

Environmental and organizational conditions for napping during night work: a qualitative study among Nursing professionals

Condições ambientais e organizacionais dos cochilos durante o trabalho noturno: um estudo qualitativo entre profissionais de Enfermagem

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ABSTRACT

Background and Objective: Permission to take a nap during the night shift may compensate for shorter daytime sleep duration at home and improve alertness on the job. This study aimed to describe the importance of napping and characterize the environmental and organizational conditions of taking a nap during a night shift.

Methods: This is a qualitative study in which 20 registered nurses and nurse assistants of a hospital in the city of São Paulo were interviewed.

Results: The results showed that, despite the permission to nap, the occurrence of napping depended on the workload. Although there was a location designated for napping, there was insufficient space and couches for everyone. In this event, many workers improvised other locations to nap. Although the conditions were not always adequate, participants reported napping/rest as an important factor for physical and mental rest and for maintaining alertness during the night shift. **Conclusions:** The statements of the participants emphasize that, in order to obtain satisfactory benefits from napping, adequate conditions for this purpose should be implemented.

Keywords: Night work; Work schedule tolerance; Nursing staff; Sleep deprivation; Arousal; Shift work; Working environment; Workload; Sleep disorders; Circadian rhythm

RESUMO

Objetivo: A permissão para cochilar durante o trabalho noturno pode contribuir para compensar a reduzida duração de sono em casa e melhorar o estado de alerta durante o trabalho. Os objetivos deste estudo foram conhecer as condições ambientais e organizacionais do cochilo e a sua importância durante o trabalho noturno entre profissionais de Enfermagem. **Métodos:** Trata-se de um estudo qualitativo, no qual 20 entrevistas foram realizadas com enfermeiras e auxiliares de enfermagem de um hospital da cidade de São Paulo. **Resultados:** Os resultados mostraram que, apesar da permissão para o cochilo, a sua ocorrência dependia da demanda de trabalho. Havia uma sala destinada para cochilar, mas não havia espaço e poltronas disponíveis para todos. Neste caso, muitas trabalhadoras improvisavam outro local. Embora nem sempre em condições adequadas, as participantes relataram que

cochilar/descansar é importante para o descanso físico e mental e para manter o alerta ao longo da noite de trabalho. **Conclusões:** Os relatos das participantes reforçam que, para que os benefícios dos cochilos sejam obtidos satisfatoriamente, também é importante que sejam implementadas condições adequadas para a sua ocorrência.

Descritores: Trabalho noturno; Tolerância ao trabalho programado; Recursos humanos de Enfermagem; Privação do sono; Nível de alerta; Trabalho em turnos; Ambiente de trabalho; Carga de trabalho; Trans-tornos do sono; Ritmo circadiano

INTRODUCTION

Health services are available to the population 24 hours a day. For this reason, hospitals have adopted continuous shift work schedules in which employees work in shifts, covering the day and night periods, seven days a week throughout the year. Professionals who are assigned to night shifts suffer several consequences to their health and well-being due to the maladjustment of their biological rhythms⁽¹⁾. Individuals who work during night shifts are clearly affected by nighttime sleep deprivation⁽²⁾.

Night shift nurses often experience a significant lack of sleep hours each week, which leads to increased sleepiness and, at long term, contributes to increased symptoms of fatigue⁽³⁾. Among nurses and Nursing assistants who work during night shifts, the quality of nighttime sleep on their days off is better than the quality of daytime sleep on work days⁽⁴⁾. This night sleep deprivation may compromise not only the health of workers, but also the quality of patient care. The accumulation of multiple jobs is another characteristic of Nursing, adding to the duration of the work day⁽⁵⁾, with possible effects on sleep.

In this context, several intervention methods have been proposed in the literature with the aim of raising the alert-

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There is no conflict of interest in this study.

Received: December 14, 2009; Accepted: March 18, 2010

ness of night shift employees, including interventions with bright light ⁽⁶⁾ and the use of caffeinated beverages ⁽⁷⁾. Permission to nap during the night shift ⁽⁸⁾ is a strategy that seeks to minimize sleep complaints.

