

Original research**ASSESSMENT OF ANXIETY DUE TO COVID-19 AMONG THE SURGERY STAFF OF THE RENE ESSOMBA THEATER "BORE" AT THE YAOUNDE CENTRAL HOSPITAL**

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Received: 09-13-2021; Accepted: 10-29-2021; Published: 11-04-2022

Abstract: *Background:* The COVID-19 pandemic has had a negative impact on healthcare systems worldwide, including surgical disciplines. To date, only a few studies have assessed the effects of the ongoing pandemic on the mental state of those potentially exposed through their daily activities, such as operating theatre staff. The present study aimed to determine the prevalence of anxiety among the operating theatre staff "BORE" during the COVID-19 pandemic.

Methods: From 13 January to 19 February 2021, we conducted a cross-sectional study using a pre-designed online form. This form was disseminated to participants via social networks. The data collection form was divided into three parts: one part was for socio-demographic information, the second part was for professional information, and the third part was for assessing the anxiety score by the Hamilton Anxiety Scale (HAM-A).

Results: A total of 42 questionnaires were fully completed and retained for analysis. The sex ratio was 1.67, with 16 men and 26 women. COVID-19 anxiety with mild severity (HS < 17) was found in 22 (55.4%) of the participants, and 33.3% had moderate to severe depression, while 11.3% had severe anxiety.

Conclusion: About 4/5 of the participants in our survey suffered from anxiety due to the COVID-19 pandemic. This study highlights the need for psychological assistance for health care workers, especially the operating theatre staff of the Yaounde Central Hospital.

Keywords: Anxiety, COVID-19, operation theatre, operating room.

INTRODUCTION The COVID-19 pandemic has significantly influenced the work habits of healthcare professionals around the world, regardless of specialty or geographic distribution [1]. Worldwide, more than 7,250,000 cases were diagnosed positive for COVID-19 during the month of June 2020. In Cameroon, as of March 1, 2021, more than 35,700 people were positive for COVID-19 [2]. We can note for the same period, 1,208 positive cases among the

nursing staff and 28 deaths [2]. Transmission of COVID-19 during surgical procedures can occur through inhalation of aerosols/droplets from infected individuals or through direct contact with mucous membranes, oral fluids, and contaminated instruments and surfaces [3]. In the operating room, when trepanation of bone tissue or drilling in the orofacial region, with a high-speed handpiece, biological fluids such as saliva and other rhinorrheas can be projected and thus exposed the surgeon and the whole patient — operating team at the risk of COVID-19 contamination. The cooling water, however, could generate aerosols. Bio-aerosols are created when combined with bodily fluids in the oral cavity, such as blood and saliva. These materials are

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usually contaminated with microorganisms and have the potential to float in the air for a considerable period of time and be inhaled by healthcare workers [4,5]. Doctors, surgeons, and ENT specialists working inwards with patients with pneumonia are at greater risk of developing infectious diseases during their activities [6].

The current COVID-19 pandemic in Cameroon is straining our health system. Surgeons, anesthetists, and residents of these different specialties, representing a population at recognized risk of burnout, are on the front line to deal with this new pathology.

Fear and anxiety are powerful emotions associated with the damning reports of the COVID-19 pandemic through social media. Mild anxiety is natural and promotes preventive and protective behavior [7]. Right now, people with persistent anxiety can panic and are more likely to make mistakes that lead to irrational decisions and behavior. Being on the list of high-risk professions, it is expected that surgeons and anesthetists will develop severe anxiety in the face of the current pandemic situation [8]. Studies have observed that in stressful situations caused by COVID-19, nurses cared for and helped each other and, to some extent, felt collective empowerment [9]. However, nurses also activated psychological defense mechanisms such as isolation and depression [9]. In addition, Louie et al. [10] conducted a study on a group of health professionals, particularly spine surgeons. Results among surgeons showed elevated anxiety levels [10].

