# LIFESTYLE INDICATORS OF PRIVATE AND CORPORALS IN THE MILITARY POLICE OF VITÓRIA-ES MUNICIPALITY

*INDICADORES DO ESTILO DE VIDA DE SOLDADOS E CABOS DA POLÍCIA MILITAR DO MUNICÍPIO DE VITÓRIA-ES*

*INDICADORES DE ESTILO DE VIDA DE SOLDADOS Y CABOS DE LA POLICÍA MILITAR EN LA CIUDAD DE VITÓRIA-ES*

**Original Article**
***Artigo Original***
***Artículo Original***

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## ABSTRACT

Introduction: The lifestyle of military personnel can increase the risk of disease. Lifestyle can be considered a way of life involving values, choices, daily practices, forms of consumption, leisure habits, work, religion and socializing, expressing the characteristics of an individual or group, and can increase the risk of disease in military officers. Objective: This study aimed to compare the lifestyles of military police soldiers and corporals in the municipality of Vitória-ES. Materials and methods: 29 military police officers, 14 soldiers, and 15 corporals, had their lifestyles assessed using the Fantastic Lifestyle questionnaire, which included family and friends, physical activity, nutrition, smoking and drugs, alcohol, sleep, seat belts, stress, safe sex, type of behavior, introspection and work. Sleep quality was also assessed, by the Pittsburgh Sleep Quality Scale involving sleep factors such as subjective quality, latency, duration, habitual efficiency, disorders, use of sleep medication, and daytime dysfunction, as well as the classification of poor sleep quality, sleep disorders, and quality. Results: Corporals were found to have higher body mass (p= 0.012), BMI (p= 0.039), and length of service (p= 0.001). As for lifestyle, there was a difference (p= 0.025) in nutrition, with 43% of the soldiers being very good and 60% of the corporals being good. In terms of sleep quality, 60% of the soldiers had poor sleep quality and 40% of the corporals had some kind of sleep disorder. Conclusion: Corporals had higher body mass, BMI, and sleep disorders, while soldiers had poor sleep quality. ***Level of Evidence III; Study of Non-Consecutive Patients, without Uniformly Applied "Gold" Reference Standard.***

**Keywords:** Police; Life Style; Work; Sleep.

## *RESUMO*

*Introdução: O estilo de vida de militares pode aumentar o risco de doenças. O estilo de vida (EV) pode ser considerado a maneira de viver envolvendo valores, escolhas, práticas cotidianas, as formas de consumo, os hábitos de lazer, o trabalho, a religião e o convívio em sociedade, expressando as características de um indivíduo ou da coletividade, podendo aumentar o risco de doenças em militares. Objetivo: comparar o estilo de vida de soldados e cabos da polícia militar no município de Vitória-ES. Materiais e métodos: 29 policiais militares, sendo 14 soldados e 15 cabos tiveram seu Estilo de Vida avaliado pelo questionário Fantastic Lifestyle englobando família e amigos, atividade física, nutrição, cigarro e drogas, álcool, sono, cinto de segurança, estresse, sexo seguro, tipo de comportamento, introspecção e trabalho. Também foi avaliada a qualidade do sono, pela escala de qualidade do sono de Pittsburgh envolvendo fatores do sono como a qualidade subjetiva, latência, duração, eficiência habitual, transtornos, uso de medicamentos para dormir, disfunção diurna, além da classificação de má qualidade do sono, distúrbios do sono e qualidade. Resultados: Observou-se que cabos possuem maior massa corporal (p= 0,012), IMC (p= 0,039) e tempo de corporação (p= 0,001). Quanto ao estilo de vida, houve diferença (p= 0,025) na nutrição com 43%, entre os soldados foi muito bom e 60% dos cabos foi bom. Na qualidade do sono, 60% dos soldados foi constatada uma má qualidade e em 40% dos cabos observou-se algum distúrbio de sono. Conclusão: Os cabos apresentaram maior massa corporal, IMC, e distúrbios de sono, enquanto soldados apresentaram má qualidade de sono.* ***Nível de Evidência III; Estudo de Pacientes não Consecutivos, sem Padrão de Referência "Ouro" Aplicado Uniformemente.***

