

## **BURNOUT IN NURSES AT HASSAN II UNIVERSITY HOSPITAL IN FEZ MOROCCO: -RESULTS OF A PROSPECTIVE SURVEY-**

Abderrahim El Bouazzaoui, Emmanuel Mukuka, Salma Labrigui, Soumaya Touzani, Nawfal Houari,  
Brahim Boukatta, Nabil Kanjaa.

Intensive Care Unit, Hassan II<sup>d</sup> University Hospital, Fez, Morocco.  
Medical School of Fez, Sidi Mohammed Benabdellah University, Fez, Morocco.

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### **ABSTRACT**

**Introduction:** The Term “Burnout” is characterized by a feeling of intensive and chronic fatigue which does not disappear even after rest. Closely related to workload, the Burnout Syndrome has greatly degraded the dispensation of health care in nurses. This study aimed to evaluate the prevalence of burnout and the existence of specific risk factors in Nurses population at the Hassan II<sup>d</sup> University Hospital of Fez in Morocco. **Material & Methods:** A descriptive and analytic study was conducted between January and May 2020 with the objective of describing all sides of the burnout syndrome: prevalence, causes and risk factors. Social, demographic, professional and medical data were collected using an anonymous quantitative questionnaire containing 35 simple multiple choice and 14 redaction questions. The questionnaires were distributed to general nurses, theater nurses, anesthetist nurses, nurse physiotherapists and runners (circulating nurses) working in Operating Theaters, Intensive care Units and Emergency Rooms. Burnout levels were assessed using the Maslach Burnout Inventory (MBI). **Results:** The targeted population comprised of 1039 nurses of which a study sample of 110 nurses was selected. A response rate of 67.3% was obtained (87/110). The average age was 32.5 years old [22- 56]. The female gender represented 70.3%. The experience period in nursing profession ranged from a minimum of 1 year and a maximum of 30 years Twenty seven percent of nurses were working in the intensive care unit. Fifty eight percent of professionals had a high level of BOS. The analysis also revealed several aspects associated with burnout. **Conclusion:** According to our findings, BOS is a reality in the Moroccan context and does exist among nurses in Hassan II<sup>d</sup> University hospital. A large number of nurses who have still not reached an elevated level of burnout are showing signs of moderate level symptoms and should be considered for a preventive approach.

**Keywords:** Burnout syndrome; Maslasch; Morocco; Nursing.

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### **Corresponding Author:**

Abderrahim El Bouazzaoui, MD.

**Affiliation:** Intensive Care Unit, Hassan II<sup>d</sup> University Hospital, Fez, Morocco.

**E-mail:** [elbouazzaouiabderrahim@gmail.com](mailto:elbouazzaouiabderrahim@gmail.com)

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## INTRODUCTION

According to World Health organization (WHO), the burnout syndrome (BOS) is characterized by "a feeling of intense fatigue, loss of control and inability to achieve concrete results at work [1]. The versatility of occupational health nurses allows them to act within a multidisciplinary team in the context of occupational health and the assessment of occupational risks in the health facility such as a hospital or a clinic. This task essentially consists of assisting the occupational physician and managing emergencies that may arise in the health facility. Such heavy responsibility can induce stressful conditions at work which could lead to burnout syndrome which could result in depression. Burnout Syndrome refers to a state of physical, emotional and mental exhaustion which results from prolonged exposure to emotionally demanding work situations. It is characterized by a degradation process which is as a result of chronic and uncontrolled work stress. Often times, victims of Burnout Syndrome possess the fear of returning to their usual work place which leads to quitting of the job. The frequent stoppage of work by the suffering staff adds to the shortcomings of the number of nurses. Burnout Syndrome victims have also an increased feeling of losing the ability to practice a profession, a decrease in self-esteem and constant questioning of their capability. This condition promotes addictive behavior, toxic habits and the onset of mental disorders. Although Burnout Syndrome victims may eventually decide to return to their workstation, they may still be in the recovery process and therefore may be afraid of not performing efficiently. They may not have their usual energy reserves hence they can quickly feel tired. This will cause adverse effects on the well-being of the patients, including the decline in the offered quality of care, loss of empathy and a higher rate of errors, whether or not resulting in death [2].

