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Mental Health Impact of the COVID-19 Outbreak among Family Nurses

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Abstract

Objective: COVID-19 outbreak can impact mental health in health care workers. This study aim was to assess the mental health impact of COVID-19 in French family nurses.

Methodology: We carried out a postal-based survey during the first French 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: Among the 421 family nurses, 82 (19.48%) worked in high epidemic location. Eighty-six nurses reported significant post-traumatic stress symptoms (21.29%). High burnout symptoms were found in 98 (24.08%), 107 (26.29%) and 26 (6.39%) family nurses. Epidemic location was no significantly associated with psychological scores. Women reported more stress and self-efficacy than men (p<0.05). This study showed the psychological impact of COVID-19 in family nurses during the sanitary lockdown period including burnout and post-traumatic stress symptoms.

Conclusion: Up to 26% of family nurses reported psychological disturbances. Interventions to promote mental health well-being of nurses, especially in women, need to be developing.

Keywords

COVID-19; Nurses; Mental health; Post-traumatic stress; Stress; Burnout

Introduction

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

Family nurses experienced an increase in the intensity and the volume of their work but they also should accommodate new protocols according to COVID-19 outbreak [2]. They also must participate in patient teaching about COVID-19 transmission and symptoms [3].

COVID-19 outbreak has a negative impact on healthcare professional mental health and could be a traumatic time [4]. Stress, anxiety and sleep disturbances were reported by healthcare workers including nurses [5-11]. Nevertheless, these studies were mainly conducted in China among hospital nurses.

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

Methods

A postal-based survey was realized to assess the impact of COVID-19 on the mental health of family nurses working in Normandy (France), the 17th April 2020 one month after COVID-19 first sanitary lockdown (17th March 2020).

It consisted of sociodemographic and clinic organization data. Epidemic location was defined by French Health Authority in 4 localized clusters before first COVID-19 lockdown.

Four psychological validated self-report questionnaires were used. The Perceived Stress scale (PSS) includes 10 items on a five-point Likert scale about stress during the last month [12]. Higher score represents high level of stress. The Impact of Event Scale-revised (IES-R) includes 22 items on a five-point Likert scale of post-traumatic stress symptoms related to epidemic situation [13]. Higher score represents high level of stress. Significant post-traumatic stress symptoms were defined by a score ≥33. The Maslach Burnout Inventory (MBI) includes 22 items with a seven-point Likert scale. It assesses three domains of burnout: emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA) [14]. Higher scores for EE and DP represent higher burnout symptoms. Higher score of PA represents lower burnout symptoms. High burnout symptoms were defined by scores ≥30 and ≥12, respectively for EE and DP and ≤33 for PA. The General Self-Efficacy scale (GSE) includes 10 items [15]. Higher score represents high self-efficacy.

Data were expressed as means and 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).

Results

The response rate was 23.20% (1814 questionnaires were sent). The sample consists of 421 family nurses (83.98% women (9 missing responses), mean age=44.81 ± 9.36; Table 1). Nurses working in high epidemic location represented 19.48% of the sample (n=82).

Mean scores and SDs of each psychological questionnaire were presented in Table 1. Eighty-six family nurses reported significant post-traumatic stress symptoms (21.29%). High burnout symptoms were found in 98 (24.08%), 107 (26.29%) and 26 (6.39%) family nurses according to EE, DP and PA scores, respectively.

There was no significant difference in psychological scores according to epidemic location status.

Women scored higher than men for PSS, IES-R, GSE and lower for DP (p=0.001, 0.001, 0.04, 0.02 respectively, Table 2).

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Table 1: Demographic, organization and psychological characteristics of family nurses.

	All sample (n=421)
Women (n, %) [missing 9]	346 (83.98)
Age (y) mean (SD)	44.81 (9.36)
High epidemic location (n, %)	82 (19.48)
Medical office [missing 9]	
Alone (n, %)	45 (10.92)
Mono-professional (n, %)	237 (57.53)
Pluri-professional (n, %)	130 (31.55)
Perceived stress scale [PSS]*; mean (SD) [missing 11]	14.17 (7.31)
Impact of Event scale [IES-R]*; mean (SD)	20.79 (14.76)
Post-traumatic stress symptoms (n, %) [missing 17]	86 (21.29)
Emotional exhaustion [EE]**; mean (SD) [missing 14]	24.09 (11.31)
Low (n, %)	137 (33.66)
Middle (n, %) burnout symptoms	172 (42.26)
High (n, %)	98 (24.08)
Depersonalisation [DP]**; mean (SD) [missing 14]	9.75 (4.90)
Low (n, %)	62 (15.23)
Middle (n, %) burnout symptoms	238 (58.48)
High (n, %)	107 (26.29)
Personal accomplishment [DP]**; mean (SD) [missing 14]	47.38 (7.23)
Low (n, %)	356 (87.47)
Middle (n, %) burnout symptoms	25 (6.14)
High (n, %)	26 (6.39)
General Self-Efficacy scale [GSE]***; mean (SD) [missing 12]	33.47 (4.67)
* 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 family nurses according to gender.

