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### RESEARCH ARTICLE

#### BURNOUT SYNDROME AMONG HEALTHCARE PROFESSIONALS IN THE SOUSS REGION: CROSS-SECTIONAL STUDY

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#### Abstract

In the context of the COVID-19 pandemic, the population has been put under a major psychological constraint. high incidence of psychological and professional burden on health care providers have been recorded. These observations are related to the considerable stress, additional pressure, accompanied by very significant awareness and media coverage which have all focused on the role of health professionals. Through this work, we aim to determine the prevalence of burnout syndrome among medical and nursing staff in the intensive care units of Hassan II Hospital in Agadir (Morocco) at the time of the Coronavirus and to look for the associated factors.

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#### Introduction:-

Since January 2020, the global economy and the professional world have been disrupted in proportions that have been never seen before. On March 11, the World Health Organization (WHO) defined the novel coronavirus as a pandemic. This virus, which initially appeared in China, quickly spread across the globe, forcing governments to prepare for the first wave of health emergencies by adopting drastic measures, paralyzing daily life in many countries around the world [1, 2].

Indeed, as of August 23, 2020, more than 23 million cases of COVID-19 have been recorded and the virus has killed more than 802,693 people [3]. In Morocco, the cumulative number of confirmations at the national level stood at 25,537 cases as of August 03, 2020 and the number of deaths at 382 people. The highest values of deaths were noted in the provinces of Tangier-Assilah and Marrakech with 8.6 and 5.0 deaths per 100,000 respectively [2].

In addition, the province of Souss-Massa recorded 295 positive cases and 6 deaths as of October 23, 2020 and 0 deaths in the city of Agadir-Ida -Ou-Tanane [2].

In the context of this health crisis, the population has been put under a major psychological constraint. Preliminary reports from affected countries at the start of the pandemic highlight the high incidence of psychological and professional burden on health care providers outside of intensive care. Indeed, the latter have seen their working hours doubled, the days off adjourned and their number of hours of sleep reduced [1].

Throughout the world and not only in Morocco, the pandemic has triggered considerable stress, additional pressure, accompanied by very significant awareness and media coverage which have all focused on the role of health professionals, thus, to their psychological health which has become disturbing and worrying [1].

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The objective of this study was to determine the prevalence of burnout syndrome among nursing staff in the intensive care units of Hassan II Hospital in Agadir (Morocco) at the time of the Coronavirus and to look for the associated factors.

## **Methods:-**

### **Type and duration of the study**

This is a cross-sectional, descriptive and analytical study carried out over the period of March-July 2021.

### **Study location**

Our study sites are the departments dedicated to the resuscitation of patients suspected or declared positive by PCR or COVID serologies and presenting respiratory distress or patients suffering from other vital distresses with a positive serological status or Covid PCR within the Agadir regional hospital.

The work of health professionals in these departments consists of taking care of patients in serious condition by providing them with adequate oxygen therapy by various means, by administering treatments, taking samples for the necessary assessments, ensuring their transport to perform imaging by monitoring them continuously.

### **Study population**

The studied population was made up of health professionals (doctors, nurses and nursing assistants) working in the COVID-19 resuscitation department at the Hassan II Regional Hospital in Agadir. The study focused on a sample of 100 of these professionals. This number is justified by the number of teams of professionals received from the various hospitals in the Souss-Massa region. We included in this study health professionals who operated during the period of March-July 2021 at the Covid-19 resuscitation departments and who agreed to participate in the survey of our study.

Thus, professionals who did not work in COVID-19 intensive care units during this period and those who refused to participate in the study were excluded from this study.

### **Data collection**

The data was collected using a survey providing information on five factors: socio-demographic and professional factors (gender, age, seniority, marital status and professional category); perceived burnout data; data on the health status of the study population and the Maslach Burn-out Inventory instrument [Maslach and Jackson, 1981, 1986]

The survey was based on the French version of the adapted MBI with 22 items whose responses are rated by a Likert scale from 0 (never) to 6 (every day).

The Maslach Burn-out Inventory subscales are emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). The calculation of the scores for each of these dimensions is obtained by the sum of the responses to the items.

