ORIGINAL ARTICLE

Received: 07/07/2018
Accepted: 11/13/2018
Funding: none

Burnout syndrome and sleep quality among military police officers in Piaui

Síndrome de *burnout* e qualidade do sono de policiais militares do Piauí

Maylla Salete Rocha Santos Chaves[1], Iara Sayuri Shimizu[1]

ABSTRACT | Background: Military police officers are a distinct population group given they deal everyday with violence and crime. For this reason they are more susceptible to develop burnout syndrome, resulting in significant decrease of productivity and changes in the quality of sleep. **Objective:** To analyze the correlation between burnout syndrome and sleep quality relative among military police officers. **Method:** Cross-sectional, descriptive and quantitative study conducted with 32 military police officers of the military police battalion of Teresina, Piaui, Brazil. Data collection was performed through administration of a questionnaire for sociodemographic data, the Masliach Burnout Inventory and the Pittsburgh Sleep Quality Index. Pearson's correlation was used for statistical analysis. **Results:** The sample comprised 32 male military police officers, with average age 44.35±5.63 years old. Sleep duration exhibited highly significant, inverse and moderate correlation with emotional exhaustion (p=0.0003). Emotional exhaustion exhibited significant moderate correlation with sleep quality (p=0.004). Depersonalization exhibited significant, albeit weak correlation with sleep quality (p=0.03). **Conclusion:** Burnout syndrome domains emotional exhaustion and depersonalization exhibited significant correlation with sleep quality.

Keywords | occupational health; burnout, professional; sleep; police.

RESUMO | Introdução: Os policiais militares fazem parte de um grupo distinto da população por estarem lidando, no seu cotidiano, com a violência e a criminalidade, tornando-se mais suscetíveis a desenvolverem a síndrome de *burnout*, com redução significativa da produtividade e alteração da qualidade do sono. **Objetivo:** Correlacionar a síndrome de *burnout* e a qualidade do sono dos policiais. **Método:** Estudo descritivo, transversal e quantitativo, com 32 policiais militares pertencentes ao batalhão de polícia militar da cidade de Teresina, Piauí. A coleta de dados ocorreu por meio de um formulário contendo informações sociodemográficas e dois questionários: *Maslach Burnout Inventory* (MBI) e Índice da Qualidade do Sono de Pittsburgh (PSQI). Para análise estatística, utilizou-se a correlação de Pearson. **Resultados:** A amostra foi composta de 32 policiais militares do sexo masculino com idade média de 44,34±5,63 anos. A duração do sono demonstrou correlação moderada extremamente significativa e inversamente proporcional à dimensão exaustão emocional (p=0,0003), correlação moderada e altamente significativa entre exaustão emocional e qualidade do sono (p=0,004) e fraca correlação significativa entre despersonalização e qualidade do sono (p=0,03). **Conclusão:** Por meio dos resultados obtidos, conclui-se que as dimensões exaustão emocional e despersonalização apresentam correlação significativa com a qualidade do sono.

Palavras-chave | saúde do trabalhador; esgotamento profissional; sono; polícia.

[1]Universidade Estadual do Piauí – Teresina (PI), Brazil.

DOI: 10.5327/Z1679443520180286

INTRODUCTION

Military police officers are a distinct population group given they deal everyday with violence and crime, and sometimes have to intermediate in human situations characterized by severe conflict and tension[1]. The basic mission of the profession consists in preventive policing and preservation of the public order. It stands out among other professional categories for its high level of stress, which causes untimely physical and mental exhaustion[2].

As a function of the job characteristics, physical exhaustion derives from direct confrontation, which might result in trauma and cut/stab or gunshot wounds. In turn, mental exhaustion is caused by mental and emotional fatigue derived for poor individual adaptation to the long working works and high levels of tension inherent to the profession[3].

Burnout syndrome is one of the main disorders associated with professional exhaustion. Burnout syndrome is a type of chronic stress characterized by physical, mental and emotional exhaustion caused by frequented and long exposure to stressors in the workplace[4].

The following are the syndrome symptoms: constant fatigue, sleep disorders, muscle pain, headache, irritability, aggressiveness, lack of motivation, anxiety and depression[5]. To cope with these symptoms, emotionally vulnerable individuals had resource to alcohol, and eventually also illegal drugs[6].

Excessive physical effort and high job demands are indicators of risk for sleep disorders among military police officers, such as insomnia, irregular wake-sleep cycle, increased daytime sleepiness and decreased alertness[7].

