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(RESEARCH ARTICLE)

Burnout syndrome among doctors and interns of the two-university hospital of Toliara: Prevalence and associated factors

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Abstract

I**ntroduction***:* The medical professional is under ever-increasing pressure, therefore he is subjected to ever-increasing stress, which may lead him to burnout. Our objective was to assess the burnout syndrome in physicians and interns in the two university hospital in Toliara and the associated factors.

Materials and methods: This is a cross-sectional descriptive study, carried out among doctors and interns practicing in the two university hospital in Toliara using an anonymous questionnaire associated with the Maslach Burnout Inventory scale.

Results: We recruited 47 practitioners. The average age of our study population was 39.51 years, 57.4% were men and 42.6% were women with a sex ratio of 1.35. Among Burnout practitioners, 32% were emotionally exhausted, 17% depersonalized, 45% had a low personal accomplishment score. Fifty-nine decimal six percent (59.6%) were in burnout, 8.6% had a high burnout score. Several factors were associated with burnout: female gender (p=0.001), young age (p=0.03), sleep quality (p=0.002), lack of theoretical and practical knowledge (p=0.02) and insufficient technical trays (p=0.03).

Conclusion: Burnout syndrome is a reality. The implementation of concrete measures would seem essential, such as improving working conditions to reduce the development of this scourge.

Keywords: Burnout; Doctors; Prevalence; Related factors; Madagascar

1. Introduction

Stress is a physiological, psychological and behavioral response of the body to a situation that can be assessed as a threat, loss or challenge [1]. Burnout Syndrome (BOS) is the result of exposure to chronic occupational stress [2]. It was first described in the 1970s by Freudenberger [3]. Burnout Syndrome (BOS) can affect all sectors of activity, but it appears that "assisting professions" with severe fatigue and wear and tear reactions, such as lawyers, teachers and medical professions, are the most exposed [4]. Internationally, the prevalence of burnout among doctors is estimated

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to be between 25% and 65%, twice as high as in other professions [5]. In Africa, they reported that 42.3% of general practitioners are burnout [6].

The consequences of burnout and the damage to health reported by scientists over the past two decades justify the attention that should be paid to this condition in all countries. Studies have been carried out in Madagascar but limited to surgical and stomatological settings. The objectives of this study are to assess the prevalence of burnout syndrome among doctors and interns in the two University Hospital in Toliara and to investigate the associated factors.

2. Material and methods

This is a cross-sectional descriptive study, winch was carried out among doctors and interns working in the two University Hospital in Toliara located in the South-West region of Madagascar, carried out from March 2019 to July 2019. We excluded from this study caregivers working for less than a year, staff absent and on leave during the study period, and poorly completed questionnaires (with incomplete answers). The consent of the participants was obtained orally before the distribution of the questionnaires. The questionnaire consisted of two parts:

The first part concerned socio-demographic and occupational data, working conditions and personal data (quality of sleep, presence of musculoskeletal disorders, physical activity and recreation). The second part evaluated burnout syndrome using the Maslach Burnout Inventory (MBI) questionnaire. The MBI interpretation was not expressed as an overall score but as a score for each of the 3 dimensions: emotional exhaustion (EE), depersonalization (DP), personal accomplishment (PA) (Table 1).

Table 1 Calculation of the MBI scale indices

	Degree of burnout		
	Low	**Moderate**	**High**
Emotional Exhaustion	0 – 17	18 – 29	30 – 54
Depersonalization	0 – 5	6 – 11	12 – 30
Personal accomplishment	0 – 33	34 – 39	40 – 48

The higher the emotional exhaustion and depersonalization, the greater the degree of burnout. Conversely, the degree of burnout is greater when personal accomplishment is low. A burnout situation was identified as soon as at least one of the 3 dimensions was reached. Burnout is defined as "low" if one of the three dimensions is pathological, "medium" if two of the three dimensions are pathological, "high" if the three dimensions are pathological.

The data was analyzed on the Statistical Package for Sociological Sciences (SPSS) for Windows, version 20.0. The results were considered significant at $p<0.05$.

3. Results

3.1. Socio-demographic characteristics

The response rate to the survey was 86.76% (or 59/68). 57.4% were male with a sex ratio of 1.35. Age ranged from 25 to 60 years with an average of 39.51 years. Among participants, 10.6% were under 26 years of age, 34% were between 26 and 35 years of age, 25.5% were between 35 and 45 years of age, and 29.8% were 45 years of age or older. Seventy-two decimal three percent (72.3%) were married and 53.2% had three or more children.

