Sleep Quality among Federal District Mobile First-Aid Health Workers

Qualidade do sono dos profissionais de enfermagem do serviço móvel de atendimento de urgência

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Como citar:
Silva JSX, Silva RM, Cangussu DDD, Moraes-Filho IM, Perez MA, Proença MFR. Sleep Quality among Federal District Mobile First-Aid Health Workers. REVISA. 2019; 8(3):264-72 Doi: https://doi.org/10.36239/revisa.v8.n3.p264a272

REVISA

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Received: 10/04/2019
Accepted: 10/06/2019

RESUMO

Objetivo: analisar a qualidade do sono dos profissionais da equipe de enfermagem do servico móvel de atendimento de urgência do Distrito Federal. **Método:** pesquisa transversal e quantitativa, realizada em outubro de 2018 junto a 66 profissionais de enfermagem por meio de um questionário sociodemográfico e ocupacional e do Índice de Qualidade do Sono de Pittsburg. Utilizou-se a estatistica descritiva para analisar os dados. **Resultados:** predominaram profissionais que trabalham 40 horas semanais (74,5%), há mais de 11 anos (74,5%), possuem outro vínculo empregatício (74,5%), atuam 12 horas diariamente (74,5%), não utilizam inibidores de sono ou medicações para dormir (74,5%). 56% apresentaram baixa qualidade de sono. Os fatores que mais contribuem para isso são: Sonolência Diurna, Distúrbios do Sono e Duração do Sono. **Conclusão:** os profissionais estão expostos a fatores laborais e demográficos que podem levar a baixa qualidade do sono, com impacto a segurança do paciente e a saúde do trabalhdor.
Descritores: Enfermagem; Sono; Emergências.

ABSTRACT

Objective: to assess the sleep quality among Mobile First-Aid Service workers in the ederal District in Brazil. **Method:** This is a crossectional and quantitative study conducted was conducted among 66 nursing professionals using a sociodemographic and ocupational form and the Pittsburg Sleep Quality Index. **Results:** most of nursing professionals work 40 hours a week (74,5%), for more than 11 years (74,5%), have another job (74,5%), and work 12 hours daily (74,5%). They do not use sleep inhibitors or medication to sleep in (74,5%). 56% of the sample had poor sleep quality that is more affected by Daily Sleepiness, Sleep Disturbances and Sleep Duration. **Conclusion:** nursing team members are exposed to occupational factors that decrease the sleep quality, with a negative impact on patient's safety and workers' health.
Descriptors: Nursing; Sleep; Emergencies.

ORIGINAL

Introduction

Sleep, that important activity required for a number of brain functions, including how nerve cells (neurons) communicate with each other and to remove toxins in the brain that build up while we are awake, aims to protect human being from the damage that naturally occurs during daily activities. Thus, partial sleep deprivation favors the depletion of the eminent psychophysiological health index that can lead to anxiety, insomnia, difficulty concentrating, tension, muscle tension, hypertension and nausea.[1] The sleep time required for adequate organic restoration is an individual component; however, an average of hours of sleep per day is expected for each developmental phase, as follows: newborns = 16 to 18 hours/day; children = 9 to 10 hours/day; adults = 7 to 8 hours/day; and elderly = 5 to 6.5 hours/day. Thus, it is clear that the duration of sleep varies from one person to another according to their age, although some individuals may require a fewer hours of sleep than the average described.[1]

There are five phases (stages) of sleep, namely: 1, 2, 3, 4 and REM (Rapid Eye Movement). Sleep begins in phase 1, going through each step until you reach REM sleep. This cycle restarts every 90 to 110 minutes, and in each phase the brain tends to act differently and each phase plays a different role including essential functions such as memory and concentration. In Phase 1, sleep is lighter and the person can easily wake up, spasms occur. In Phase 2, there is a reduction in wave frequency, which leads to deep relaxation of the body. In Phase 3, the body is in a very deep and deep sleep, with very slow brain waves (delta waves) combined with fast waves. At this stage, it is difficult to arouse the individual and when this phase is interrupted the person may becomedisorientated when awake. In phase 4, sleep is deep and characterized by delta waves in fact, this phase is crucial for the body to be refreshed at dawn, being related to dreams and the rest of the brain of everyday activities. These early stages are relevant for the body to achieve relaxation and release growth hormone (for children and adolescents). Rapid Eye Movement (REM) sleep begins about 70 to 90 minutes after the person is asleep. It refers to the complete rest cycle that maintains the physical, mental and chemical balance of the individual, and concentrates most dreams as well as respiratory and cardiac changes. Deprivation of this sleep phase causes irritability, memory difficulties and depressive symptoms. [2]

