ARTÍCULO ORIGINAL

The occupational stress affects the health conditions of military police officers

El estrés laboral afecta las condiciones de salud de los oficiales de la policía militar


Center of Health Sciences and Sport. Univ. Estadual de Santa Catarina. Florianópolis, Brazil.

ABSTRACT

Introduction: the agents who are responsible for the public security are exposed to working conditions that affect quality of life, especially the stress that these professionals daily experience.

Objective: to describe the socio-demographic and occupational characteristics, the health conditions and the occupational stress indicators of the military officers from the State of Santa Catarina.

Methods: descriptive correlational study with a sample of 1069 subjects, 583 police officers in qualifying course (QMO) and 486 qualified officers. The Short Form Health Survey and Occupational Stress Indicators were applied.

Results: the results showed that the scores of health conditions were below the cut off for both the physical and the mental components. The vitality variable (p=.000), social functioning (p=.017), age (p=.018) and number of hours worked per day (p=.023) showed a significant association with occupational stress score.

Conclusions: it is concluded that there are significant differences between health indicators and occupational stress. The tendency to reduction of vitality caused by occupational stress and the social function increases with the age and with higher number of workhours per day.

Keywords: police, health, psychological stress.
RESUMEN

Introducción: los individuos que velan por la seguridad pública están expuestos a condiciones de trabajo que afectan la calidad de vida, especialmente el nivel de estrés que experimentan a diario. La gran demanda de salud física y psicológica es provocada por la incertidumbre de enfrentarse a la muerte, y por el mantenimiento diario a la rutina.

Objetivo: describir las características sociodemográficas y ocupacionales, las condiciones de salud y los indicadores de estrés laboral de los oficiales militares del Estado de Santa Catarina.

Métodos: estudio descriptivo correlacional con una muestra de 1 069 sujetos, 583 policías participantes del curso de formación y 486 policías efectivos. Se aplicaron los instrumentos: Short Form Health Survey e indicadores de estrés laboral.

Resultados: las condiciones de salud de la muestra están por debajo de los parámetros establecidos, ya sea para el componente físico como para el mental. El componente vitalidad (p= 0,000), funcionamiento social (p= 0,017), edad (p= 0,018) y número de horas trabajadas por día (p= 0,023) evidenciaron relaciones significativas con la puntuación de estrés ocupacional.

Conclusiones: existen diferencias significativas entre el estrés laboral y los indicadores de salud. La tendencia a disminuir la vitalidad por estrés laboral y la función social aumentan con la edad y el número de horas de trabajo por día.

Palabras clave: policía, salud, estrés psicológico.

INTRODUCTION

The agents who are responsible for the public security are exposed to working conditions that affect quality of life, especially the states of stress experienced daily by these professionals.1 The high physical and psychological demand of the professionals in public security is triggered by the uncertainty of impending fatal confrontation and the routine daily servicing.2 Current studies indicate serious conditions related to physical and mental condition of police that may affect their professional performances, especially those associated with states of stress and occupational dissatisfaction.3-6

Studies have also shown that police officers have low levels of life quality associated with higher levels of stress.7,8 Costa, Accioly Junior Oliveira and Maia9 conducted a study with the Military Police Officers of Natal-RN and they found out that 47.4 % showed indicative of stress, among the 47 %, 36 % with psychological symptoms and 11.4 % with physical symptoms. Moraes, Marques and Portes10 conducted a study with the Military Police Officers of Belo Horizonte-MG and they found that the main sources of occupational stress were related to workload, interrelationships, environment and corporate climate.

In a survey performed by the State of Santa Catarina about the reasons of stress in Public Security Professionals, it was identified that Military Police Officers show increased rates of resistance, phase in which the coping strategies used still maintain the overall balance of the body. However, it should be highlighted that the deleterious conditions resulting from occupational stress may, throughout time, affect the
commitment to the profession, and reduce the health and life quality conditions in the Military Police Officers.\textsuperscript{10,11}

Considering the performance in public security by the Military Police Officers and the deleterious consequences related to stress, this study aims to describe and relate the socio-demographic and occupational characteristics, the health conditions and the indicators of occupational stress of military officers of the State of Santa Catarina.

