

# Occupational Stress in Professionals of Mobile Emergency Service. A Descriptive Study

ORIGINAL

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## Abstract

**Objective:** This study aimed to evaluate the occupational stress presence and levels in professional of the Mobile Emergency Service (SAMU) of a municipality in Northeast Brazil.

**Method:** It is a descriptive and investigative research, with the application of a questionnaire. The researched material was 30 professionals. A semi-structured interview technique for data collection and descriptive statistical analysis were used, using percentage calculation and presentation of results in tables.

**Results:** As the scientific enterprise product here effected, it is highlighted that 40% of respondents are nurses, male, with service time ranging between 2 and 3 years (40%) and working hours between 40 and 60hours weekly (36.7%). After analyzing the results that identify the symptoms of stress in professionals interviewed, it could be seen that the verbalized symptoms are related to problems in the musculoskeletal, gastrointestinal and nervous systems, as well as sleep problems

**Conclusions:** According to this data, it is believed that the adoption of mitigation measures of stress with the administrative interventions, adopting a preventive culture, aiming to occupational safety and health professional is very importance to improve the quality of life of these people.

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## Keywords

Occupational Stress; Professional Depletion; Emergency Medical Services.

## Introduction

According to the World Health Organization (WHO), the stress has been considered a global epidemic, because of the constant updating of the information. This updating may affect the quality of life of individuals, resulting in the family, social losses, lack of motivation for activities in general, physical and psychological illnesses, and problems at work [1].

Today, the impact of stress on health affects three spheres of human beings: biological, in which stress can lead to the aggravation of pre-existing conditions and/or trigger the onset of other diseases; psychic, whose commitment is evidenced by the appearance of psychological symptoms such as anxiety and depression; and social dimension, triggering the deterioration of the quality of interpersonal relationships [2].

Stress can occur in two ways. The first one is of acute nature and very intense, but it quickly disappears; and the second one is of chronic and not so intense nature and may occur for longer periods, with few resources used by the individual to face it [3].

Occupational stress is determined by the perception that the worker needs on the working environment and his ability to face them. Today, knowledge and control of occupational stress not only involve the prevention of harm to physical and mental health of workers, but also aim to avoid the deleterious effects of stress on productivity and its performance, given that the success of an organization is significantly determined by the ability of its employees to cope with the stress [4, 5].

With the creation and deployment of Mobile Emergency Service (SAMU) by Ordinance number 1, 864 GM/MS, of September 29, 2003, health professionals are facing new challenges to meet the population's needs, challenges that lead physical and mental wear to the life of the professional [6, 7].

The work done by professionals in the mobile pre-hospital care cannot be provided; the greater the uncertainty of the event, the greater will be the generation of feelings of threat, requiring professional expertise and effort to save lives, with making a quick and effective decision [3].

A study [8] conducted with 40 professionals of the multidisciplinary team of two units of Mobile Emergency Service (SAMU) aimed to identify occupational risk factors which they are exposed. The study found the following results: physical abuse (of patients and other individuals present at the place of care, especially in violent places) and risk of acquiring infections by the frequent contact with blood and other body fluids. Exposure to all these factors can be a major source of occupational stress to the Mobile Emergency Service team.

Health professionals in emergency services provide assistance in sectors considered stressful, both for the workload as the tasks. This study is justified by the impact of occupational stress both at the individual, and organizational context since professionals in health care should be in good physical and emotional conditions to perform a quality service [9].

Before the described context, the purpose of this study was to evaluate the presence of occupational stress in professionals of the Mobile Emergency Service (SAMU) in a municipality in Northeast Brazil.

## Method

This is a descriptive and investigative nature field research, with in-person questionnaires. The research study materials were professionals working in the Mobile Emergency Service (SAMU) of Piancó-PB municipality located in Paraíba backlands. The service assists 26 (twenty-six) municipalities, being of the Regionalization and Decentralization, which corresponds to 15% of Paraíba territory, a population of 240, 313 inhabitants [10].