Few studies in Africa and Cameroon have been carried out to determine the level of exposure to anxiety due to COVID-19 among staff working in operating theaters. Therefore, we found it appropriate to estimate the anxiety due to this new virus among surgeons, anesthetists, and nurses working in the operating room of the Yaoundé Central Hospital.

The objective of this study was to assess the anxiety due to the COVID-19 pandemic on the staff working in the operating room Professor René ESSOMBA "BORE" of the Central Hospital of Yaoundé.

PATIENTS AND METHODS *Type of study.* We conducted a cross-sectional study using a survey questionnaire directly submitted to participants and available online.

Study period. Our study took place over one month, from January 13 to February 19, 2021.

Study population. The target population consisted of nursing staff working in the René Essomba "BORE" operating room at the Yaoundé Central Hospital in Cameroon. All health professionals working in the service selected for this research agreed to participate, and those who completed the questionnaire were included in the study.

Respondents from the target population were sampled using a cluster sampling technique. We assessed the mental health status of these participants during the COVID-19 pandemic using structured questionnaires. The questionnaire used was anonymous to ensure the confidentiality and reliability of the data.

Data gathering. We conducted a questionnaire survey administered to participants and online. Data collection was done prospectively between January 13, 2021, and February 19, 2021. To this end, a well-constructed questionnaire was designed with Google-Forms and validated by intra-class correlation, while another was directly administered to participants. The link to the online survey was sent to social networks and the e-mail addresses of the various workers in the operating room at the Yaoundé central hospital. Before data collection, we explained the objectives and requirements of our study to all participants. We obtained informed consent and made it clear that participation was voluntary. Each of the participants completed a self-administered, anonymous data collection sheet. The general and professional characteristics of the subjects included seven elements, including age, sex, professional rank, specialty, number of years of practice, number of working days per week, number of years of practice. The HAM-A score was used to assess anxiety in the participants. The HAM-A was one of the first rating scales developed to measure the severity of anxiety symptoms and is still widely used today in clinical and research settings. The scale includes 14 items, each defined by a series of symptoms, and measures both mental anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety) [11]. Each item is rated on a scale from 0 (not present) to 4 (severe), with a total score range of 0 to 56. These 14 items are anxious mood, tension, insomnia, fear, intellectual dysfunction, depressed mood, muscle symptoms, sensory symptoms, cardiovascular symptoms, respiratory symptoms, gastrointestinal symptoms, genitourinary symptoms, autonomic symptoms, and behavior during maintenance [11].

Statistical analysis Statistical analysis was performed using IBM SPSS Statistics Version 21 software (IBM Corp., Armonk, NY, USA). The t-tests were used to compare the mean score between two categories and the ANOVA for more than two categories. The proportion of participants in each level of depression severity was compared to the Chi2 test or Fisher's exact test, if applicable. A p-value <0.05 was considered statistically significant.

Ethics Participants responded anonymously to the online survey by completing an informed consent letter in the first section of the electronic questionnaire. In the consent form, all participants were provided with information regarding the purpose of the research, the confidentiality of the information, and the right to revoke participation without prior justification.

RESULTS A total of 42 participants were included in our study (Table 1). The mean age of the participants in this series was 34.4 years \pm 7. The subjects of our research were predominantly female, i.e., 62.2% (n = 26) while we

found 37.8% (n = 16) of male individuals. The population studied was predominantly young (Table 1).

Prevalence and severity of anxiety Table 1 below presents the descriptive information of the various variables selected from the nursing staff in the operating room. In our sample, 50% (n = 21) of the participants were medical specialists (residents), while five medical specialists were included in our survey. The results show that 33.33% (n = 14) of personnel working at BORE presented symptoms of moderate to severe anxiety. Over 60% of the participants were men (62%).

This survey found no significant association between the Hamilton score and gender (Table 2). In addition, the specialty of the staff and the number of patients operated on per week did not show any statistically significant association with the Hamilton score in this sample.

DISCUSSION The objective of this study was to assess the state of anxiety of healthcare workers working in the

		General workforce	
		N=42	
		n	%
Gender	Female	26	62.2
	Male	16	37.8
Status	Specialists	5	11.9
	Residents	21	50
	Nursers	7	16.67
Numbers of operating days	Caregivers	9	21.43
	1	9	21.43
	2	20	47.6
Average number of patients operated on per week	3+	13	30.95
	0.0		
	Less than 2	27	61.0
Number of years in practice	more 2+	15	39.0
	Less tha 5	26	61.0
Hamilton Score	5+	16	39.0
	8 to 15	22	55.4
	15 to 24	14	33.3
	\geq 24	6	11.3

Table 1. Research Results

Severity of anxiety				
		Absent / Mild	Moderate / severe	
	Workforce	N (%)	N (%)	Value-P*
Total	42	35 (84.1)	7 (15.9)	<0.001
Age (years)				0.20
<30	15	12 (28.0)	4 (8.5)	
≥30	27	24 (56.1)	2 (7.3)	
Gender				0.54**
Male	16	13 (30.5)	3 (7.3)	
Female	26	23 (53.7)	3 (8.5)	
Status				0.73**
Specialists	5	4 (9.5)	1 (2.4)	
Residents	21	17(40.4)	4 (9.5)	
Nurses	7	5(11.9)	2(4.7)	0.04
Caregivers	9	8 (19)	1 (2.4)	
Average number of patients operated on per week				0.75**
<2	27	25 (25.6)	2 (6.1)	
≥2	15	11 (58.5)	4 (9.8)	
Numbers of years in practice				0.79
Less than 5	26	22 (52.4)	4 (8.5)	
More than 5	16	13 (31.7)	3 (7.3)	

Table 2. Distribution of the Hamilton score according to other variables.

"BORE" operating room of the Yaoundé Central Hospital during the Covid-19 pandemic. This survey revealed that 8.43% of them experienced mild anxiety and 2.4% severe anxiety. Studies have shown that healthcare workers are highly exposed to COVID-19 contamination. 30% of the 1,755 positive coronavirus cases in Hong Kong were health workers [12]. Likewise, in another study of the SARS pandemic from February 2002 to February 2003, 105 of 305 SARS-positive cases were caregivers [13]. Another

study suggests that the SARS-CoV and MERS-CoV viruses are spread between humans mainly by nosocomial transmission. Healthcare workers, particularly those in surgical disciplines, were most exposed to this infection [14].

Our study assessed anxiety among nursing staff in the operating room of the Yaoundé Central Hospital. Our results showed that working in surgical care and

anesthesia were risk factors for increased anxiety scores, which is an important finding suggesting that government authorities need to implement measures to alleviate mental health symptoms in early-stage healthcare workers. New bio-disasters - including SARS, Ebola, H1N1, Middle East Respiratory Syndrome (MERS), and the novel coronavirus - are deeply associated with negative psychological effects on medical personnel, including depression, anxiety, and 'Insomnia. Thanks to the HAMA score, we found that 11.5% of the "BORE" staff were anxious. This result is lower than that found by Lai et al., who showed that 44.6% of those questioned presented anxiety symptoms during the COVID-19 epidemic [15]. The main possible reasons for this conclusion are the different tools assessments and the different stages of COVID-19. At the time of our study, more than a year after confirming the first COVID-19 patient in Cameroon, March 2020, health workers seemed to be better informed about the risk factors for this disease. However, a study by Jeong et al. [16] showed that the prevalence of anxiety symptoms in the general population who had not been diagnosed with MERS and who required two weeks of isolation was 7, 6% (95% CI 6.3-8.9%), which is lower than our result. This difference could be since our survey included only 42 health workers. Jeong et al., in their study, used the Seven-Point Generalized Anxiety Disorder Scale to rate anxiety, a 5-point cut-off confirming mild anxiety.