The three levels (low, moderate and high) of burnout are defined by specific thresholds: EE (low BO: score < 18, moderate BO: 18 to 29, high BO: > 29); DP (low BO: < 6, moderate BO: 6 to 11, high BO: > 11); PA (high BO: < 34, moderate BO: 34 to 39, low BO: > 39) [9,10]. Thus, stages of different severity of Burn-out are distinguished according to the number of dimensions reached. Burnout is low when only one dimension is affected, medium when 2/3 of the dimensions are affected and severe when the 3 dimensions are pathological [7]. Associations between dependent and independent variables were established with the chi-2 test. The analysis was performed using SPSS 13.0 software.

### **Ethical Considerations:**

Participants were assured of the anonymity of their answers in the survey as well as the confidentiality of the information.

## **Results:-**

In our series, the majority of participants (93%) were over 40 years old. There is a male predominance with a percentage of 60% against 40% of women who responded to the survey.

Single participants outnumbered those who are married (66% vs. 34%).

The most represented professional categories in our study were doctors with a percentage of 39% and disabilities with a percentage of 40%, against only 21% for nursing auxiliaries.

Concerning the seniority of exercise in the field of health, the majority (85%) of the participants had a seniority of 10 years or more against 15% of the participants had a seniority of less than 10 years.

During the period of our study, 60% of the participants worked for more than 40 hours during the last two months of the total duration of our study, the majority (63%) of the staff worked on weekends once every two weeks. 21% work weekends every week and 14% never work weekends. A feeling of exhaustion was felt during the Covid crisis by 74% of the participants (74%). This exhaustion was further amplified by the fear of transmitting the infection to family members (85%) as well as the fear of becoming infected (59%).

The results of our study show that the factors that were statistically significant for the three dimensions of burnout were: (Table 2)

1. The gender of the participants ( $p=0.012$ )
2. Professional category ( $p<0.001$ )
3. The seniority of exercise ( $p=0.037$ )
4. The fear of being infected with covid-19 ( $P=0.002$ )

### **Discussion:-**

Our study was carried out with medical or paramedical personnel who had worked during the Covid-19 pandemic. The results show the significant psychological impact on the individuals who participated in the study.

Concerning the three Burn-out dimensions, 85% presented an emotional exhaustion, 88% a depersonalization and 84% an alteration of personal accomplishment.

The first dimension of Burn-out is represented by emotional exhaustion. This represents the affective side of Burn-out and is linked to physical and/or mental exhaustion.

Among the direct causes of emotional exhaustion is the excessive workload as would be the case for health professionals facing patients suffering during the Covid-19 pandemic. [3].

In a recent 2022 study, about 451 health personnel working in the context of the Covid-19 pandemic, the risk factors for emotional exhaustion would be: female gender, nurse or medical professional category, work in a university establishment, work in an environment with a high risk of contamination by Covid-19, fear of infection by Covid-19, work with low wages, heavy workload, lack of time for oneself and for the family and guilt following the risk of Covid-19 contamination of loved ones. [4]

In contrast to these factors and as results of this same study, the factors which protect against the emotional exhaustion would be the satisfaction with the place of exercise, the exercise with a title of professor as well as the exercise in a private structure. [4]

This study has highlighted the negative effect of the association of a work overload and a lack of salary increase on the mental health of health personnel. [4]

In our series, and contrary to the results of the study carried out with 135 health professionals during the same covid-19 pandemic in 2021 [10-11], young doctors, nurses and caregivers are more interested in Burn-out compared to older staff. Similar to this result and always in opposition to the results of this same study, the group aged over 40 in our series have a lower incidence of burnout compared to the young population (under 40 years old). [1]

As demonstrated by the results of our study as well as for the majority of studies, the relatively low incidence of burnout in the elderly population is explained by the experience accumulated in the latter during the years of exercise. [5]

The more one practices in the medical field, the more one will develop capacities such as the management of the stress imposed by the nature and the workload. [5]

Our study is an analytical study that assesses the factors that were most associated with the occurrence of burnout among the members of our series. The results of our study show that the factors that were statistically significant for the three burnout parameters were:

1. The female gender of the participants ( $p=0.012$ )
2. The professional category, doctors being the most affected compared to nurses and caregivers ( $p<0.001$ )
3. An exercise period exceeding 10 years. ( $p=0.037$ )
4. The fear of being infected with covid-19. ( $p=0.002$ )

The results of our study are in harmony with those of several studies [6]. The studies carried out trying to explain the relationship between the workload and the occurrence of burn-out have accused several mechanisms, among others [6]:

1. Mental fatigue
2. Anxiety which further complicates the heavy workload
3. Exaggerated sense of responsibility among staff.