The multidisciplinary team of SAMU is composed of drivers (ambulances), interventional physicians (who provide direct assistance to victims) and regulators (attending to telephone calls and decide the most appropriate type of ambulance to be sent), nurses, nursing technicians and screening receptionists (who make the first contact with the person that calls and transfer the call to the regulator doctor).

SAMU of Piancó-PB has two types of ambulances: the basic support unit (USB), in which all assistance have a driver and a nursing technician; and the advanced support unit (the mobile ASU or ICU), having the driver, an interventional doctor and a nurse to answer the call. From the information provided by the person making the call about the injury and the status of the victim, it is up to the medical regulator deciding which type of ambulance is best suited to answer the call.

As inclusion criteria for the sampling process, there were defined: to be a professional of the municipal SAMU staff, want to participate in the study voluntarily and sign the Term of Free and Informed Consent Form (ICF) and be present in service at the time of the survey. Professionals who have been removed from service for leave reasons, health or vacation, temporary workers, medical regulation assistants, administrators and cleaning professionals were excluded.

The study population was composed of 83 professionals, but only 30 remained after the application of the inclusion and exclusion criteria. The research project was approved by the Research Ethics Committee (CEP) of the Federal Institute of Science and Technology of Paraíba - IFPB under number 20670913.9.0000.5185.

Data collection was performed by an a self-administered instrument that assessed socio-demographic and labor aspects. This instrument was submitted to three researchers' nurses about content and objectivity, considered appropriate by them to the study. The data collection was in September 2013, totaling 30 days. Descriptive statistics were

used with percentage calculation and presentation of results in tables.

## Results

Before the formation of the pre-hospital care team and the work, dynamics adopted an analysis of data from the team as a whole was chosen to be performed.

The study included 30 subjects of both genders, 12 nurses, 7 rescuers drivers, 6 nursing technicians and 5 doctors. Regarding the gender, 57% of the population were men, while women were 43% of all research subjects. About age, 46.7% of respondents were from 21-30 years old and 31-40 years old, the mean age of 31.27 years old and standard deviation of 5.41 years old. **(Table 1)**

About professional practice time, the research data show that 12 individuals or 40% of respondents work in the profession for 2-3 years. **(Table 2)**

During the analysis of the working life of individuals surveyed, their weekly working hours was evaluated, where it was observed that 36.67% of

**Table 1.** Distribution of workers in emergency medical care service according to professional category, gender, and age. Piancó, PB Brazil. 2016.

| Distribution of service workers |           |             |
|---------------------------------|-----------|-------------|
|                                 | n (%)     | Total n (%) |
| Professional Category           |           |             |
| Nurse                           | 12 (40)   | 30 (100)    |
| Rescuer drivers                 | 7 (23.3)  |             |
| Nursing technicians             | 6 (20)    |             |
| Doctors                         | 5 (16.7)  |             |
| Gender                          |           |             |
| Male                            | 17 (57)   | 30 (100)    |
| Female                          | 13 (43)   |             |
| Age                             |           |             |
| 21-30                           | 14 (46.7) | 30 (100)    |
| 31-40                           | 14 (46.7) |             |
| 41-50                           | 2 (6.6)   |             |

**Table 2.** Distribution of occupation time of workers in the health emergency care service Pianco, PB Brazil. 2016 n = 30.

| Occupation time of service workers |          |
|------------------------------------|----------|
| Time (years)                       | n (%)    |
| 0 - 1                              | 5 (16.7) |
| 2 - 3                              | 12 (40)  |
| 4 - 5                              | 6 (20)   |
| 6 - 7                              | 3 (10)   |
| 8 - 9                              | 1 (3.3)  |
| 10 - 11                            | 2 (6.7)  |
| 11 - >                             | 1 (3.3)  |
| Total                              | 30 (100) |

**Table 3.** Distribution of study participants according to a weekly schedule. Pianco PB, Brazil. 2016

| Distribution of workers according to the weekly schedule |           |
|--|-----------|
| Weekly working hours                                     | n (%)     |
| 20-40  | 8 (26.7)  |
| 41-60  | 11 (36.7) |
| 61-80  | 6 (20)    |
| 81-100   | 1 (3.3)   |
| 101-120  | 1 (3.3)   |
| 121-140  | 3 (10)    |
| Total  | 30 (100)  |

those surveyed work between 41 to 60 hours weekly, according to **Table 3**.

Based on the question "What location do you currently work (check more than one option if you have more than one job)", The results indicate that in addition to acting in the SAMU, 13 professionals still work in hospitals, 4 work in family health teams and 4 other unspecified the places, as can be seen in **Figure 1**.

Two the individuals who had the level without stress are nurses, with only two years in the profession. One is a nursing technician with 8 years of occupation, and another is a nursing technician with only 2 years of profession.

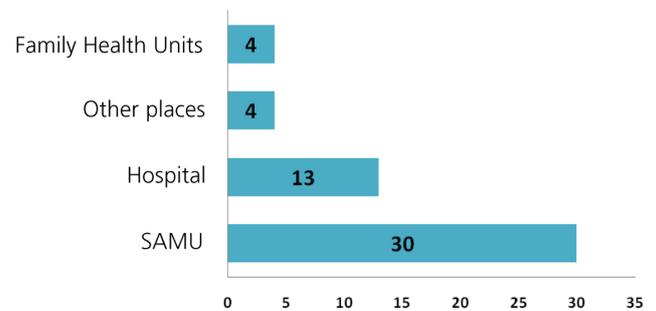
The level of intense stress was presented in two nurses, one with four years of occupation and the other with five years of occupation. Also, a first rescuer driver with only three years in the profession presented the high-stress level, that is, the very intense level of stress. (**Figure 2**)

Concerning the most common symptoms experienced in the last two months, 21 workers reported symptoms such as overeating, pain in the lower back, irregular sleep waking up several times at night.

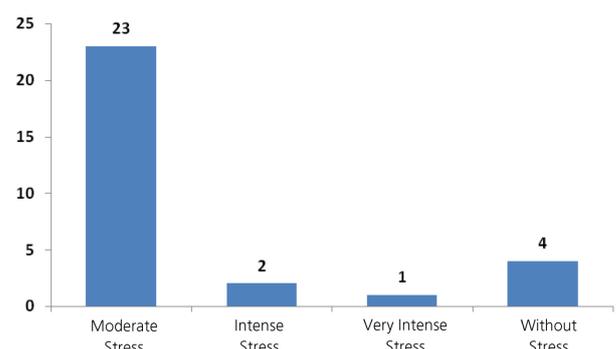
There were 20 individuals with feelings of anger, pain in the neck and shoulder muscles and excessive worries. Still, 19 individuals reported having headaches from tension and migraine, and 17 individuals reported having insomnia and fatigue.

Another 15 individuals had irritability, 14 indivi-

**Figure 1:** Distribution of bonds numbers of workers in the emergency medical service. Pianco, PB Brazil. 2016.



**Figure 2:** Distribution if the stress level found in individuals of the emergency medical assistance service. Pianco, PB Brazil. 2016.



duals reported having nervousness, 13 subjects answered that they use alcohol intake and medicine without a prescription. We also have 11 individuals who reported having ulcer or gastritis, followed by indigestion, as described in **Table 4**.

**Table 4.** Distribution of answers of workers in the health emergency care service according to the identification of symptoms of stress found in the professionals. Pianco, PB, Brazil. 2016.

| Symptoms of stress found                        | Number of responses to the symptom described | % |
|---|--|---|
| Headaches for tension and migraine              | 19   | 7 |
| Insomnia, fatigue                               | 17   | 6 |
| Overeating                                      | 21   | 7 |
| Pain in lower back                              | 21   | 7 |
| Ulcer or gastritis                              | 11   | 4 |
| Nervousness                                     | 14   | 5 |
| Nightmares                                      | 9  | 3 |
| Abnormal blood pressure                         | 7  | 2 |
| Cold and sweaty hands and feet                  | 6  | 2 |
| Alcohol/medicines intake without prescription   | 13   | 5 |
| Heart palpitations (tachycardia)                | 9  | 3 |
| Indigestion                                     | 11   | 4 |
| Sexual difficulties                             | 5  | 2 |
| Excessive worries                               | 20   | 7 |
| Nausea and Vomiting                             | 4  | 1 |
| Irritability                                    | 15   | 5 |
| Irregular sleep waking up several times a night | 21   | 7 |
| Lose of appetite or diarrhea                    | 9  | 3 |
| Pain in the muscles of the neck and shoulders   | 20   | 7 |
| Respiratory crisis and difficulty breathing     | 7  | 2 |
| Periods of depression                           | 5  | 2 |
| Small accidents                                 | 4  | 1 |
| Feeling of anger                                | 20   | 7 |

**Source:** Research data

## Discussion

The results of this study indicate that the socio-demographic characteristics of workers in the emergency medical care service are similar to samples from other research with nurses [5]. The workers category who stood out in this study were the nursing professionals. In the health teams, usually, nurses are the professionals who have more contact with patients, supervising and documenting the services. The figure of the nurse is associated with Advanced Support Unit (ASU) or Advanced Life Support (ALS), along with the doctor and the driver, they are who receive training and are qualified [11, 12].

Regarding gender, the results are consistent with national studies [13, 14], showing a higher prevalence of males in the SAMU, but other studies also reveal the greater female presence.

Regarding age, it is clear that the majority of workers participating in this study are over 20 years old. Research [15] with SAMU workers found the presence of individuals between 20 and 50 years old. Those individuals are considered mature and young people with a high level of productivity at work.

As for the time and work in the SAMU, a study [16] conducted with health professionals who work in assisting emergency care noted that the professional activity ranged from 06 months to 16 years of occupation. Another study found that 42.0% of the professionals surveyed have worked in the institution for 1 to 5 years [14].

The occupation time ensures greater work experience, and professional feel more familiar with teammates, with the activities to be followed within the organization and thus be easier to deal with problems and solve them in the most convenient way.

In this study, it was observed that prolonged working hours of workers are excessive, and this contributes to the physical and psychological wear and sleep disorders. Studies [17] on the quality of life in the SAMU show that occupational stress of emergency workers is related to the workload, and night shifts.

These workers working with weekly working hours above what is allowed, make the work exhausted., It is necessary a relay in duty shifts improve the working hours of professionals and to ensure service 24 hours a day.

Still on occupational stress, a study [18] identified that 93.33% health workers had stress level from moderate to intense. Among the causes that made the work process, there were: workload, lack of time for leisure and self-care and quality of life-related to sleep habits, rest, nutrition and physical activity; double shifts, poor working conditions and the interpersonal relationship in the team.

This study found that some SAMU professionals have more than one simultaneous employment relationship. The fact that the individual act at multiple locations simultaneously has contributed to the work overload and may result in physical and mental strain and the accumulation of responsibilities.

A study [19] evaluating the processes that cause stress in health professionals observed that all health professionals surveyed said they have double shifts in other health care facilities.

Stress levels found in research [20] among health professionals of the city of Criciuma-PR, Brazil, showed significant results, achieving greater prevalence of moderate level of stress, with professional experience of 5 months to 13 years. In another study [19], professional activities time of 10 to 20 years was also prevalent regarding moderate stress level.

A worker with stress factors for prolonged periods has a stress picture. In this phase, it is possible to reverse this malaise situation at work more easily than in the Burnout levels. Therefore, it is important early diagnosis and effective and efficient interventions [21]. After analyzing the results that identify the symptoms of stress in professionals of this study, it can be seen that the verbalized symptoms are related to problems on the musculoskeletal system, gastrointestinal, sleep problems and nervous system.

Research [22] that aimed to investigate stress in the SAMU nurses pointed as the most frequent symptoms: excessive emotional sensitivity, doubts about themselves, thoughts on a single subject, excessive irritability and decreased libido, sudden urge to start new projects, lose of sense of humor and desire to escape.

For symptoms of physical stress, the results indicated muscle tension, insomnia, change in appetite, excessive gas and memory problems. Although there are common symptoms in stress also present in other diseases, it is of great value to mention some common signs of stress. Some symptoms of stress are easy to identify (rapid breathing, hand sweating, tachycardia, gastric hyperacidity, loss of appetite, headache) [23, 24].

Occupational stress is considered one of the triggering factors of insomnia and changes in sleep patterns by observing the relationship between occupational stress and sleep disorders with the combination of high secretion of cortisol from the activation of the hypothalamic gland pituitary axis and adrenal cortex. There are three types of sleep disorders related to stress at work: difficulty falling asleep, more frequent interruptions of nocturnal sleep and wake up in the morning with more difficulty [25].

Knowing the importance of the stress in the lives of professionals and the negative effect that provides, developing coping measures is important to reduce the existing problems in the workplace, minimize the difficulties, support the workers, provide better living conditions inside and outside the work environment and thus improve the quality of care provided to the individual [26].

### **The Security Contribution of Working on Stress Prevention**

According to the European Agency for Safety and Health at Work [27], the methods used for the management of occupational stress are divided in the literature into three types of interventions: primary, secondary and tertiary.

Primary interventions are those that seek to change the organization of work to reduce occupational stressors. Secondary interventions are focused on worker training, to promote health or develop psychological skills for coping with stressors. Tertiary interventions seek to provide support to those workers who were victims of occupational stress and burnout and had developed mental health or physical problems [28].

Another classification of interventions for the management of occupational stress proposed by Van der Klink et al. [29] is divided into two groups: in the first group, there are strategies for organizational restructuring and redefinition of roles; in the second group, there are interventions related to relaxation methods (physical and mental), biofeedback, cognitive-behavioral training skills (assertiveness, hardiness, self-esteem) to modify the response of the individuals to occupational stressors.

The challenges inherent in the activity of the professionals working in the SAMU, Health Education are also appropriate to address coping strategies, since they value the knowledge of students and encourage critical reflection of reality [17].

Health Education is based on individuals be responsible for their health problems, and as a social practice centered on the daily questioning, the appreciation of the experience of individuals and social groups. It is capable of developing reflection and critical awareness of the people about the causes of their health problems process [30].

The educational action strategies include the participation of all health professionals in the process of training individuals and population groups to be responsible for their health problems; the understanding that the subjects of this process have different perceptions of social reality and that these should be the starting point of the educational action; popular participation and strengthening the role of the health service [17, 31].

## Conclusions

SAMU has contributed to improving assistance to the population health. However, health professionals who provide this assistance are exposed to psychic work overload that can lead to the onset of various diseases to their health, including stress.

SAMU has contributed to improving assistance to the health of the population. However, health professionals who provide this assistance are exposed to psychic work overload which can lead to the onset of various diseases to their health including stress.

This study enables to verify that the exposure of a professional to stressors in the workplace that can have serious consequences damaging him and therefore damaging the assistance provided by him. This reality of the work environment needs to be known by the managers, who must individually meet the working condition and health professionals. In this way, they could engage them in group discussions, development, thus programs related to worker health.

Among the various possibilities of preventers performance, there is the establishment of an Internal Commission for Accident Prevention (ICAP), carry out collective interventions -with strategies for the practice of interaction between professionals from various professional areas - and individual interventions - focused on the needs of each professional in the search for job satisfaction, recognition, and motivation- as well as physical exercise in the workplace, with the use of physical structure available, rooms for relaxation and techniques labor gymnastics. This is to name just a few of the many appropriate measures; that certainly would have good progress regarding the improvement of working conditions and promoting workers' health.

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