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Original article

Psychological distress among health care professionals of the three COVID-19 most affected Regions in Cameroon: Prevalence and associated factors

Détresse psychologique chez le personnel de la santé dans les trois Régions du Cameroun les plus infectées au COVID-19 : prévalence et facteurs associés

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A B S T R A C T

Objectives. – The present study aimed to assess the prevalence of symptoms of anxiety and depression among health professionals in the three most affected regions in Cameroon.

Materials and methods. – The study was a descriptive cross-sectional type. Participants were health care professionals working in the three chosen regions of Cameroon. The non-probability convenient sample technique and that of the snowball were valued via a web questionnaire. The non-exhaustive sample size was 292. The diagnosis of anxiety and depression was made by the HAD (Hospital Anxiety and Depression scale).

Results. – The prevalence of symptoms of anxiety ranging from mild to severe and those of depression were 42.20% and 43.50% respectively. Anxiety symptoms were associated with the age of the participants (P = 0.006), fear of contamination (P = 0.019), fear of death (P = 0.000), and depressive symptoms associated to the fear of death (P = 0.000).

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R É S U M É

Objectifs. – Les auteurs rapportent que le secteur médical est classé à un plus grand risque de contracter le COVID-19 et de le propager potentiellement à d'autres. Le nombre sans cesse croissant de cas confirmés et suspects, la pression dans les soins, l’épuisement des équipements de protection individuelle et le manque de médicaments spécifiques peuvent contribuer à un vécu anxio-dépressif significatif. La présente étude s’est donnée pour ambition d’évaluer la prévalence des symptômes de l’anxiété et de la dépression chez les professionnels de santé dans les trois Régions les plus concernées au Cameroun.

Matièrs et méthodes. – Le choix des trois Régions du Cameroun se justifie non seulement par le fait qu’elles totalisent 95,8 % des cas de coronavirus au pays depuis le début de la pandémie, mais aussi parce
1. Introduction

In any biological disaster resulting to high contamination and death rate, words such as fear, uncertainty and stigma are common and can be obstacles to appropriate medical intervention. The foreseeable shortage of protective equipment and an increasing flow of both suspected and confirmed COVID-19 cases contribute to increase pressure and preoccupation on health professionals [17], but also a real source of stress. In fact, those offering health care to patients with pneumonia or suspected COVID-19 infection are vulnerable to both a high risk of infection and mental health problems [27]. These problems affect the attention, understanding and decision-making capacity of hospital care professionals; which could hamper the fight against COVID-19 and have a lasting deleterious effect on their general well-being [10].

Authors report that the medical sector is classified at a greater risk of contracting COVID-19 and potentially spreading it to others [4,25]. There is a constant increase in the number of suspected and confirmed cases, the pressure in health care, the exhaustion of personal protective equipment, the generalized media coverage, the lack of specific drugs and the feeling of being poorly taken care of, can contribute to the mental overload of health workers and as long as to a significant anxiodepressive experience [11]. In addition to the risks associated to the working conditions, health professionals also face psychological risks, in particular the burnout due to excessive stress in an increase busy health system and multiple clinical activities that can fuel anxiety and depression [17].

The experience of depression against the coexistence of countless number of deaths, long shifts with strangers and the most diverse demands in the treatment of patients with COVID-19 has also been identified by authors [11,21]. For instance, Neto and collaborators remind that most of those who work in isolation units and hospitals are not trained to provide mental health care. All of these factors could contribute to the development of experiences of stress responsible for the emergence of the anxiodepressive symptomatology. COVID-19 respiratory infection spread very quickly and the entire health sector still runs after the virus. We will briefly present the situation in the world, in Africa and in Cameroon at the time of writing this article.

2. The world, Africa and Cameroon against the COVID-19

Data available on the WHO website as of May 18, 2020 shows that the world has reached 4,718,215 confirmed cases of COVID-19 with 315,283 deaths [20]. This article is written during evolution of the pandemic and statistics remain very dynamic. However, the United States, Italy, Spain, France and United Kingdom are the five countries which pay the heaviest tribe linked to this pandemic. As of this write up, the African continent remains the least affected in the world. As of March 31, 2020, there were 5,255 Coronavirus confirmed cases with 172 deaths in 47 countries [28]. Cameroon is among the African countries most affected by the coronavirus pandemic and the first in Central Africa.

