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Relação entre a Síndrome de Burnout e as condições de saúde entre Militares do Ex**ército.**

Relationship between Burnout Syndrome and health conditions among Army Military.

Relación entre el síndrome de Burnout y las condiciones de salud entre oficiales del ejército.

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RESUMO: Objetivo: identificar a relação entre a Síndrome de *Burnout* e as condições demográficas, socioeconômicas, de saúde, hábitos de vida/atitudes/comportamentos e fatores ocupacionais entre militares do Exército. Métodos: estudo transversal entre militares de um batalhão no interior de Minas Gerais. Avaliou-se a Síndrome de *Burnout* por meio do *Maslach Burnout Inventory*, instrumento validado para uso no Brasil, sendo os dados coletados por pesquisadores previamente calibrados. Estudo aprovado pelo Comitê de Ética da Associação Educativa do Brasil. Resultados: participaram do estudo 121 militares, dos quais 119 responderam ao *Maslach Burnout Inventory*. Registrou-se prevalência de SB em 89,1% (n=106) dos militares. Por análise de regressão logística

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múltipla, constatou-se maior chance de desenvolver *Burnout* entre militares com baixa percepção do nível de Qualidade de Vida nos domínios físico (OR: 6,95; IC: 1,08-44,82; p: 0,042) e psicológico (OR: 5,12; IC: 1,03-25,50; p: 0,046). Menor chance de ocorrer *Burnout* entre militares com baixa percepção do nível de Qualidade de Vida no domínio ambiental (OR: 0,16; IC: 0,03-0,82; p: 0,027) e entre aqueles que faziam uso contínuo de medicamentos (OR: 0,16; IC: 0,03-0,83; p: 0,029). Conclusão: identificou-se relação entre Burnout e condições de saúde (baixa percepção do nível de Qualidade de Vida nos domínios físico, psicológico e ambiental e uso de medicamento).
PALAVRAS-CHAVE: Esgotamento Profissional. Saúde Coletiva. Saúde do Trabalhador. Militares.

ABSTRACT: Objective: to identify the relationship between Burnout Syndrome and demographic, socioeconomic, health, lifestyle habits/attitudes/behaviors and working conditions among Brazilian Army soldiers. Methods: cross-sectional study of a military battalion in Minas Gerais. Evaluated the Burnout syndrome through Maslach Burnout Inventory, validated instrument for use in Brazil, and the data collected by researchers calibrated. This study was approved by the Ethics Committee of the Brazilian Educational Association. Results: the study involved 121 soldiers, of whom 119 answered the Maslach Burnout Inventory. Reported a prevalence of BS in 89.1% (n=106) of the military. Through the analysis of multiple logistic regression found a higher chance of developing burnout, military with low perception on Life Quality in the physical level (OR: 6.95, CI: 1.08 to 44.82; p: 0.042) and psychological (OR : 5.12, CI: 1.03 to 25.50; p: 0.046). Less likely to occur Burnout was found between military with low perception of life quality level in the environmental field (OR: 0.16; CI: from 0.03 to 0.82; p: 0.027) and those who make continued use of medicine (OR: 0.16, CI: 0.03 to 0.83; p: 0.029). Conclusion: a relationship was identified between burnout and health conditions (low perception of life quality level in the physical, psychological and environmental and use of medication).
KEYWORDS: Burnout. Public health. Worker's health. Military.

