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## Anxiety, depression, and posttraumatic stress in nurses during the COVID-19 outbreak

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1 **Anxiety, depression, and posttraumatic stress in nurses during the COVID-19 outbreak**

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4 for-profit sectors.

5 **Conflict of Interest**

6 The authors declare that they have no conflicts of interest.

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9 During the COVID-19 pandemic, nurses and physicians faced exhausting work conditions, making  
10 ethically and morally difficult decisions, and taking health risks to themselves and their loved ones  
11 (Maben and Bridges, 2020). This situation also affected their mental health, with high levels of  
12 trauma- and stress-related symptoms that have been reported by nurses and physicians since the  
13 early months of pandemic (Benfante et al., 2020).

14 The present study mainly aimed to assess the psychological impact of the COVID-19  
15 outbreak on nurses and physicians working in XXX.

16 The responses of 73 nurses and 72 physicians were collected through an anonymized online  
17 survey. The current data were acquired as part of a larger project investigating the psychological  
18 impact of COVID-19 in XXX population. Participants were asked to indicate sociodemographic,  
19 clinical and work-related information, and to complete three self-report questionnaires to assess  
20 anxiety (State-Trait Anxiety Inventory-Form Y1, STAI Y1), depressive (Beck Depression  
21 Inventory, BDI-II), and posttraumatic (PTSD Checklist for DSM-5, PCL-5) symptoms. The study  
22 was approved by the University of XXX ethics committee (Prot. n. 142069) and was conducted in  
23 accordance with the Declaration of Helsinki; all the participants gave their informed consent.

24 In order to investigate the psychological impact of the COVID-19 outbreak on nurses and  
25 physicians, independent *t*-tests were performed to evaluate possible differences between those two  
26 groups on sociodemographic, clinical, and work-related variables, health-related questions, and  
27 psychological variables. Results of comparisons are presented in **Table 1**. Significant differences  
28 between nurses and physicians were found on both Visual Analogue Scales (VAS) we used for the  
29 assessment of health-related aspects. Indeed, nurses rated lower their health and reported to be more  
30 worried about contracting COVID-19 with respect to physicians. Similarly, significant differences  
31 emerged between nurses and physicians on anxiety symptoms and PTSS, with the former reporting  
32 higher scores on the STAI Y1 and PCL-5, respectively.

33 These results are not surprising considering that nurses are usually one of the healthcare  
34 professional groups dealing with patients at the frontline across healthcare settings and for this

35 reason they are continually exposed to stressful events. Particularly, during the COVID-19  
36 pandemic, being more in contact with risky patients than physicians makes nurses more vulnerable  
37 and at risk to develop psychological distress. In line with our findings, previous studies showed that  
38 PTSS (Şahin et al., 2020; Johnson et al., 2020) and anxiety symptoms (Johnson et al., 2020) were  
39 significantly higher among nurses than physicians.

40 Spending much more time with patients may also explain nurses' greater fear of contracting  
41 infection. A previous study confirmed our results showing that nurses reported an increased fear of  
42 being infected, and consequently of infecting their loved ones, leading to high levels of  
43 psychological distress (Sampaio et al., 2020).

44 Despite this study being limited by its cross-sectional nature and its reduced sample, our  
45 results highlight that nurses experience higher levels of anxiety symptoms and PTSS, and are more  
46 worried about contracting COVID-19 compared to physicians. In conclusion, the present findings  
47 underline the importance of paying attention to the psychological health of this healthcare  
48 professional group.

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64 **Table 1.** Sociodemographic, clinical, and work-related characteristics of nurse and physician  
 65 groups. Mean (SD), percentage, *t*-test, chi-square test, and Cohen's *d* are listed.

	<b>Nurses (N = 73)</b>	<b>Physicians (N = 72)</b>	<b>Test (df)</b>	<b><i>p</i></b>	<b>Effect size</b>
<b>Age (years)</b>	44.3 (10.6)	41.5 (11.7)	t(143) = -1.51	.134	<i>d</i> = 0.25
<b>Gender</b>			$\chi^2(1) = 0.63$	.427	
<b>Male</b>	18 (24.7%)	22 (30.6%)			
<b>Female</b>	55 (75.3%)	50 (69.4%)			
<b>Marital status</b>			$\chi^2(1) = 0.61$	.433	
<b>Not in a relationship</b>	31 (42.5%)	26 (36.1 %)			
<b>In a relationship</b>	42 (57.5%)	46 (63.9%)			
<b>Type of ward</b>			$\chi^2(1) = 0.01$	.925	
<b>COVID-19 unit</b>	32 (43.8%)	31 (43.1%)			
<b>Other unit</b>	41 (56.2%)	41 (56.9%)			
<b>Medical condition</b>			$\chi^2(1) = 2.14$	.144	
<b>Yes</b>	23 (31.5%)	15 (20.8%)			
<b>No</b>	50 (68.5%)	57 (79.2%)			
<b>Psychological aspects</b>					
<b>Health evaluation (VAS)*</b>	7.11 (2.0)	8.4 (1.4)	t(126.64) = 4.62	<b>&lt;.001</b>	<i>d</i> = 0.77
<b>Health concern (VAS)#</b>	7.04 (2.5)	6.0 (2.6)	t(143) = -2.42	<b>.017</b>	<i>d</i> = 0.40
<b>STAI Y1</b>	53.8 (14.5)	48.8 (12.9)	t(143) = -2.21	<b>.029</b>	<i>d</i> = 0.37
<b>Scored above the STAI Y1 cut-off point (<math>\geq 41</math>)</b>	55 (75.3%)	48 (66.7%)	$\chi^2(1) = 1.33$	.250	
<b>BDI-II</b>	12.3 (10.5)	10.7 (8.4)	t(143) = -0.96	.340	<i>d</i> = 0.20
<b>Scored above the BDI-II cut-off point (<math>&gt; 13</math>)</b>	21 (28.8%)	24 (33.3%)	$\chi^2(1) = 0.35$	.552	
<b>PCL-5</b>	29.1 (18.6)	20.3 (14.2)	t(134.52) = -3.19	<b>.002</b>	<i>d</i> = 0.53
<b>Scored above the PCL-5 cut-off point (<math>\geq 33</math>)</b>	24 (32.9%)	14 (19.4%)	$\chi^2(1) = 3.38$	.066	

66 SD = Standard Deviation; VAS = Visual Analogue Scale; BDI-II = Beck Depression Inventory;

67 STAI Y1 = State-Trait Anxiety Inventory Form Y1; PCL-5 = PTSD Checklist for DSM-5.

68 \* Health evaluation question = 'How do you currently rate your health?'

69 # Health concern question = 'How concerned are you about contracting COVID-19?'