Statistics compiled by the Johns Hopkins University point out South Africa as the country with the highest number of confirmed COVID-19 cases as of May 18, 2020 (15,515 case) [9]. According to the same source, Cameroon occupies the sixth position with 3,105 confirmed cases and 140 deaths [9–15]. In this perspective, the cities of Yaoundé, Douala, and Bafoussam are the cities which alone account for 95.8% of the confirmed cases as well as the deceased. It is a highly contagious disease with a proven risk of death, particularly in the context of comorbidity and old age [22].

In this context of coronavirus, compulsory or voluntary confinement is recommended by almost all the stakeholders.
However, health care workers face a dilemma: that of moving forward, facing the disease when others move back ward. This posture imposed on health professionals by their science and practical know-how is not without psychological impact. More generally, the diagnosis of a serious illness remains a traumatic event comparable to a life event [23] and health personnel is one of the populations most exposed to contamination by the coronavirus as already noted. The awareness of this risk of contamination can be a real reason for significant psychological distress.

If most of the authors converge on the vulnerable and risky nature of infection inducing mental health problems among health professionals, it is clear that in Cameroon currently, no research identified to our knowledge has attempted to determine the prevalence of distress, anxiety and depression among healthcare workers, who are at the forefront in the diagnosis, treatment and care of patients with COVID-19. We agree with the authors [11,14] who believe that practitioners and researchers in the behavioral sciences should take part in helping health care workers to contain and eliminate the spread of COVID-19, and this by producing appropriate knowledge, tools and methodologies [25].

3. The healthcare professional and anxiodepressive symptomatology in the context of a pandemic

Psychological distress can be considered as a decompensated stress leading to an anxiodepressive experience, in this sense Norton and collaborators had already underlined that the majority of psychiatric disorders are of the anxiodepressive sphere [18]. Psychological distress is also understood as a subjective state including symptoms related to anxiety, aggression, depression, irritability, exhaustion, social disengagement and cognitive problems [14]. In distress, individuals may exhibit symptoms such as anxious and depressive reactions to stressors, reduced intellectual capacity, aggression, irritability, fatigue, insomnia, absenteeism, withdrawal, cognitive problems, guilt, excessive alcohol, drugs or medication consumption [13].

Several researchers have conducted research to determine the prevalence of mental health problems among medical personnel with highly contagious diseases. Liu and colleagues [13] conducted 23 online mental health surveys on 1563 medical personnel associated with the COVID-19 epidemic through platforms such as WeChat and Questionnaire Star. The authors found the prevalence of depression at 50.7%, anxiety at 44.7%, insomnia at 36.1% and symptoms related to stress at 73.4%.

In another study, Lai and colleagues [11] assessed the magnitude of mental health outcomes and associated factors among 1,257 healthcare workers in 34 hospitals treating patients exposed to COVID-19 in China. The results reveal a considerable proportion of participants who reported symptoms of depression (50.4%), anxiety (44.6%) and distress (71.5%). The authors point out that these results are more important for front-line health personnel engaged in the diagnosis, treatment and direct care of patients with COVID-19. Building on the same dynamic, this research assesses depressive and anxious symptoms among healthcare professionals. This objective is based on the comments of certain authors [17,21] who maintain that the protection of the mental health of professionals is important to control the epidemic and preserve their own health in the long term.

4. Materials and methods

The choice of the three Regions of Cameroon is justified not only by the fact that they cover 95.8% [15] of coronavirus cases in the country since the start of the pandemic, but also because they contain more than half (56%) of the health care professionals in the entire country [8]. It was a descriptive cross-sectional and analytical study. Participants where health professionals serving in the health institutions, Non-Governmental Organizations (NGO) and Civil Society Organizations (CSO). They all work in the Center, Littoral and West regions of Cameroon.

The non-probability sampling method of convenience coupled with the snowball method was used. It consisted in building a web questionnaire. The choice was made on WhatsApp application where the information is less dispersed as compared to other social networks. In this perspective, the questionnaire link was sent only to the groups of health professionals. Participants were instructed to forward the link to their respective professional groups but also to their other colleagues in-box.

