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# The psychological effect of the COVID 19 pandemic on the staff of the Mohammed VI University Hospital in Marrakech

Mohamed IJIM *, Salma AITBATAHAR and Lamyae AMRO

*Pulmonology department, Arrazi hospital, Mohammed VI University Hospital, Marrakech, Morocco.*

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## Abstract

**Background:** Health professionals have undergone very high levels of workload and pressure since the COVID-19 epidemic. Purpose: This study aims to assess the psychological impact of COVID-19 on health professionals at the Mohammed VI University Hospital. From May 31 to June 22, 2020.

**Methods**: This is a cross-sectional study carried out among professionals of the Mohammed VI University Hospital in Marrakech using a questionnaire measuring the psychological impacts; the event impact scale - revised (IES-R), An exploratory and bivariate factor analysis was carried out to exploit the results.

**Results**; 117 people answered the questionnaire, 66.67% were women, the average age was 30 years with extremes ranging from 25 to 60 years, 46.15% were doctors, 46.15% were nurses, 25.65% of participants lived alone, while 74.35% with families, after the start of the epidemic, 51 people lived in one of the hotels dedicated to housing and confinement. 28.2% or 33 people had declared transport problems. Of the participants in the study, 53.84% presented with insomnia, 12.82% (15) described aggression, and somatization was presented by 9 people (7.69%), nightmares by 9 others (7.69%) and intense fear by 3 people. 7.7% or 9 people who have already consulted the psychiatric listening cell during this period. The IES-R score is calculated at 41.94 or in favor of a post-traumatic stress disorder prevalent in this sample, with a score of avoidance at 12.76, intrusion of memories at 18.58 and hyperactivity at 10.58.

**Conclusion**: unwanted psychological impacts are prevalent among our healthcare professionals.

**Keywords:** Coronavirus; Depression; Anxiety; Health professionals; Psychological

## 1. Introduction

There is a broad consensus that the outbreak of an infectious disease is often linked to psychological impacts [1]. Containment measures, including mandatory quarantine or distancing, especially if it is prolonged, may increase the risk of psychological disorders, such as depression, anxiety, post-traumatic stress [2].

Compared to the general population, health workers are more likely to experience a wide range of negative psychological impacts following an emergency or disaster.

Severe emotional stress had been reported during or after the outbreak of infectious diseases among healthcare professionals in previous studies, including the 2003 Severe Acute Respiratory Syndrome (SARS) epidemic [3], Ebola virus disease in 2014 and Middle East respiratory syndrome epidemic (MERS) in 2015 [4,5].

* Corresponding author: Mohamed IJIM
Pulmonology department, Arrazi hospital, Mohammed VI University Hospital, Marrakech, Morocco.

Health workers have been shown to experience high levels of stress, anxiety, depression and post-traumatic stress during or even after the onset of infectious diseases [6].

Adverse psychological outcomes in healthcare workers are usually determined by a variety of factors during an infectious disease outbreak with a high death rate, including uncertain length of quarantine, inadequate medical supplies, fears of infection, stigma and discrimination, etc. [2, 7].

Meanwhile, the support they got from others and the coping strategies they adopted during the event had been reported to be associated with their psychological state during the disease outbreak [5]. Less support and more negative coping strategies have been shown to be common predictors of acute and chronic PTS and other mental health problems [8, 9].

By understanding the psychological consequences caused by an epidemic in healthcare workers and studying the mechanism below, effective intervention and treatment can be developed and provided to this population, to improve their psychological well-being.

The present study aimed to investigate the presence of an adverse psychological outcome experienced by healthcare professionals during the COVID-19 epidemic and assess the associated factors,

## 2. Methods

This study was a quantitative and descriptive survey using the snowball sampling strategy, including doctors, nurses, medical technicians, and non-medical staff working in hospitals. Study participants were recruited from hospitals in the Mohammed VI University Center in Marrakech. The time span of the study was 22 days between May 31 to June 21, 2020. A total of 117 people voluntarily participated and completed questionnaires anonymously online. Thus the consent of the participants was obtained.

The survey questions included Sociodemographic variables (gender, age, marital status and occupation), psychiatric health status, confinement and working conditions during this period, Impact of Event Scale-Revised (IES- R).

The Impact of Event Scale (IES-R) was used to assess subjective stress caused by traumatic events, and it includes 22 items and consists of three subscales of symptoms of post-traumatic stress disorder (PTSD), including intrusion, hyper-arousal and avoidance [10]. The IES-R in French version was used in our study.

