

Assessment of Anxiety among Caregivers at the Covid-19 Treatment Centers in Grand-Bassam and Cocody-Abidjan from July to September 2020

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Abstract

The rapid spread of coronavirus disease (COVID-19) has led to general psychosis among the population in Ivory Coast. The medical profession, on the front line of the treatment, was in distress, given the risk of exposure to the patient. It is in this context that this study has set itself the objective of studying anxiety among caregivers involved in the management of people with COVID-19. This is a cross-sectional, descriptive and analytical study that included a sample of 50 stakeholders. It took place from July to September 2020 at the Treatment Center of the Village of Information Technologies and Biotechnology in Grand-Bassam (VITIB) and the Infectious Diseases Treatment Center (CTMI) of the University Hospital (CHU) of Cocody. The results indicate that caregivers were male in 52% of cases with an average age of 36 years. These are: doctors, nurses and caregivers respectively in the proportions of 18%, 42% and 40% with more than half (58%) who had more than 5 years of seniority. A proportion of 34% of caregivers felt they were insufficiently protected. The Hamilton Scale assessment of anxiety showed that 14% had mild anxiety, 6% moderate anxiety and 2% severe anxiety. There was no link between the degree of anxiety and professional seniority but also between the degree of anxiety and the marital situation. This work has therefore made it possible to see that anxiety is a real problem for caregivers dedicated to the management of COVID-19 patients.

Keywords

COVID-19, Anxiety, Assessment, Nursing Staff, Abidjan

1. Introduction

Corona Virus Disease (Covid-19) is an infectious disease of viral origin, due to severe acute respiratory syndrome coronavirus 2 (Sars-CoV-2). It most often manifests as mild influenza symptoms, but severe variants, in the form of respiratory distress, are not uncommon in individuals with risk factors [1]. The rapid progression of the disease worldwide has led the World Health Organization (WHO) to declare the state of pandemic as of March 11, 2020 [2]. As of February 22, 2021, there were more than 111 million confirmed cases with 63 million cures and 2 million deaths worldwide. In America, more than 28 million confirmed cases with 500 thousand deaths; in France more than 3 million confirmed cases, 200 thousand cures, 84 thousand deaths [3]. Ivory Coast, like the rest of the world, deciphered 32,039 confirmed cases, 30,768 cured and 188 deaths [4]. Since the first imported case of COVID-19 was reported in the WHO Africa sector in February 2020, each state has implemented control strategies [5].

Thus in Ivory Coast, several actions were undertaken by the government: the establishment of a crisis committee, awareness and dissemination of preventive measures, the development of an emergency response plan, systematic detection of suspected cases of travellers from countries affected by the pandemic, quarantine or containment of suspected and confirmed cases and management of confirmed cases [6]. Thus, the Ministry of Health has opened several screening and treatment centers including the Village of Information Technologies and Biotechnology (VITIB) in Grand-Bassam and the Infectious Diseases Treatment Center (CTMI) at the University Hospital (CHU) in Cocody [7]. Health workers have been assigned to these centers to help people with the disease.

Moreover, the rapid spread of the disease, the lack of information on the infection and the lack of specific treatment available have led to psychosis in the general population but especially in hospitals. It is in this context that this research work was initiated in order to assess the psychological state of caregivers involved in the treatment of people with dementia. The study is part of a quantitative and qualitative approach.

2. Materials and Method

This was a cross-sectional descriptive and analytical study that took place at the two sites for the management of people with dementia. This is a part of the VITIB in Grand-Bassam, clerk to welcome asymptomatic or paucisymptomatic patients and on the other hand the CTMI at the Cocody University Hospital equipped with a resuscitation unit with a capacity of seven patients and a medical hospitalization unit with a capacity of twenty patients.

The nursing staff consisted respectively of 06 doctors, 17 nurses and 12 orderlies for VITIB and 45 doctors, 29 nurses and 31 orderlies for CTMI.

Included in our study were doctors, nurses and orderlies from these centres who were in contact with patients and who gave their consent to participate in the survey.

On the basis of a voluntary sample, we retained 50 caregivers out of 140 (35.71%) including 09 doctors, 21 nurses (era) and 20 caregivers.