**Descritores:** Policia; Estilo de Vida; Trabalho; Sono.

## *RESUMEN*

*Introducción: el estilo de vida militar puede aumentar el riesgo de enfermedades. El estilo de vida (EV) puede considerarse un modo de vida que incluye valores, elecciones, prácticas cotidianas, formas de consumo, hábitos de ocio, trabajo, religión y socialización, que expresa las características de un individuo o grupo, y puede aumentar el riesgo de enfermedad en el personal militar. Objetivo: Comparar los estilos de vida de soldados y cabos de la policía militar en el municipio de Vitória-ES. Materiales y métodos: 29 policías militares, 14 soldados y 15 cabos, fueron evaluados en sus estilos de vida por medio del cuestionario Fantastic Lifestyle, que incluyó familia y amigos, actividad física, nutrición, tabaco y drogas, alcohol, sueño, cinturón de seguridad, estrés, sexo seguro, tipo de comportamiento,*


Associate Editor responsible for the review process: André Pedrinelli

*introspección y trabajo. También se evaluó la calidad del sueño mediante la Escala de Calidad del Sueño de Pittsburgh, que incluía factores del sueño como la calidad subjetiva, la latencia, la duración, la eficiencia habitual, los trastornos, el uso de medicación para dormir, la disfunción diurna, así como la clasificación de la mala calidad, los trastornos y la calidad del sueño. Resultados: Se observó que los cabos tenían mayor masa corporal (p= 0,012), IMC (p= 0,039) y antigüedad en el servicio (p= 0,001). En cuanto al estilo de vida, se observó una diferencia (p= 0,025) en la nutrición, ya que el 43% de los soldados era muy buena y el 60% de los cabos era buena. En cuanto a la calidad del sueño, el 60% de los soldados tenían una mala calidad del sueño y el 40% de los cabos presentaban algún tipo de trastorno del sueño. Conclusión: Los cabos presentaron mayor masa corporal, IMC y trastornos del sueño, mientras que los soldados presentaron una mala calidad del sueño.* ***Nivel de Evidencia III; Estudio de Pacientes no Consecutivos, sin Patrón "Oro" de Referencia Aplicado Uniformemente.***

***Descriptores:*** *Policía; Estilo de Vida; Trabajo; Sueño.*

DOI: http://dx.doi.org/10.47870/1517-8692202430032023_0224i Article received on 04/03/2023 accepted on 08/22/2023

## INTRODUCTION

Lifestyle (LS) can be considered the way of living involving values, choices, daily practices, forms of consumption, leisure habits, the work, religion and living in society, expressing the characteristics of an individual or collective.[1] There are studies[2,3] available in the literature that addressed the effects and impacts of LS on working conditions and health conditions of workers. The reduction in pandemic rates of inadequate LS is the focus of many researches, which is associated with the risk of developing chronic diseases, and changes in occupational and behavioral indicators.[4,5] This way, the work environment is a relevant issue that can affect workers, causing negative aspects to health and reducing the participation of its labor force work.[6,7]

Considering military police officers, the LS of these professionals presents unhealthy indicators[7] with evidence demonstrating that sedentary behavior and hypercaloric intake, associated with classic occupational factors of the profession such as stress[8] compromise the health parameters of this population by increasing the risk of development of diseases related to cardiovascular, metabolic, cancer and general mortality.[6,9] Furthermore, it is important to consider that changes in the risk of cardiovascular diseases, increased body mass and physical inactivity, classical and LS-mediated parameters directly interfere with occupational performance of military police officers.[10] Additionally, some studies[8,11] indicate association and differences between police officers, considering gender, function, position and workplace. It should be noted that the total number of hours worked, employee turnover shifts and services, early retirements and the commitment of public security professionals salaries are variables that present greater risk in development of chronic diseases.[10,12]

Although the health monitoring actions of public security agents have been expanded with the implementation of actions aimed at assisting these professionals, Ferreira[13] points out that the analysis of health indicators of public security professionals is still treated with little importance, due to the lack of attention and actions of managers regarding the internal conditions of the organization system of Public security institutions. Additionally, Ferreira et al.[8] indicate changes in parameters the LS in agents with different positions and ranks studies must be carried out to clarify this scenario. Therefore, the objective of this study was to compare the LS and sleep quality of soldiers and military police corporals assigned to the municipality of Vitória-ES.

## METHODS

### Sample

After approval by the Ethics and Research Committee of the Federal University of Espírito Santo (4.871.370/2021), 29 military police officers (4 women and 25 men) active in the Municipality of Vitória – ES voluntarily participated in the study distributed in two groups: private (P, n:14) and corporal (C, n:15). The military personnel active in their activities were included and individuals who were away from their occupational activity for any reason were excluded, just as those who answered the questionnaire incorrectly and who did not present the consentient term.

### Parameters

#### Anthropometric parameters

Data regarding body mass and height were acquired in a self-referred way. Subsequently, the equation (body mass / height$^2$) was used for the calculation of body mass index (BMI).