In a cross-sectional and descriptive quantitative study to research the prevalence of burnout among liberal general health practitioners in the Nord and Pas-de-Calais cities of France (in which 244 responses were

obtained out of 3,563 targeted physicians), presented and publicly defended on the 11th of October 2018, it was clearly shown that the prevalence of Burnout Syndrome is high, at 47.5%, and that 1.2% of respondents are in severe Burn-Out. In this study, it was concluded that giving enough vacation holidays to health workers and allowing them to spend enough time with their families is correlated with a lower prevalence of Burnout [3]. In a Moroccan study which investigated the burnout syndrome in 175 nurses in Marrakech (10% of the total population of 1722 nurses), 62% of nurses presented a high level of burnout. Emotional Exhaustion was high in 41% of participants, while 26% had a high level of depersonalization and 33% had a low level of personal achievement. In this study, it was shown that an increased workload, the successive and scouring night shifts which leave only the time to rest, a lack of optimization and organization of work associated with a lack of motivation of workers by ensuring remuneration commensurate with their personal commitment in such a particular profession can lead to burnout syndrome [8]. A study on the burnout in the nurses' population in the Moroccan private sector showed that nurses have higher Burnout prevalence than doctors and pharmacists [4].

This study was conducted because we stated that few authors investigated the syndrome of burnout in the population of nurses at Hassan II<sup>d</sup> University Hospital in Fez. We tried to assess the presence and the prevalence of the syndrome and explored the possible risk factors. The study evaluated the direct and relative causes of stress leading to Burnout Syndrome and its consequences. Participants were given a chance to freely suggest methods that could help to reduce stress in their working environments.

## OBJECTIVES OF THE STUDY

The main objective of our study was to objectively measure and assess the prevalence, risk factors and consequences of BOS and suggest necessary measures to consider in order to prevent the apparition and

aggravation of Burnout Syndrome among nurses at Hassan II<sup>d</sup> University Hospital in Fez- Morocco.

## **METHODS AND MATERIALS**

This is a cross-sectional, descriptive and quantitative study conducted at Hassan II<sup>d</sup> University Hospital in Fez among nurses working in operating theaters (OT), intensive care units (ICU) and emergency rooms (ER). Hassan IId University Hospital had 1039 nurses working in 3 hospital structures: Ibn Al Hassan University Center, Omar Drissi Eye Hospital and the Oncology Center. We included active nurses of the following units: Mother and Child Intensive Care Unit, A1 floor Intensive Care Unit, A4 floor Intensive Care Unit, C0 floor Emergency Room, A2 floor central operating theater and A3 floor central operating theater. We excluded from this study nurses working outside the units mentioned above as well as nurses working in the administrative department. The used sampling method was probability and more precisely simple random sampling. The study spanned the period from January to May 2020, because it is a period during which we were subjected to the source of data within the Hospital, but because of the conditions related to the pandemic (COVID-19) we had this period prolonged and thus, enabling us to continue our analysis and master our research until September 2020.

An anonymous questionnaire of 35 simple multiple-choice questions was administrated to all participants. Fourteen essay questions were made, covering socio-demographic factors, occupational factors, social factors as well as medical factors. Our questionnaire also included the Maslach Burn-Out Inventory (MBI). Subsequently, the questionnaires were distributed to the nurses to be completed. A little chat was tolerable for those who were interested in. Anonymity and confidentiality of answers were ensured. \*The results were considered significant for a p value <0.05. The variables were compared by bivariate analysis using the Chi-square test for qualitative variables and the Z-law for quantitative variables.

## **RESULTS**

Our study revealed 63.5% of women were affected by Burnout Syndrome. Stress management was much more remarkable among the more experienced nurses. Likewise, nurses aged over 28 years seemed to have a good balance in their lives both personal and professional compared to those below that age. Although the results did not show us a influence of the balance between professional and personal, family and social life with a P-value <0.2, we found that professionals who claimed to have been working for more than 10 years showed a remarkable balance in their work and a lower level of Burnout Syndrome.

The analysis of the results obtained from our study demonstrate that BOS is a reality at Hassan II<sup>d</sup> University Hospital in Fez. Out of the total number of nurses interrogated, 66 responded to the MBI. The analysis of the MBI revealed 43 nurses affected by BOS representing 58.1% of the total respondents with 4 (5.4%) presenting a high level of BOS. Further analysis of the MBI showed 31.1% of nurses who presented a high level of Emotional Exhaustion [EE], about 31.1% with a high level of Depersonalization [DP] and 47.3% who obtained a high score presenting a low level of personal accomplishment.

Among the 58.1% nurses who were found affected by BOS, 20.3% presented a moderate risk, leaving 32.4% with a low risk of BOS. First, we found only 20% of nurses who have poor sleep quality, 11% of nurses with a psychological history, and 7% who are already on psychotropic drugs, with only 3% of nurses who had already attempted suicide. Analysis of the relationship between gender and the occurrence of BOS revealed that 33 women had DP and decreased PA represented by 31.5% out of the studied population of women, compared to 28.3% men. The correlation is statistically significant with a p-value of <0.001). Regarding EE, we could not find a link between gender and EE with p-value <0.3. The results showed that BOS affected women more than men although the difference was not significantly remarkable.