It seems that gender plays a decisive role as shown by the results of our study ( $p=0.012$ ) with men showing more impairment in personal accomplishment than women. Regarding emotional exhaustion, another factor that is significant according to gender ( $p=0.013$ ), it is reversed for men and women because they are altered more in women than in men. These results correspond to those observed in several other studies [7].

In a recent study from 2022, high scores for personal accomplishment, reflecting an alteration of this factor would be secondary in the context of the Covid-19 pandemic in certain circumstances, in particular: being a resident, having a history of Covid-19 infection, the lack of time allotted for oneself or for the family. On the other hand, having children would play a protective role against the alteration of personal accomplishment. [4]

Our study demonstrates the significant relationship between the occurrence of Burn-out and the fear of being infected with Covid-19. This is confirmed by several studies in the literature. [1] It seems that the fear of contamination is more prevalent among women, especially those with children. [8]

The same study of 2022 was able to demonstrate that depersonalization, one of the dimensions of Burn-out, would be linked to the possession of children, the status of doctor, the status of resident, work in a university establishment, being at risk of contamination by Covid-19, a low salary, the lack of time for oneself and for the family, the feeling of guilt for the risk of Covid-19 infection for relatives and the consumption of alcohol. [4]

Conversely to these factors, those that protect health personnel against depersonalization would be a large number of children, exercise with a professor's title, work in a private establishment and satisfaction with the exercise environment. [4]

These results, whether from our study or other studies in the literature, should alert us to the importance of preventing burnout, especially for the personnel most at risk, especially those on the front line.

Psychological and psychiatric support, as well as recognition of their efforts, must be the rule.

One of the great protective elements against Burn-out would be social support. Receiving social support serves to reduce the harmful effect of stress. [9]

Family support, being part of social support, is alone capable of fighting against the 3 dimensions of Burn-out as well as against the loss of hope.[9]

### **Conclusion:-**

During the COVID-19 pandemic, psychological and professional burden on health care providers have been related in many studies to the considerable stress, additional pressure, accompanied by very significant awareness and media coverage which have all focused on the role of health professionals. In our work, we would like to emphasize

the role of Psychological and psychiatric support, as well as recognition of efforts provided by the medical and nurse staff.

### Tables

**Table 1:-**Socio-demographic and professional characteristics.

Variables	n(%)
<b>Age</b>	
< 40 years old	93 (93)
≥ 40 years old	7 (7)
<b>Gender</b>	
Male	60 (60)
Female	40 (40)
<b>Marital status</b>	
Married	34 (34)
Single	66 (66)
<b>Professional category</b>	
Doctor	39 (39)
Nurse	40 (40)
Caregivers	21 (21)
<b>Seniority</b>	
≤ 10 years	85 (85)
> 10 years	15 (15)
<b>Average hours worked per week over the past two months</b>	
< 10 hours	1 (1)
10 à 20 hours	10 (10)
21 à 40 hours	27 (27)
41 à 60 hours	36 (36)
61 à 80 hours	16 (16)
> 80 hours	10 (10)
<b>Number of times worked on weekends in the last two months</b>	
Never	14 (14)
Every 2 weeks	63 (63)
Every week	21 (21)
<b>Feeling exhausted more now than before the covid-19 crisis</b>	
Disagree	17 (17)
Agree	74 (74)
Neither agree nor disagree	14 (14)
Missing data	1 (1)
<b>Fear of infection</b>	
Disagree	26 (26)
Agree	59 (59)
Neither agree nor disagree	14 (14)
Missing data	1(1)
<b>Fear that the family is infected</b>	
Disagree	12(12)
Agree	85 (85)
Neither agree nor disagree	2 (2)
Missing data	1(1)

**Table 2:-**Burn-out severity and different related factors in the studies population.

Factor	emotional exhaustion (EE) n=100				Depersonalization (DP) n=100				Personal accomplishment (PA) n=100			
	Low EE	Mediu m EE	Sever e EE	p	Low DP	Mediu m DP	Sever e DP	p	Low PA	Mediu m PA	Sever e PA	p