3.2. Socio-professional characteristics

Doctors represented 62% of the study population, 32% were Interns and 6% associate professors, 65.9% of participants were from the University Hospital Antanambao Toliara and 34.1% from the University Hospital Mitsinjo Betanimena, 57.4% were under 5 years of service, 29.8% worked 46 hours and more, and 46.8% performed 48 hours or more of call duty per week.

3.3. Triggering factors

3.3.1. Professional factors

Practitioners said they were disturbed by the lack of technical trays in 93.6% and by the lack of theoretical knowledge in 70.2%, and 93.6% were discouraged by demanding and difficult patients, 78.7% reported being pressed for time at work.

3.3.2. Personal factors

Fifty-seven decimal five percent (57.5%) had no psychological support in difficult situations, 38.3% had conflicts with other staff, 46.8% had poor sleep quality and 55.3% had musculoskeletal disorders.

3.3.3. MBI score

MBI found that 59.6% of participants were burnout, 8.6% had a high burnout score. Of these, 32% were emotionally exhausted, 17% were depersonalized, and 45% had a low personal achievement score (Figure 1).

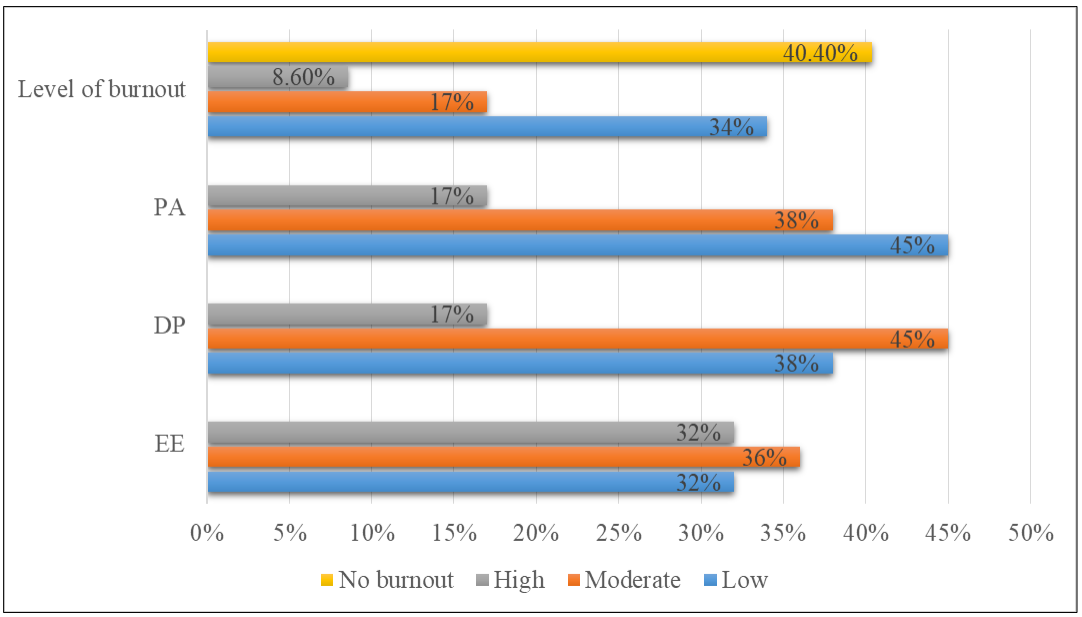

Figure 1 Distribution of the study population according to the level of burnout

3.4. Factors associated with burnout

Several factors have been associated with burnout: female gender (0.001), young age (0.03), lack of theoretical and practical knowledge (0.03), insufficient technical trays (0.03) and sleep quality (0.002) (Table 2).

Table 2 Factors associated with burnout

Existence of burnout				
Settings	**Yes**	**No**	**Total**	**P**
	n (%)	**n (%)**	**n (%)**	
Gender				
Male	16 (59.3)	11 (40.7)	27 (100.0)	
Female	12 (60.0)	08 (40.0)	20 (100.0)	0.001
Age				

< 26 years	03 (60.0)	02 (40.0)	05 (100.0)	
26 à 35 years	14 (87.5)	02 (12.5)	16 (100.0)	0.03
36 à 45 years	06 (50.0)	06 (50.0)	12 (100.0)	
≥ 46 years	05 (35.7)	09 (64.3)	14 (100.0)	
Sleep quality				
Good	04 (25)	12 (75)	16 (100.0)	
Medium	08 (88.9)	01 (11.1)	09 (100.0)	
Bad	16 (72.7)	06 (27.3)	22 (100.0)	0.002
Inadequacies of demotivating technical trays				
No	0 (0.0)	0.3 (100.0)	03 (100.0)	
Yes	28 (63.6)	16 (36.4)	44 (100.0)	0.03
Lack of theoretical and practical knowledge discouraging				
No	08 (57.1)	06 (42.9)	14 (100.0)	
Yes	20 (60.6)	13 (39.3)	33 (100.0)	0.03

The Emotional exhaustion was associated with: Age, especially young ages (p=0.03), sleep quality (p=0.003), title or status of practitioners (p=0.04), lack of theoretical and practical knowledge (p=0.01), lack of technical trays (p=0.03), difficult demanding patients (p=0.01) (Table 3).