RESUMEN: Objetivo: identificar la relación entre el síndrome de *Burnout* y las condiciones demográficas, socioeconómicas, de salud, hábitos de vida, actitudes y comportamientos demográficos y factores ocupacionales entre oficiales del ejército. Métodos: estudio transversal entre oficiales de un batallón militar en el interior de Minas Gerais. Se evaluó el síndrome de *Burnout* a través de *Maslach Burnout Inventory*, instrumento aprobado para su uso en Brasil, y los datos recogidos por investigadores debidamente calibrados. Este estudio fue aprobado por el Comité de Ética de la "Associação Educativa do Brasil". Resultados: 121 oficiales participaron en el estudio, de los cuales 119 respondieron a la *Maslach Burnout Inventory*. Se observó una prevalencia de SB en el 89,1% (n = 106) de los militares. En el análisis de regresión logística múltiple se constató una mayor probabilidad de desarrollar *Burnout* entre militar con baja percepción de calidad de vida en el plano físico (OR: 6,95; IC 1,08 a la 44.82; p: 0,042) y psicológico (OR: 5,12; IC 1,03 a la 25.50; p: 0,046). Menos posibilidad que ocurra *Burnout* entre militares con baja percepción del nivel de calidad de vida en el campo medioambiental (OR: 0,16; IC 0,03 a 0,82; p: 0,027) y entre los que hacen uso continuo de medicamentos (OR: 0,16; IC 0,03 a la 0,83; p: 0,029). Conclusión:

se identificó una relación entre *Burnout* y las condiciones de salud (baja percepción del nivel de calidad de vida de los dominios físicos, psicológicos y ambientales, y el uso de medicación).
PALABRAS CLAVE: agotamiento profesional; salud pública; salud laboral; militares.

INTRODUCTION

The association between labor activity and physical/psychological stress, has been established long ago [1], it is defined as a public health problem [2], which has received attention by researchers, health managers, media and the workers themselves [3], and identifying risk and/or protection factors in relation to working stress reduction has become both a moral as well as well as imperative issues [4]. In the labor context, the Burnout Syndrome (BS) beyond representing an injury to the worker's health, is still characterized as risk to the people attended for the worker, over all in those professional categories demarcated by intense human contact between worker and attended people[5].

The chronic exposition to labor-related stress agents, in an environment where the worker does not make use of confrontation mechanisms to face such agents takes them to develop BS [6,7], which comprises sensations of frustration, tension and lack of energy; attitudes demarcated by emotional insensibility that culminate in a dehumanized treatment to people, work co-workers and the labor institution; and finally feeling of dissatisfaction with their occupational development and consequently negative work self-assessment [6,8].

Professional categories, such as of the military, defined by constant emotional pressure, requirement for a promptitude state, of routine and repetitive emergency situations, tiresome shifts and intense interpersonal contacts and others, are favorable to developing mental and compartmental disorders, amongst which the BS[9]. Previous researches rely on evaluating the factors related to BS and/or to stress in distinct professional categories of teachers, military healthcare professionals and military policemen, however few had as subjects the Brazilian Army military. Previous research between Army military in the city of Ribeirão Preto (SP) identified inversely proportional significance between military rank and exhaustion (emotional exhaustion), that is, as higher is the military rank, and the smaller was the registered exhaustion. Another proportional significance inversely identified was between exhaustion/cynicism and professional effectiveness, that is, how much lesser the exhaustion or cynicism, the better is the involvement of the military with the work [10].

Among professors, a previous research identified as risk factors for developing BS: feminine gender, not having a fixed companion, not having children, being older, having greater workload, taking care of greater number of pupils and working in public schools [11]. Among intensivists of a university hospital, there was a greater chance for developing BS among men, people who identify the work as "sometimes / often / always" stressful, people who "do not agree nor disagree / agree in

part / totally agree" would choose another profession with the same pay than those who "disagree totally / partially" in choosing another profession [12]. Among military firemen, we checked a greater chance for BS to occur among firefighters with low general perception on life quality level and with low perception on life quality level in the psychological domain; among those who consume alcohol and those who have another job. While a minor chance was identified among firemen with body mass index categorized as overweight; among firemen with medium level of education; and those with long service categorized as greater than three and less than or equal to seven years and less than or equal to three years [9].

Among Brazilian Army officers, it was found that soldiers with better cardio respiratory fitness tend to show reduced patterns in anatomic response to stress [13]. Among the Army military in Rio de Janeiro (RJ) city, a research that has evaluated evidences for work stress, considering the effort-reward model (imbalance between high effort and low reward in the work environment), identified 16% stress prevalence, and those with stress signs and with lieutenant rank showed higher vulnerability to developing Common Mental Disorders [14]. Prior research involving The Spanish Army military identified that work-family conflict should be considered as a stress factor in the military context, once that military with high levels of tension related to such conflict showed a higher chance for developing the emotional exhaustion of *Burnout* [15]. Such result corroborates with a research developed between North American Army soldiers, where it was evidenced that the family does not only configure itself as a source of support to the soldier, but also as a factor that favors the stress development [16].

