Prevalence of burnout syndrome in military personnel at the National Geographic Institute of Peru

Prevalencia del síndrome de burnout en personal militar del Instituto Geográfico Nacional del Perú

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ABSTRACT:
The study aimed to investigate the prevalence of burnout syndrome and to identify the main factors associated with it.

Methodology: The Maslach Burnout Inventory - Human Services Survey (MBI-HSS) instrument was applied, using a validated version in Spanish; previously the COPE-28 instrument.

Results: The results determined that the association between age and emotional exhaustion is (0.231) for those under 40 years of age; while for those over 40 years of age it is (0.751); age and stress perception (0.205) for those under 40 years of age and (0.858) for those over 40 years of age; age and depersonalization are (0.244) and (0.757) for under and over 40 years respectively; grade and emotional exhaustion were (0.151) for officers and (0.720) for supervisors, technicians, and NCOs; between grade and perception of stress was (0.832) for officers and (0.110) for supervisors, technicians, and NCOs.

Conclusion: The observational-analytical study model applied in the military of the Lima Metropolitana Region was not satisfactory, in synergy with the working hours and high levels of professional responsibility in the context of COVID-19, which interfere in the relationship between the military and the communities.

Keywords: Burnout syndrome, stress, emotional exhaustion, depersonalization, correlation.

RESUMEN:
Objetivo: Investigar la prevalencia del síndrome de burnout e identificar los principales factores asociados a este.
Métodología: Se aplicó el instrumento de Maslach Burnout Inventory - Human Services Survey (MBI-HSS), empleando una versión validada en español; previamente el instrumento COPE-28.
Resultados: Los resultados determinaron que la asociación entre la edad y el agotamiento emocional es (0.231) para menores de 40 años; mientras para mayores de 40 años es de (0.751); edad y...
percepción del estrés (0,205) en menores de 40 años y (0,858) en mayores de 40 años; edad y despersonalización son de (0,244) y (0,757), para menores y mayores de 40 años respectivamente; grado y agotamiento emocional fue de (0,151) para oficiales y (0,720) en (supervisores, técnicos y suboficiales) y entre el grado y percepción del estrés fue (0,832) para oficiales y (0,110) en (supervisores, técnicos y suboficiales).

**Conclusión:** El modelo de estudio observacional-analítico aplicado en militares de la Región Lima Metropolitana no fue satisfactorio, en sinergia por las jornadas de trabajo y altos niveles de responsabilidad profesional en el contexto del COVID-19, que interfieren en la relación de los militares y las comunidades.

**Palabras clave:** síndrome de burnout, estrés, agotamiento emocional, despersonalización, correlación.

**INTRODUCTION**

The Burnout syndrome was described, for the first time, in the ‘70s between health volunteers. It is defined as the response of chronic stress process related to the work. In the last few years has been considered an important health problem. According to Maslach, the burnout syndrome consists of three components: emotional exhaustion (overdemanding), depersonalization (negative, insensible, and incoherent responses to others), and personal fulfillment (competency feelings and work achievements) \(^{(1)}\). Work quantitative requirements, experienced workload, and time pressure are strong and consistent related with Burnout, especially with the fatigue dimension. The work qualitative requirements, as the conflict of roles and the role ambiguity, are also significantly related to Burnout \(^{(2)}\).

The work stress between the health professionals has become several health problems. For the workers, world economy, and Burnout between the military training and progressing have achieved epidemic levels with a prevalence that is approximately 50 % \(^{(3)}\). Four main factors associated with workers' Burnout of primary health care: 1) The lack of control according to the work conditions and decision-making; 2) the pressure of time so that doctors perceive that they are evaluated only for their productivity; 3) a chaotic and inefficient work environment that use improperly the doctors of administration and tasks; 4) misalignment between doctors and managers on values, mission, purpose, and compensation \(^{(4)}\). Specific tensions that may predispose to the residents the fatigue: excessive requirements that decrease the attention quality, long working hours, several shift hours, sleep deprivation, the need to lead with the suffering and death, the fear of making mistakes, among others \(^{(5)}\). In this regard, the lack of autonomy, competitiveness, new expectations, the inadequate support of the supervisors, and the irregular work hours are other problems of the residence that is related to Burnout.