Table 3 Factors associated with emotional exhaustion

Settings	**Emotional Exhaustion**				
	Low (%)	**Moderate (%)**	**High (%)**	**Total (%)**	**P**
Age					
<26 years	0(0.0)	03(60)	02(40)	05(100)	
[26-35 years [	02(12.5)	05(31.3)	09(56.3)	16(100)	0.03
[35-45 years [	07(58.3)	03(25)	02(16.7)	12(100)	
≥45 years	06(42.9)	06(42.9)	02(14.3)	14(100)	
Title /status of practitioners					
Professor	01(33.3)	02(66.7)	0(0.0)	03(100)	
Doctors	13(44.8)	09(31.0)	07(24.1)	29(100)	0.04
Interns	01(6.7)	06(40)	08(53.30)	15(100)	
Quality of sleep					
Good	09(56.3)	06(37.5)	01(6.3)	16(100)	
Medium	0 (0.0)	02(22.2)	07(77.8)	09(100)	0.003
Bad	06(27.3)	09(40.9)	07(31.8)	22(100)	
Lack of theoretical and practical knowledge discouraging					
No	08(51.7)	01(7.1)	05(35.7)	14(100)	0.01
Yes	07(21.2)	16(48.5)	10(30.3)	16(100)	
Demanding or challenging patients discouraging					

No	01(33.3)	01(33.3)	01(33.3)	03(100)	0.01
Yes	14(31.8)	16(36.4)	14(31.8)	44(100)	
Inadequacies of demotivating technical trays					
No	03(100)	0(0.0)	0(0.0)	03(100)	0.03
Yes	12(27.3)	17(38.2)	15(34.1)	44(100)	

For the depersonalization: no statistically significant differences were shown in socio-demographic, occupational, working conditions and personal data.

Personal accomplishment was associated with: at the home institution of the practitioners (p=0.04), sleep quality (p=0.01) and musculoskeletal disorders (p=0.02) (Table 4).

Table 4 Factors associated with personal accomplishment

Personal accomplishment					
Settings	*Low*	*Moderate*	*High*	*Total*	
	n (%)	n (%)	n (%)	n (%)	P
Establishment					
University Hospital Antanambao	05 (16.1)	12 (38.7)	14 (45.3)	31 (100)	0.04
University Hospital Mintsinjo Betanimena	03 (18.8)	06 (37.5)	07 (43.8)	16 (100)	
Quality of sleep					
Good	05 (31.3)	09 (56.3)	02 (12.5)	16 (100)	0.01
Medium	0 (0.0)	02 (22.2)	07 (77.8)	09 (100)	
Bad	03 (13.6)	07 (31.8)	12 (54.5)	22 (100)	
Muscle-skeletal disorders					
No	06 (28.6)	10 (47.6)	05 (13.8)	21 (100)	0.02
Yes	02 (7.7)	08 (30.8)	16 (61.5)	26 (100)	

4. Discussion

The frequency of burnout in this study was 59.57%, of which 8.51% had a high burnout score. This result is high compared to that of Rakotondrainibe et al., in a study carried out in Antananarivo, they reported a prevalence at 51.2% and a BOS high at 4.2% [7]. As well as, S.H. Mandengue et al., in a study conducted in Cameroon, they reported that 42.4% of its study population are burnout victims, and 1.2% have severe BOS [6]. The Swiss physicians also appear to be less intensely affected, C. Goehring et al., mentions a rate of 44.7%, and a burnout score high at 3.5% [8]. In contrast, in Morocco, Massou et al., reported a high prevalence compared to this study, i.e. 69.5% [9]. As well as in France, G. Mion et al., reported a rate of 62.3% [10]. Burnout prevalence varies from study to study. This difference may be related to the characteristic of the study population.

According to C. Maslach [11] the BOS begins with "the appearance of the EE possibly associated in parallel with the DP as a defense against the BOS, which together lead to the decrease of the PA. In this study, 45% of practitioners had low PA, much higher than those with EE (32%) and DP (17%). If one compares the scores of the three sub-dimensions with the other studies, there is considerable variability, but the three dimensions have all evolved independently of the others. Among Malagasy surgeons, Rakotondrainibe et al [7] reported a high level of personal exhaustion at 25%, a high level of depersonalization at 27.1% and a low level of personal fulfillment at 39.6%. Among Danish doctors, 14.8% have a high level of EE, 10.2% have a high level of PD, and 25.5% report a low level of PA [12].