When considering the importance to identify the factors related to developing BS for, therefrom, proposing the implementation and/or the improvement of measures conducive to combating such factors, as well as the effects of previous researches between military personnel, mainly those of the Brazilian Army and aiming to contributing to identify other conditions related to BS, beyond those already studied so far, this study aimed to identify the relationship between BS and demographic, socio-economic and health conditions, life habits/attitudes/behavioral and occupational conditions among the Brazilian Army military.

MATERIAL AND METHODS

This study is the product of a larger research project, which was approved by the Ethics and Research Committee of the Educational Association of Brazil (written opinion 804.985). Thus, the methodology herein submitted will be replicated in its entirety in other scientific products, and, in this study, it was adapted, considering as BS as the dependent variable. It is a cross-sectional and analytical study between military personnel of Brazilian Army infantry battalion in Minas Gerais, inland.

According to the initial design, we sought to develop a population-related study. However, due people's time unavailability to adhere to data collection, researchers have opted for sampling

representativeness. That way and when considering 331 subjects, population, 95% confidence level, 8% error margin, 50% BS prevalence 10% non-response rate, we identified the need for the participation of 114 soldiers, who have been selected by convenience.

BS and its dimensions were evaluated by the *Maslach Burnout Inventory* (MBI). It is a structured questionnaire, self-applicable and validated for use in Brazil [17], which aims to measure professional weariness, regardless of professional categories and occupational characteristics of the sampling subjects. Consisting of 22 statements with a Likert-type score scale ranging from one to five (never, rarely, sometimes, often, and always) and comprising the three syndrome's fundamental dimensions: Emotional Exhaustion (EE), Depersonalization (DE) and Low Professional Realization (PR). EE is evaluated through nine statements, generating a score of 9 to 45, which later on is categorized according to EE level: high exhaustion level (> 27); moderate exhaustion level (17 to 26) and low exhaustion level (≤ 16). DE is evaluated by five statements that generate a score of five to 25, where high DE level is defined by scores equal to or greater than 13, moderate DE level corresponds to the score of seven to 12 and low DE level is indicated by scores less than or equal to six points. Low PR is evaluated by eight items that generate a score of eight to 40, working opposite the other two dimensions, since that, high level comprises score from zero to 31, moderate level corresponds to the score between 32 to 38 and is low level is characterized by a score greater than or equal to 39 points [18]. We considered evidences for developing BS, the presence of a dimension in a severe level [12].

In accordance with the purpose of the study, we considered BS and dimensions as the dependent variables, in order to measure the developments in the light depending on the independent variables evaluated in this study (individual variables: demographic, socio-economic and health conditions, life habits/attitudes/behavioral and occupational conditions). In table 1, we displayed in the variables and their categorizations.

Table 1 - Categorizations of variables, relationship between Burnout Syndrome and demographic, socio-economic and health conditions, life habits/attitudes/behavioral and occupational conditions between Brazilian Army Military, Minas Gerais inland, 2014 (n=119)