Neurobiological processes occurring during sleep are essential to preserve the physical and cognitive health of people[8]. Recurrent sleep deprivation might reduce the mental abilities and cause physical tiredness, which contribute to isolation, difficulty to participate in social activities and high levels of stress[3].

Given this scenario, gathering information about burnout syndrome and the quality of sleep of military police officers is relevant to contribute to the knowledge in this field and reinforce the need to pay attention to this population of workers.

Therefore, the aim of the present study was to investigate burnout syndrome and sleep quality among military police officers allocated to the operational unit in Teresina, Piaui, Brazil.

METHOD

The present cross-sectional, descriptive and quantitative study was conducted with 32 military police officers allocated to the military police battalion of Teresina.

The study was approved on 28 October 2017 by the research ethics committee of State University of Piaui, ruling no. 2,331,823, in compliance with the National Health Council Resolution no. 466/2012. Authorization was further obtained by the Teaching, Instruction and Research Board of the Piaui Military Police General Command. Then the investigators contacted the military police battalion commandant to set the schedule for data collection according to the institutional availability.

Data collection was performed in March and April 2018. Candidates were contacted during the working hours and invited to voluntarily participate in the study. They were informed as to the study aims and expected benefits, and confidentiality, privacy and anonymity were ensured. After reading and signing an informed consent form, the participants were delivered the questionnaires and anthropometric measurement was performed.

Of the 135 officers allocated to the battalion, only 32 agreed to participate in the study. We included military police officers who agreed to participate in the study, were allocated to the operational unit, did not have another job, and were not on vacation or leave at the time of data collection. Fourteen officers on sick leave were excluded.

The data were collected on a form including information on age, sex, marital status, educational level, daily working hours, length of work in the job, shifts, comorbidities and alcohol consumption. In addition, we administered two questionnaires, the *Maslach Burnout Inventory* (MBI) and the Pittsburgh Sleep Quality Index (PSQI).

The body weight was measured with a Donew Deluxe® portable digital scale; three measurements were performed, and the value recorded twice was selected for analysis. Height was measured only once using a simple non-elastic 0.5-cm scale tape measure posted to a wall. These measurements were performed with the participants barefoot, not wearing hats, standing up against a wall, in upright position, the arms along the body, the head up, and looking at a fixed point at the eye level.

Next we calculated the body mass index (BMI) by dividing the body weight (kg) by the height squared (m^2).

The results were categorized following the World Health rganization (WHO): underweight (<18.5 kg/m^2) normal weight (18.6–24.9 kg/m^2); overweight (25–29.9 kg/m^2), class I (30–34.9 kg/m^2), class II (35–39.9 kg/m^2) and class III (>40 kg/m^2) obesity[9].

MBI was administered to investigate professional exhaustion. This questionnaire comprises 22 questions relative to the three fundamental domains of burnout: emotional exhaustion, 9 items; depersonalization, 5 items; and personal accomplishment, 8 items. For emotional exhaustion, scores ≥27 indicate high level of burnout, 19 to 26 moderate level, and <19 low level. For depersonalization, scores ≥10 indicate high level, 6 to 9 moderate level, and <6 low level. Personal accomplishment has reverse score: 0 to 33 indicate high level, 34 to 39 moderate level, and ≥40 low level[10].

PSQI was administered to assess the quality of sleep in the past month. It comprises ten questions distributed across seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction, which are scored from 0 to 3. The individual scores are added to obtained to global score, which ranges from 0 and 21. Scores 0 to 4 indicate satisfactory sleep quality, 5 to 10 poor quality and >10 sleep disorder[8].

The data were entered and tabulated on a Microsoft Excel 2016 spreadsheet. Statistical analysis was performed using software Bioestat version 5.0. Pearson's correlation was used to investigate the association between burnout syndrome and sleep quality. The results were categorized as follows: very weak correlation (0.00–0.19), weak (0.20–0.39), moderate (0.40–0.69), strong (0.70–0.89) and very strong (0.90–1.00)[11].

RESULTS

Of 135 officers allocated to the battalion, only 32 agreed to participate in the study. Their average age was 44.34±5.63 years old. Most participants were married (71.87%), had completed higher education (36.36%), worked in the morning (62.50%) and had worked in this job for 21 to 31 years (50%). Their average body weight was 81.87±14.03 kg, mean height 1.69±0.06 m and mean BMI 28.43±3.82 kg/m^2. Most participants had overweight (46.87%) and class I obesity (31.25%) (Table 1).