### Lifestyle assessment

The lifestyle evaluation was performed using the Fantastic Lifestyle Questionnaire validated for the Brazilian population by Rodriguez-Añez et al.[14] The instrument takes into account behaviors presented by individuals in the last month and the results obtained after the association between lifestyle and health itself. The tool has 25 questions, divided into nine domains, which are: 1) family and friends; 2) physical activity; 3) nutrition; 4) cigarettes and drugs; 5) alcohol; 6) sleep, seat belt, stress and safe sex; 7) type of behaviour; 8) introspection; 9) work.

The 25 questions that comprised the body of the questionnaire were arranged on the Likert scale, so that 23 of these questions have five possible alternatives as answers, and 2 are presented in dichotomous ways. After the sum of the 25 columns, a score was obtained, in which individuals were classified into 5 categories, which are: "Excellent" (85 to 100 points), "Very good" (70 to 84 points), "Good" (55 to 69 points), "Regular" (35 to 54 points) and "Needs improvement" (0 to 34 points).

### Sleep quality

Sleep quality was assessed using the Pittsburgh Sleep Quality Scale (PSQI-BR) already validated in Brazil,[15] allowing to evaluate the quality and disorders of sleep, in the period of one month prior to the date of its application. The instrument contains 19 questions grouped into seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disorders, use of sleeping medications and daytime dysfunction. The score for each component varied from zero to three points and the overall score, obtained with the sum of the components, can vary from zero to 21 points. The higher the value obtained, the worse the evaluation of the sleep quality, with a global score of five points being the cutoff point which allows distinguishing between subjects with poor sleep quality, sleep disorders and good sleep quality.

### Statistical analysis

Data are presented in absolute frequency (n), relative frequency (%) for qualitative variables and mean and standard deviation for quantitative variables. To the comparisons between groups were carried out using the X2

tests for the qualitative parameters and the unpaired t for the quantitative parameters with aid of GraphPad Prism software version 6.00 for Windows (GraphPad Software, La Jolla California, USA) and significance level of p<0.05.

## RESULTS

As described in Table 1, among the 29 military police officers who participated in the study 14 individuals were from the private group and 15 individuals from the corporal group. However, 3 (21%) and 1 (6.6%) were women in the private and corporal groups respectively.

The general characteristics of the study subjects are described in Table 1 No significant differences were found between the groups considering age and height, however, the values related to body mass, BMI and length of service were higher (p<0.05) in the C compared to the P group.

Considering the LS domains (Table 2), a significant difference (p=0.025) was found only in the nutrition parameter. Considering LS score rating 43% of P were classified as very good and 60% of C showed good classification without differing from each other (p= 0.156).

The number of sleep hours was 6.18 ± 1.65 and sleep efficiency of 87.64 ± 12.64. No difference was found in bed hours (P: 5.93 ± 1.97h, C: 6.41 ± 1.32h; p=0.454) as well as sleep efficiency (P: 85.56 ± 13.54%, C: 89.58 ± 11.87%; p=0.404) between groups. Sleep quality classification between P and C can be seen in Table 3. Significant difference (p=0.007) was found in the classification of sleep quality among privates and corporals, it has been demonstrated that 100% of P present poor sleep quality compared to 60% of C, however, 40% of C presented sleep disturbances.

## DISCUSSION

Professional performance has been identified as an intervening factor in quality of life of the individual, since work is characterized as one of the main activities carried out by man.[16] In this sense, the routine of occupational activities can cause physical and emotional exhaustion in workers, resulting in harm to health and perception of quality of life. Among the occupational activities, the activity of military police officers is considered stressful with numerous studies dedicated to investigating this population in the most varied approaches. In this perspective, Benevides-Pereira[17] considers that the work of military personnel is one of the professions that expose themselves to risks and have their health integrity threatened.

In our study, the sample was mostly made up of men, a. similar result to other studies.[18] The male predominance is directly related to the process of joining the military police, since the recruitment process notices makes it clear that the number of vacancies for women is lower than the vacancies allocated to men.[19]

Another very interesting fact found in our study was the difference both in body mass and BMI among privates and corporals. We identified a tendency towards overweight in the general sample. However, average values of 27.84 ± 3.39 kg/m$^2$ demonstrating a prevalence of overweight in corporals, a result similar to other studies.[5,20] It is known that increased body mass is associated with cardiometabolic diseases, Anderson et al.[21] indicated that the incidence of obesity among military police officers is high due to the adoption of habits considered harmful to health. Furthermore, Minayo[7] considers that service routines encourage the appearance of risk factors that can contribute to the development of cardiometabolic chronic diseases.