Variables	Categorization:
DEPENDENTS	
Syndrome of *Burnout*[a]	0 = absence 1 = presence
Emotional exhaustion	0 = low/moderate 1 = high
Depersonalization[a]	0 = low/moderate 1 = high
Professional realization[a]	0 = high/moderate 1 = low
INDEPENDENTS	
Individual variables	
Demographic conditions	
Gender	0 = male 1 = female
Age	0 = ≤ 21 years 1 = > 21 years*
Race or skin color[b]	0 = white/yellow 1 = black/brown/indigenous
Socioeconomic conditions	
Education	0 = basic/high-school 1 = higher education
Conjugal situation[b]	0 = married = 1 single/divorced
Kid (s)	0 = yes 1 = no
Economic segmentation[d]	0 = high (A1, A2, B1 and B2) 1 = low (C1, C2, D and E)
Perception on social support[e]	0 = high perception 1 = low perception*
Health conditions	
Musculoskeletal symptoms [f] (central anatomical region)	0 = never/rarely presenting symptoms 1 = frequently/always presenting symptoms
Musculoskeletal symptoms [f] (peripheral anatomical region)	0 = never/rarely presenting symptoms 1 = frequently/always presenting symptoms
Perception on life quality level (LQ)[g]	1 = high 0 = low*
Perception on physical domain GLQ[g]	1 = high 0 = low*
Perception on physiological domain GLQ[g]	1 = high 0 = low*
Perception on social domain GLQ[g]	1 = high 0 = low*
Perception on environmental domain GLQ[g]	1 = high 0 = low*
Perception on life quality level in work life (WLQ)[h]	1 = high 0 = low*
Perception on physical domain/health WLQ[h]	1 = high 0 = low*
Perception on psychological domain WLQ[h]	1 = high 0 = low*
Perception on personal domain WLQ[h]	1 = high 0 = low*
Perception on professional domain WQL[h]	1 = high 0 = low*
Self-perception on health[h]	0 = very good/excellent 1 = bad/regular/good
Bout by chronic diseases	0 = no 1 = yes
Continuous use of medicines	0 = no 1 = yes
Self-medication	0 = no 1 = yes
Removal from professional practice in the last 12 months	0 = no 1 = yes
Accomplishment of current psychotherapeutic treatment	0 = no 1 = yes
Nutritional status (body mass index - BMI) [i]	0 = normal 1 = overweight/obesity
Coronary and/or metabolic risk	--
Index of Coning (IC) [j]	0 = no risk 1 = with risk
Abdominal circumference (AC)[k]	0 = no risk 1 = with risk
Waist Hip Ratio (WHR)[l]	0 = no risk 1 = with risk
Waist Stature Ratio (WSR)[m]	0 = no risk 1 = with risk
Systolic and diastolic blood pressure[n]	0 = no evidences for hypertension 1 = with evidences for hypertension
Evidences for Common Mental Disorders[o]	0 = absence 1 = presence
Evidences of Depression[p]	0 = absence 1 = presence
Evidences for Anxiety	0 = minimum/light 1 = moderate/severe
Level of Self-esteem[r]	0 = high self-esteem 1 = low self-esteem
Evidences for Eating Disorders - Anorexia Nervosa (AN)[s]	0 = normal 1 = differs from normal
Evidences for eating disorders – Bulimia[t]	0 = absence 1 = presence
Perception on body image[u]	0 = satisfied 1 = unsatisfied

cont..

Table 1 - Continuation.

Life habits/attitudes/behaviors	
Physical activity level[v]	0 = active 1 = inactive
Use of psychoactive substances[x]	
Occupational conditions	
Length of service as a military	0 = less than 12 months 1 = greater than or equal to 12 months
Activity type	0 = administrative 1 = operational
Military rank	0 = captain, major, lieutenant colonel, colonel, brigadier general, major general, army general, filed marshal 1 = sub-lieutenant, aspirant, second lieutenant, first lieutenant 2 = private, corporal, third sergeant, second sergeant, firs-major sergeant

[a] Investigated according to *Maslach Burnout Inventory (MBI)*.
[(b)] Investigated according to the Sample Questionnaire CD 2010, proposed by the Brazilian Institute of Geography and Statistics (IBGE) [19].
[(c)] "married" comprises the married subjects and those stable union, and "single/divorced", the separated or judicially separated, divorced, widowed single [19].
[e] Investigated according to the Brazil Economic Classification Criterion (BECC). Such segmentations represent the respective classes of family income: A1: R$ 12.926,00; A2: R$ 8.418,00; B1: R$ 4.418,00; B2: R$ 2.565,00; C1: R$ 1.541,00; C2: R$ 1.024,00; D: R$ 714,00 and E: R$ 477,00[20], divided in high and low [21].
[e] Investigated according to the Social Support Scale: structured questionnaire, self-applied and validated for use in Brazil [22].
Cont.