	Women (n=346)	Men (n=66)	p value
Age (y) mean (SD)	44.66 (9.34)	45.57 (9.49)	0.47
Epidemic location Covid-19			
High (n, %)	63 (18.21)	16 (24.24)	0.30
Low (n, %)	283 (81.79)	50 (75.76)	
Perceived stress scale [PSS]; mean (SD)	16.76 (7.19)	13.06 (7.23)	0.001
Impact of Event scale [IES-R]; mean (SD)	21.89 (14.84)	15.05 (13.11)	0.001
Emotional exhaustion [EE]*; mean (SD)	24.36 (11.00)	22.83 (12.85)	0.32
Depersonalisation [DP]*; mean (SD)	9.53 (4.78)	10.73 (5.21)	0.04
Personal accomplishment [PA]*; mean (SD)	47.08 (7.44)	48.92 (5.90)	0.10
General Self-Efficacy scale [GSE]; mean (SD)	34.54 (4.40)	32.60 (6.41)	0.02
* Maslach Burnout Inventory			

Discussion

This is the first study that showed the psychological impact of COVID-19 in family nurses in France during the first sanitary lockdown period, including burnout and post-traumatic stress symptoms. Less than 20% of the family nurses worked in high epidemic location of COVID-19. Based on self-report validated questionnaires, up to 26% of family nurses reported psychological difficulties. Epidemic location was not associated to these difficulties. Women reported more stress but also more self-efficacy than men.

Nurses are the largest health care professional group providing care on the frontline of the COVID-19 pandemic [16]. Beyond experiencing breakdowns of usual supports and protocols, an increase in the intensity and the volume of their work, nurses were exposed to some trauma such as watching their patients die alone and colleagues get sick.

Several studies have shown mental health difficulties in healthcare workers dealing with challenges of the COVID-19 outbreak. These studies were mainly conducted in China among hospital frontline nurses. More than 70% of Chinese nurses and physicians reported symptoms of distress [8]. Hospital frontlines nurses also reported anxiety, depression and fear [17] and were generally under pressure [10].

If family nurses were also sometimes in frontline of COVID-19 outbreak, with an increase in the intensity and the volume of their work, few studies assess their psychological well-being. This study showed that 21% of family nurses reported post-traumatic stress symptoms and up to 26% reported burnout symptoms. Previous results showed that up to 61% of hospitals nurses in Wuhan (China), epicenter of the COVID-19 epidemic, reported moderate and high burnout symptoms [17]. At the opposite of this province, the Normandy region (France) represents a lower epidemic location of COVID-19 than Wuhan which can explain in part these differences.

We found that epidemic location was no significantly associated with psychological scores. A study also did not shown relationship between psychological disturbances and working with COVID-19 patients [18]. In our study, with only 4 localized clusters at the time of the study, the Normandy region was not a high exposed COVID-19 French region.

Women reported more stress than men. Similar results have been found in healthcare workers in China, [6,8] in Oman physicians [18], Colombian general practitioners [19], French community pharmacists [20] and in general population [21] during COVID-19 outbreak. Nevertheless, we found that women reported higher self-efficacy than men.

Intervention to promote mental health well-being of nurses need to be developing. If some support start to be proposed by managers in hospital to protect the mental well-being of staff [22], intervention outside hospital should be developing, especially for nurses with stress post-traumatic symptoms.

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

This study is the first study which showed the psychological impact of COVID-19 in family nurses in France during the first sanitary lockdown period. Based on validated self-report questionnaires, up to 26% of family nurses reported psychological difficulties. Intervention to promote mental health well-being of nurses need to be developing.

Acknowledgments

Contributions

X.H and M.L. contributed equally to the conception, design, analysis and interpretation of data and writing. X.H and E.M. contributed to data acquisition. S.J., PA.C. and FLB edited this work. All authors approved the final version of this document.

Competing Interests

None declared

Ethics Approval

This survey was approved by Ethic Department of University of Caen Normandy (Authorization n°TG_COMPO_PEDAGO_SANTE_14-20180529-01R1).

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