METHODS

This research was designed as a correlational descriptive study. It was submitted and approved by the Ethics Committee on Research involving Human Subjects of the University of the State of Santa Catarina, under the protocol number 132/2011 and 174/2011.

Sample

The population was consisted of actual military officers of the Military Police of Santa Catarina, being 11,663 were active, 4,839 were in reserve, 2,300 from the training courses for soldiers (CFSD) and 180 from training courses for officers (CFO) identified between 2010 and 2012 (N= 18,982).

The quantitative calculation of the sample was made through software SampleXS for Windows, according to the equation: \[ n = N\left(\frac{p}{100}\right)\left(\frac{E}{100}\right) \], where \( n \) = sample size, \( N \) = population size, \( E \) = tolerable sampling error (.05), and \( p \) = estimating prevalence at 50 \%. The quantitative sampling for finite populations was set at 557 study subjects obtained by accidental sampling\textsuperscript{12} for qualified police officers (QPO) and 471 in qualification for military officers (QMO), adopting prevalence of occurrence of occupational stress of 50 \%, margin of error less than 5 \%, design effect of 1.5 points, and increase of 10 \% for sample loss, totaling 1,131 subjects (n). Sample totaling a loss of 5.5 \% (QPO= 6.2 \%; QMO= 4.9 \%), after a preliminary analysis in 1,069 cases (583 subjects QMO= QPO= 486) were validated.

Instruments

Two instruments were used for data collection: a) Short Form Health Survey (SF-36); b) Occupational Stress Indicators (OSI). It was used as well a spreadsheet to collect socio-demographic data (gender, age, possession of household goods, education) and occupational (training area, official graduation, length of employment, number of hours of daily work, number of days worked per week, quantity of days worked per week, type of activity).

The SF-36 was selected because it allows the measurement of life quality related to health conditions living, being comprised of 36 items that are grouped into eight different areas: functional capacity, physical aspects, pain, general state of health, vitality, social aspect, emotional aspects, mental health.\textsuperscript{13,14} The scores of the SF-36 are calculated from the issues assessed by responses from Likert scale, which allows the calculation of the areas investigated as criteria and formula proposed by Ware and Gandek\textsuperscript{13} and validated in Brazil by Cicconeli, Ferraz and Santos\textsuperscript{14} that indicate points of 0 (worst health condition) to 100 points (best health condition).
The OSI was selected because it allows measurement of satisfaction with psychosocial work-related aspects, consisting of 22 questions prepared by the Likert scale of six points ranging from huge dissatisfaction to huge satisfaction for every aspect of the job. The indicators are obtained from the sum of the measures of satisfaction with the overall work that can range from 22 to 132 points. The OSI was developed by Robertson, Cooper and Williams\textsuperscript{15} and was translated into Portuguese and validated by Swan, Moraes and Cooper.\textsuperscript{16} The rates of occupational satisfaction obtained by OSI criteria adopted by Swan et al.\textsuperscript{16} (22-132 points) that do not have defined point cut or split-level, but which are categorized by Martinez, Paraguay and Latorre\textsuperscript{17} (< 44 points= satisfaction; 44-86 points= intermediate satisfaction; > 86 points= dissatisfaction).

**Procedures**

Initially it was requested the necessary institutional consents, in this case, of the Board of Health and Social Promotion of the Military Police of Santa Catarina and then the permissions of the command units of the Military Police of Santa Catarina that were accidentally selected. After obtaining the consents and permissions, the study was approved by the Ethics Committee in Research involving humans.

The procedures began only after obtaining the consent of the military police officers. However, it was offered to the subjects to sign the term of free and informed consent, guaranteeing thereby the complete anonymity of the respondents. After the invitation to heads of units of the Military Police of Santa Catarina, visits were made directly in the places requesting the participation of the military police officers.

All units of the Military Police of Santa Catarina who were contacted enabled the research. However, the data collection with the military police officers was strictly between those who volunteered to participate in the study.