Table 1 – Conclusion

[f] Investigated according to the Nordic Musculoskeletal Symptoms Questionnaire: structured questionnaire, self-applied and validated for use in Brazil [23].
[g] Investigated according to *Whoqol-Bref:* structured questionnaire, self-applied and validated for use in Brazil[24].
[h] Investigated according to *Quality of Working Life Questionnaire* – bref (QWLQ-bref): structured questionnaire, self-applied and validated for use in Brazil[25].
[I] Calculated by ratio of weight/height [2] (kg/m2), and subsequently sorted according to WHO in normal index (< 25 kg/m^2); overweight (25 to 29.9 kg/m^2) or obese (>30 kg/m^2)[26].
[j] We considered as high risk discriminator the cut-off points: 1.25 for men and 1.18 to women [27].
[k] We considered CA > 80 cm and > 94; CA > 88 cm and > 102, respectively, for women and men, as increased risk and very high risk that constituted a single category [28].
[l] We considered as cut-off point WHR <0.85 and WHR to women and men, respectively [29].
[m] We considered as cut-off value ≥ 0.5 for both genders[30.]
[n] Held with the subject sitting, after 5 minutes of rest, with the bladder empty, and after at least 30 minutes without food intake, caffeine, and/or smoking. Three measures were carried out, disregarding the first. Blood pressure was considered as the arithmetic average of the second and third measurements [31]. The cut-off points considered for high blood pressure considered the values recommended by the *Joint Committee on Detection, Evaluation and Treatment of High Blood Pressure*, which provides value ≥ 140 mm/Hg for high systolic pressure and 90 mm/Hg ≥ for high diastolic pressure (JVC, 2003) and/or use of anti-hypertensive drugs[32].
[o] Investigated in accordance with the General Health Questionnaire (GHQ-12): structured questionnaire, self-applied and validated for use in Brazil[33].
[p] Investigated according to Beck Depression Inventory (BDI): structured questionnaire, self-applied and validated for use in Brazil[34].
[q] Investigated according to Beck Anxiety Inventory (BAI): structured questionnaire, self-applied and validated for use in Brazil[34].
[r] Investigated according to the Rosenberg Self-esteem Scale: structured questionnaire, self-applied and validated for use in Brazil[35].
[s] Investigated in accordance with Eat Attitude Test (EAT-26): structured questionnaire, self-applied and validated for use in Brazil[36].
[t] Investigated according to Bulimic Investigation Test Edinburgh (BITE): structured questionnaire, self-applied and validated for use in Brazil [37].
[u] Investigated according to Silhouette Analysis Instrument[38].
[v] Investigated in accordance with recommendations of the World Health Organization [39] and the Brazilian Ministry of Health [40].
[x] Investigated according to *Alcohol, Smoking and Substance Involvement Screening Test* (ASSIST): structured questionnaire, self-applied and validated for use in Brazil [41].

- Categorized considering the lower limit of confidence interval.

For the anthropometric and blood pressure level assessment, we used: retractable non-extensible *Fiber Glass*® measuring tape, mechanical scale Filizola ®, *Rappaport Premium*® stethoscopes, and *Aneróide Premium*® sphygmomanometers, calibrated and certified by the National Institute of Metrology, Standardization and Industrial Quality (INMETRO). Anthropometric assessment for blood pressure as well as applying the form containing the questionnaires used in the study were performed by researchers involved in the study, previously trained and calibrated.

For statistical analysis, we used the software *Statistical Package for the Social Sciences* - SPSS v. 17.0. To assess association between BS and independent variables, we carried out bivariate analysis by Chi-square Test for categorical variables considering association at the level of $p \leq 0.20$, according to previous study [12]. Independent associated variables were included in the multiple logistic regression analysis retaining, in the final model, those associated with BS and dimensions at the level of $p \leq 0.0512$.