General	24 (28,2 %)	16 (18,8 %)	45 (52,9 %)		26 (29,5%)	19 (21,6 %)	43 (48,9 %)		17 (20,2 %)	19 (22,6 %)	48 (57,1 %)	
Age												
<40 years old	23 (28,8 %)	16 (20%)	41 (51,2 %)	0,24 0	24(28,9 %)	18 (21,7 %)	41 (49,4 %)	0,94 5	15 (19%)	18 (22,8 %)	46 (58,2 %)	0,27 8
≥40 years old	1 (20%)	0 (0%)	4 (80%)		2 (40%)	1 (20%)	2 (40%)		2 (40%)	2 (40%)	1 (20%)	
Gender												
Male	19 (35,2 %)	13 (24,1 %)	22 (40,7 %)	0,01 3	18 (33,3%)	10 (18,5 %)	26 (48,2 %)	0,53 0	6 (11,1 %)	12 (22,2 %)	36 (66,7 %)	0,01 2
Female	5 (16,1 %)	3 (9,7% )	23 (74,2 %)		8 (23,5%)	9 (26,5 %)	17 (50%)		11 (36,7 %)	7 (23,3 %)	12 (40%)	
Profession al category												
Doctor	3 (8,8% )	10 (29,4 %)	21 (61,8 %)	<0,0 01	3 (8,6%)	6 (17,1 %)	26 (71,3 %)	<0,0 01	9 (28,1 %)	7 (21,9 %)	16 (50%)	0,06 7
Nurse	18 (56,3 %)	1 (3,1% )	13 (40,6 %)		21 (63,6%)	6 (18,2 %)	6 (18,2 %)		2(6,1 %)	7 (21,2 %)	24 (72,7 %)	
Caregiver	3 (13,8 %)	5 (26,3 %)	11 (57,9 %)		2 (10%)	7 (35%)	11 (55%)		6 (31,5 %)	5 (26,3 %)	8 (42,1 %)	
Marital status												
Married	6 (23,1 %)	4 (15,4 %)	16 (61,5 %)	0,59 9	8 (28,6%)	4 (14,3 %)	16 (57,1 %)	0,43 7	8 (29,6 %)	6 (22,2 %)	13 (48,2 %)	0,33 1
Single	18 (30,5 %)	12 (20,3 %)	29 (49,2 %)		18 (30%)	15 (25%)	27 (45%)		9 (15,8 %)	13 (22,8 %)	35 (61,4 %)	
Seniority												
≤10 years	23 (30,3 %)	16 (21%)	37 (48,7 %)	0,03 9	24 (30,8%)	18 (23,1 %)	36 (46,1 %)	0,52 3	14 (18,7 %)	15 (20%)	46 (61,3 %)	0,03 7
> 10 years	1 (11,1 %)	0 (0%)	8 (88,9 %)		2 (20%)	1 (10%)	7 (70%)		3 (33,3 %)	4 (44,4 %)	2 (22,3 %)	
Exhausti on more during the COVID- 19 period												
Yes	19 (30,6 %)	8 (12,9 %)	35 (56,5 %)	0,15 6	22 (34,2%)	12 (18,8 %)	30 (47%)	0,16 9	12 (18,8 %)	14 (21,9 %)	38 (59,3 %)	0,59 7
No	3 (17,6 %)	7 (41,2 %)	7 (41,2 %)		4 (16,7%)	7 (29,2 %)	13 (54,1 %)		5 (25%)	5 (25%)	10 (50%)	

Fear of being infected with COVID-19												
Worried	20 (40,8%)	4 (8,2%)	25 (51%)	0,00 2	22 (44%)	8 (16%)	20 (40%)	0.00 4	8 (16%)	10 (20%)	32 (64%)	0.42 1
Not worried	4 (16%)	10 (40%)	11 (44%)		4 (10,5%)	11 (28,9%)	23 (60,6%)		9 (26,5%)	9 (26,5%)	16 (47%)	
The fear that a family member is infected with COVID-19												
Worried	22 (30,6%)	11 (15,3%)	39 (54,1%)	0.23 4	25 (33.8%)	14 (18,9%)	35 (47,3%)	0.14 8	15 (20,3%)	15 (20,3%)	44 (59,4%)	0.37 9
Not worried	2 (18,2%)	4 (36,4%)	5 (45,4%)		1 (7,1%)	5 (35,7%)	8 (57,2%)		2 (20%)	4 (40%)	4 (40%)	

### Competing interests

The authors declare no competing interest.

### Authors' contributions

All the mentioned authors have equally contributed in data collection, data analysis, literature review and in manuscript redaction.

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Not Applicable.

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