The survey was conducted through questionnaires and it was answered in three basic ways:

- Filled by the researchers from the information reported directly by the research subjects
- Filled by the research subjects themselves and later picked up by the researchers
- Filled and sent by the subject through the email address provided by the subject.

The subjects who were not in the units on the days scheduled for data collection were subsequently contacted, and those who agreed to participate were submitted to the questionnaires. After the tabulation, analysis and systematization of the data, it was delivered the main results, in an absolutely anonymity way to the responsible for the Department of Health and Social Promotion of the Military Police of Santa Catarina.

**Statistical Analysis**

The Data was tabulated in Microsoft Excel program version 2007 and analyzed using the Statistical Package Social Science (SPSS) version 20.0 program. The data was processed and shown through the minimum, maximum, medium measures and standard deviation, and confidence interval of 95 % (IC95 %). The reliability of the results of the instruments was assessed using Cronbach's coefficient, adopting an
The analysis of internal reliability of the Short Form Outcome Medicals (SF-36) responses determined alpha of 0.910, ranging from 0.904 (how long you feel full of vigor, full of desire, full of strength) to 0.930 (rank of general health compared to one year ago ) and the Occupational Stress Indicators (OSI) responses determined alpha of 0.967, ranging from 0.965 (feeling in relation to personal current career opportunities) to 0.968 (feeling regarding the relationship with others in the institution that works. Thus, the reliability coefficients were considered excellent (OSI) and great (SF-36) on adopted values.

The socio-demographic data characterize the subjects mostly from both groups, as males with complete or incomplete high school, and belonging to the middle class (table 1). It can also be pointed that the average age of QMO was 27.47 years (DP= 3.13), and the QPO was 37.10 years (DP= 7.5).
The occupational data regarding the graduation of the police officer, indicates that between QMO presents only one subject was in the position of Cadet from the Officer Training Course, while other students were Soldiers (f= 582, 99.82 %). Among the QPO, it was found that the majority was in the degree of soldier (f= 297, 65.9 %). Both groups work around five days a week, 11 hours per day, and QPO serve public security an average of 16:57 years (table 2).

The data relating to domain scores of the health conditions of the Military Police shows, in both groups, that the highest score refers to the field of functional capacity and the lower scores refer to the areas of pain and vitality. The results of the components of the health conditions of the Military Police Officers point scores below the cut off, both physical (QMO: 50 points; QPO: 47 points) and mental (QMO: 45 points; QPO: 41 points) (table 3).
The data associated to the overall satisfaction of work noticed from the indicators of occupational stress of the Military Police Officers show that most of the subjects are categorized with intermediate satisfaction (QMO: 77.1%; QPO: 56.1%). On the other hand, the average score of overall satisfaction noticed from the indicators of occupational stress was 61.67 (DP=18.95) points for QMO, and 80.10 (DP=23.9) points for the QPO. It is important to highlight that higher the score of the overall satisfaction with work results to higher occupational stress. Moreover, it was found that a higher percentage of officers already graduated are satisfied with the work compared to students of the training courses.

The Comparisons of the Military Police Officers in the varying conditions of health and indicators of occupational stress shows that when the military officers who are taking the training course are compared to the police officers in action, as well as, among the police officers that work in operational and administrative activity, indicate significant differences (p<.05) for all variables. These differences show that the Military Police Officers who are taking the training course show a better situation concerning the variables such as occupational stress, functioning capacity, pain, general health, vitality, social function, mental health, irritability, worry and depression compared to the group of Qualified Military Police Officers. All these differences, considering p<.05 (table 4).
Considering that the ostensive action is the main function of the Institution, it was found that most of the subjects engaged in operating activities (n= 303, 62.3 %), among those working predominantly in operating, most of them work in the police car (n= 109, 45.2 %). When the group of the Military Police Officers of Operational Activity (PMO), are compared to the Group of the Military Police Officers of the Administrative Activity (QPO), it appears that QPO were on average better than the PMO group in all variables, except the variable of occupational stress and physical activity level (table 5).