The involvement of socio-demographic and occupational variables in the occurrence of burnout was evaluated by several authors. In this study, the female population was more sensitive to burnout than the male population (60% versus 59.3%), this association was highly significant (p=0.001). This finding is consistent with that of literature. An American study also mentioned that women are more "intensely" affected than men (26% of women have a high score in all three dimensions versus 21% of men, p<0.05) [13]. A study in Israel and Jordan reported that female gender is a significant predictor of burnout (p <0.05, p <0.01) [14-15]. Their greater vulnerability to burnout may be related to their greater involvement in the emotional relationship with their patients with the difficulty of reconciling work constraints and family burdens [16].

Youth may be a factor in vulnerability to burnout. In this study, 87.5% of practitioners between the ages of 26 and 35 were in burnout and 60% below 26 years. Young age was significantly correlated with the occurrence of burnout, particularly EE (p=0.03). The results in the literature are controversial. It has been reported that younger age is associated with an increased risk of burnout [17-18]. And increasing age is associated with a lower level of emotional exhaustion and depersonalization [19]. However, some have mentioned that there is no relationship between age and the occurrence of burnout [9]. The majority of practitioners are young and early in their careers, starting practice is particularly marked by the confrontation between prescribed work and actual work, which is a source of stress. An early career caregiver has less skill, resources and knowledge of coping strategies to cope with the stressful changes and events of his or her working life [20]. The risk of emotional exhaustion decreased with a change in status (53.30% of Interns had an EE, 24.1% for physicians). This association was significant with p=0.04. This result is consistent with that of Rakotondrainibe et al., they reported that BOS is significantly correlated with occupational status, in particular EE [7]. Massou S et al. also found this link [9].

For the home institution of practitioners, personal fulfillment was significantly associated with the workplace (p=0.04). In the literature, the results are controversial. Gilliland reported that doctors in Northern Ireland working in the public sector have additional stress and lower morale than those working in the private sector (p<0.001) [21]. On the other hand, in France, Mion et al., as well as Doppia et al., did not find any significant link between the workplace and the burnout [10, 22].

The difficulty of making a diagnosis and implementing a treatment is omnipresent in our profession. In this study, the lack of theoretical and practical knowledge was significantly correlated with the occurrence of burnout, particularly EE. This result is consistent with that of literature. Barbarin et al., reported a significant association between emotional exhaustion and insufficient and/or inappropriate theoretical knowledge (p<0.05) [23]. Andrianjafinoro et al., [24] also reported that burnout frequency is high in Ondo-stomatologists who have difficulty with odontal procedures (p=0.001). A doctor with insufficient theoretical background feels in difficulty and less sure of himself when faced with a complex case. Investing in a supportive relationship with the patient is therefore more difficult, which could increase the patient's burnout. Continuing medical education could therefore be a real resource for doctors. Insufficient equipment is the first major factor in hospital hardship [24]. The insufficiency of the technical trays was significantly correlated with the occurrence of burnout and the EE. In Morocco, they also reported a strong correlation between the EE, the DP, the decrease in PA and the service equipment problem (p<0.001) [25].

Although the relationship with the patient, leading to recognition, may be one of the greatest satisfactions in the profession of doctor, it can also be a source of tension and promotes the appearance of burnout. In this study, emotional exhaustion was significantly associated with demanding or difficult patients. For Galam, burnout is above all a pathology of the helping relationship [26].

In this study, sleep quality was significantly correlated with the occurrence of burnout. In the literature, several studies have suggested that sleep deprivation is associated with higher burnout scores with a predominance over EE slopes and PD [27-29].

In the literature, there is an increased sensitivity of burnout victims to psychosomatic and psycho-functional diseases. Andrianjafinoro et al, mention an association between musculoskeletal disorders and burnout [24]. In this study, there was a significant correlation between PA and musculoskeletal disorders.

5. Conclusion

Burnout is a very real situation in Madagascar. Several factors contribute to the occurrence of this scourge. Its prevention is essential for both personal and professional caregivers. The improvement of the working condition is necessary to reduce the evolution of this disorder, by improving the technical trays and continuing medical training.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

No conflict of interest to declare.

Statement of informed consent

The study was carried out after heads of the oral consent of the respondents. Before the administration of the questionnaires, we explained the objective of the survey, insisting on the total respect of the confidentiality of the data in order to encourage the respondents to answer the questionnaire with honesty. All information collected on individuals was kept confidential, respect for anonymity was enforced by using codes for each file.

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