The data collection period lasted from 05 to 19 April 2020, two weeks after which there were no more respondents. It was impossible for the same person via the same device to respond twice to the questionnaire, so the questionnaire could not be sent without all the items being checked. At the end of this period, the non-exhaustive sample size was 292 health professionals who normally answered the questionnaire. The diagnosis of ansiodepressive state was made using the HAD scale (Hospital Anxiety and Depression scale) deemed to be very relevant for evaluation in hospital settings [3].

In the HAD, each scored response semi-quantitatively assesses the intensity of the symptom during the past week. A total score is obtained as well as scores for the two subscales: the maximum score is 42 for the global scale and 21 for each of the subscales. For each subscale, a score of 7 or less refers to an absence of symptomatology, from 8 to 10 to a doubtful symptomatology and 11 and more to a certain symptomatology. Cronbach’s alpha is 0.70 for depression and 0.74 for anxiety [2]. Some authors after several works have proposed that a note less than or equal to 7 indicates an absence of anxiety or depression; that between 8 and 10 suggests weak or mild anxiety or depression; between 11 and 14, for moderate anxiety or depression; finally, a score between 15 and 21 is indicative of severe anxiety [1]. In the context of this study, the latter algorithm will be used because it gives better clinical appreciation. Anyway, some evening the prospect, it is noticed that only the scores of more than 11 allow to account for a significant anxiodepressive suffering.

The responses downloaded from the site were first processed with Microsoft Excel 2013 software. In this sense, the anxiety and depression scores were calculated for diagnostic purposes. After this phase, the statistical analysis was done using the software Epi Info version 7.2.2.6. The association between variables were considered significant for a P-value less than 5%. Results are presented using tables.

5. Results of the study

Results are presented in three parts: first part presenting the socio-demographic characteristics. The second part presents the prevalence of symptoms, anxiety and depression and the third part dedicated to the associated factors.

5.1. Socio-demographic data

The Western Region was more represented with 42.80% of participants, followed by the Littoral with 29.80% and finally the Center region (27.40%) (Table 1). The female staff were slightly more represented (54.50%) with a sex ratio (F/M) of 1.19 in their favor. The [31–35] age group as the middle class was also the most represented with a frequency of 35.30%. The Nurse and Doctor categories led the classification of respondents with the respective frequencies of 57.50% and 25.30%. The majority of participants...
worked in district and other health facilities of similar category (36.30%) (Table 1).

### 5.2. Prevalence of anxiety and depression

The results of the diagnostic scales show that the general prevalence of anxiety is 42.20% (27.10% for moderate anxiety and 15.10% for severe anxiety), this prevalence was 43.5% for depression (33.9% for moderate depression and 9.60% for severe depression). It is a quite varying prevalence within professional categories. We noted that the highest rate of anxiety and depression (57.90% and 52.60%) was observed within the Assistant Nurses category while the lowest rates (0.00%) was observed in the in Medical Laboratory personnel for anxiety (0.00%) and in Clinical Psychologists for depression (20%) (Table 2). Results also showed a rate of 20.54% representing the number of participants who accumulated significant scores for depression and anxiety.

### 5.3. Factors associated with anxiety and depression

Factors such as age, occupational category, department, fear of contamination, fear of dying were considered to be associated with anxiety and depression. After the statistical tests, there was a strong association between anxiety and fear of dying ($P = 0.000$), also between anxiety and the fear of becoming infected ($P = 0.019$) (Table 3), and age ($P = 0.006$) (Table 4). As for depression, a strong association with fear of dying ($P = 0.000$) (Table 5) was highlighted.

Furthermore, the professional qualification, the department and gender did not show a statistically significant association with any of the diagnoses.

### 6. Discussion

Psychological distress as an association of anxio-depressive symptomatology is reputed to be the most recurrent psychopathological problem among psychiatric disorders. The literature repeatedly questions it in diverse populations; health professionals caring for the infected ones are often less targeted by studies conducted on such aspect, and if so only during epidemics. Health professionals from three regions of Cameroon (Center, Littoral and West) were involved in this study and the discussion of the results will respect the chronology of the presentation of the part devoted to the results.