The PTSD total score were converted to dichotomous variables (presence of PTSD symptoms (IES-R ≥ 22) and no PTSD symptoms). The group comparisons of categorical variables were carried out with chi-square tests, and continuous variables were analyzed with Student's t-test. For univariate analysis of PTSD symptoms, the chi-square test was used for categorical variables. The count and frequency were presented.

Linear regressions were used to calculate bivariate associations between socio-demographic characteristics, variables related to the COVID-19 outbreak and psychological outcomes, for detecting risk factors for PTSD symptoms.

A two-sided $p < 0.05$ was identified as statistically significant, EPI INFO 7.2.4.0 software for windows was used for statistical analysis.

## 3. Results

117 people responded to the questionnaire, 66.67% were women, the average age was 30 years with extremes ranging from 25 to 60 years, of which 97% were under 40 years old, 53.85% were married, 46.15% were doctors, 46.15% were nurses, 15 people or 12.82% had already had psychiatric illnesses (depression: 9, anxiety: 3, panic disorder; 3), 25.65% of the participants lived alone, while 74.35% with family, after the at the start of the epidemic, 51 people lived in one of the hotels dedicated to housing and confinement, the reception within these housing establishments was deemed satisfactory by 64.70% of the housed, and also the calm and security by the same percentage, while the quality of the food was deemed unsatisfied by 76.47% of the residents.

28.2% or 33 people had declared transport problems between the accommodation and the hospital during the period of confinement.

Among the participants in the study, 93 or 79.46% worked directly with patients confirmed to have covid 19, the number of people who changed their post of assignment was 54 or 46.15%, on average the number of working hours was 36h per week per person,

The level of remuneration was judged unsatisfactory by 82.05% of the people, 51.28% judged the communication as unsatisfied, and 58.97 judged the availability of protective equipment as satisfactory.

The percentage of people who kept a regular physical activity was 15.39%, 10.26% of people who kept close physical contact with their families during this period of confinement, the degree of stress in general was considered very important by 66.67% of people,

Sixty three people or 53.84% presented with insomnia, 12.82% (15) described aggression, and somatization was presented by 9 people (7.69%), nightmares by 9 others (7.69%) and intense fear by 3 people. 7.7% or 9 people who have already consulted the psychiatric listening cell during this period.

The IES-R score is calculated at 41.94 or in favor of a post-traumatic stress disorder widespread in this sample, with a score of avoidance at 12.76, intrusion of memories at 18.58 and hyperactivity at 10.58 (table 1).

**Table 1** Association between the variables linked to the COVID-19 epidemic and the IES-R score≥22

| | **IES-R ≥ 22** | | | **Mild-p exact** | **Fisher exact** |
|---|---|---|---|---|---|
| **Gender** | **NO** | **YES** | **Total** | 0.315 | 0.406 |
| Female | 15 | 63 | 78 | | |
| Row% | 19.23% | 80.77% | 100.00% | | |
| Male | 6 | 33 | 39 | | |
| Row% | 15.38% | 84.62% | 100.00% | | |
| **Marital status** | | | | 0.374 | 0.464 |
| Single | 9 | 45 | 54 | | |
| Row% | 16.67% | 83.33% | 100.00% | | |
| **Married** | 12 | 51 | 63 | | |
| Row% | 19.05% | 80.95% | 100.00% | | |
| **CHANGE OF POSITION (job)** | | | | 0.374 | 0.464 |
| No | 12 | 51 | 63 | | |
| Row% | 19.05% | 80.95% | 100.00% | | |
| Yes | 9 | 45 | 54 | | |
| Row% | 16.67% | 83.33% | 100.00% | | |
| **Psychiatric consultation** | | | | 0.078 | 0.156 |
| No | 21 | 87 | 108 | | |
| Row% | 19.44% | 80.56% | 100.00% | | |
| Yes | 0 | 9 | 9 | | |
| Row% | 0.00% | 100.00% | 100.00% | | |
| **Contact with family** | | | | 0.255 | 0.367 |
| No | 18 | 87 | 105 | | |
| Row% | 17.14% | 82.86% | 100.00% | | |
| Yes | 3 | 9 | 12 | | |
| Row% | 25.00% | 75.00% | 100.00% | | |
| **Habitat** | | | | 0.089 | 0.127 |
| At home | 9 | 57 | 66 | | |
| Row% | 13.64% | 86.36% | 100.00% | | |
| Hôtel | 12 | 39 | 51 | | |

| | | | | | |
|---|---|---|---|---|---|
| Row% | 23.53% | 76.47% | 100.00% | | |
| **Alone or with family** | | | | 0.363 | 0.463 |
| With family | 15 | 72 | 87 | | |
| Row% | 17.24% | 82.76% | 100.00% | | |
| Alone | 6 | 24 | 30 | | |
| Row% | 20.00% | 80.00% | 100.00% | | |
| **Sports activity** | | | | 0.045 | 0.07 |
| No | 15 | 84 | 99 | | |
| Row% | 15.15% | 84.85% | 100.00% | | |
| Yes | 6 | 12 | 18 | | |
| Row% | 33.33% | 66.67% | 100.00% | | |
| **Working with covid + patients** | | | | 0.232 | 0.326 |
| No | 3 | 21 | 24 | | |
| Row% | 12.50% | 87.50% | 100.00% | | |
| Yes | 18 | 75 | 93 | | |
| Row% | 19.35% | 80.65% | 100.00% | | |

## 4. Discussion

The results of our study revealed a high prevalence of PTS among medical professionals during the COVID 19 virus outbreak. The rate was also outside the 10-27% range of probable and clinical diagnoses of PTSD reported in the Ebola epidemic in 2014-2016 in the general population [7] and in the SARS epidemic among health workers in 2003 [11]. Post-traumatic stress disorder (PTSD) is a common psychiatric disorder manifested by symptoms of intrusion, over-arousal and avoidance following a traumatic event [12]. According to previous studies, healthcare professionals are likely to develop unwanted psychological problems, such as depression and post-traumatic stress disorder as a result of their trauma experience [13, 14].

In the circumstances of an infectious disease outbreak, frontline health workers are always afraid of being infected or infecting others, especially when they have physical symptoms related to the infection [2, 13, 15]. During this time of containment health workers obviously became the population at high risk of transmitting the virus to who have close contact with them, and not surprisingly, were in the position of being stigmatized or left behind by others.

Stigma / distancing, fears of infection and the perceived high risk of their work; These are issues of great concern to healthcare professionals in the COVID-19 outbreak and other similar outbreaks, and have been shown to be associated with adverse psychological outcomes in this and other study. Other previous ones [2, 6, 13, 7].

Therefore, in addition to providing appropriate psychological counseling and accurate information targeting stigma against frontline health workers to mitigate their perceived threat, a more supportive social environment and more user-friendly mass media would be helpful for psychological health. Health workers during an infectiou disease epidemic.

In addition, the shortage of medical supplies among health professionals is always worth considering, it can lead to serious psychological consequences for them, even suicide.

Active coping strategies focused on problem solving can lead to an improvement in the relationship between the person and the environment and thus lead to a positive emotional response [16].

Our data suggest strategies that promote active coping styles and provide sufficient social support may help reduce the onset of unwanted psychological symptoms like depression, anxiety, and stress. This is consistent with previous studies that found active coping and social support to be the most important buffers of negative psychological health among healthcare workers [17, 18].

Given the amount of stress experienced by medical personnel during the pandemic, it is important to provide them with personalized mental health support, such as observing changes in the trajectory of the post-pandemic mental health situation and setting up 'a nationwide psychological support group, in order to prevent the occurrence of generalized psychiatric disorders in this population.

Otherwise, it would be a long-term social and economic burden [19]. In addition, appropriate response measures must be adopted based on psychological assessment at every stage of the pandemic, including timely counseling and testing, development of positive coping strategies and creation of an environment more social friendly; environment and mass media network. This would apply to similar outbreaks in the future.

Our preliminary results can be supplemented by future studies targeting this population.

## 5. Conclusion

Unwanted psychological impacts are prevalent among healthcare professionals in Marrakech during the COVID-19 outbreak

Screening for adverse psychological effects and developing corresponding preventive measures would be beneficial in reducing the negative psychological outcomes of the COVID-19 pandemic among frontline soldiers

### *Recommendations*

Unwanted psychological impacts are prevalent among healthcare professionals in Marrakech during the COVID-19 outbreak, the IES-R score is calculated at 41.94 or in favor of a post-traumatic stress disorder widespread in this sample, with a score of avoidance at 12.76, intrusion of memories at 18.58 and hyperactivity at 10.58.

## Compliance with ethical standards

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### *Authors' contributions*

Guarantor of integrity of entire study, all authors; study concepts/study design or data acquisition or data analysis/interpretation, all authors; manuscript drafting or manuscript revision for important intellectual content, all authors; approval of final version of submitted manuscript, all authors; agrees to ensure any questions related to the work are appropriately resolved, all authors; literature research, all authors; clinical studies, all authors.; statistical analysis, M.I.; and manuscript editing, all authors.

### *Disclosure of conflict of interest*

The authors declare no conflict of interest.

### *Statement of informed consent*

Permission to conduct the study was obtained from Department of Pneumology, ARRAZI Hospital, Mohamed VI University Hospital Center, Marrakesh. Informed consent was obtained from participants. All participants' information including raw data was be kept confidential during and after study period.

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