Logistic regression has multiple nature, wherein its dependent variable is dichotomous, i.e. has only two categories, as shown in this study. Inserting the variables in the model followed the "step back" method, in which the analysis occurs by entering all the independent variables associated in the bivariate analysis and the one to one withdrawal of the independent variables starts up with the least significant.

After each independent variable withdrawal, the model is compared with the previous one. This process occurs until the independent variables are associated with the dependent considering value of $p \leq 0.05$. The most important in picking these independent variables and the final model is that there is a theory to guide the modling[42]. Estimating the coefficients for the logistic regression is similar to linear regression and the *logit* model has the logistic curve characteristic form. Calculating the logistic regression is estimated for comparing between the probability that the event may occur (developing BS) with the probability that it may not occur (not developing BS). In this sense the reason for inequality can be expressed as[43]:

$$\frac{\text{Probability that the event may occur}}{\text{Probability that the event may not occur}} = e^{B_0+B_1X_1+...B_nX_n}$$

In assessing model's adjustment quality, we employed the *Nagelkerke* test in order to explain the proposed model and *Hosmer and Lemeshow* test for *goodness-of-fit* testing. This test is similar to R^2 in linear regression and indicates the proportion of variance-covariance in the data is explained by the model. Hosmer and Lemeshow values range from 0 to 1 and intervals between 0.80 and 0.90, or higher, indicate satisfactory adjustment [43].

RESULTS

121 military participated in the study and MBI was answered by 119 people, who had as an average age: 22.04 years (± 6.47; CI_{95}%: 20.87-23.21; 18-45). The following prevalence values were recorded for BS (89.1%; n=106), EE (41.2%; n=49), DE (52.1%; n=62) and low PR (60.5%; n=72).

We identified in the bivariate analysis, considering $p < 0.20$, a relationship between BS and occupational and health conditions (Table 2).

Table 2 – Bivariate analysis for relationship between *Burnout* Syndrome and demographic, socio-economic and health conditions, life habits/attitudes/behavioral and occupational conditions between Brazilian Army Military, Minas Gerais inland, 2014 (n=119)

INDEPENDENTS			**Syndrome of *Burnout***		
			No signs	**With signs**	***P***
	n	**%**			
Health conditions					
Musculoskeletal symptoms (peripheral anatomical region)					
Problems in the hip region due to work					
No	101	84.9	7.9	92.1	
Yes	18	15.1	27.8	72.2	0.013
Perception on physical domain GLQ					
High	77	64.7	14.3	85.7	
Low	42	35.3	4.8	95.2	0.111
Perception on physiological domain GLQ					
High	64	53.8	15.6	84.4	
Low	55	46.2	5.5	94.5	0.076
Perception on social domain GLQ					
High	80	67.2	13.8	86.2	
Low	39	32.8	5.1	94.9	0.157
Perception on environmental domain GLQ					
High	69	58.5	10.1	89.9	
Low	49	41.5	12.2	87.8	0.720
Perception on personal domain GLQ					
High	92	77.3	14.1	85.9	
Low	27	22.7	0.0	100.0	0.038
Perception on professional domain GLQ					
High	92	77.3	14.1	85.9	
Low	27	22.7	0.0	100.0	0.038
Bout by chronic diseases					
No	113	95.0	9.7	90.3	
Yes	6	5.0	33.3	66.7	0.071
Continuous use of medicines					
No	49	41.2	4.1	95.9	
Yes	70	58.8	15.7	84.3	0.045

Cont.

cont.

Table 2 - Continuation.

Evidences for Common Mental Disorders					
Absence	106	89.1	12.3	87.7	
Presence	13	10.9	0.0	100.0	0.181
Evidences of Depression*					
Absence	101	86.3	12.9	87.1	
Presence	16	13.7	0.0	100.0	0.128
Occupational Conditions					
Activity type					
Administrative	70	59.3	7.1	92.9	
Operational	48	40.7	16.7	83.3	0.105

*"n" does not match the sample. ** Control variable.