As mentioned above, the three regions of Cameroon which were concerned by the study cover 56% of the country healthcare giver number as reported by the survey by the National Institute of Statistics [7]. This shows that, even if the study does not cover all the ten regions of the country, it reflects at a high level the behavior of all the health professionals that are fighting the COVID-19. These are also cosmopolitan regions in which health workers come from all ethnic groups in Cameroon. The results show that female staff was relatively more represented (54.50%) with a sex ratio (F/M) of 1.19. This frequency would have been greater, but it is close to the average, and can be justified by the fact that 36% of women are less literate in Cameroon [7] whereas the minimum entry certificate into the health care professions now our days in Cameroon is First Certificate of Study.

The middle class [31–35 years] has the highest frequency (35.30%), this huge portion of young health professionals is justified by the permanent recruitment of young professionals in the Cameroonian public service for a decade. The Nurse and Doctor category led the respondents with the respective frequencies of 57.50% and 25.30%. This strong participation of Medical Doctors and Nurses is the result of a good mastery of the collection tool in relation to their level of training. This representativeness is likely to increase the reliability of the results of the study in the sense that, these categories associated with that of Assistant Nurses, are at the forefront of the care of patients with COVID-19. In this perspective, they live a particular anxiety-provoking experience with COVID-19.

### 7. Prevalence of anxiety and depression among health workers in Cameroon

In this context of the COVID-19 pandemic, the study shows that the general prevalence of symptoms of anxiety and depression among health personnel in the three most affected regions of Cameroon are 42.20% respectively and 43.50%. A study had also questioned the same problem in a non-epidemiological context, but rather in stress factors associated with medical emergencies at CHU Habib Bourguiba and Hedi Chaker de Sfax in Tunisia [16]. That study found a prevalence of anxiety symptoms of 38.90%, which is very close to that of the present study. However, another prevalence (50.4% for depression and 44.60% for depression), this time from China during the COVID-19 pandemic [11] was very close to that found in the present study. Still in China, Liu and collaborators [12] from their online survey conducted through platforms such as WeChat and Questionnaire Star on mental health among 1,563 medical personnel associated with the COVID-19 epidemic presented the prevalence of depression of 50.7%, and 44.7% for anxiety.
It was also noted in this study the various rates of anxiety ranging from 27.10% for moderate anxiety to 15.10% for severe anxiety and on the other hand and 33.90% for moderate depression and 9.60% for severe depression. The authors Wang et al. brought out a similar approach in a study in the general population in China [26]. They had a prevalence of 16.50% for symptoms of anxiety ranging from moderate to severe and 28.80% for symptoms of depression also ranging from moderate to severe. The disparities observed in this other study can be explained by several factors including the population (the study to interview the general population and not health professionals).

There has also been a strong disparity in this prevalence within the different specific professional categories. In this sense, the anxiety rates of 57.90% and depression of 52.60% were noted in the Assistant Nurses category, placing them at the forefront of psychological distress. In contrast, Medical Laboratory Technicians had the lowest anxiety rate (0.0%) and Clinical Psychologists for depression (0.0%). These results reflect an empirical reality because the Assistant Nurses are called upon to collaborate, to help other caregivers (Nurses and Doctors) in the administration of patient care. They are therefore very exposed to the risk of contamination. On the other hand, the Medical Laboratory personnel working in health facilities, except those involved in the sampling as part of COVID-19 have a very low risk of contamination.

From a general perspective, the anxiety symptoms of caregivers were, among other things, associated with the age of the participants (P = 0.006), the fear of becoming infected (P = 0.019) and of dying (P = 0.000). With regard to depressive symptoms, the only statistically significant relationship was that associated with the fear of dying (P = 0.000). These correlations are consistent with the claims of the National Institute of Excellence in Health and Social Services in Quebec. According to her, personnel of the health sector report that worries and fears in a pandemic context are related, among other things, to the health of loved ones and the risk of infection, fears of contracting the disease and/or dying, fear of lacking protective equipment [5]. Even if the fear of dying remains strongly associated with anxio-depressive symptoms, it should be noted that it was an emotion found in less than half of the participants (48.60%) thus showing moderate resilience. This relative resilience of personnel against the COVID-19 pandemic is linked to their low death rate estimated at 9.70% in Europe on May 08, 2020 [6], but generally estimated between 0.5% and 4% by scientists [19].