Most participants (90.62%) did not report any comorbidity; only 9.38% reported some disease, including arterial hypertension, low back pain, sleep apnea, sinusitis, somnambulism, arthrosis and diabetes. Fifty percent of the sample reported to consume alcohol.

The sample exhibited high rates of emotional exhaustion (43.75%) and depersonalization (56.25%) and low personal accomplishment (75%).

The scores on the emotional exhaustion domain varied from 9 to 44, mean 26±9.94. The scores on depersonalization varied from 5 to 21, mean 11±4.28. The scores on personal accomplishment varied from 10 to 40, mean 28.78±7.27.

The average sleep duration was 6±1.62 hours. About 71.87% of the participants reported poor sleep quality, 18.75% were classified as with sleep disorder, while only 9.37% were found to have good sleep quality. The average score on PSQI was 8.06±3.60, varying from 20 to 2.

As Table 2 shows, sleep duration had moderate, highly significant and inverse correlation with domain emotional exhaustion (r=-0.59; p=0.0003). Highly significant and moderate correlation was found between emotional exhaustion and sleep quality (r=0.48; p=0.004). The correlation between depersonalization and sleep quality was significant, albeit weak (r=0.37; p=0.03).

DISCUSSION

The present sample composed of 32 military police officers allocated to the operational unit exhibited high levels of emotional exhaustion and depersonalization and low levels of personal accomplishment, which characterize burnout syndrome, and poor sleep quality.

Administration of MBI allowed analyzing the three domains of burnout syndrome. The participants exhibited high levels of emotional exhaustion and depersonalization and low levels of personal accomplishment, which indicate high risk for development of burnout syndrome. We may hypothesize that officers allocated to the operational unit are more susceptible to develop burnout syndrome, because they must cope with extremely difficult situations. The studies by Ascari et al.[12], with 127 military police officers in a county in Santa Catarina, Brazil, and by Rocha and Cavalcante Neto[13], with 30 officers in Alagoas, did not find evidence of burnout

Table 1. General characteristics of the sample, Teresina, Piauí, 2018 (n=32).

Variables	F	%
Age (years old)		
32–37	5	15.62
38–43	7	21.87
44–49	16	50
Over 50	4	12.5
Educational level		
Complete higher education	12	36.36
Incomplete higher education	2	6.06
Complete secondary school	10	30.30
Incomplete secondary school	3	9.1
Complete elementary school	3	9.1
Incomplete elementary school	2	6.06
Marital status		
Single	4	12.5
Married	23	71.87
Stable union	2	6.25
Divorced	3	9.37
Working hours		
Morning (6 h)	20	62.5
Afternoon (6 h)	5	15.62
Full-time (12 h)	5	15.62
Shifts (24 h)	2	6.25
Length in the job (years)		
5–10	12	37.5
11–16	1	3.12
16–21	3	9.37
21–26	8	25
26–31	8	25
Body mass index		
Normal weight	5	15.62
Overweight	15	46.87
Class I obesity	10	31.25
Class II obesity	2	6.25

F: absolute frequency; %: relative frequency.

among the analyzed populations, but observed they were at high risk of developing this condition.

The high level of professional exhaustion found in the present study is similar to the one detected for other professional categories in Brazil, especially the ones related to health and education. The reason is that these workers are also exposed to poor working conditions with poor perspectives of professional growth, as shown in the studies by Valle and Malvezzi[14] and Lima et al.[15].

The average sleep duration was 6 hours; according to Brazilian studies, sleeping less than 8 hours is insufficient[16,17]. Most participants reported poor sleep quality and sleep disturbances. These findings agree with the ones of the studies by Oliveira and Santos[18] — with 24 military police officers from São Paulo, Brazil, who exhibited high rates of daytime sleepiness (50%) and insomnia (45.9%) — and by Garbarino et al.[19] — with 1,280 police officers in Italy, 35.7% of whom reported sleep disturbances.

As the literature shows, as e.g., in the study by Ayala-Guerrero et al.[20], poor sleep quality is associated with several physical and mental disorders, including memory impairment, poorer responses in attention-demanding tasks, deficits in psychomotor tasks, cognitive impairment, increased sensitivity to pain, irritability, fatigue and psychosocial dysfunction.

In the present study, we found negative correlation between sleep duration and emotional exhaustion, and positive correlation of poor sleep quality with emotional exhaustion and depersonalization. Therefore, the data suggest that

Table 2. Correlation between Pittsburgh Sleep Quality Index and Masliach Burnout Inventory variables, Teresina, Piauí, 2018 (n=32).

Correlations	r	p-value
Sleep duration *vs.* emotional exhaustion	-0.59	0.0003
Sleep duration *vs.* depersonalization	-0.17	0.34
Sleep duration *vs.* personal accomplishment	0.11	0.54
Emotional exhaustion *vs.* PSQI	0.48	0.004
Depersonalization *vs.* PSQI	0.37	0.03
Personal accomplishment *vs.* PSQI	-0.07	0.66

PSQI: Pittsburgh Sleep Quality Index.

there is correspondence between burnout syndrome and sleep quality: the higher the level of professional exhaustion, the higher the global score on PSQI, which indicates poor sleep quality and sleep disturbances.

The study by Everding et al.[21], with 379 police officers in North America, found that the ones categorized as with poor sleep quality (39%) reported higher personal, organizational and operational stress levels, depression symptoms and poorer state of health.

In the study by Bond et al.[22], conducted in the United States with 372 police officers, more than one-fourth of the participants exhibited poor sleep quality and sleep disturbances, and there was association between specific types of traumatic events/stressors (seeing a fellow officer being killed, abused children, traffic accidents) and poorer sleep quality.

Some aspects of the activities of officers allocated to the operational unit might account for the results found in the present study, and also reported by Bravo et al.[23], such as long working hours, short rest breaks, shorter sleep duration, poorer working conditions, exposure to violence, constant insecurity, involvement in traumatic incidents and shift work, with eventual affection of the circadian rhythm.

Moreno-Jiménez[24] and Neylan et al.[25] observed that the characteristics of military jobs result in increased absenteeism, sick leaves, poorer quality of work and predisposition to sleep disorders.

The present study had some limitations, such as the impossibility to recruit a more representative sample, given the low adherence of the target population, and the fact that 10% of the officers were on sick leave. In addition, application of questionnaires might result in under- or overestimation of measurements.

CONCLUSION

The participants exhibited high levels of emotional exhaustion and depersonalization, and low levels of personal accomplishment, which is indicative of burnout syndrome. In addition, they reported poor sleep quality. On these grounds we suggest implementing institutional measures at military police battalions in Piaui and programs including control of stress and sleep hygiene.

ACKNOWLEDGEMENTS

The authors thank the 1st Military Police Battalion of Piaui for its collaboration in the present study.

REFERENCES

1. Costa M, Accioly Júnior H, Oliveira J, Maia E. Estresse: diagnóstico dos policiais militares em uma cidade brasileira. Rev Panam Salud Publica. 2007;21(4):217-22.
2. Gonçalves SJC, Viega AJS, Rodrigues LMS. Qualidade de vida dos policiais militares que atuam na área da 2ª CIA do 10º Batalhão Militar (Miguel Pereira e Paty do Alferes). Rev Fluminense de Extensão Universitária. 2012;2(2):53-76.
3. Silva FC, Hernandez SS, Arancibia BA, Castro TL, Filho PJ, da Silva R. Health-related quality of life and related factors of military police officers. Health and Qual Life Outcomes. 2014;12:60. https://doi.org/10.1186/1477-7525-12-60
4. Fabichak CSJS, Silva-Junior JS, Morrone LC. Síndrome de Burnout em Médicos Residentes e Preditores Organizacionais do Trabalho. Rev Bras Med Trab. 2014;12(2):79-84.
5. Benevides-Pereira AMT. Burnout: quando o trabalho ameaça o bem-estar do trabalhador. São Paulo: Casa do Psicólogo; 2002.
6. Cunradi CB, Chen MJ, Lipton R. Association of occupational and substance use factors with burnout among urban transit operators. J Urban Health. 2009;86(4):562-70. https://doi.org/10.1007/s11524-009-9349-4
7. Akerstedt T. Shift work and sleep disorders. Sleep. 2005;28(1):9-11.
8. Bertolazzi AN. Tradução, adaptação cultural e validação de dois instrumentos de avaliação do sono: escala de sonolência de Epworth e índice de qualidade de sono de Pittsburgh [dissertation]. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2008.
9. World Health Organization. Physical status: the use and interpretation of anthropometry. Geneva: World Health Organization; 1995. 854 p.
10. Maslach C, Jackson SE. Maslach Burnout Inventory. 2ª ed. Palo Alto: Consulting Psychologist Press; 1986.
11. Mukaka MM. A guide to appropriate use of Correlation coefficient in medical research. Malawi Med J. 2012;24(3):69-71.
12. Ascari RA, Dumke M, Dacol PM, Maus Júnior S, Sá CA, Lautert L. Prevalência de risco para síndrome de burnout em policiais militares. Cogitare Enferm. 2016;21(2):1-10. http://dx.doi.org/10.5380/ce.v21i2.44610
13. Rocha DF, Cavalcante Neto JLC. A Síndrome de Burnout e os níveis de atividade física em policiais militares ambientais de Alagoas, Brasil. R Bras Qual Vida. 2014;6(1):27-37. http://dx.doi.org/10.3895/S2175-08582014000100004