Alghamdi et al.[22] showed that the military police contingent presents a high prevalence of body mass gain, driven by factors such as a sedentary lifestyle and bad eating habits. In agreement with our study, other works also showed the influence of poor eating habits and body weight gain among these privates.[20,23,24] Based on the difference you find in the nutrition parameter between P and C, it is possible to consider that the time in the corporation as well as the common habits presented by this group of professionals may in some way significantly influence these indicators, as demonstrated by others studies.[21,25]

In our study, we showed that the difference in both occupational activity time level in the corporation as the nutrition indicator in the style of among privates and military police corporals in the city of Vitória may be associated with poor diet or poor nutrition. In the midst of the indicators that can support such a finding, we highlight the low socio-economic level prevalent between privates.[8] Although we have not evaluated this information in our study, according to Ferreira et al.[8] privates traditionally receive the lowest salaries from the military police, in addition to composing the large mass of workers in this professional category.

Considering police occupational activity, it is possible to consider that the performance may be affected by long duty shifts, high risk of activities of the position, high demands for carrying out duties, tensions caused by power conflict, rigid discipline, emotional factors and personal obligations, exposing this professional to health risky situations.[10,26] Furthermore, the routine of military police is essentially based on patrolling, an activity conducted extensively with individuals remaining seated in vehicles for long hours, associated with administrative duties executed within the corporation, who perform most of the time sitting down.

**Table 1.** Sample characteristics of soldiers and corporal of military officers.

| Parameters | Overall n = 29 | Private n = 14 | Corporal n = 15 | Significance |
|---|---|---|---|---|
| Age (years) | 32.24 ± 4.068 | 31.29 ± 2.87 | 33.13 ± 4.87 | 0.222 |
| Body mass (kg) | 79.96 ± 14.01 | 73.08 ± 11.82 | 85.93 ± '3.30 | 0.012 |
| Height (m) | 1.73 ± 0.06 | 1.71 ± 0.06 | 1.75 ± 0.06 | 0.063 |
| BMI (kg/m$^2$) | 25.50 ± 6.05 | 23.05 ± 7.33 | 27.84 ± 3.39 | 0.039 |
| Service time (years) | 9.34 ± 2.46 | 7.64 ± 0.74 | 10.93 ± 2.46 | 0.001 |

Values expressed in mean ± standard deviation. BMI: body mass index.

**Table 2.** Lifestyle score of privates and corporal of military officers.

| Parameters | Overall n = 29 | Private n = 14 | Corporal n = 15 | Significance |
|---|---|---|---|---|
| Family and friends | 5.69 ± 2.41 | 5.71 ± 2.20 | 5.67 ± 2.66 | 0.958 |
| Physical activity | 4.76 ± 2.44 | 5.43 ± 2.03 | 4.13 ± 2.70 | 0.154 |
| Nutrition | 6.55 ± 2.73 | 7.71 ± 2.70 | 5.47 ± 2.36 | 0.025 |
| Cigarette and drugs | 13.21 ± 2.21 | 13.43 ± 1.95 | 13.00 ± 2.48 | 0.608 |
| Alcohol | 7.93 ± 3.37 | 7.21 ± 3.12 | 8.60 ± 3.38 | 0.261 |
| Sleep, seatbelts, stress, and safe sex | 11.17 ± 3.89 | 11.79 ± 3.31 | 10.60 ± 4.40 | 0.418 |
| Type behavior | 3.86 ± 2.31 | 4.36 ± 2.44 | 3.40 ± 2.16 | 0.275 |
| Introspection | 7.83 ± 2.45 | 8.50 ± 2.53 | 7.20 ± 2.27 | 0.159 |
| Work and satisfaction with profession | 2.62 ± 1.29 | 2.57 ± 1.16 | 2.67 ± 1.45 | 0.846 |
| Total score | 63.62 ± 13.83 | 66.71 ± 13.50 | 60.73 ± 13.97 | 0.251 |
| **Classification** | | | | |
| Excellent | 1 (3%) | 1 (7%) | 0 (0%) | 0.156 |
| Very god | 9 (31%) | 6 (43%) | 3 (20%) | |
| Good | 12 (42%) | 3 (21%) | 9 (60%) | |
| Regular | 6 (21%) | 4 (29%) | 2 (13%) | |
| Needs improvement | 1 (3%) | 0 (0%) | 1 (7%) | |

Values expressed in mean ± standard deviation.

**Table 3.** Sleep quality classification of privates and corporal of military officers.

| Parameters | Overall n = 29 | Private n = 14 | Corporal n = 15 | Significance |
|---|---|---|---|---|
| Poor sleep quality | 23 (79%) | 14 (100%) | 9 (60%) | 0.0079 |
| Sleep disturbance | 6 (21%) | 0 (0%) | 6 (40%) | |
| Good sleep quality | 0 (0%) | 0 (0%) | 0 (0%) | |

Values expressed in frequency (%).