**Table 4.** Average, minimum and maximum values of the variables indicators of occupational stress and health conditions of qualified police officers (QPO) and in qualification for military officers (QMO) participants in the study

<table>
<thead>
<tr>
<th>Variables</th>
<th>QMO</th>
<th>QPO</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational stress</td>
<td>61.67 (4-132)*</td>
<td>80.10 (4-165)</td>
<td>0.000</td>
</tr>
<tr>
<td>Satisfaction with work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional capacity</td>
<td>92.86 (4-100)**</td>
<td>82.66 (5-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Physical aspect</td>
<td>74.78 (25-100)</td>
<td>72.12 (25-100)</td>
<td>0.269</td>
</tr>
<tr>
<td>Pain</td>
<td>66.35 (10-100)**</td>
<td>60.86 (10-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Overall health</td>
<td>79 (5-100)**</td>
<td>68.37 (10-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Vitality</td>
<td>64.97 (5-100)**</td>
<td>57.30 (5-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Social function</td>
<td>74.64 (12-100)**</td>
<td>66.42 (12-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Emotional aspect</td>
<td>78.3 (33-100)</td>
<td>76 (33-100)</td>
<td>0.349</td>
</tr>
<tr>
<td>Mental health</td>
<td>74.85 (4-100)**</td>
<td>64.61 (4-100)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

* Significant difference between groups (p < .01).

Table 5. Average, minimum and maximum values of the variables indicators of occupational stress and health status of military police officers who work in the Operational Activity (QPO) and Administrative (AQPO)

<table>
<thead>
<tr>
<th>Variable</th>
<th>QPO</th>
<th>AQPO</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational stress</td>
<td>82.87 (4-165)**</td>
<td>75.57 (22-132)</td>
<td>0.001</td>
</tr>
<tr>
<td>Satisfaction with work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional capacity</td>
<td>81.16 (5-100)</td>
<td>85.08 (5-100)</td>
<td>0.134</td>
</tr>
<tr>
<td>Physical aspect</td>
<td>66.93 (25-100)*</td>
<td>79.29 (25-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Pain</td>
<td>58.17 (10-100)*</td>
<td>65.25 (10-100)</td>
<td>0.008</td>
</tr>
<tr>
<td>Overall health</td>
<td>65.27 (10-100)*</td>
<td>73.5 (15-100)</td>
<td>0.000</td>
</tr>
<tr>
<td>Vitality</td>
<td>55.22 (5-100)*</td>
<td>60.65 (10-100)</td>
<td>0.011</td>
</tr>
<tr>
<td>Social function</td>
<td>63.31 (12-100)*</td>
<td>71.41 (12-100)</td>
<td>0.001</td>
</tr>
<tr>
<td>Emotional aspect</td>
<td>71.59 (33-100)*</td>
<td>81.64 (33-100)</td>
<td>0.001</td>
</tr>
<tr>
<td>Mental health</td>
<td>52.80 (4-100)**</td>
<td>67.55 (4-100)</td>
<td>0.024</td>
</tr>
</tbody>
</table>

* Significant difference between groups (p < .05).
The Multiple regression of the overall occupational stress score was performed with the variables of health-related quality of life, both QMO and QPO. After completion of the simple regression of each of the independent variables in relation to the dependent variable, the following variables were selected: vitality (B= -0.403), social aspect (B= -0.120), amount of hours worked (B= 0.370) and age (B= 0.345), all with the value of p< .20, all of which remained with adopted significance in the final model (p< .05). These variables can explain 22.2 % of the occurrence of occupational stress.

The analysis of the regression coefficients indicates that for every unit increase in overall score of occupational stress is identified decreased vitality 0.403 points and 0.120 points in social aspect, as well as increasing age in 03.45 years and the amount of hours worked per day in 0.370 h. Thus, it can be suggested that the Military Police Officers with higher overall scores of occupational stress tend to have lower scores for vitality and social function and have a greater number of hours worked and age, independent of each final independent variables.

**DISCUSSION**

The occupational data characterize the subjects mostly as soldiers in QPO group of predominantly operational performance, with the average time of admittance Institution 16.57 years, both groups work five days a week and 11 hours a day. These results partially converge the study by Jesus and Jesus4 which showed that 82.5 % of the sample was soldiers with 13.41 years of Institution, with time of service from 11 to 20 years (48.8 %). On the other hand, Ferreira, Bonfim and Augusto18 studied military police officers, most with more than 18 years of institution (57 %), with an average of Institution time of 16 years, with weekly workload of 44 hours with average time of 19 hours overtime per week.

Silva, Schlichting, Schlichting, Gutierrez Son, Adami and Silva19 studied military police officers in Santa Catarina and found that the subjects had an average time of 15 years' service, with the highest concentration between 1 and 5 years (34.4 %). Thus, it can be analyzed that the military police officers investigated in this study, have some similar occupational characteristics to Brazilian police officers. However, it should be noted that the QMO group differs from the studies analyzed by dealing with police officers in the beginning of their careers, still not graduated.

Considering that the ostensive action is the main function of the Institution, it was possible to see that the results of this study converge with Dantas's research8 by military police officers who found that 84 % of the sample was active agents in the operational area, which is the focus the military organization. It should be highlighted that this distribution reflects the composition of the patents in the Military Police of Santa Catarina, since most acts of the Institution, according to the legal prerogative, with the patrolling assigned to the Military Police.

The data related to health conditions, higher for QMO compared to QPO, showed the best scores, near the upper limit (best health status) in both groups, especially in the field of functional capacity, partially diverging from the literature. However, scores below the cut-off point, both for physical and for mental health conditions, partially converge from studies in Brazil,20 but differ from the study in the United States of America,21 however, all of them point several problems to the health of the police officers.
The problems with higher involvement in civil and military police officers of the state of Rio de Janeiro, Minayo, Assis and Oliveira,\textsuperscript{6} were pains in the neck, back and spine. In a study of military police of São Paulo, 54\% of the interviewed, considered health as the most intervening factor for life quality, as well as insufficient to perform its activities.\textsuperscript{20} In a study by Rajaratnam et al.\textsuperscript{21} with North American police officers was identified that the majority of participants considered themselves as having good health (35.9\%), very good (42.3\%) or excellent (15.8\%). However, it should be noted that evaluations of health conditions in this study were performed using instruments that seek to consider perceptions, thus, most studies on this subject is are susceptible to the context in which they are inserted, they may vary according to the economic, social, cultural and political conditions.

The data associated to satisfaction with psychosocial work-related shows that, in both groups, the indicators of occupational stress of the Military Police officers categorize most of the subjects with an "intermediate satisfaction", other than that, a higher percentage of "satisfaction" was identified among the QPO and "dissatisfaction" among the QMO, converging with other studies conducted in different Brazilian contexts\textsuperscript{22} and diverging from other studies.\textsuperscript{6,18} Ferreira et al.\textsuperscript{18} found that over half of the military police officers considered negative the actions taken on their jobs, especially because of a repetitive function (76\%), there is less freedom to decide (74\%), having a fast rhythm of work (72\%) and having physical efforts in excess (58\%). Although it was identified an intermediate job satisfaction, Minayo et al.\textsuperscript{6} demonstrated that the military police officers of the city of Rio de Janeiro stand out from other professionals by the heavy workload and physical and mental suffering caused by the functions performed on a daily categories. On the other hand, Gonçalo Gomes, Barbosa and Afonso\textsuperscript{22} found that only 7.4\% of public security officers and 18.5\% of prison security professionals were dissatisfied with the profession.

Considering that occupational stress can be understood as a lack of balance between the demands of work and the control of their activities,\textsuperscript{23} care should be taken in understanding the demands of police officer work, as this is considered an occupation that must be prepared continuously, which causes charges to both the police force as the officer subject of several profiles as rescue agents, investigational agents, road agents, customs agents and others. Adds up to the military police occupation, the inherent rigid hierarchy of command in the existing military establishment, which causes states of anxiety that, should be properly considered responsibilities.

The results of associations that link the Military Police with higher scores of occupational stress tend to have lower scores for vitality and social function and higher amount of hours worked per day and age, as well as the results of significant comparisons which show that the military police which are in the beginning of their careers (formation of soldiers) have better scores in most of the variables when compared to police officers in action, and also a better condition, for most variables for those working in administrative activity when compared to that act operational activity, are partially corroborated by studies conducted in Brazil\textsuperscript{24,9,20,6,25} and in many other countries.\textsuperscript{26,27}

Souza et al.\textsuperscript{25} found a correlation between health and physical activity, digestive system problems, muscle, bone and skin problems among the military police officers of the city of Rio de Janeiro. In addition to these associations, Souza et al.\textsuperscript{25} also show that the increased chances of developing psychological stress among police officers who are not satisfied with their ability to respond to difficult situations are not satisfied with their lives as a whole, so they have health problems, rarely develop activities beyond time and suffered some victimization. It's important to notice that in
this study the sedentary lifestyle is not associated with psychological distress, only to health issues. Minayo et al.\textsuperscript{6} also found associations between medical problems and symptoms of mental distress, and highlight that from the physical point of view, the health problems of the police officers are linked to lifestyle issues such as irregular feeding, sleep problems, inactivity and social isolation.

Lipp\textsuperscript{20} found significant associations between stress and life quality in the social, emotional, professional and health aspects. Kutlu, \c{C}ivi and Karaoglu\textsuperscript{28} found that scores of life quality in the areas of physical, psychological, social and environmental relationships, the overall life quality and general health were significantly lower in depressed individuals than no depressed. Tharkar et al.\textsuperscript{27} verified that the lack of physical activity among Indian police officers, although is no association with the other study variables, it can be analyzed that among the police officers there is less time devoted to physical exercise when compared to the control group of citizens of other assignments professionals.

Charles et al.\textsuperscript{24} identified an association between white blood cell count and the physical activity, in a group of female North American police officers, and the association between abdominal fat, body mass index (BMI) when adjusted for depression. Costa et al.\textsuperscript{9} in a study with military police officers of Natal found that 76\% of the individuals had symptoms of stress and the only association found it was between the stress and gender, women being the most affected. Nabeel et al.\textsuperscript{26} in study that aimed to explore the correlation between physical activity, physical fitness and injuries among police, with police officers in Minneapolis, found that agents with higher fitness levels had less chances to suffer sprains, back pain and chronic pain. Nabeel et al.\textsuperscript{26} also found that officers with higher levels of physical activity and more physically fit have lower prevalence of musculoskeletal injuries and chronic pain.

Thus, it is understood that the results of associations and comparisons show consideration relevant to the performance, health, occupational satisfaction, stress and physical activity. However, it must be highlighted the need to contextualize the subject and the Institution of the Military Police of Santa Catarina.

It should be noted that these findings must be contextualized according to the nature of the study and according to the limitations of the instruments adopted mainly by the ability of subjective apprehension of variables. Regarding the characteristics of the subjects, of which physical exercise is still a working reality, it can be suggested that institutionalized physical activity is still in its infancy, as there are few battalions of Military Police in the state of Santa Catarina offering conditions similar to the students of the training courses for the realization of physical activity. Regarding the characteristics of the instruments, it should be noticed that all taken care of for the application and analysis of the resulting data, including the application of reliability tests widely recommended.

The results of this study demonstrate that the military police who are in the situation of students from training, although they are experiencing a different situation in their lives, which undergo aspiring to stress is part of professional training, significantly, have a best condition in relation to occupational stress, functioning, bodily pain, general health, vitality, social function, mental health, irritability, worry and depression when compared to the police officers who are already working in the Institution. Thus, it is concluded that the beginners in the police force are in a condition of higher physical and mental health than the police officers who are acting, and that the conditions of the officers who work in operating activities, compared to those with health conditions who act in administrative activities, have higher affect conditions of occupational stress, physical appearance, pain, general health, vitality, social function, emotional and mental health aspect.
Considering the limitations and the findings of this study, it is suggested studies with larger sample size and greater number of units of the Military Police of Santa Catarina, and the use of instruments with more direct measures on the variables screen. It is also suggested that in order to detect and prevent from situations that can trigger some actions should be developed.

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Recibido: 17 de febrero de 2014.
Aprobado: 17 de abril de 2014.