A study ⁽⁹⁾ with nurses and physicians showed that napping during the night shift improved their performance and decreased fatigue at the end of the work day. Napping during the night shift was also associated with reduced sleepiness during the shift among nurses ⁽¹⁰⁾. Another study ⁽¹¹⁾ showed that the nurses who took naps during the night shift had the same total amount of sleep as the day shift workers.

Thus, given the benefits of naps during night shifts and the lack of qualitative studies in this area, the current study aimed to understand the importance of napping and to characterize the environmental and organizational conditions that are favourable or unfavourable to napping during the night shift among the Nursing staff at a hospital in São Paulo.

METHODS

Sample population

This study included 20 female Nursing professionals (assistants, technicians and registered nurses) who worked during night shifts (19h to 7h) in a hospital in São Paulo that allows napping during the night shift.

The mean age of study participants was 37 years (SD=7 years old). Most of them (60.0%) had College degrees, 55.0% were married, 35.0% were single and 10.0% divorced. Half of the interviewed individuals were nurses and the other half were assistants or nurse technicians; 85.0% reported having only one job. The working schedule consisted of 12 hours of night work followed by 36 hours off. There were 6 or 7 nights of work every 14 days.

The studied sectors were: emergency rooms, adult intensive care unit, maternity, medical-surgical clinical unit and pediatrics wards.

Interviews

When aiming to understand and interpret a particular phenomenon in terms of the meanings that people attach to it, it is vital to perform qualitative research ⁽¹²⁾.

In this study, semi-structured interviews were recorded with permission and transcribed for later analysis.

The developed interview script was previously tested in a population similar to that of the current study. The questions used were: 1) Is it important for you to nap? Why? 2) How is napping time organized in your sector? What do you think about this napping time organization? 3) Could you describe the place where you usually take the nap? I would like you to describe this location exactly in terms of lighting, noise, ventilation, temperature, privacy and comfort in general.

The study sample was selected according to convenience, depending on the availability of the professionals to participate in interviews, because they were held at the hospital during night shifts.

Data analysis

Interviews were analyzed according to the method of "Collective Subject Discourse" (CSD). Using this technique, it was possible to select the individuals' key expressions and central ideas from each answer ⁽¹³⁾. CSD is a methodological tool that is capable of depicting the social representations of a particular group ⁽¹³⁾.

The key words are verbatim transcripts or excerpts of the speech of each individual. They reveal the essence of the testimony or of the discursive content of the segments in which the statement is divided ⁽¹⁴⁾.

The central idea can be understood as a summary of the individual's statement. Therefore, the central idea of a speech is not an interpretation, but rather a description of the meaning of a statement or a set of statements ⁽¹⁴⁾.

For the development of collective subject discourse, all of the key expressions comprised by the same central idea were grouped together.

Ethical principles

This study was approved by the Research Ethics Committees of the School of Public Health of Universidade de São Paulo (USP) and of the University Hospital where the research was carried out. The workers were informed about (i) the research objectives, (ii) their freedom to refuse to participate in the study without prejudice toward their professional activity and (iii) the guarantee of the confidentiality of the results. The Nursing professionals who were invited to participate signed a consent form that was drafted in accordance with the ethical principles described in Resolution 196/96 from the Brazilian Ministry of Health.

RESULTS

Collective Subject Discourse (CSD)

Below, we present the results of the three analyzed questions and their central ideas (CI):

Question 1 (Is it important for you to nap? Why?) generated three central ideas, here defined as CI-A, CI-B and CI-C.

CI-A: Napping is important because it provides rest, increases attention, and reduces fatigue and the risk of errors.

CSD - Central Idea A: "It is important because it somewhat decreases fatigue. There are moments when I'm very sleepy and, when I rest a bit, I get better. Sometimes, when you cannot nap due to the workload in the sector or because

we work with a reduced number of employees, I realize that I'm more distracted. The risk of a mistake due to sleep is very great because of distraction. There comes a time when fatigue is really intense. Sometimes I read something and I cannot understand what I'm reading. So you have to stop in order to have a mind-rest as well. When I work twelve hours straight, sometimes I cannot even assimilate what I have been doing."