These occupational and environmental conditions can turn these professionals into sedentary individuals, and inactivity, for that matter, gradually affects health. From this perspective, Ferraz et al.[27], through a systematic review, demonstrated that exposure to health risks is increased in police officers when sedentary LS is added to risk factors, working conditions and unhealthy bio-socio-environmental aspects, which can affect the health of these professionals. Furthermore, the authors also demonstrate the presence of metabolic syndrome and cardiovascular disease risks in the majority of subjects participating in the studies.

From this perspective, the LS of military police officers must be constantly monitored, as it can significantly affect health indicators of this population. However, it is important to consider that LS is determined by various behaviors, which impact on population health, being related with countless aspects that express attitudes and values in people's lives. In this way, work can affect the worker's life, whether as a developer of identity or even as social inclusion. Therefore, it is possible to consider that the occupational activity can establish a triple relationship between identity, work, social and affective relationships[28] which makes LS monitoring independent of occupational activity an important influencing parameter both in work activity having broad repercussions on the lives of the subjects.

In our study, we observed that the LS of private and corporals was considered very good and good respectively. Hypothetically, a possible reason for such findings may be associated with the influence of social and cultural factors among Espírito Santo residents. According to the Brazilian Institute of Geography and Statistics,[29] the state of Espírito Santo was considered the State with the second best life expectancy in Brazil, with the issue of quality of life and well-being being the one with the greatest awareness between Espírito Santo residents.[29] The LS classification considered satisfactory in our sample study is not original, other studies also demonstrated that police officers indicated good perception of quality of life.[30] Additionally, Ferraz et al.[27] demonstrated in their systematic review that for the maintenance of health, the regular practice of physical activity, adaptation to healthy LS and disease prevention are considered effective strategies.

Considering the influence of physical fitness as a parameter of health and performance of professional activity, police organizations carry out assessments in graduates and its staff to assess vigor and physical fitness as well as verify whether agents are physically fit to perform their role.[26] In spite of that, we indicate that the looking at health and occupational performance indicators is expanded and that other important parameters for police officer integrity are constantly monitored and that healthy policy implementation actions can be operationalized aiming at broad well-being. Such perspective is guided by the context, assuming that health surveillance is not restricted or exclusive to information production actions, but also in the diagnosis that will allow interventions in factors that determine and condition the possibility of development of risk factors in this population can be implemented.

Another important component for health in general is sleep. As claimed by Telles et al.,[31] sleep is a functional, active, reversible and cyclical state, with specific physiological and behavioral manifestations, accompanied by modifications of mental activity. According to the National Institute of Health, the recommended rest time for the body to recover varies according to different factors, such as age, but corresponds, for most adults, to approximately seven to eight hours a day, which are considered sufficient to rest.[32] Similar to other studies,[33] we demonstrated that the sleep quality of military police officers was considered inadequate, presenting a poor quality of sleep, with values below those recommended by the National Institute of Health.

Even so it has not been evaluated, it is possible to consider that exposure to risk situations, the different shifts and the work routine itself as well as habits adopted can be considered determining factors in compromising the quantity and quality of sleep of these professionals. It is important to mention that disturbances in the quantity as well as quality of sleep are directly associated with the development of cardiometabolic diseases, which are frequently present among military police officers.[27]

Some limitations must be presented in this study. The amount of subjects involved, the assessment of biometric parameters in a self-reported manner and the specificity of the population being restricted to the Municipality of Vitoria-ES do not allow any generalization of the data.

In conclusion, based on the results found in this study we can consider that corporals exhibited greater body mass and BMI compared to privates. Although no change in the LS score was identified between the groups, the nutritional parameter differed between P and C. Finally, privates had poor sleep quality unlike the corporals that showed sleep disturbances.

## ACKNOWLEDGMENTS

The authors would like to thank to Fundação de Amparo à Pesquisa do Espírito Santo (FAPES, grants numbers 637/2022 e 1007/2022) and to scientific assistance adress to CHOR and AFM, to Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for scientific assistance via the productivity fellowship address to CDFCL, to Military Police of Espirito Santo and to Lais Pessanha Leal to english language assistance. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

All authors declare no potential conflict of interest related to this article

**AUTHORS' CONTRIBUTIONS:** Each author contributed individually and significantly to the development of the manuscript. MMD, VVS, CHOR, GSO e DSB: conceptualization, data curation and methodology. CDFCL, RLR, AFM: formal analysis and writing-original draft. PLF e ACP: writing-original draft.

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