The analytical study showed that factors significantly associated with BOS development were the marital status (celibacy), the elevated number of working hours, working in ICU department and the confrontation with a stressful event (like death of

patient) with respectively  $p=0.02$ ,  $p=0.09$ ,  $p=0.001$  and  $p=0.02$ . Family distancing, night shifts and pay satisfaction were not significant factors associated to BOS ( $p \leq 0.5$ ). (**Table I**)

**Table I: Factors associated to burnout in nurses at Hassan II<sup>d</sup> University Hospital**

Factors associated to Burnout		%	p-value
Age (years old)	26-35	73.1%	$p=0.001$
	36-45	3.8%	
	$\geq 46$	9.1%	
Marital Status	Married	59%	$p=0.02$
	Single	38%	
	Divorced	3%	
Residency	Residents of Fez	56%	$p=0.09$
	Residents of other cities	44%	
Working Hours	Working > 10 hours	50%	$p=0.001$
	Working 6 to 9 hours	32.4%	
	Working < 5 hours	17.6%	
Night Shifts	At least 15 night shifts a months	43.8%	$p=0.90$
	No night shifts	46.4%	
Working place	ICU	56.8%	$p<0.001$
	Operating Theater & Emergency Room	32.4%	
Stressful event	Encountered with the death of a patient	48.6% %	$p=0.02$
	Confronted with a serious machine fault	23%	
	Grave technical problem	12.2%	
Pay satisfaction	Yes	49.9%	$p=0.50$
	No	50.1%	

## DISCUSSION

Given our study population (1039 nurses), our minimum response target was 130 to be representative while accepting a 5% alpha error risk (1.96) also to satisfy our heterogeneous population. Analysis of the relationship between gender and the occurrence of BOS revealed that 33 women had DP and decreased PA represented by 31.5% out of the studied population of women, compared to 28.3% men. The correlation is statistically significant with a p- value of  $<0.001$ . Regarding EE, we could not find a link between sex and EE with p-value  $<0.3$ . The results showed that

BOS affected women more than men although the difference was not significantly remarkable. Patrick and Lavery have shown that age is a risk factor for the onset of BOS [5]. However, other authors think the opposite, arguing that BOS is more associated with working conditions [6]. In the statistical analysis using the Z-test with a 5% risk, we found a significant link between age and the occurrence of BOS with a p-value of  $<0.001$ . Maslach et al (2001), as well as Schaufeli and Enzmann (1998), have shown that BOS is higher among nurses who are single and especially men. Based on our study analysis, we found 30.8% of single

nurses with a high level of EE against 15.3 % of nurses. The correlation between the marital status and the onset of BOS was significant with a p-value of  $<0.02$ , showing that nurses who are not married are most likely affected by BOS than those who are married.

Part of our research was dedicated to find a correlation between staying far from your family and the mismanagement of stress leading to BOS. Interrogated nurses were therefore asked to indicate the specific city of origin in which their families reside. Fifteen percent of nurses who claimed the city of Fez as their home had a high level of Emotional Exhaustion as compared to 12.2% of nurses from other cities. The correlation was thus not significant, so we did not find a much relation between the town of origin and the mismanagement of stress which leads to BOS with a p- value of 0.9. According to our analysis, 56.8% of nurses working in ICU had a higher level of Emotional Exhaustion vs. 32.4% of nurses working in Operating Theater and Emergency Room. The correlation between a particular service/ward and the onset of BOS was significant with a p-value  $<0.001$ . The analysis therefore showed that nurses in the Intensive Care Unit are much more exposed to risk factors of BOS than nurses in the Operating Theater and Emergency Room. A statistical analysis using a Student's-t-test revealed that work experience had minimal influence on the occurrence of BOS in the nurses surveyed. However, considering the survey conducted by Moulay Khatri BEN MOUSSA at the Marrakech University Hospital in 2016, work experience was found to have an influence on the appearance of BOS, insofar as having so many years of practice and experience would help overcome stress at work [11].

According to Garcia-Izquierdo and Rios-Risquez, working at night is linked to decreased PA. Based on the analysis made on our results, we did not find much correlation between the frequency of night shifts and the apparition of BOS with a p-value of  $<0.90$ . Let us follow the results obtained which reveal 46.6% of nurses who do not do night shifts and 43.8% of nurses who do night shifts 15 times a month. After a close

study, we could affirm that there is a good planning of night shifts for nurses working in ICU, Operating Theater and Emergency Room at Hassan II<sup>d</sup> University Hospital in Fez- Morocco. This greatly eliminates doing of night shifts from being among the major causes of BOS in as much as reduction in Personal Accomplishment is concerned. Nevertheless, optimizing the frequency of night shifts gives nurses enough time to have healthy rest as recommended, participate in sports, restore their energy and spend time with their family. Doing so would reduce a good number of risk factors of BOS [7].