The collection of data that lasted 3 months (from July to September 2020), was done on individual survey sheets filled in by the caregivers themselves. The parameters assessed were related to the bio-sociodemographic profile (age, sex, marital status, number of children, seniority), roles in management and level of anxiety (assessed by the Hamilton Scale).

The Hamilton Anxiety Rating Scale (HARS; Hamilton 1959) is an instrument for detecting and measuring the severity of perceived anxiety symptoms, evaluated by the clinician in 14 points or items rated from 0 to 4 depending on intensity. It was originally designed to assess treatment outcomes by clinicians. His interpretation gives us 4 situations namely score 12, anxiety called “normal”; score between 12 and 20 mild anxiety; score between 20 and 25, moderate anxiety; score > 25, severe to severe anxiety [8].

The survey sheet that we developed was administered to caregivers after a pre-test of 5 caregivers with the same characteristics as those in our study sample. The collection instrument was refined before the actual survey was started.

The data collected was captured and analyzed using computer hardware including SPSS 18, Excel 16 and Word 16. The results were presented in tabular form. For the analysis, it was a mixed analysis of qualitative and quantitative variables. The test used is the Fisher exact test which is an exact statistical test used for contingency table analysis. This test is generally used with low numbers ($n < 5$) but is valid for all sample sizes. It owes its name to its inventor, Ronald Fisher. It is a test qualified as exact because probabilities can be calculated exactly rather than relying on an approximation that becomes correct only asymptotically as for the test of Chi 2 used in contingency tables.

3. Results

The sample size was composed of 50 caregivers including 09 doctors, 21 nurses (era) and 20 caregivers.

3.1. Sociodemographic and Occupational Profile

The 26 - 35 and 36 - 50 age groups were the most represented in 44% of cases each with an average age of caregivers of 36 years. Male subjects predominated in 52% with a sex ratio of 1.08. Our respondents were mostly single (40%). Among caregivers, nurses and nursing assistants were the most represented corporations in our study respectively in 42% and 40%. The majority of participants (58%) had a seniority professional between 1 and 5 years (**Table 1**).

3.2. Caregiver Anxiety

3.2.1. Level of Anxiety among Caregivers

The Hamilton-wide anxiety assessment indicated that 20% of practitioners had mild, moderate or severe anxiety (**Table 2**).

Table 1. Socio-demographic and occupational characteristics of caregivers.

Parameters	Effective	Percentage
Age (years)	(n = 50)	(%)
18 - 25	05	10
26 - 35	22	44
36 - 50	22	44
50 and more	01	02
Sex	(n = 50)	(%)
Masculine	26	52
Female	24	48
Marital status	(n = 50)	(%)
Single	20	40
Married	18	36
Common-law	12	24
Corporation	(n = 50)	(%)
Doctors	09	18
Nurses	21	42
Orderlies	20	40
Professional seniority	(n = 50)	(%)
1 - 5	29	58
6 - 10	13	26
11 - 15	03	06
16 - 20	02	04
21 and more	03	06

Table 2. Distribution of caregivers by level of anxiety.

Echelle HAMILTON	Effectifve (n = 50)	%
“Normal” anxiety	40	80
Mild anxiety	05	10
Moderate anxiety	04	08
Severe to severe anxiety	01	02
Total	50	100

Table 3. Relationship between anxiety and seniority.

Professional Seniority \ Degree of anxiety	“normale” anxiety	Severe to severe anxiety	Mild anxiety	Moderate anxiety	Total
1 - 5	25	01	01	02	29
11 - 15	02	00	00	01	03
16 - 20	01	00	00	01	02
21 and more	03	00	00	00	03
6 - 10	09	00	04	00	13
Total	40	01	05	04	50

Fisher test, dependence is not significant. $p = 0.1077$

Table 4. Relationship between level of anxiety and marital status.

Anxiety \ Marital status	Single	Common-law	Married	Total
“Normal” anxiety	18 (90%)	9 (75%)	13 72%	40
Mild anxiety	1 (5%)	2 (17%)	2 (11%)	5
Moderate anxiety	1 (5%)	1 (8%)	2 (11%)	4
Severe to severe anxiety	0 (0%)	0 (0%)	1 (6%)	1
Total	20	12	18	50

Fisher test, $p = 0.753$

3.2.2. Degree of Anxiety and Seniority

The intersection of anxiety with seniority is not significant. There is therefore no link between anxiety and professional seniority (**Table 3**).