8. Conclusion

The main objective of this study was to estimate the frequency of anxio-depressive symptoms in a population of healthcare professionals from the three regions most affected by COVID-19 in Cameroon. It is noted from this study that the general prevalence of symptoms ranging from mild to severe anxiety and depression among health personnel from the three most affected regions of Cameroon are respectively 42.20% and 43.50%. The anxiety rates of 57.90% and depression of 52.60% were noted in the Assistant Nurses category, placing them at the forefront of psychological distress. In contrast, Medical Laboratory personnel had the lowest anxiety rate (0.0%) and Clinical Psychologists for depression (0.0%). From a general perspective, the anxiety symptoms of caregivers were associated with the age of the participants (P = 0.006), the

### Table 2
Prevalence of Anxiety and depression in the various professional categories.

| Score dimension | ALT % | AN % | N % | MD % | Psy % | MLT % | HT % | General prevalence % | P value |
|-----------------|-------|------|-----|------|------|------|-----|----------------------|---------|
| Absent          | 0     | 15.8 | 34.5| 40.5 | 60   | 38.9 | 50  | 35.6                 | NS      |
| Low             | 0     | 26.3 | 20.8| 23   | 0    | 27.8 | 50  | 22.3                 |         |
| Moderate        | 100   | 42.1 | 26.2| 24.3 | 40   | 27.8 | 0   | 27.1                 |         |
| Severe          | 0     | 15.8 | 18.5| 12.2 | 0    | 5.6  | 0   | 15.1                 |         |
| TOTAL           | 100   | 100  | 100 | 100  | 100  | 100  | 100 | 100                  |         |

### Table 3
Factors found as sources of anxiety.

| Fear of getting infected | Modality | Absent | Low | Moderate | Severe | P value |
|--------------------------|----------|--------|-----|----------|--------|---------|
| No                       |          | 11.5   | 10.8| 1.3      | 2.3    | 0.019   |
| Yes                      |          | 88.5   | 89.2| 98.7     | 97.7   |         |
| Total                    |          | 100    | 100 | 100      | 100    |         |

### Table 4
Relationship between Anxiety and Age groups.

| Age group | Absent | Low | Moderate | Severe | Total |
|-----------|--------|-----|----------|--------|-------|
| [20–25]   | 27.1   | 33.3| 31.3     | 8.3    | 100   |
| [25–30]   | 100    | 0   | 0        | 0      | 100   |
| [26–30]   | 35.9   | 31.3| 26.6     | 6.3    | 100   |
| [31–35]   | 46.6   | 15.5| 23.3     | 14.6   | 100   |
| [36–40]   | 25.8   | 22.6| 19.4     | 32.3   | 100   |
| [41–45]   | 40     | 6.7 | 33.3     | 20     | 100   |
| [46–50]   | 18.2   | 18.2| 54.5     | 9.1    | 100   |
| [51–55]   | 7.1    | 14.3| 35.7     | 42.9   | 100   |
| [56–0]    | 40     | 20  | 20       | 20     | 100   |
| P value    | 0.006  |      |          |        |       |

### Table 5
Factors found as sources of depression.

| Fear of getting infected | Modality | Absent | Low | Moderate | Severe | P value |
|--------------------------|----------|--------|-----|----------|--------|---------|
| No                       |          | 10.5   | 9   | 4        | 3.6    | NS      |
| Yes                      |          | 89.5   | 91  | 96       | 96.4   |         |
| TOTAL                    |          | 100    | 100 | 100      | 100    |         |

| Fear of death            | Modality | Absent | Low | Moderate | Severe | 0.0000  |
|--------------------------|----------|--------|-----|----------|--------|---------|
| Non                      |          | 73.7   | 50.6| 40.4     | 32.1   |         |
| Yes                      |          | 26.3   | 49.4| 59.6     | 67.9   |         |
| TOTAL                    |          | 100    | 100 | 100      | 100    |         |
fear of becoming infected ($P = 0.019$) and the fear of dying ($P = 0.000$). With regard to depressive symptoms, the only statistically significant relationship was found with the fear of dying ($P = 0.000$). Thus, the improvement of working conditions and in particular the provision of protective equipment, the establishment of special listening units for health personnel could be proposed.

Disclosure of interest

The authors declare that they have no competing interest.

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