Health care workers experience organized shifts, with the same professional acting in different shifts characterized by long working hours without a consistent rest compounded by the notorious responsibility involved in the care of human health. In addition to the factors mentioned before, Mobile Emergency Care Service (SAMU) need rapid action in emergency situations, they must work in difficult to reach places which includes heavy traffic in large cities; each of these factors affects arrival time, impact othe patient's prognosis.[2-3] and also affect the emergency workers sleep patterns.

Faced to this context, the challenge of SAMU nursing professionals, especially those working at night, is to be able to adapt sleep to the rhythm of life and work, because mental distress associated with low quality sleep contributes to negative health outcomes. From these statements, it is possible to understand why many of them show signs of daytime sleepiness, insomnia and decreased work performance, that is, situations that favor the increasingly frequent error in hospitals.[4-6] Thus, the poor sleep quality of SAMU nursing professionals can

impact the quality of service provided, as well as their health and quality of life. In this sense, research shows that people with inadequate amounts of sleep show a decrease in their physical vigor, contributing to their early aging, vulnerability to infections, obesity, hypertension and diabetes.[5-7]

The purpose of this study was to assess the quality of sleep of nursing professionals of a Mobile Emergency Care Service of the Federal District in Brazil+.

Method

This is a cross-sectional, descriptive and quantitative research conducted by the Federal District's Mobile Prehospital Care Service, where the average attendance exceeds six thousand occurrences characterized as clinical, followed by surgical, psychiatric and maternal diseases.

The research population consisted of nurses and nursing technicians who work directly in the prehospital care of a unit of SAMU of the Federal District. This study included all nursing team professionals linked to the institution studied during the study and data collection. This research excluded any professional who were on leave of any kind.

Data collection was performed in October 2018, where information was collected through self-applicable instruments: Questionnaire to describe the socio-demographic and occupational profile and the Pittsburg Sleep Quality Index (IQSP). These instruments were delivered to employees who agreed to participate in the research by signing the Informed Consent Form (ICF).

The sociodemographic and occupational questionnarie involved the following variables: age, sex, marital status, presence of children, academic background, professional category, length of work, educational level, weekly workload, work regime (partial or full), number of how many job numbers, workload of the other job, total monthly income received in minimum wages, sufficiency of monthly income for maintenance, last year's leave, working time, daily workday, substance use to inhibit sleep and sleep substance consumption.

The Pittsburgh Sleep Quality Index (SSQI) was created to assess sleep quality and was validated in 1989 for sleep disordered patients, being then validated for Brazilian reality in 2008.[8] In this instrument, there are ten questions, as follows: open question one to four; and five to 10- half open. These questions are listed in seven components as follows: Subjective sleep quality (Question 6); Sleep Latency (Questions 2 and 5a); Sleep Duration (Question 4); Habitual sleep efficiency (Questions 1, 3 and 4) Sleep disorders (Questions 5b to 5j); Use of sleeping medications (Question 7); daytime sleepiness and daytime disorders (Questions 8 and 9). The overall score is generated by the sum of the score of each component, which has a weight ranging from 0 to 3. Thus, the maximum possible value is 21 points, and the higher this score, the worse the sleep quality.[8] Question ten is characterized by being optional and was not considered in this research. However, the criterion for establishing the global score was considered from the sum of the scores of each component, where it has a relevant weight ranging from 0 to 3.. As for the scores higher than five points indicate a poor quality compared to the sleep pattern, requiring the conversion of the answers achieved in each question making the use of a Likert scale, following the instructions sought in research with health professionals.[8]

To establish the organization and analysis criteria of the collected data, an Excel database (Office 2007) was created using the Statistical Package for Social Science (SPSS), version 17.0. Qualitative variables were described as absolute (n) and percentage (%) values. Quantitative variables were exposed in descriptive measures: minimum and maximum values, mean and standard deviation.

Authorization for this research was obtained from each of the participating organizations and later submitted, via Brazil platform, for consideration by the Research Ethics Committee (CEP) of the Faculty of Science and Education Sena Aires (FACESA); the study was approved under protocol number 2.870. .584. In addition, in compliance with the Guidelines and Regulatory Standards for Research Involving Human Beings (Resolution CNS 466/12), participants completed an Informed Consent Form approved by the CEP.

Results

One hundred surveys were distributed among the target population and 66 were returned for a 66% return rate. Thirsty-seven nurses and 29 nursing technicians participated in the study. Table 1 presents the sociodemographic data of nursing professionals in prehospital care.

Table 1 – Sociodemographic characteristics of nursing professionals in prehospital care. Goiás, 2018

Variable*	n	%
Age		
31 to 40 years	27	40.5%
Sex		
Male	41	62.5%
Marital Status		
Single	30	45.5%
Married	20	30.5%
Do you have children?		
Yes	43	65.5%
Education		
College	66	100%

* Only the predominant category for each variable is presented.

Table 1 shows a predominance of professionals aged between 31 and 40 years (40.5%), male (62.5%), single (45.5%), with children (65.5%). and with 3rd degree (100%). The occupational characteristics of nursing professionals in prehospital care are presented in Table 2.

Table 2 - Occupational characteristics of nursing professionals in prehospital care. Goiás, 2018.

Variable*	n	%
Professional Category		

Nurse	37	56,5%
Working time		
11 to 20 years	49	74,5%
Education		
Undergraduate	39	59,5%
Graduate	24	36%
Monthly time load		
40 hours	49	74,5%
Work regime		
Full time	53	80,5%
More than one job		
Yes	49	74,5%
Total month income		
7 to 10 minimum wages	53	80,5%
Sufficient monthly income for maintenance		
Yes	53	80,5%
Vacation in the last year		
Yes	49	74,5%
Work shift		
Morning	21	31,5%
Evening	25	37,5%
Daily workload		
12 hours	49	74,5%
Consumption of sleep-inhibiting substances		
No	49	74,5%
Sleep Substance Consumption		
No	49	74,5%

*Only the predominant category for each variable is displayed.

Results indicate that 56.5% are nurses, 74.5% have been working at SAMU for more than 11 years, 59.5% are graduates, with a weekly workload of 40 hours (74.5%). and under the full work regime (80.5%). Most emergency care professionals are employed by another service (74.5%), receive between 7 and 10 minimum wages (80.5%)(One minimum wage is About 200 dollars) and consider their income sufficient to maintain them (74.5%). 74.5% took vacations in the last year, 37.5%, work in the daytime and 74.5% do daily work of 12 hours / day. 74.5% do not use any medication to inhibit sleep and 74.5% do not use sleeping substances. Table 3 presents the descriptive measures for the IQSP components.

Table 3- Descriptive measures for PSQI's components. Goiás, 2018.

Component	Minimum	Maximum	Mean	Standard Deviation(SD)

Subjective Sleep Quality	0.00	3.00	0.96	1.05
Sleep Latency	0.00	3.00	1.28	1.00
Sleep Duration	0.00	3.00	1.43	0.93
Habitual sleep efficiency	0.00	3.00	0.77	1.06
Sleep Disorders	1.00	3.00	2.34	0.59
Use of sleeping medications	0.00	3.00	0.28	0.83
Daytime Sleepiness	1.00	3.00	2.56	0.55

Considering that the SSQI has the inverse scale, it can be seen above that the factors that most contribute to the decrease in sleep quality are: Daytime Sleepiness (Mean = 2.56; SD = 0.55), Sleep Disorders (Mean = 2.34; SD= 0.59) and Sleep Duration (Mean = 1.43; SD= 0.93). In addition, in the overall analysis of the score, it is observed that 56% of nursing professionals have poor sleep quality.

