dichotomous data were transformed into dummy variables (Field, 2009).

RESULTS

An INEM taskforce closely monitored professionals suspected or infected by COVID-19 and others with dysfunctional reactions. Among the participants, 45 (22%) received this support. 21 (47%) were followed by a team of nurses and emergency technicians, six (13%) by a team of psychologists and 13 (29%) by both.

Most already faced or were expecting changes in their job-related tasks (*n* = 180, 89%). Changes on rescue protocols when approaching victims (*n* = 159, 90%) and on the use of protective equipment (*n* = 159, 90%) were the main changes that occurred. The most expected change in the future was to receive training on COVID-19 security measures (*n* = 41, 24%) and changes in teamwork (*n* = 29, 20%). The measures professionals valued the most to usher in these changes were supervisors/INEM listening to their opinions/suggestions (*n* = 129, 72%); and more detailed information from an operational point-of-view (*n* = 123, 68%).

During the pandemic, the majority (*n* = 168, 83%) did not change households. The participants who did change mostly specified the following reasons: unwillingness to risk infecting family members (*n* = 21, 65%) and moving closer to work (*n* = 5, 15%). Most (*n* = 26, 74%) did not report this situation to INEM. Moreover, most participants revealed they were not a target of stigma/discrimination (*n* = 131, 65%). Among the participants who were targeted, the stigma/discrimination came from society (*n* = 55, 76%), colleagues (*n* = 20, 28%), relatives (*n* = 17, 24%) and friends (*n* = 16, 22%).

Table 1 presents descriptive statistics for some COVID-19 experience variables.

Table 1. COVID-19 experience related variables: mean, standard deviation and range.

Variables	*M*	*SD*	*Range*
COVID-19 anxiety[a]	0.35	0.59	0-3.50
Security measures[b]	2.34	1.04	0-4
Impact on rescuers' well-being[c]			
Job changes – past[c]	2.54	1.02	1-5
Job changes – present[c]	2.78	0.99	1-5
Job changes – future[c]	2.91	1.15	1-5
Changing household[d]	2.46	1.31	0-4
Stigma/Discrimination[e]	2.07	1.35	0-4
Overall COVID-19 Fear[f]	1.92	0.94	0-4
Infecting friends/relatives	2.98	1.23	0-4
Infecting co-workers	2.57	1.18	0-4
Having difficulties in assisting friends/relatives	2.14	1.40	0-4
Being infected by COVID-19	2.00	1.29	0-4
Failing	1.74	1.25	0-4
Having difficulties in managing COVID-19 symptoms if infected	1.65	1.20	0-4
Having difficulties in assisting victims	1.65	1.31	0-4
Not knowing enough about COVID-19	1.28	1.11	0-4
Being a target of stigma/discrimination	1.26	1.23	0-4

Note: [a] 0 = *not at all* to 4 = *nearly every day*. [b] 0 = *none or insufficient* to 4 = *the best possible*. [c] 1 = *very negatively* to 5 = *very positively*. [d] 0 = *nothing* to 4 = *a lot*. [e] 0 = *not at all* to 4 = *a lot*. [f] 0 = *nothing* to 4 = *a lot*.

Participants presented low levels of COVID-19 anxiety, which included dizziness, sleep disturbances, tonic immobility, appetite loss and abdominal distress. COVID-19 security measures provided by INEM were perceived as moderately adequate. Participants considered changes or expected changes in their job-related tasks moderately affected (past), were affecting (present) and were going to affect (future) their well-being. Changing households and being a target of stigma/discrimination were considered to harm their well-being moderately.

Concerning COVID-19 fear, an overall score was created. Participants showed low-moderate levels of fear (Table 1). They were more afraid of infecting friends/relatives, followed by infecting co-workers,

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having difficulties in assisting friends/relatives, being infected by COVID-19, failing, having difficulties in managing COVID-19 symptoms (if infected) and in assisting victims, not knowing enough about COVID-19, and being a target of stigma/discrimination.

Regarding mental health variables, participants showed (Table 2): low levels for anxiety, depression, obsessive-compulsive symptoms and negative well-being; low-moderate levels of stress; and moderate levels of general well-being, positive well-being and energy. Within obsessive-compulsive symptoms, ordering and washing had the highest average.

Table 2. Mental health variables: Internal consistency, minimum, maximum, mean and standard deviation.

Variables and dimensions	*α*	*Min.*	*Max.*	*M*	*SD*
PHQ-4 (0-3)					
Anxiety	.71	0	3.00	0.61	0.65
Depression	.75	0	3.00	0.53	0.60
PSS (0-4)					
Stress	.72	0	3.50	1.24	0.69
OCI-R (0-4)					
Overall obsessive-compulsive symptoms	.90	0	3.33	0.79	0.58
Washing	.70	0	3.67	1.04	0.86
Obsessing	.85	0	3.67	0.65	0.82
Hoarding	.57	0	3.00	0.68	0.67
Ordering	.84	0	4.00	1.19	0.97
Checking	.66	0	3.67	0.77	0.67
Neutralizing	.59	0	3.67	0.40	0.59
WBQ-12 (0-3)					
Overall well-being	.88	0.33	3.00	1.97	0.50
Positive well-being	.88	0	3.00	1.62	0.70
Negative well-being	.82	0	3.00	0.41	0.49
Energy	.73	0	3.00	1.69	0.61

Differences between gender and professional role were analyzed and results showed (only significant results and the overall scores for each variable are presented; Table 3 and Table 4): men presented higher levels of overall well-being than women; and pre-hospital medical technicians presented higher depression and stress, as well as lower well-being, when compared to nurses.

Table 3. Mental health variables: differences between gender.

	Gender	*M (SD)*	*Welch (df1,df2)*	*d*
Overall well-being	Women (*n* = 65)	1.86 (0.45)	4.56 (1, 142.04)*	0.33
	Men (*n* = 138)	2.02 (0.52)		

Note: *p < .05.

Table 4. Mental health variables: differences between professional roles.

	Gender	*M (SD)*	*Welch (df1,df2)*	*d*
Depression	Technicians (*n* = 146)	0.59 (0.60)	4.89 (1, 105.15)*	0.34
	Nurses (*n* = 57)	0.39 (0.58)		
Stress	Technicians (*n* = 146)	1.31 (0.68)	5.21 (1, 99.53)*	0.36
	Nurses (*n* = 57)	1.06 (0.70)		
Overall well-being	Technicians (*n* = 146)	1.90 (0.49)	11.09 (1, 102.52)**	0.51
	Nurses (*n* = 57)	2.15 (0.49)		

Note: *p < .050. **p < .01.

All mental health variables correlated with each other (Table 5): anxiety, depression, stress, and obsessive-compulsive symptoms correlated positively; and all the above correlated negatively with well-being. Moreover, participants who lived alone generally considered security measures as adequate, and being a parent and years of professional experience positively correlated with COVID-19 anxiety. Regarding COVID-19 experience and mental health, results showed COVID-19 anxiety and fear correlated: positively with anxiety, depression, stress, and obsessive-compulsive symptoms; and negatively with well-being. How security measures were assessed correlated positively with well-being and negatively with anxiety, depression, stress and obsessive-compulsive symptoms. COVID-19 job changes correlated positively with

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anxiety. Professionals who changed household reported higher stress and lower well-being. Professionals who reported stigma/discrimination reported higher depression, anxiety and stress. The contributing variables for COVID-19 anxiety were explored among sociodemographic/professional, COVID-19 experience and mental health variables (Table 6), but the group of sociodemographic/professional variables did not significantly explain COVID-19 anxiety. When adding COVID-19 experience related variables, the explained variance increased to 8.7% and to 45% with mental health variables. Only fear and the adequacy of COVID-19 security measures (in Model 2), anxiety, depression and obsessive-compulsive symptoms significantly explained COVID-19 anxiety.

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Table 5. *Correlations matrix: Sociodemographic and professional, COVID-19 experience and mental health variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender (woman)[a]	-														
2. Age	-.11	-													
3. Lived alone (yes)[b]	.22**	-.16*	-												
4. Being a parent (yes)[b]	-.15*	.32***	-.47***	-											
5. Years of experience	-.01	.53***	-.08	.31***	-										
6. COVID-19 Anxiety[c]	.02	.10	-.12	.19**	.14*	-									
7. Changed household (yes)[b]	-.03	-.06	.08	-.09	-.08	.08	-								
8. Security measures[c]	.11	.06	.15*	-.08	-.09	-.20**	-.14*	-							
9. Job changes (yes)[b]	.05	-.13	-.12	.10	-.10	.06	-.05	.02	-						
10. Fear[c]	-.03	.02	-.01	.06	.05	.24**	.00	-.12	.01	-					
11. Target of stigma (yes)[b]	-.0	-.06	-.04	-.08	.02	.11	.07	-.08	-.09	.19**	-				
12. Anxiety[d]	.10	.07	-.14*	.15*	.05	.62***	.11	-.26***	.14*	.27***	.15*	-			
13. Depression[d]	.06	-.00	-.03	-.01	-.03	.56***	.04	-.27***	.08	.25***	.20**	.66***	-		
14. Stress[c]	.01	.04	-.02	.03	-.02	.45***	.15*	-.35***	.10	.24***	.18*	.52***	.54***	-	
15. Obsessive-compulsive[c]	-.01	.04	-.01	-.03	-.01	.43***	-.10	-.17*	.02	.21**	.11	.40***	.44***	.44***	-
16. Well-being[d]	-.14*	.01	-.03	.04	.04	-.54***	-.14*	.29***	-.04	-.22***	-.09	-.60***	-.69***	-.61***	-.51***

Note: [a] Dummy variable (0 = man, 1 = woman). [b] Dummy variable (0 = no, 1 = yes). [c] Range: 0-4. [d] Range: 0-3. *p < .05. **p < .01. ***p < .001.

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Table 6. *Predictors of COVID-19 Anxiety: Sociodemographic and professional, COVID-19 experience and mental health variables.*

	Model 1			***Model 2***			***Model 3***		
Predictors	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Gender (Woman)	0.06	0.09	.05	0.09	0.09	.07	-0.03	0.07	-.03
Age	0.00	0.01	.00	0.01	0.01	.05	-0.01	0.01	-.05
Lived alone (yes)	-0.10	0.15	-.06	-0.10	0.15	-.03	-0.04	0.11	-.02
Being a parent (yes)	0.7	0.10	.14	0.16	0.10	.13	0.14	0.08	.11
Years of experience	0.01	0.01	.08	0.01	0.01	.05	0.01	0.01	.12
Changed household (yes)				0.13	0.11	.08	0.08	0.09	.05
Security measures				-0.08	0.04	-.15*	0.03	0.03	.06
Job changes (yes)				0.12	0.13	.06	-0.04	0.10	-.02
Fear				0.12	0.04	.19**	0.02	0.04	.03
Target of stigma				0.09	0.09	.08	-0.02	0.07	-.02
Anxiety							0.30	0.07	.34***
Depression							0.17	0.08	.17*
Stress							0.05	0.06	.06
Obsessive-compulsive							0.14	0.07	.14*
Well-being							-0.15	0.10	-.13
F		1.74			2.91**			11.96***	
df		5, 196			10, 191			15, 186	
R^2a		.018			.087			.450	

Note: $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$.

DISCUSSION

This exploratory study aimed to understand how Portuguese medical rescuers psychologically experienced COVID-19, and overall results showed rescuers presented adequate levels on all mental health variables assessed in this study, during the initial stages of the COVID-19 pandemic. Their good psychological adjustment may have stemmed from how they experienced and worked through the COVID-19 pandemic, and from their overall mental health, both of which were closely related. Moreover, COVID-19 fear, COVID-19 security measures, anxiety, depression and obsessive-compulsive symptoms significantly explained the COVID-19 anxiety. However, it is important to note that we did not control for data prior to COVID-19 and that this is a preliminary study. Regarding how rescuers lived and are living through this pandemic, results showed low COVID-19 anxiety and low-moderate levels of fear, especially of infecting relatives and/or colleagues. Due to the COVID-19 pandemic, most already faced or were facing changes in their job-related tasks, did not change household and were not a target of stigma/discrimination. Workplace security measures were considered moderately adequate, and only a small percentage were closely monitored for displaying dysfunctional reactions. Thus, despite being highly exposed to COVID-19, suffering significant changes in their working conditions and feeling afraid, participants seem to show a good ability to psychologically adjust to these stressors. The security measures' adequacy and the support from colleagues and relatives, in their work and in the household, may have helped balance how they have responded to this pandemic. These results are in line and add to the knowledge of the sparse literature on changes and challenges faced by healthcare workers during COVID-19 (e.g., Almeida et al., 2020; Hamouche, 2020; Ho et al., 2020; Kang et al., 2020; Lai et al., 2020; Lau et al., 2021).

Mental health variables also showed good levels of psychological adjustment, with rescuers presenting low anxiety, depression and obsessive-compulsive symptoms, as well as low-moderate stress and moderate well-being. Washing and ordering were the highest obsessive-compulsive symptoms, which show the concern with security protocols and protective measures (Mrklas et al., 2020). These results support literature that found mild levels of these mental health indicators, although some reported higher levels than those of this study (Almeida et al., 2020; Buselli et al., 2020; Giusti et al., 2020; Greenberg et al., 2021; de Pinho et al., 2021; Zhang, Wang et al., 2020), especially for anxiety and depression (Li et al., 2021). However, this study presents additional information on rescuers' obsessive-compulsive symptoms and well-being during COVID-19, which are still sparsely studied.

