



# Impact on mental health of the COVID-19 outbreak among general practitioners during the sanitary lockdown period

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## Abstract

**Background** COVID-19 outbreak can impact mental health including health care workers.

**Aim** The aim of this study was to assess the mental health impact of COVID-19 in French General Practitioners (GPs).

**Methods** We carried out a postal-based survey during the first lockdown. Four psychological validated self-report questionnaires were used to assess stress, post-traumatic stress symptoms, burnout and self-efficacy (Perceived Stress scale, Impact of Event Scale-revised, Maslach Burnout Inventory and General Self-Efficacy scale).

**Results** The sample consists of 332 general practitioners (43.50% women, mean age = 50.74 ± 11.91). General practitioners working in high epidemic location represented 27.71% of the sample ( $n = 92$ ). Thirty four GPs reported significant post-traumatic stress symptoms (10.59%). High burnout symptoms were found in 79 (24.46%), 137 (42.41%) and 17 (5.26%) participants. Only General Self-Efficacy scores were significantly different according to epidemic location status with lower scores in GPs working in high epidemic location ( $33.37 \pm 4.64$  vs.  $32.06 \pm 5.43$ ;  $P = 0.04$ ). Women reported more stress and burnout symptoms than men ( $P = 0.01$ ).

**Conclusions** This study showed the psychological impact of COVID-19 in GPs during the sanitary lockdown period including burnout and post-traumatic stress symptoms. Up to 42% of GPs reported psychological disturbances. Interventions to promote mental health well-being of healthcare workers need to be developing.

**Keywords** Burnout · COVID-19 · General practitioners · Mental health · Stress

## Introduction

In December 2019, a cluster of pneumonia cases in China conducted to identify the SARS-CoV-2 a novel coronavirus also named COVID-19 [1]. On March 2020, the World Health Organization declared the COVID-19 as a pandemic.

Some results showed that the COVID-19 outbreak have a negative impact on healthcare workers mental health.

Psychological symptoms such as anxiety, stress and sleep disturbances were reported in healthcare workers [2–8] including mainly nurses.

General practitioners (GPs) played an important role in hindering the spread of COVID-19 in primary care. They help to reduce the virus propagation by treating patients and provide medical surveillance and the virus transmission by patient monitoring. Furthermore, living with the fear to be infected themselves could induced anxiety and stress [8, 9]. Nevertheless, only one study assessed the COVID-19 pandemic impact on depression, anxiety and insomnia in GPs [7].

The aim of this study was to assess the psychological impact of COVID-19, especially stress and burnout symptoms, in French GPs.

## Methods

We carried out a postal-based survey the 15th April 2020 to assess the impact of COVID-19 on the mental health of GPs

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working in Normandy (France), one month after COVID-19 the first sanitary lockdown (17th March 2020).

It consisted of sociodemographic, medical office organization and general practice supervisors' data. Epidemic location was defined by French Health Authority in 4 localized clusters before first COVID-19 lockdown. This survey was approved by Ethic Department of University of Caen Normandy (Authorization n°TG\_COMPO\_PEDAGO\_SANTE\_14–20,180,529-01R1).

Four psychological validated self-report questionnaires were used. The Perceived Stress scale (PSS) assesses stress [10]. The Impact of Event Scale-revised (IES-R) assesses post-traumatic stress symptoms [11]. Significant symptoms were defined by a score  $\geq 33$ . The Maslach Burnout Inventory (MBI) assesses [12]: emotional exhaustion (EE), depersonalisation (DP) and personal accomplishment (PA). High burnout symptoms were defined by scores  $\geq 30$  and  $\geq 12$ , respectively for EE and DP and  $\leq 33$  for PA. The General Self-Efficacy scale (GSE) was also used [13].

## Statistical analysis

Data were expressed as means and standard deviations (SD) or percentage. Comparisons between groups (gender or exposition) were done by *t* Student's test or chi-2 test, where appropriate, using NCSS version 9 (Hintze J, Kaysville, Utah, USA: [www.ncss.com](http://www.ncss.com)).

## Results

The response rate was 29.19% ( $n = 364$ ; 1247 questionnaires were sent). Thirty-two questionnaires were non-usable mainly for return to the expeditor due to incorrect postal address or return without completion. The sample consists of 332 general practitioners (43.50% women (1 missing response), mean age =  $50.74 \pm 11.91$ ; Table 1). General practitioners working in high epidemic location represented 27.71% of the sample ( $n = 92$ ).