Burnout was found to be a significant predictor of the following physical conditions: hypercholesterolemia, type 2 diabetes, coronary heart disease, hospitalization for a cardiovascular disorder, musculoskeletal pain, changes in pain experiences, prolonged fatigue, headaches, gastrointestinal problems, respiratory problems, serious injuries, and early mortality age, while psychological effects include: insomnia, depressive symptoms, use of psychotropic and antidepressant medications, hospitalization for mental disorders, and symptoms of poor psychological health, in addition to a correlation between burnout and suicidal ideation \(^{(6)}\). Consequently, it consists of a public health problem with fatal consequences that are necessary to prevent in workplaces.
However, the crisis in the Peru context started in 2020 and it has had serious consequences for all the Peruvians. Currently, there are 6 million people that need medical services and the necessary need to help these people that have to meet the available resources \(^7\). The World Health Organization has only received 1/4 of the necessary financing in order to execute the 2021 Humanitarian Response Plan. The negative side effects of wars and conflicts on mental health are well documented. Due to the long crisis in Peru, it had a great influence and affected all aspects of life, such as health care and education, which has been reflected in all people and has led to a deterioration of living conditions \(^8\). This also adds to the strains on the military, as they had to bear the burdens of deteriorating healthcare by making additional efforts to fulfill their roles as care providers during COVID-19 in 2020 and so far in 2021.

The situation of the military personnel of the National Geographic Institute of Peru has become a crisis because, as a result of the Coronavirus pandemic, Peru is one of the most affected by this virus. Therefore, restrictive measures must be applied to avoid the spread of COVID-19, which implies restrictions to free transit and all kinds of meetings, since the Central Government has given priority to the health of the people in general. If it is taken into account that this study is going to be carried out based on qualified military personnel, both senior personnel (officers) and junior personnel, who share work environments together in a facility and according to the need and programming. They also perform activities outside the institution, these being patrolling and surveillance in conditions of exposure of their lives in often adverse situations, depending on the place and the moment in which they are, having to accept the rigor not only of discipline, the tension of the work itself, as well as being away from the family environment and often with limitations in communicating with them and the problems of everyday family life.

Therefore, the prevalence of Burnout Syndrome in the military personnel of the National Geographic Institute of Peru in the year 2020 is evaluated, having as a hypothesis if there is a relationship between stress perception and age, between emotional exhaustion and age, between depersonalization and age, between stress perception and military rank, between emotional exhaustion and military rank, between depersonalization and military rank. In this regard, the objective of this research is to "investigate the prevalence of the Burnout syndrome and identify its main demographic factors."

**METHODOLOGY**

The study context is applied, prospective, analytical observational, and cross-sectional; since the cause-effect relationship was sought between two phenomena that are related over time, as this will see later on \(^9\). The research was performed from the beginning of the pandemic in April 2020 until May 2021 at the headquarters of the National Geographic Institute of Peru, Lima Metropolitana Region. In order to be appropriate and convenient for the study, all military personnel was considered. A cross-sectional study was carried out on a large sample of 118 active military personnel, stratified into 25 career officers and 93 specialists (supervisors, technicians, and non-commissioned officers). Data were collected from all administrative and operational units of the entity approved by the institution's management and with the informed consent of the study universe. None of the participants was excluded from the research instrument. Respondents were contacted
by e-mail, generating a shared link in Google Form, explaining in detail the purpose of the study and participation was voluntary; data were collected virtually and processed in SPSS Version 26 convergent validity software.

**Technique and instrument**

A special survey was designed to collect the data, and all participants from all units of the Institute were invited to participate. The survey consisted of two parts: the first part was the demographic data sheet that was designed especially for the purpose of this study, containing questions on age, gender, province, unit of analysis, residency program, military specialty, and years of service. The second part was the Maslach Burnout Inventory - Human Services Survey (MBI-HSS), it was used a Spanish validated version \(^{(10)}\), the MBI-HSS is structured with 23 questions subdivided into the areas of emotional exhaustion (EE), depersonalization (D), and professional fulfillment (PF). These three domains were evaluated on the following way: EE (low: < 13, moderate: 14-26, high > 27), to D (low: < 5, moderate 6-9, and high > 9), to: PF (low > 40, moderate 34-39, high: < 33). In addition, an additional dichotomization was used for the three burnout scores (high burnout vs. not high burnout).