Furthermore, differences between gender and professional roles were also found: men and emergency technicians reported lower well-being than women and nurses, respectively; and technicians also reported higher depression and stress. Thus, women appear to have reported more vulnerability during the initial stages of this pandemic regarding their perception this experience and their well-being, as Badahdah and colleagues (2020) found with 194 physicians during the beginning of COVID-19. Additionally, emergency technicians also reported being more vulnerable, which raises some questions.

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These are, namely, if these results may be due to their lower level of qualifications (as found in some studies; Bentley et al., 2013; Gupta et al., 2021) or to being more frequently exposed to critical stressors (e.g., Petrie et al., 2018), when compared to nurses. Moreover, mental health variables were all correlated to each other, showing a high comorbidity and a comprehensive impact of stressors during this pandemic (e.g., Almeida et al., 2020; Li et al., 2021). COVID-19 experience related variables were also correlated with mental health variables. Rescuers with higher anxiety, depression, stress and obsessive-compulsive symptoms, as well as lower well-being also presented higher COVID-19 anxiety and fear, as well as poorly assessed workplace security measures. So, perceiving security measures as being more adequate can have a protective role in rescuers' mental health and COVID-19 related fear appears to be a risk factor. Participants who already faced or were expecting job changes as a result of COVID-19 presented higher anxiety than those who did not. This finding shows that significant changes in rescuers' work settings and tasks result in worries and tension, physiologically, cognitively and behaviorally (APA, 2014; Beck & Clark, 1997). Being a target of stigma/discrimination and changing household correlated with stress, anxiety, depression and well-being, which shows both are risk factors for mental health. All this information adds to the scientific understanding of how specific details of the COVID-19 experience may have affected the mental health of rescuers, a topic sparsely studied, especially in Portugal and with this population. Contributing variables for COVID-19 anxiety were explored considering sociodemographic/professional, COVID-19 experience and mental health variables. Findings showed a higher contribution of mental health variables to the explained variance of COVID-19 anxiety. Thus, rescuers' mental health during COVID-19 can especially contribute to how COVID-19 is experienced. Among the sociodemographic/professional and COVID-19 experience variables, only the adequacy of the COVID-19 security measures and levels of fear contributed to COVID-19 anxiety. As such, COVID-19 related fear, especially in these uncertain times, and rescuers perceiving that the security measures cannot effectively protect them, are key factors to the exacerbation of COVID-19 anxiety symptoms (Beck & Clark, 1997; Lee, 2020). However, mental health variables and COVID-19 fear and security measures appear to interact when predicting COVID-19 anxiety (change in *p* values; Hayes, 2018).

Regarding mental health, only anxiety, depression and obsessive-compulsive symptoms positively contributed to COVID-19 anxiety. The contribution of anxiety might be a result of the shared symptoms with COVID-19 anxiety (Lee, 2020). Additionally, this finding shows overall anxiety also exacerbates anxiety related to COVID-19. The same happened for depression, with similar symptoms and with high comorbidity with anxiety (APA, 2014). The contribution of obsessive-compulsive symptoms might indicate that excessive worrying and behaviors related with ordering and washing (the highest reported) do not lighten the emotional discomfort (APA, 2014). Even if normal and/or expected in this pandemic, these symptoms are promoting COVID-19 anxiety.

Notwithstanding its limitations (e.g., cross-sectional, self-reported, preliminary, and not controlling for pre-COVID-19 data), this study contributes to the sparse literature that characterized and explored in depth the COVID-19 psychological experience of Portuguese medical rescuers. When compared to hospital staff, medical rescuers' working conditions and demands are markedly different, as they are exposed to multiple risks and stressors, directly and/or indirectly. Therefore, their unique experience needs to be understood so as to better prepare our healthcare system for future COVID-19 and/or similar outbreaks (EUROFOUND, 2021; Ho et al., 2020).

This study, moreover, points to other future topics on which the scientific literature on COVID-19 might further develop. In depth studies could be carried out, for example, on the contribution and impact of COVID-19 related fear and security measures for these and other mental health variables; the mediation and moderation relationships between variables in this study; and the symptoms of COVID-19 related anxiety; as well as its contributing value to other key psychological factors. Additionally, future studies ought to increase the sample size and diversity, by including other rescuers, and perform more complex statistical analysis. It is important to highlight that the evolving COVID-19 pandemic calls for the need to closely and continuously monitor medical rescuers' experience and psychological health. Psychologists who support these emergency institutions and rescuers can focus and develop prevention and/or mitigation strategies closely related to how rescuers perceive security measures and their level of fear. The same is especially true for other mental health variables, which can be closely monitored to prevent COVID-19 anxiety, namely depression, obsessive-compulsive symptoms, and anxiety. It is, nevertheless, important to note that this study only presents preliminary data on these topics, and needs to be considered along with the emerging literature in this field.

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