3.2.3. Degree of Anxiety and Marital Status

The increase in the degree of anxiety with the marital situation is therefore not significant no link between the anxiety and the marital situation (**Table 4**).

4. Discussion

4.1. Bio-Sociodemographic Data

The ages of the participants were largely (44%) between 26 and 50 years with an average age of 36 years. This shows that the caregivers of these treatment centers are young adults and adults. This result is almost superimposed on that of Mboua *et al.* (2020) [9] which in their study of anxiety and depression associated with the management of COVID-19 among health workers in Cameroon, was predominantly in the 30-year age group, 39 years in 45.8% of cases. Moreover,

Zhu Z *et al.* (2020) [10] in their work noted 56.4% of caregivers aged between 30 and 49 years. These different results show that caregivers treating Covid-19 patients are of mature age and could benefit from sufficient experience to conduct this care activity.

Regarding gender, the majority of caregivers (52%) were male. Mboua *et al.* (2020) [9] and Zhu Z *et al.* (2020) [10] respectively found female majorities of 53% and 82.4%. In view of the results of these different works carried out in different contexts, we can say that sex is not a criterion for recruiting caregivers for the management of covid-19 patients.

The marital situation of our respondents was dominated by unmarried (40% single and 24% common-law) followed by married (36%). Our results differ from those of Zhang W. *et al.* (2020) [11] who in their study “Mental and psychosocial health problems of medical health workers during the COVID-19 outbreak” in China found 82% of married and 18% unmarried. This difference could be explained by the fact that the recruitment of caregivers in the treatment centers of patients with covid-19 was voluntary and as a result many married caregivers to protect themselves and their families did not enlist.

The professional profile of caregivers in our study was dominated by nurses and caregivers respectively in 42% and 40%. Our results corroborated those of Lai J *et al.* (2019) [12] in Gansu in China in their study of factors associated with mental health outcomes in healthcare workers exposed to coronavirus disease 2019 and Mboua *et al.* (2020) [9] who recovered a predominance at the nursing staff level of 60.8% and 55.7% respectively.

At the level of professional seniority, the majority of caregivers (58%) had a professional experience of up to 5 years while Juhong Zhu (2020) [13] in his study noted an average duration of professional practice of 11.35 ± 8.60 (years). So little work experience combined with working on the front lines in this pandemic can be a source of anxiety for caregivers.

4.2. Assessment of Caregiver Anxiety

The Hamilton Scale Anxiety Assessment showed that 20% had anxiety with 10% mild anxiety, 8% moderate anxiety and 2% severe anxiety. The study by Lai *et al.* (2019) [12] reported prevalence of depression, anxiety and stress-related symptoms among health care workers in China at 50.7%, 44.7% and 73.4% respectively.

The intersection between seniority and anxiety showed that there was no link between anxiety and occupation. This result differs from those of Halouani *et al.* (2018) [14] who in a study published in 2018 on the psychological distress of medical and anesthesia-resuscitation personnel found that 40.7% of medical staff were estimated stressed and 38.9% in isostrain situation. The lack of correlation between anxiety and professional care practice in this covid-19 situation could be explained by some control of caregivers on the disease and their confidence in protective equipment. The majority of caregivers (66%) felt that they were adequately protected by work equipment.

The intersection of anxiety and marital status showed no link between anxiety and marital status. No association between Anxiety and marital status was found in the study of Kandouci *et al.* [15] on Psychosocial Impact of COVID-19 on Health Workers in Algeria. Our result differs from that of a cohort of 1,599 people from the general population in China during the peak of the COVID-19 epidemic, which suggests that being single has been reported as a predisposing factor to psychological distress. The reasons for the association between celibacy and anxiety, indicated by this study, were the lack of social commitment, the feeling of loneliness in the uncertainty of the COVID-19 pandemic and the lack of sharing of the financial burden during this period. This may increase their risk of Anxiety [16].

Some limitations were noted in our study. The fact that this is a cross-sectional study is already a limitation. For Kandouci *et al.* [15], cross-sectional studies did not track changes in psychological distress after the onset and expansion of the pandemic, and the cross-sectional design limited our ability to distinguish between pre-pandemic symptoms and whether the psychological symptoms of health professionals have worsened or not, therefore, a longitudinal study is warranted.