Discussion

In the present study, there was a predominance of professionals aged between 31 and 40 years (40.5%), male (62.5%), single (45.5%), with children (65.5%) and with graduate degree as level of education (100%). Similar results were found in other studies.[9-12]. Historically, nursing is observed as a profession exercised by women, which is reinforced by data from the Order of Nurses (2012)[13], However, in this study, there was a predominance of men, which may be related to the type of service evaluated and the growth of the number of men in the nursing profession over the years.

The predominance of single workers with children is an aspect that can facilitate the performance of their duties in the service, because the emotional relationship with the child, even without the daily living of the mother, can play a social support role in coping with the labor demands. In addition, the fact that they have children but are single, often living with their parents, promotes a division of responsibilities, reducing stress and thus reducing the risk of poor sleep quality.[1,10,13]

We found that 56.5% of respondents are nurses, work for more than 11 years at SAMU (74.5%), on a 40-hour weekly basis (74.5%), have another job (74.5%) , took vacations in the last year (74.5%), receive between 7 and 10 minimum wages (80.5%) and consider their own income for their maintenance (74.5%). In this sense, it is noteworthy that nurses accumulate work bonds and, therefore, perform long daily work hours. The accumulation of hours worked can positively reflect the monthly income received and thus contribute to the satisfaction of the professional with it, but has a negative impact on the sleep quality of professionals.[1,13] About this, research points out that double-shift nurses eventually develop primary insomnia, which can cause adverse effects, including drowsiness and fatigue during the first hours of work[1]

Findings from this study suggest that nursing professionals perform most of their functions during the day (37.5%) meaning their circadian rhythm may be affected each time they have a shift change at work. Depending on the frequency

of those changes their job performance may be affected. Despite the demands on their time and the need to achieve the recommended number of sleep hours, respondents in this study reported that do not use sleep inhibitors (74.5%) and do not use sleeping pills (74.5%). However, we observed that daytime sleepiness, sleep disorders and sleep duration are the factors that most contribute to the decrease in sleep quality of nursing professionals. This is reinforced by the findings of a survey of 233 Thai nurses in which an average daily sleep of 6.2 hours was observed, 76.9% had short sleep duration and 49.5% had excessive daytime sleepiness.[4] Therefore, rest time, the presence of disorders that may affect sleep time and also its general quality, as well as daytime sleepiness are elements that contribute to poor sleep quality in Brazilian and foreign nursing professionals, confirming the potential stress of the emergency work context and its interface with the health of nursing professionals.[13-15]

In this research, it was observed that 56% have poor sleep quality. In a survey of nursing professionals from a private hospital in the interior of Bahia, it was found that 88% of nursing assistants and 72% of nurses had poor sleep quality.[14] In a survey conducted with a Texas emergency nurse (United States), poor sleep quality was found in 73.3% of the sample through the PSRI. In addition, poor sleep quality was associated with simple errors during work shift assistance.[15] A study conducted in Chicago (United States) with 605 critical care unit nurses, including urgency, identified 29% of regrets in clinical decisions made, and this variable was associated with higher daytime sleepiness, shorter rest time between shifts and poorer sleep quality.[13] In this context, the emergency service is characterized by work overload, fatigue, the need to make quick decisions and deal with death and acute suffering. This can lead the professional to fatigue, stress at work and trigger a fall in sleep quality, impacting the quality of care, patient safety and physical and mental health.[13]

Conclusion

The working environment of the emergency nursing service has characteristics such as work overload, working long shifts, the need to make quick decisions under pressure and living with suffering and death, which can contribute to the fall in sleep quality of nursing professionals. Faced with this, daytime sleepiness and care errors become a constant in daily work, impacting the health of professionals, the quality of care provided and patient safety.

As it is a case study, we had difficulty to recruit emergency service professionals during the work period, as well as the time available for the development of a research. In addition, this research was conducted with professionals of an emergency service in a region with high demand for care, which may differ from the reality of emergency services available in Brazil.

In this sense, it is suggested to conduct new research that addresses the nursing professionals of the mobile emergency care service in alternative spaces, outside the work period, in order to expand the research sample. In addition, it is important to conduct an analysis of services located in spaces with less demand for care, which will allow us to identify if the reality of work and health of these professionals differs from that found in this research.

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