Nonetheless, medical workers who provided treatment or direct care to infected patients suffered higher anxiety scores than those who did not care for patients with COVID-19. Previous studies have reported psychological symptoms, such as anxiety, depending on the epidemic phase [17]. This is because medical workers were able to adapt psychologically, having gradually learned more about Covid-19 and gained rich clinical experience in treating and caring for infected patients.

The lack of personal protective equipment and the absence of routine COVID-19 testing of patients admitted to the operating room can also be anxiety-provoking factors. Protective medical equipment, such as N95 masks, goggles, and protective clothing, was severely deficient during the early stages of the outbreak in China in Hubei Province; this could explain the level of anxiety and high stress in hospitals in this province [18].

In this study, a small proportion of participants experienced symptoms of severe anxiety (11.3%) due to SARS-CoV-2; this differs from the frequency of these disorders in other studies [19, 20]. This can be explained by our study being carried out in Cameroon, where the

exceptional SARS epidemics were. In contrast, the studies mentioned above were carried out on the Asian continent, where epidemics are very frequent. The health authorities in China, Hong Kong, and Taiwan have well-prepared procedures, well-trained service personnel, and an industry well suited for these purposes.

Wu et al. [21] pointed out that having the status of a health worker working in high-risk areas, such as wards accommodating SARS patients, was associated with levels 2 to 3 times higher. Elevated post-traumatic stress symptoms compared to people exercising in the operating room.

A cross-sectional survey of 1,257 healthcare professionals in 34 hospitals in China showed that a significant proportion of those directly involved in caring for patients with COVID-19 disease experienced symptoms of depression (50.4%), anxiety (44.6%), insomnia (34%), and distress (71.5%). Frontline worker status was an independent risk factor for deteriorating mental health [22]. Another Chinese cross-sectional observational study of 180 healthcare professionals providing direct care to patients with COVID-19 showed that significant anxiety and stress levels negatively affected sleep quality and work [23].

Another observational study conducted in Singapore aimed to assess the prevalence of depression, stress, anxiety, and post-traumatic stress disorder (PTSD) among all healthcare workers and compare the results between medical and non-medical workers. Of the 470 participants, 14.5% had anxiety symptoms, 8.9% of depression, 6.6% of stress, and 7.7% of PTSD [24]. These results are in agreement with the conclusions of the present study.

Our study has several limitations. First, it does not involve longitudinal analysis of the data. Second, the number of respondents is limited. Third, it does not compare anxiety symptoms, caregivers' status, and the specialty of participants. This shows the need to conduct longitudinal and multicenter studies with a larger number of populations.

CONCLUSION About 8.43% of the participants included in our survey experienced mild to severe anxiety due to this COVID-19 outbreak. Although isolation effectively reduces the spread of this pandemic, depriving people of their liberty must be treated with caution. Supporting the mental health of all health workers must be an essential part of the public health response, and special efforts should be directed to vulnerable sectors of public health.

Authors' statement I solemnly declare: I respect academic ethics, advocating a rigorous style of study. The article is the result of my team and me. This article does not contain any content published or written by others unless expressly stated and cited in the article.

Declaration of conflict of interest The authors have no conflicts of interest to declare.

Acknowledgment All authors have given final approval and agree to be responsible for all aspects of the work. The authors confirm that this study did not receive any grants or funds from any public, commercial, or not-for-profit enterprise or contributing institution. We acknowledge the cooperation of the nursing staff of the René Essomba "BORE" operating room for their participation in this study.

"What is known."

- The Covid-19 pandemic has had a huge impact on the mental health of healthcare workers
- Many studies have shown that caregivers are subject to stress and sometimes severe anxiety
- The fear of being infected or of developing serious forms of complications from Covid-19 has changed the habits of healthcare workers.

"What our study brings new."

- Assessment of anxiety due to the Covid-19 pandemic among staff working in the operating theater in Yaoundé
 - Our study showed that caregivers in the operating room also developed severe forms of anxiety
- We also found that anesthetists and anesthesia nurses were developing more cases of Covid disease, suggesting that special psychiatric monitoring should be reserved for operating room staff.

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