**Previous analysis of research method**

The Stress Coping Styles Questionnaire (COPE-28) containing 14 items was applied; designing the respective permission document applied in two formative moments remotely through the Zoom platform, in order to obtain informed consent, the objective and importance of the same for each of the participants \(^{(11)}\). The model used by the author in his research was followed, taking the dimensions in detail:

a. Active coping: Direct action of increasing own efforts to eliminate or reduce the stress stimulus.
b. Planning: Thinking about how to cope with stress. Planning action strategies, the steps to be taken, and the direction of the efforts to be made.
c. Instrumental support: Seek help, advice, information from people who are competent about what to do.
d. Use of emotional support: In order to obtain emotional support of sympathy and understanding.
e. Self-distraction: Concentrate on other projects, trying to distract yourself with other activities, to try not to focus on the stressor.
f. Relief: Increased awareness of own emotional discomfort, accompanied by a tendency to express or discharge those feelings.
g. Behavioral disengagement: Reducing efforts to deal with the stressor, including foregoing effort to achieve goals with which the stressor interferes.
h. Positive reinterpretation: Looking for the positive and favorable side of the problem and trying to improve or grow from the situation.
i. Negation: Denying the reality of the stressful event.
j. Acceptance: Accept the fact of what is happening, make sure that is real.
k. Religion: The tendency to turn to religion in times of stress increases participation in religious activities.
l. Use of psychotropic substances: It means taking alcohol or other substances in order to feel good or to help oneself cope with the stressor.
m. State of mind: Assuming stressful situations with jokes, making this practice routine.
Subsequently, the results were reviewed, evaluated, and processed to obtain the results that have been recorded in the present study. Cronbach’s alpha reliability test and Spearman’s correlation coefficient, which is a nonparametric measure of rank correlation, were used for data analysis. It was used in such a way that the data analysis estimated the association between two classified variables. Finally, the results were presented in descriptive tables.

RESULTS

Observational-analytical research estimated the cause-effect relationship between burnout syndrome and social praxis in military personnel of the National Geographic Institute of Peru, Lima Metropolitana Region. The convergent validity of the MBI-HSS instrument applied at the institute was adequate for all factors with an average (α=0.899). Reflecting the situation in which the universe of the study is found, who are involved in conjunctural situations that may imply entering into a burnout syndrome as mentioned by Maslach and Jackson (12): “a psychological syndrome of emotional exhaustion, depersonalization, and personal fulfillment...” in the workers. Supporting these results with the evidence of Alves et al. (13), they stated that all dimensions of emotional work were shown to be predictors of burnout: variety and intensity of emotions, frequency of interaction with people, deep regulation and superficial regulation, and the need to express positive emotions as part of police work.

In general, the final sample consisted of 118 military personnel, predominantly male (68 %), under 50 years of age (93 %), with a partner (55 %). The majority of participants reported physical activity (67 %). The rates of smoking (5 %) and drinking alcoholic beverages (12 %) were low. No participants reported the use of psychotropic substances. These results were previously collected from the COPE-28 instrument.

Analysis of MBI-HSS instrument scores

Most participants worked up to 48 hours per week (70 %), performed guard duty service twice a week (82 %), worked in up to 2 districts (87 %), and also in their private office (84 %). The addition of MBI-HSS scores showed that 82 % on average of the participants scored within the high-risk range on the dimensions of the study’s assessment instrument. The prevalence of burnout for the complete sample was 23 %, Figure 1.
The prevalence of high-risk scores was 45% for depersonalization, 29% for personal fulfillment, and only 6% for emotional exhaustion; while 20% (24 militaries) did not involve Burnout risk, Figure 2.

**Figure 2: Prevalence of representative high-risk scores of Burnout.**

- The association between age and emotional exhaustion is (0.231) for those younger than 40 years, while for those older than 40 years it is (0.751).
- The linear correlation between age and stress perception (0.205) in those under 40 years of age and (0.858) in those over 40 years of age.
- The linear dependence between age and depersonalization are (0.244) and (0.757), for those younger and older than 40 years, respectively.
- The relationship between grade and emotional exhaustion was (0.151) for officers and (0.720) for supervisors, technicians, and NCOs.
- The relationship between grade and perception of stress was (0.832) for officers and (0.110) for supervisors, technicians, and NCOs.

In conclusion, coefficients greater than 0.700 are those that evidenced an almost perfect correlation and correspond to factors that impact burnout syndrome within the institution and are statistically significant with (p-value = 0.0001 < α = 0.05).

Main findings of the military personnel domains valued

Of the three domains assessed for the study, the results explain for EE (high > 27) in 82 militaries, for D (moderate 6-9) in 79 militaries, and for PF (moderate 34-39) in 85. In this sense, the prevalence of Burnout in the institution's personnel ranges from moderate to high in 82 participants as average and representative of 70 % for the study; which leads to establishing that the rest of the personnel (30 % equivalent to 36 people average) evidenced a risk in PF (low > 40 points), D (low: < 5 points), and EE (low: < 13 points); as a result of the application of the Burnout prevalence instrument, Figure 3. These results confirm the dependence or Pearson correlation of the factors by age in officers, supervisors, technicians, and NCOs.

![Figure 3: Scales valuations of PF, D, and EE in the study sampling](source)

Source: Own elaboration (2021)

DISCUSSION

Burnout syndrome is a psychosocial disorder that affects individuals who are exposed to excessively high demands and have no means to respond satisfactorily. Emotional exhaustion (EE), depersonalization (D), and low personal fulfillment (PF) develop in response to chronic stress in the workplace. The workers most susceptible to burnout are those engaged in interpersonal care, including military personnel with support functions in the context of COVID-19. This occupational context is characterized by ambiguous professional or personal interactions and strong emotional situations. For research purposes, there is no predominant factor for Burnout in military personnel, as all dimensions (EE, D, and PF) are equally represented in at least 79 participants with a prevalence of moderate to high risk according to the instrument scores, as evidenced in the results. The 23 % of the participants obtained scores compatible with burnout, i.e., in line with the study by Lima et al. (14) conducted with resident physicians.
at the Militar Doctor Carlos Arvelos Hospital in Caracas, Venezuela, the burnout index was 28 %; the most affected parameters were organizational cohesion and supervisor influence. The reason for these findings could probably be the hierarchical structure of military hospitals, where relationships between civilian and military personnel, staff and residents seem to be under a rigid organization of work, with lack of collaboration, obedience, and discipline imposed as fundamental aspects and impersonal treatment. The burnout rate was probably higher in the Caracas hospital because the study was conducted with resident physicians, most of whom are at risk of COVID-19 infection during their work.

Among physicians at the Marcilio Dias Naval Hospital at high risk of burnout, it was found that the most affected domain was depersonalization (D) (45 %), followed by personal fulfillment (PF) (25 %), and emotional exhaustion (EE) (6 %). Similarly, in a study conducted with interns at Yale University, among those at high risk of burnout, depersonalization was the most affected domain in the evaluations conducted in 2009 (64 %) and 2010 (85 %). Also, the study by Magalhães et al. (15), which analyzed anesthesiologists in the Federal District, Brazil, found a high prevalence of depersonalization (28 %), followed by emotional exhaustion (23 %). Therefore, it could be inferred that physicians have a feeling of personal accomplishment, but the working conditions, characterized by lack of support, long interrupted working hours, and inadequate payment, make depersonalization and emotional exhaustion stand out as triggers of burnout.

Burnout was more frequent among women (57 %), as also described in Packham's Medscape National Physician Burnout & Depression Report (16), in which the syndrome affected 48 % of the women analyzed. According to Carlotto and Palazzo (17), there have been changes in family dynamics, and the proportion of working women has increased in recent years. Also in the study by Silva et al. (18), the reason could be that most women face a double burden, and need to reconcile their professional responsibilities with managing family life. Therefore, given the current social structure, women are exposed to overload, with consequent interference with their work performance, resulting in physical and emotional stress.

When analyzed by age range, the prevalence of burnout was 69.2 % among participants aged 35 to 44 years; the second most affected group was 28 to 34 years (23.2 %). Similar results were reported by Magalhães et al. (15), in whose study the age range of 30 to 50 years predominated (64 %), and the age range of 27 to 35 years in the study of Pereira et al. (19). In turn, in Packham's study (16) the most prevalent age range (35.0 %) was 45 to 54 years. After the age of 54 years, the incidence of burnout decreased considerably in all these studies, suggesting that, over time, and depending on their professional experience, professionals (medical and military) learn to cope better with stress and feelings derived from work experiences. As a result, aging is associated with less work-related physical and mental stress.

According to Carlotto and Palazzo (17), individuals with stable partners are less predisposed to develop burnout. However, in the present study, the incidence of the syndrome was higher among participants living in a couple (64.3 %). The same occurred in the study by Silva et al. (18), in which burnout was more frequent among married participants (48.1 %), and in the study by Rizo et al. (20), in which 52.4 % of the participants with burnout syndrome lived with a partner. However, attention should be drawn to the fact that none of these studies analyzed the emotional satisfaction of
individuals with their relationships and that the analysis of marital status does not reflect their actual emotional state. Nevertheless, these data indicate that family life and life outside of work interfere with physicians’ working and psychological conditions in the workplace. Therefore, risk factors such as marital and family problems, coupled with excessive workload and emotional exhaustion, contribute to the onset of burnout syndrome.

Most of the participants with burnout did not practice physical activity (58 %), defined as at least 30 minutes of exercise 3 times per week. This finding has an interesting connection with data from Packham’s study (16) in which, when asked about the best way to cope with burnout, 50 % of the participants mentioned physical exercise. In the study by Magalhães et al. (15), burnout was detected in 57 % of sedentary participants, and in the study by Fernández et al. (21), none of the participants with burnout practiced physical activity.

The observations aforementioned indicate that the current work model at the National Geographic Institute of Peru, Lima Metropolitana Region is not satisfactory, and is further aggravated by working hours and high levels of professional responsibility during the pandemic, which interfere with the relationship between the military and the communities. According to this, burnout causes military officers, technicians, supervisors, and managers to lose interest in innovations, making it difficult to disseminate evidence-based practices. Despite these facts, professional practice is associated with innumerable motives for psychological gratification: alleviating pain and suffering, curing illness, saving lives, making accurate diagnoses, having feelings of competence, teaching, counseling, educating, preventing disease, and receiving recognition and gratitude. All these factors could contribute to preventing the occurrence of burnout. Some protective measures aimed at this population are necessary, such as adequate salaries and work schedules, regular training of multidisciplinary personnel, including periodic planning meetings, and provision of psychological counseling services.

**CONCLUSIONS**

High levels of burnout syndrome have been found among the military personnel of the National Geographic Institute of Peru, Lima Metropolitana Region during the period 2020-2021. Male professionals presented greater emotional exhaustion, and those who worked in greater contact with villagers had the highest rates of burnout syndrome. There was a significant relationship between Burnout and gender, affiliated authority, and the same significant result among the other variables. Further studies are needed to understand coping mechanisms in order to prevent and reduce the effects of chronic stress in the Peruvian military. There is a significant relationship between stress perception and age because the Spearman’s Rho correlation coefficient in military personnel > 40 years old is greater than 0.700, with a strong positive association and significance level 0.000<0.05. There is a significant relationship between emotional exhaustion and age because the Spearman’s Rho correlation coefficient in military personnel > 40 years old is also greater than 0.700 and the significance level is valid. Moreover, a significant relationship between depersonalization (D) and age emotional exhaustion (EE) and low personal fulfillment (PF) are associated with the state of stress and depression. Finally, the observational-analytical study model applied in the military of the Lima Metropolitana Region was not
satisfactory, in synergy due to working hours and high levels of professional responsibility in the context of COVID-19, which interfere in the relationship of the military and the communities.

REFERENCES