Another limitation of our study is the small sample size. Indeed, 50 caregivers have agreed to participate in the survey of a total of 140 caregivers in the two treatment sites for people with Covid-19 disease. Despite the guarantee of anonymity and confidentiality of the data, 90 caregivers refused to participate in the survey. This refusal could be explained by the fact that the caregivers did not want to be assessed and were afraid of being diagnosed as anxious and therefore fragile. Also in black Africa in the popular perception, the caregiver is supposed to be protected from any disease and hold the remedy if necessary. Our results could not be generalized to all caregivers involved in the management of patients with Covid-19.

We can also point out bias, because we do not have the means to attest to the veracity of certain information collected during our investigation.

5. Conclusion

This study conducted on caregivers working in treatment centers for people with covid-19 has highlighted that anxiety is a psychological and physiological state characterized by somatic components, cognitive and behavioral emotions represent an occupational risk in these environments. The prevalence of anxiety in this population was 20%. In addition, the study related the length of professional service and the degree of anxiety without significant link. However, there is a need to put in place psychological support for caregivers and ensure their mental well-being in order to ensure the sustainability of these health services.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Survey Form

IDENTIFIER No.

Form No. /_/_/_/

I. Socio-Professional Characteristics

- | | | | | |
|---|------------|---------------|------------|---------------------------|
| 1. Age (years): /_ / | 1) 18 - 25 | 2) 26 - 35 | 3) 36 - 50 | 4) 50 and more |
| 2. Sex: /_ / | 1) Female | 2) Masculine | | |
| 3. Marital status: /_ / | 1) Single | 2) Common-law | 3) Married | 4) Divorced 5) Widowed |
| 4. Corporation: /_ / | 1) Doctor | 2) Nurse | 3) Midwife | 4) Orderlies |
| 5. Professional Seniority (years): /_ / | 1) 1 - 5 | 2) 6 - 10 | 3) 11 - 15 | 4) 16 - 20 5) 20 and more |

II. Assessment of Anxiety Using the Hamilton Scale

Hamilton Anxiety Rating Scale (HAM-A)

Reference: Hamilton M. The assessment of anxiety states by rating. *Br J Med Psychol* 1959; 32: 50-55.

Rating Clinician-rated

Administration time 10-15 minutes

Main purpose To assess the severity of symptoms of anxiety

Population Adults, adolescents and children

Commentary

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 both clinical and research settings. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). Although the HAM-A remains widely used as an outcome measure in clinical trials, it has been criticized for its sometimes poor ability to discriminate between anxiolytic and antidepressant effects, and somatic anxiety versus somatic side effects. The HAM-A does not provide any standardized probe questions. Despite this, the reported levels of inter-rater reliability for the scale appear to be acceptable.

Scoring

Each item is scored on a scale of 0 (not present) to 4 (severe), with a total score range of 0 - 56, where <17 indicates mild severity, 18 - 24 mild to moderate severity and 25 - 30 moderate to severe.

Versions

The scale has been translated into: Cantonese for China, French and Spanish. An IVR version of the scale is available from Healthcare Technology Systems.

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Hamilton Anxiety Rating Scale, HAM-A

Below is a of phrases that describe certain feeling that people have Rate the patients by finding the answer which best describes the extent to which he/she has these conditions. Select one of the five responses for each of the fourteen questions.

0 = Not present, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very severe.

1. Anxious mood

[[[[[

Worries, anticipation of the worst, fearful anticipation, irritability

2. Tension [[[[[[

Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.

3. Fears TT [[[T [[

Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.

4. Insomnia [[[[[T

Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.

5. Intellectual [[[T [3] [4]

Difficulty in concentration, poor memory.

6. Depressed mood T [[T [[

Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.

7. Somatic (muscular) [[[[[[

Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.

8. Somatic (sensory) [[[[[[

Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.

9. Cardiovascular symptoms [[[[[[

Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.

10. Respiratory symptoms [T] T T T T

Pressure or constriction in chest, choking feelings, sighing, dyspnea.

11. Gastrointestinal symptoms T T T T T

Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.

12. Genitourinary symptoms T T T T T

Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence

13. Autonomic symptoms T T T T T

Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.

14. Behavior at interview T T T T T

Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc.