

Study of Burnout Determinants among Soldiers of the Libreville Airport Area (GABON)

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Abstract: Maslach defined Burnout in 1981 as a pathology resulting from the cumulative effects of stress in a work environment. The Gabonese soldiers are exposed to several stressors. Thus, this study was designed to measure the level of burnout and understand its determinants among soldiers from the Libreville airport area. This study is cross-sectional, descriptive and analytical, and was conducted from 01th to 15th July 2017. It involved 97 Gabonese soldiers operating in the airport area. They belonged to the land army's first regiment of paratroopers, at air force base 01 and the light aircraft helicopter base. The data was collected in the workplace using a self-administered questionnaire after informed consent. A descriptive then bivariate analysis was done using the software Epi Info 7. The prevalence of burnout was 87.6%, with 20% of participants experiencing a high level of burnout, 45.9% experiencing a moderate level of burnout and 34.1% experiencing a low level of burnout. There was 40.2% of high emotional exhaustion, 54.6% of high depersonalization and 12.4% of low personal achievement among the participants. The determinants of burnout were social and economic factors such as age (OR = 4 [1.14 - 13.96]) and economic activity of the marital partner (OR = 1.21 [1.08- 1.36]). For better mental health of the Gabonese soldiers, it is necessary to improve the working conditions, make the military command more aware of burnout, and train the medical services in the diagnosis and early management of burnout.

Keywords: Determinants, Burnout, Soldiers, Prevalence, Gabon

1. INTRODUCTION

Burnout or burnout was defined in 1976 by Maslach as "a mental and physical exhaustion of people whose work requires permanent contact with others"¹.

In its work of 1981, it revised this definition with Jackson by adding a three-dimensional character; the burnout was defined as a pathology resulting from the cumulative effects of stress in the work environment and the three dimensions of which are²: the emotional Exhaustion, the depersonalization or dehumanization and the degradation of personal accomplishment.

The burnout has physical, emotional, cognitive, behavioural and motivational manifestations³. The consequences of burn-out are numerous namely

cardiovascular disorders, sleep disorders⁴, addictive behaviours such as alcoholism and drug addiction^{3,5,6,7}, suicidal attitudes⁸, family-type disorders Marital and divorce violence⁹, job dissatisfaction, absenteeism, job abandonment and multiple trades change¹⁰.

No one is safe from burnout. Men and women are affected in almost equal proportion¹¹. Some authors have noted that burnout occurs on a specific behavioural profile, that is, in competitive, voluntary, dynamic, helpful, demanding individuals, with an important altruism and a need for Recognition¹². The professions in which individuals are subject to a high degree of insecurity are particularly prone to burnout. This is the case, for example, of military or health workers conducting humanitarian missions in the war zone¹³.

The study by Doris Briley Durand¹⁴ in 1997 on US Army volunteers shows a prevalence of burnout variant between 15 and 20%. Truchot¹⁵, in its work of 2002, reported a prevalence of 40% among liberal doctors in France. Vaquin-Villeminy¹⁶, in 2007 in its work, showed that it was 51.6% in a population of general practitioners in France. A cross-sectional study of burnout in the Senegalese military of El Geniema, in 2010, showed a prevalence of 42.7%¹⁷. The Army's primary mission is to defend the national territory in the event of external attacks. However, in recent years, the mission of securing the interior of Gabon has been added to this one, calling for additional work for the military with new rules of engagement that have changed the way it works by multiplying Operational availabilities, guards and missions within the country under rather difficult conditions. Similarly, military employment, through its activities and daily life, is a source of constraint, submission and constant pressure¹⁸.

The objective of this study was to study the determinants of burnout, to identify occupational, clinical, and behavioural sociodemographic factors and to measure the burnout level among the Gabonese military exercising in the area of Libreville Airport.

2. METHOD

2.1. Study framework.

Libreville is located on the north-west coast of Gabon. It is limited to the north by the commune of Akanda, to the south by the commune of Owendo, to the west by

the estuary of the river Komo that flows into the Atlantic Ocean and to the east is surrounded by an immense expanse of forest. It is the political and administrative capital of Gabon, the chief place of the province of the estuary. It is also the first city in number of inhabitants; its population was 703 940 inhabitants in 2013¹⁹.

This study was carried out within the Gabonese Army units stationed at the airport area level; it was the first regiment of the Gabonese paratroopers of the army, at Air Force Base 01 and at the helicopter base of the military light aviation. Their workforce is 3 000 men, departing on an area of one square kilometre. The first regiment of the Gabonese paratroopers is an elite unit of paracommandos (Elite Unit). Air Base 01 and the helicopter base maintain the operational capabilities of aerial projections and ensure the transport of officials. These units are involved in peacekeeping operations in the Central African Republic, the security of strategic sites, the maintenance of public and institutional order. They also have the distinction of being the first to be mobilized in the event of a crisis. Two infirmaries provide medical support in its units:

- One in the first regiment of the Gabonese paratroopers, taking care of all the members of this unit and their families and surrounding civilian populations; With a four-bed hospitalization capacity.
- One at its air Base 01, which takes care of all the military personnel of Air Base 01, the Air Force staff, the helicopter base, the Directorate of Light Aviation of the armed forces and their families and civilian populations Surrounding With a two-bed hospitalization capacity.

A medical officer supplemented by administrative and paramedical personnel heads each of the infirmaries. The medical supply is provided by the military health Service through its central health-supply facility.

The units of our study are located alongside important civilian infrastructures: the International airport of Libreville, the offices of the Agency for the Safety of Air navigation in Africa and Madagascar, an area of residential housing and ambassadors.

2.2. Type of study.

The study is of a transversal, descriptive and analytical type. It took place from 01 to 15 July 2017 in the military of the North Zone (airport area) in Libreville.

2.3. Sampling and selection criteria.

It was included in this study all the Gabonese soldiers present in the units selected for the study and having agreed to participate voluntarily. All military personnel with documented psychiatric antecedents arrested or returned from a mission that required a form of engagement outside Libreville or outside Gabon during the study period were excluded from the study.

This study was exhaustive. The target individuals of the study were researched at the unit level. The investigators have challenged all the military without any sociodemographic or professional distinctions in keeping with the hours of staff availability.

2.4. Data collection

The survey started with a preparatory phase for the drafting of the research protocol and the preparation of the questionnaire. The questionnaire was tested at random by the military in the airport area during their visit to the infirmaries before the study began. Four nurses were trained as investigators. The data collection lasted for two weeks. The members were sensitized on the objectives of the survey during the daily colour presentations and explanations of the questionnaire they have to complete. The supervising physician presented and travelled through the questionnaire explaining the contents to the Members present. Because of the explanations, the voluntary service members, who went to the infirmaries, had 30 minutes to complete and verify their questionnaires under the supervision of the investigators, who were responsible for verifying that the questionnaire was properly filled and Answer questions to participants if a passage or question was not well understood. The collection was made based on a self-administered questionnaire consisting of four parts: sociodemographic characteristics, occupational characteristics, clinical and behavioural characteristics and the Maslach Burn-out Inventory (MBI). The MBI is composed of 22 items that allow evaluating the three dimensions of the burnout: emotional exhaustion, depersonalization and personal accomplishment.

2.5. Data entry and Analysis

Data entry and analysis has been done with the EPI info 7.2.1.0 software. The description of the qualitative variables was performed with the frequency and confidence interval at 95% and that of the quantitative variables by mean, standard deviation and quantiles. The analysis of the variables of interest that are emotional exhaustion, depersonalization, personal accomplishment and burnout has been transformed into an ordinal variable. Each variable of interest was crossed at each independent variable. The links were considered significant to 95% if P-value < 0.05; Odds Ratios (OR) and their Confidence Intervals at 95% (CI 95%); a gold was considered significant if the CI 95 % did not framed the value 1.

2.6. Ethical considerations

Participation in the study was free and anonymous. The consent of the participants was free and enlightened. No judgement of subjective, personified or grouped that may affect the moral personality of individuals and institutions will be published in this study. No compensation or financial or material compensation has been proposed for participation in this study.

3. RESULTS

At the end of the collection, we conducted our investigation into 97 military personnel.

3.1. Descriptive analysis (Characteristics of the study population)

Sociodemographic characteristics: The average age was 32.5 (+/-7.1) years with extremes of 23 and 53 years and a median at 30 years. The ages were grouped into two classes: less than or equal to 35 years (23.7%) and from 36 years to over (76.3%). Men accounted for 72.2%. Gender ratio was equal to 2.6. Singles accounted for 98.0% of participants. Education levels were 6.19% for primary, 84.54% for secondary and 8.28% for the higher. With respect to diplomas: 27.84% held only a civil diploma, 58.76% held only a military diploma and 13.40% held both. The participants lived in the commune of Libreville at 55.7% and the remainder in the neighbouring municipalities of Akanda and Owendo. 20.6% of the military claimed to be disturbed by noise pollution caused by the neighbourhood. In 97.9% of cases, the participants had dependants at the rate of 4.44 (+/-2.5) persons per participant with extremes ranging from one to thirteen persons and a median to 4 persons. Of the participants, 92.6% had children. The matrimonial partners had no economic activity in 69.7% of the cases.

Professional characteristics: The 97 participants in the study were restarted as follows: 51.5% in the first Regiment, 27.8% at Air Base 01 and 20.6% at the helicopter base. They had been grouped into two hierarchical classes. The number of participants guided this classification and the functions employed in the companies. The executive class included senior officers and NCOs. The subordinates consisted of junior ranks and subordinate NCOs. The Executive class represented 10.3% of the participants. Respondents reported being satisfied with their employment since incorporation at 83.5%. Respondents held non-sedentary (company) jobs in 59.8% of cases. The proportion of respondents who worked 5 days in the week was 8.3% and those who worked 6 days in the week were 91.7%. Those who worked a maximum of 8h per day accounted for 32.0% and those who worked more than 8 h per day 68.0%. The feeling after a day's work was 85.6% well and 42.3% pressure at work. Respondents had responded to being psychologically prepared for a combat-type military engagement of 92.8%. Since 2012, only 52.6% had received at least once annual leave. The average of the days of leave taken was 25.30 (+/-8.94) days. The extremes were 14 and 45 days with a median at 29 days. Of the respondents who had not taken leave, 80.4% referred to the refusal of the command to grant leave and 19.6% referred to the chaining of missions. Respondents wanted to change jobs in 25.8% of cases. The reasons mentioned in this category were a new career orientation in 24.0%, demotivation in 16.0% and physical exhaustion in 52.0% and stress in 8.0%. Of the respondents, 22.7% did not feel ready for

an external operation. The financial situation was satisfactory for 48.4% of respondents. The average seniority of the surveyed military was 10.01 (+/-7.4) years. The extremes were 4 and 33 years old with a median at 7 years of age. Seniority had been classified into two groups: one with a duration of incorporation of less than or equal to ten years (73.2% of respondents) and another with an incorporation duration of more than eleven years (26.8% of respondents).

Clinical and behavioural characteristics: Regarding the presence of recurrent health concerns in the last five months, 13.4% recognized that they had had some. Respondents suffered in 2.1% of a chronic disease, represented by high blood pressure and chronic sinusitis (50.0% and 50.0%), respectively. All cases were under treatment. Visits to the doctor in the last five months were made by 77.37% of respondents. The reasons had been: visits related to the disease (47.4% of the military personnel having been to the doctor) and for medical aptitude for an internship or mission departure (52.6% of the members having been to the doctor). The presence of chronic diseases in respondents' families was 18.6%. The links ranged from first-degree parent (children) to fourth-degree parent (grandparents). Family chronic diseases were represented by medical pathologies (high blood pressure 38.9%, sickle cell anaemia 11.1%, diabetes 16.6%, ophthalmological conditions 16.6%, Down syndrome 21.5.6%, HIV infection 5.6%, gout 5.6%). Among those surveyed who had a family member with a chronic illness, 83.3% said this disease affected them.

The use of psychostimulants had been found in 46.4% of the members interviewed. For those who consumed it, energy drinks and coffee each accounted for 26.7%, cola 17.8%, tobacco 15.5%, cannabis 8.9% and *iboga* (a plant with hallucinogenic effects, used in some traditional initiation ceremonies) 4.4%. Consumption of alcoholic beverages was found in 62.9% of the military. Among consumers of alcoholic beverages, 21.3% consumed one to two drinks per day and 78.7% consumed at least three drinks a day. A history of significant events had been reported by 47.4% of respondents. In this group, the death of a loved one was the main event in 56.4%, a public road accident in 11%, political events following the presidential elections of 2016 in 21.8% and the marriage of a relative at 10.8%. Of the respondents, 82.5% stated that they did not have a stress problem. The means of relaxation among the respondents were sport at 42.3%, prayer at 31%, music at 8.2%, television at 7.2%, the practice of sex at 6.2% and consumption of alcohol at 5.1%. The quality of sleep had been appreciated by the sensation of waking sleep (74.2% good sensation and 25.8% not good sensation) and by the feeling of waking sleep (good feeling with sensation of being in form 30.9% and bad felt with sensation of being Tired 69.1%). Concerning the taking of sleeping pills, 97.0% of respondents said they did not take any.

Burn-Out or burnout: The appreciation of the burnout was made by evaluating the degree of emotional exhaustion, the degree of depersonalization and the degree of personal accomplishment. The appreciation of the burnout was made according by the interpretation of the score in the MBI by items.

We have 87.6% of the individuals surveyed who were burned out; it was high for 20%, moderate for 45.9% and low for 34.1% (table1)

Table1: Prevalence of burn-out and its components (n = 97)

	Absolute frequencies (n)	Relative frequencies (%)	95% CI
Burnout presence			
Yes	85	87.6%	[79.3-93.4]
No	12	12.4%	[6.5-20.6]
Burnout level			
High	17	20.0%	[12.1-30.0]
Moderate	39	45.9%	[35.0-57.0]
Low	29	34.1%	[24.1-45.2]

3.2. Bivariate analysis

According to sociodemographic characteristics: The age class less than or equal to 35 years was more exposed to burnout than that of 36 years (P-value < 0.05 OR = 4 [1.4-13.9]) and respondents whose marital partner had an economic activity were more exposed to burn-out (p-value < 0.05 OR = 1.2 [1.08-1.36]). Other sociodemographic factors showed no statistically significant difference (P-value > 0.05).

Table 2: sociodemographic characteristics and burnout presence (n = 97).

	Burn-out		p-value	OR
	Yes	No		
Age class				
Less than or equal to 35 years	91.9%	8.1%		1
From 36 years to over	73.9%	26.1%	0.02*	4 [1.4-13.9]
Sex				
Man	85.7%	14.3%	0.50	
Woman	92.6%	7.4%		
Marital status				
Single	87.4%	12.6%	1	
Married	100.0%	0.0%		
Economic activity of the matrimonial partner				
Yes	100.0%	0.0%	0.01*	1.2 [1.08-1.36]
No	82.1%	17.9%		
Religion				
Yes	86.7%	13.3%	0.56	
No	100.0%	0.0%		
Place of residence and Entourage				
Quiet	87.0%	13.0%	1	
Noise	90.0%	10.0%		
Dependants				
No	100.0%	0.0%	1	
Yes	87.4%	12.6%		

According to the professional characteristics: In respondents, no professional factors showed a significant statistical difference from the presence of Burnout (p-value > 0.05).

Based on clinical and behavioural characteristics: In respondents, no clinical and behavioural factors had a significant statistical difference compared to the presence of burnout (p-value > 0.05).

4. DISCUSSION

This study on the factors associated with burnout in the Gabonese military stationed at the level of the airport area of Libreville enabled us, through a methodology respectful of statistical principles, to find factors associated with the burnout in the military who agreed to participate in the study. The limitations of this study are relative to the size of the study population that does not allow for adequate statistical exploitation of burnout.

The burnout is the product of a reciprocal influence between the perceptions of the individual and the professional and environmental requirements²⁰. This study showed that military personnel whose age is less than or equal to 35 years are more exposed to burnout than those whose age is 36 years and older with an OR = 4 [1.14-13.96]. Schaufeli & Buunk²¹ in their study reports that the burn-out would be more present in younger workers and those who therefore have less work experience and that older workers can be seen as "survivors"; this phenomenon is called "healthy worker effect". A study carried out in the general population in Finland, on the other hand, reports an increase in prevalence with age²². The study also showed that military personnel with a matrimonial partner who had economic activity were more prone to burnout than those who did not (OR = 1.21 [1.08-1.36]). The analysis of other sociodemographic factors did not allow the objective of statistically significant links. However, burnout has been present in over 85.0% for all other sociodemographic factors. Regardless of the unit, the members of the study are exposed to burnout. There is no statistically significant difference. However, the burnout has been present in over 70.0% for all professional factors. The concept of burnout is in a context specifically related to professional activity and its development is based on the same theories as those of stress at work²³. The most frequent work constraint associated with Burnout is the importance of workload. The temporal pressure, very often associated with a high workload, is also often reported as related to burnout²⁴. The other psychosocial exposures described in the development of burnout are five-dimensional: lack of resources (low social support from the hierarchy and colleagues), low control, low rewards, and lack of equity and conflict of Value²⁴. On the other hand, studies show that some constraints are preferentially linked to one or the other of the dimensions of burnout. Thus, the high workload and high requirements would be more related to the

emotional exhaustion dimension, while the lack of available resources would be more in connection with depersonalization. In addition, low social support could also behave as a modulator of effect in the professional stress relationships of burnout²⁵. Burnout has been present in more than 70.0% for all clinical and behavioural factors. The study revealed no statistically significant differences in clinical and behavioural factors. According to Schaufeli, some psychosomatic health problems (e.g. headaches, ulcers, etc.) and psychological disorders (e.g. anxiety, depression, alcohol abuse, etc.) are associated with the experience of burnout²⁶. Anxiety is decisive in the aggravation of the burnout. Agents with a state of anxiety have 1.5 times more risk of making a high burnout than others²⁷. Anxiety disorders are a variety of disorders that manifest themselves in a very variable way. Several authors mentioned the role of personality traits in the appearance of a burnout²⁸. Personal factors would fall into account in 40% of the causes of burnout and organizational factors in 60%²⁹. With respect to the prevalence of 87.6% found in our study, these results are similar to those of Tine²⁷. It is clear that despite the fact that the two have not been under the same conditions, this does not change the occurrence of burnout with high prevalence. The prevalence of high emotional exhaustion is 40.2% in the study. According to Maslach³⁰, it is a feeling that is manifested by the occurrence of fatigue and disinterest in the workplace, showing a fatigue experienced in the idea of work. This is the key component of the burnout. The worker suffering from severe emotional exhaustion would tend to get body and soul to the task for low productivity. Dumesnil³¹ found a strong statistical link between emotional exhaustion and high workload (OR = 2.1 [1.3-3.3]). The prevalence of depersonalization was high for 54.6% of the military in our study. Depersonalization describes an individual who has lost a part of his or her humanism; it is the dehumanization of his relationships with others. It is characterized by indifference and cynicism that lead to the inhibition by the subject of any warm attitude towards its colleagues and clients. It would seem that despite the living conditions and the entourage of military employment, this feeling is always noted at different proportions. Indeed, Durand D.B.¹⁴ in his study showed that among the volunteer military in Germany, it was 3.5%, in the United States of 2.1% and in South Korea of 1.9%. The prevalence of high personal achievement disorder in this study is 68.0%. Personal accomplishment is a feeling that ensures a balance in the event of burnout and Depersonalization. It is indispensable to the psychological balance and to the development at work. The diminishing sense of personal accomplishment is manifested by a decline in productivity at work, as well as feelings of inefficiency, failure and guilt that come from a devaluing self-critique of his work³⁰.

5. CONCLUSION

Burnout is a psychological syndrome involving emotional exhaustion, depersonalization and a low sense of personal accomplishment. It is marked by an accumulation of stress at work. The person develops negative feelings towards others and towards themselves.

This study revealed two sociodemographic factors involved in the installation of burnout: The Age and practice of an economic activity of the matrimonial partner. However, the bivariate analysis between the burnout and the factors we studied showed prevalence in excess of 70%, although no statistically significant links appeared. Which clearly shows that the burnout is still a reality. The morbid consequences of burnout were not addressed in our study. However, it must be recalled that they have a proven impact on the individual and its environment (sleep disturbances, alcohol problems, cardiovascular and musculoskeletal disorders)^{32,33,34}. The installation of good prevention is desirable for good management of burnout. Decision makers should introduce or set up in each unit psychological services. The improvement of the working environment, a better planning of the workload and work schedules, the taking into account of the leave requests are some measures that must be taken in the direction of improving the framework of work.

The commandments and medical services of the forces must not know this problem because they are responsible for the operational maintenance of the troops, on the administrative side and on the medical side. Medical teams will need to be trained in the early diagnosis of anxiety cases and in the management of recurrent psychosomatic disorders and psycho-traumas.

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