The nursing profession has a strong relational aspect and a permanent interaction with the emotions of patients. The confrontation with pain, anguish and death of patients causes incredible and traumatic emotions for healthcare professionals. According to the results of our research, 13.5% of nurses confronted with a patient's death presented a high level of Emotional Exhaustion compared to 4.1% of nurses who had never been confronted with such a situation in their working time. We therefore found a significant link between the striking confrontation of a horrible situation during the dispensation of health care and the increase in the level of Emotional Exhaustion with a p- value of  $<0.02$ . However, regarding depersonalization and a reduction in Personal Accomplishment, the correlation was negligible with a p-value of  $<0.50$ .

Nurse burnout is a substantial concern for all concerned: nurses, employers, and patients. Nurses themselves are at risk for developing depressive disorders and other mental health conditions and for quitting their job. For institutions, a decrease in the quality of patient care can affect their reputation and bottom line. For patients, nurse burnout can directly impact their health. The most dangerous risk associated with burnout is a decrease in the quality of patient care. Mistakes due to exhaustion can lead to patient discomfort, infection, and even (in extreme cases) death. One study found that the patients of nurses experiencing burnout had an increased incidence of urinary tract and surgical site infections.

In a study by Marshall University, nurse-to-patient ratios greater than 1:4 were not only correlated with higher percentages of burnout, -but for each patient added to that ratio-, there was a 7% increase in hospital mortality. [10].

## STUDY LIMITATIONS

Burnout is a complex process or state whose origins and mechanisms are multiple and dependent on each other. We have seen that there are many definitions. The MBI scale does not offer a score that decides between absence or presence of burnout. This scale is therefore not used to screen for this syndrome. It is therefore difficult to carry out an epidemiological investigation on this subject, since it is impossible to have rigorous interpretations.

Nurses with high Burnout may not have responded to the questionnaire due to lack of energy, avoidance, lack of motivation due to the length of the questionnaire (8 pages) which may have discouraged some nurses from answering it; and conversely, some participants could have participated actively. Our results would thus be under or over expressed. The results of our study, however, make it possible to give an orientation on the existence of burnout among the nurses of our CHU. A self-questionnaire cannot allow an objective assessment of the BOS. A person suffering from burnout may not objectively answer the questionnaire (wanting for example to deny his suffering). In addition, we sometimes asked sensitive questions (e.g. the use of tobacco, alcohol or psychotropic drugs and whether or not one has had suicidal intentions). The anonymity of the questionnaire may have favored the honesty of the answers.

The outbreak of the virus, which began in Wuhan, China in November 2019, had affected more than 14.7 million people by the time of the research. At least 610,200 people died worldwide. The virus had affected Morocco and therefore prevented us from continuing the distribution of questionnaires. For this reason, we could not reach the expected sample size, and we did not even retrieve other questionnaires

that had already been distributed in the wards due to the quarantine pronounced by the state of emergency by the Moroccan government.

## CONCLUSIONS

Burnout Syndrome is present among nurses working in the OT, ICU and ER at Hassan II<sup>d</sup> University Hospital in Fez- Morocco. A large number of nurses who have still not reached an elevated level of burnout are showing signs of moderate level symptoms. The reduction of working hours, optimization of night shifts, a good communication of the risks and duties related to work by their employers and taking vacations at least twice a year may help reduce the aggravation of the level of BOS in this population. Regarding our findings, we could conclude that there is a moderate overall state of burnout in nurses. That is to say, most of the nurses are not yet at the extreme level of BOS. We arrived at this conclusion following the aspects concretely revealed through our investigation. Regarding the anticipation of the development or worsening of the degree of BOS, one of the preventive measures would be at the level of the combination of the different therapeutic approaches; individual, collective and organizational. Thus, good communication is necessary and urgent, both at a horizontal level (between colleagues) and at a vertical level (with heads of departments and administrative managers). The development of a program to improve working conditions can then be proposed to administrative and financial decision-makers.

## ABBREVIATIONS:

WHO: World Health Organization  
MBI Maslash Burnout Inventory  
BOS: Burnout Syndrome  
DP Depersonalization  
EE: Emotional Exhaustion  
PA: Personal Accomplishment  
ICU: Intensive Care Unit  
ER: Emergency Room  
OT: Operating theater

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