14. Valle LELR, Malvezzi S. Estresse e distúrbio do sono no desempenho de professores: saúde mental no trabalho [PhD dissertation]. São Paulo: Universidade de São Paulo; 2011.
15. Lima RAS, Souza AI, Galindo RH, Feliciano KVO. Vulnerabilidade ao burnout entre médicos de hospital público do Recife. Ciênc Saúde Coletiva. 2013;18(4):1051-8. http://dx.doi.org/10.1590/S1413-81232013000400018
16. Bernardo MPSL, Pereira EF, Louzada FM, D'Almeida V. Duração do sono em adolescentes de diferentes níveis socioeconômicos. J Bras Psiquiatr. 2009;58(4):231-7. http://dx.doi.org/10.1590/S0047-20852009000400003
17. Pereira EF, Bernardo MPSL, D'Almeida V, Louzada FM. Sono, trabalho e estudo: duração do sono em estudantes trabalhadores e não trabalhadores. Cad Saúde Pública. 2011;27(5):975-84. http://dx.doi.org/10.1590/S0102-311X2011000500015
18. Oliveira KL, Santos LM. Percepção da saúde mental em policiais militares da força tática e de rua. Sociologias. 2010;12(25):224-50. http://dx.doi.org/10.1590/S1517-45222010000300009
19. Garbarino S, De Carli F, Nobili L, Mascialino B, Squarcia S, Penco MA, et al. Sleepiness and sleep disorders in shift workers: a study on a group of Italian police officers. Sleep. 2002;25(6):648-53.
20. Ayala-Guerrero F, Aguilar AR, Medina GM. Mecanismos reguladores do ciclo sono-vigília. Translation: Angel Roberto Barchuk. In: Reimão R, Valle LELR, Valle ELR, Rossini S, editors. Sono e saúde: interfaces com neurologia e psicologia. São Paulo: Novo Conceito; 2010.
21. Everding B, Hallam JE, Kohut ML, Lee DC, Anderson AA, Franke WD. Association of Sleep Quality With Cardiovascular Disease Risk and Mental Health in Law Enforcement Officers. J Occup Environ Med. 2016;58(8):e281-6. https://doi.org/10.1097/JOM.0000000000000814
22. Bond J, Hartley TA, Sarkisian K, Andrew ME, Charles LE, Violant JM, et al. Association of Traumatic Police Event Exposure With Sleep Quality and Quantity in the BCOPS Study Cohort. Int J Emerg Ment Health. 2013;15(4):255-65.
23. Bravo DS, Barbosa PMK, Calamita ZC. Ausência por doença na carreira do policial militar. Rev Enferm UFPE. 2017;11(7):2758-64. https://doi.org/10.5205/reuol.10939-97553-1-RV.1107201715
24. Moreno-Jiménez B. Olvido y recuperación de los factores psicosociales en la salud laboral. Arch Prev Riesgos Labor. 2000;3(1)3-4.
25. Neylan TC, Metzler TJ, Best SR, Weiss DS, Fagan JA, Liberman A, et al. Critical incident exposure and sleep quality in police officers. Psychosom Med. 2002;64(2):345-52.

Correspondence address: Maylla Salete Rocha Santos Chaves – Quadra 8, Bloco 4, Apartamento 102, Conjunto Morada Nova – Morada Nova – CEP: 64023-124 – Teresina (PI), Brazil – E-mail: mayllasalete@hotmail.com