Through multiple logistic regression analysis, we recoded greater chance for BS to occur among military with low perception on life quality level in the physical and psychological domains when compared to the military with high perception in such domains. Less chance of occurring BS was among the military with low perception on life quality level in the environmental domain, when compared to the military with high perception on such a domain, and between military personnel who do use medicines, when compared to those who do not make such use (table 3).

Table 2 – Multiple logistic regression models for relationship between *Burnout* Syndrome and demographic, socio-economic and health conditions, life habits/attitudes/behavioral and occupational conditions between Brazilian Army Military, Minas Gerais inland, estimate of Odds Ratio and respective interval with 95% confidence (CI95%), 2014 (n=119)

	Syndrome of *Burnout*		
	OR	**CI**	**P**
Health Conditions			
Perception on physical domain GLQ			
High	1		
Low	6.95	1.08-44.82	0.042
Cont.			
Table 3 – Conclusion			
Perception on physiological domain GLQ			
High	1		
Low	5.12	1.03-25.50	0.046
Perception on environmental domain GLQ			
High	1		
Low	0.16	0.03-0.82	0.027
Continuous use of medicines			
No	1		
Yes	0.16	0.03-0.83	0.029

Nagelkerke: 0.235. *Hosmer and Lemeshow:* 0.920.

DISCUSSION

In the literature, there are researches on BS-related factors among health and education professionals. However, there are few studies on military, especially from the Armed Forces. When considering the proximity of activities at work, career posts and identical principles of hierarchy and discipline followed by civil and military policemen, the results in this study will seek to, a priori, to be discussed considering the results of the previous research involving policemen. When this is not possible, the discussion will involve professionals from distinct occupational categories. That way, when it is not possible to discuss the results considering specifically the BS variable, we will be considering studies that evaluated conditions for stress itself.

The prevalence identified regarding BS (89.1%; n=106), EE (41.2%; n=49), DE (52.1%; n=62) and low PRP (60.5%; n =72) are significant and worthy of attention. The prevalence of BS is still uncertain, but, according to previous studies, affects a significant number of people and can range from approximately 4.0% to 85.7%, depending on the studied population [44]. BS prevalence now recoded is higher than the prevalence registered in national researches, which have identified 84.5% BS prevalence among nursing firemen operating in emergency room units (UPAS) [45] 60.0% for civil policemen [46] e 55.9% for military firemen [47].

Military with low perception on life quality level in the physical domain (35.3%, n=42), showed a higher chance for developing BS (6.95 times, when compared to the military with high perception in this domain). We found that military with low perception on life quality level in the psychological domain (46.2%, n=55), showed a higher chance for developing BS (5.12 times, when compared to the military with high perception in this domain).

When considering the policemen professional category, it is marked by the exposure of workers to physical and psychic risk factors that significantly affect life quality and physical, mental and social well-being of the policemen [48]. Persecutions, physical confrontations, trauma, injuries, fractures, sprains and backache, among others, relate to the physical risks that affect policemen [49]. When considering psychic suffering, one of its main consequences, is the development of high levels of symptoms related to stress [50], which, in their turn, can encourage the development of depressive disorder, with consequent reduction for the perception on life quality level [48].

In this sense, plausible explanation for the relationship identified between low perception on life quality level in the physical domain and BS can be based on the fact that such a domain includes conditions, such as energy and fatigue, pain and discomfort, sleep and rest [51] and, in such a way, the working conditions of the policemen, as, for example, activities carried out in extensive workloads, overworking and constant exposure to risk [52] could negatively impact the perception on life quality level in the physical domain, encouraging BS development. Prior research among Health Sciences students also identified such association [53].

In its turn, the psychological domain for perception on life quality level involves positive feelings, thinking, learning, memory and concentration, self-esteem, body image, appearance and negative feelings [51]. These conditions can be negatively impacted by the daily lives of police organizations, which are the main sources for psychological suffering among the policemen, due to singularities, such as: extreme stress with direct consequences on the policemen general state; need to meet the labor demands and interpersonal relations with peers and family [54]. In addition to the psychological suffering, other conditions may affect the perception on policemen life quality level, among which: exposure to disasters [55], diseases and physical injuries, depressive disorder [56] and high stress levels [57], conditions that, by committing the psychological domain of perception for life quality level can encourage BS development.

Military with low perception on life quality level in the environmental domain (41.5%, n=49), showed a higher chance for developing BS (0.16 times, when compared to the military with high perception in this domain), being such a result divergent from the expected one. Such a domain includes physical safety and protection, home environment, financial resources, availability and quality regarding health and social care, opportunities to acquire new information and skills, opportunities and participation in recreation and leisure activities, physical environment conditions, such as pollution, noise, traffic, weather, and transport [51].

A survey among Polish bank clerks identified that employees dissatisfied with the work environment (co-workers, supervisors, work content, work organization and conditions, development and wage) are more likely to develop health problems, such as, for example, depressive anxiety, with consequent commitment in organizing and performing tasks and greater perception on stress associated with the labor overload [58]. We have to consider that the cross-sectional design of this study has as one of its limits the reverse causality, i.e., exposure and outcome are collected simultaneously and often we do not know which one preceded the other. In this way, military with BS, could have developed low perception on life quality level in the environmental domain.

As for the use of medicines, the military using medicines continuously (59.5%, n=72) showed reduced chance for developing BS (0.16 times, when compared to the military that do not use them). This estimate ranged from approximately 0.03 times up 0.83 times less chances to show BS indicative. The use of medicines such as psychotropic drugs, can be considered individual protection factor by workers, since these drugs can protect situation demarcated by high stress situations [59,60]. In this sense, one should consider the possibility of reverse causality having interfered also in this variable's result.

In this study, there was no controlled use drug class and, that way, we cannot say if the use of medications, such as anxiolytics, hypnotics and/or antidepressants, would act as a protective factor for developing BS. However, the result of this study differs from previous researches where, among nurses, those who used sleeping drugs had higher stress levels[61]; and between professionals in primary health care, we found that drug use (anxiolytics and hypnotics, antidepressants) as joined

positively to the development of professional exhaustion, one of BS dimensions of BS[62].

As the limiting factors of this study, in addition to the design with cross section and the possibility for reverse casuistry having interfered in the closure of two independent variables, the fact that it was been carried out in only one infantry battalion may not represent the military situation in other cities, states and nation. We should also consider the number of subjects who have consented to participate in the study which, according to the methodological design, should have been higher. It is believed that the wide confidence intervals obtained in multiple logistic regression models (Table 3) are due to the small number of subjects. However, this study, used validated instruments in Brazil and had its data collected by previously trained and calibrated researchers, which provides reliability for the submitted results.

5 CONCLUSION

When looking an answer to the guiding question of this study: demographic, socioeconomic conditions and health conditions, life habits/attitudes/behavioral and occupational factors may favor BS development between army military?", statistically significant relationship was identified between BS and health conditions, i.e. military with low perception on life quality level in physical and psychological domains showed higher chances to develop BS, while those with low perception on life quality level in the environmental domain and that, made use of medicine, showed smaller chance to develop the syndrome.

As the example of programs for assessing and promoting physical, mental and social well-being developed in several countries worldwide, the results herein identified guide towards for the need of health professionals and managers of the infantry battalion to implement and/or adapt coping measures for BS, considering with greater vehemence those that can positively impact on the perception on life quality level in the physical and psychological domains. Among such measures, evaluation and monitoring are suggested for the periodic military general health state, as well as promoting activities that foster the physical and emotional well-being, among which, moments of leisure and relaxation and promotion of positive feelings and thoughts, as well as self-esteem. In this perspective, we highlight that a better understanding on the transformations in the labor context may involve changes in social and work relationships, which may affect the well-being of workers and the social groups where they are inserted.

This study does not close the investigation on the theme, on the contrary, it adds to the specialized literature on the theme on BS the possibility to identify favorable factors for developing this syndrome in a not yet studied population, the Brazilian Army military. Thus, the development of new researches involving such military category is encouraged, so that, possible gaps that still hinder a better understanding and intervention in factors that can negatively impact the physical, mental and social well-being of those who take care of our national security are increasingly met.

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