**Table 1** Demographic, organization and psychological characteristics of general practitioners

	All sample ( $n=332$ )
Women (n, %) [missing 1]	144 (43.50)
Age (y) mean (SD)	50.74 (11.91)
High epidemic location (n, %)	92 (27.71)
Medical office [missing 3]	
Alone (n, %)	67 (20.37)
Mono-professional (n, %)	117 (35.56)
Pluri-professional (n, %)	145 (44.07)
General Practice supervisors (n, %)	153 (46.08)
Perceived stress scale [PSS]*; mean (SD) [missing 1]	14.33 (7.24)
Impact of Event scale [IES-R]*; mean (SD)	14.69 (14.35)
Post-traumatic stress symptoms (n, %) [missing 11]	34 (10.59)
Emotional exhaustion [EE]**; mean (SD) [missing 9]	22.65 (10.59)
Low (n, %)	130 (40.25)
Middle (n, %) burnout symptoms	114 (35.29)
High (n, %)	79 (24.46)
Depersonalisation [DP]**; mean (SD) [missing 9]	11.65 (5.31)
Low (n, %)	26 (8.05)
Middle (n, %) burnout symptoms	160 (49.54)
High (n, %)	137 (42.41)
Personal accomplishment [PA]**; mean (SD) [missing 9]	46.86 (7.94)
Low (n, %)	277 (85.76)
Middle (n, %) burnout symptoms	29 (8.98)
High (n, %)	17 (5.26)
General Self-Efficacy scale [GSE]***; mean (SD) [missing 12]	33.01 (4.89)

\*Higher score represents high level of stress

\*\*Maslach Burnout Inventory. Higher score of PA represents lower burnout symptoms. Higher scores for EE and DP represent higher burnout symptoms

\*\*\*Higher score represents high self-efficacy level

**Table 2** Demographic, exposition and psychological characteristics of general practitioners according to gender

	Women ( <i>n</i> =144)	Men ( <i>n</i> =187)	<i>P</i> value
Age (y) mean (SD)	46.59 (10.80)	53.46 (11.88)	<b>0.001</b>
Epidemic location Covid-19			
High (n, %)	44 (30.56)	48 (25.67)	0.50
Low (n, %)	100 (69.44)	139 (74.33)	
General Practice supervisors			
Yes (n, %)	84 (58.33)	95 (50.80)	0.22
No (n, %)	60 (41.67)	92 (49.20)	
Perceived stress scale [PSS]; mean (SD)	16.20 (7.48)	12.86 (6.71)	<b>0.01</b>
Impact of Event scale [IES-R]; mean (SD)	18.21 (16.56)	11.90 (11.63)	<b>0.001</b>
Emotional exhaustion [EE]*; mean (SD)	22.00 (10.19)	23.48 (10.99)	0.24
Depersonalisation [DP]*; mean (SD)	10.86 (5.13)	12.28 (5.39)	<b>0.012</b>
Personal accomplishment [PA]*; mean (SD)	46.35 (7.69)	47.25 (8.13)	0.12
General Self-Efficacy scale [GSE]; mean (SD)	32.18 (5.02)	33.67 (4.70)	<b>0.04</b>

\*Maslach Burnout Inventory

Mean scores and SDs of each psychological questionnaire were presented in Table 1.

Among psychological scores, only General Self-Efficacy scores were significantly different according to epidemic location status with lower scores in GPs working in high epidemic location ( $33.37 \pm 4.64$  vs.  $32.06 \pm 5.43$ ;  $P = 0.04$ ).

Women scored higher than men for PSS, IES-R and DP and lower for GSE ( $P = 0.01, 0.001, 0.012, 0.04$  respectively, Table 2).

## Discussion

It is the first study which showed the psychological impact of COVID-19 in GPs during the first sanitary lockdown period including burnout and post-traumatic stress symptoms. Based on self-report validated questionnaires, up to 42% of GPs reported psychological difficulties. Women reported more stress and burnout symptoms than men.

Healthcare workers are at increased risk of mental health difficulties when dealing with challenges of the COVID-19 outbreak [14]. In Chinese physicians and nurses more than 70% reported symptoms of distress [4]. Data in Oman physicians [2] and French urologists [15] also showed psychological difficulties induced by COVID-19 outbreak. According to these first results we showed that up to 42% of French GPs reported burnout symptoms and 11% post-traumatic stress symptoms.

If GPs were at the frontline beating the COVID-19 pandemic, to our knowledge, only two studies assessed the COVID-19 pandemic impact on psychological health in GPs [7, 16]. In a sample of 132 Italian GPs working in Genoa, 30% reported moderate/severe depression symptoms associated with anxiety and insomnia. A second study showed that

40% ( $n = 531$ ) of Colombian GPs reported symptoms of generalized anxiety disorder [16]. Burnout, self-efficacy level, and post-traumatic stress symptoms were not assessed in these studies.

Among psychological scores, only General Self-Efficacy scores were significantly different according to epidemic location. Previous studies also did not shown relationship between mental health and working with COVID-19 patients [2]. In our study, with only 4 localized clusters, the Normandy region was not a high exposed COVID-19 French region.

Women reported more psychological difficulties than men. Similar results have been found in Colombian GPs [16], in healthcare workers in France and China [3, 4, 17], in Oman physicians [2] and in general population [18] during COVID-19 outbreak.

Limitations of the study also include low response rate. Moreover, we did not have control group and reference of psychological symptoms before the sanitary lockdown period. Furthermore, longitudinal data would be interesting.

This study is the first study which showed the psychological impact of COVID-19 in GPs during the first sanitary lockdown period including burnout and post-traumatic stress symptoms. Based on self-report validated questionnaires, up to 42% of GPs reported psychological difficulties. Intervention to promote mental health well-being of GPs need to be developing.

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## Compliance with ethical standards

**Conflict of interest** We have no conflicts of interest.

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