CI-B: Napping is important because it is a physiological need.

CSD - Central Idea B: "Napping is important because we are human beings; we need to rest even if just for half an hour, because the night was made for sleeping. There are people who work every night and sleep during the day. But sometimes, (these people) cannot sleep because during the day the sleep-wake cycle changes a lot, so it is important to rest during the night."

CI -C: Napping is not important, but resting is.

CSD - Central Idea C: "For me, it is not important to nap because napping will not solve much. But it is important to have a peaceful environment where you can restore some of the energy lost during the shift. It is important to close your eyes, rest, stretch your legs, even if you don't sleep. This helps to reinvigorate, even if not for long. On very busy nights when there is no rest, your day is very cumbersome."

Question 2 (How is napping time organized in your sector? What do you think about this napping time organization?) generated four central ideas, here defined as CI-A, CI-B, CI-C and CI-D.

CI-A: I like the organization of napping schedules because we share in accordance with each person's fatigue and we do not leave anyone alone on duty.

CSD - Central Idea A: "I think it's good because we share the time of the nap in accordance with each person's fatigue. It is usually organized into two periods: half of the staff rests in the first half, and the remainder in the second. If there are a large number of employees, the rest is divided into three periods. We divide the napping time according to the needs of the employee. This is good because not everyone will nap at the same time, so the sector is not empty. Because if suddenly there is a complication, being alone is complicated, it is important to have another colleague to help. It is a commitment among all."

CI-B: I like the organization of the napping schedule, but I think they should increase resting time.

CSD of Central Idea B: "I think the organization is good, although I think the hospital should allow a little ex-

tra resting time for those who work at night because we get very tired. One hour is too little."

CI-C: I like the organization of napping schedules, but I think it should be something more formal.

CSD of Central Idea C: "We even have the time to rest, but it seems as if it is always furtive. Sometimes we even get insecure about the boss coming in. He knows that we take time to rest, but we still feel terribly ashamed. It is embarrassing; everyone knows that it happens in all sectors across the hospital. It seems like we're doing something wrong, even though we know it is not. If someone is resting, it is because they actually can do it."

CI-D: I don't like the napping schedules because there is no predefined time and there is not always time to rest.

CSD of Central Idea D: "It's disorganized because there is not an exact time and we cannot always rest. The schedule is defined by the head nurse. Since it depends on the shift, the type of patient, the team and the sector, it is not always possible to rest. There are shifts when you cannot even sit down. The priority is to work. There is no strict organization, where you would rest in a particular period of time. If one is scheduled for a time, but had to give medication or the patient called, then we cannot rest in our schedule. So we will not rest at all. I think we should really have a standard schedule, 'on the clock' for everyone. However, we do work, many times, understaffed."

Question 3 (Could you describe the place where you usually take the nap? I would like you to describe this location exactly in terms of lighting, noise, ventilation, temperature, privacy and comfort in general) generated three central ideas, here defined as CI-A, CI-B and CI-C.

CI-A: The place where I rest is comfortable.

CSD of Central Idea A: "We, here at the hospital, have a rest area where there are reclining sofas, a private restroom and two seats. It is very quiet, comfortable and darker than the other places. In the rest room, the light is very soft and it has two areas: one with a television, and others only with sofas for those who like to sleep in the dark. The room has air conditioning, and we can warm up when it is very cold, it feels good for resting. I think it's a very quiet place, with comfort, appropriate to sleep quietly."

CI-B: The place where I rest is not comfortable.

CSD of Central Idea B: "It's not a comfortable place. The hospital even has a proper place to rest, but it has few sofas for the number of employees. There is no privacy. It is mixed, males and females, from all sectors. It has an elevator

nearby, so you have a lot of noise of people coming in and out. Often, there is no seat available, so we rest in any unoccupied office or room. In these places, you can be called back to work at any time. Also, there's no bed, we stretch a little on the couch or reclining seats; that is, we do not lie down. Sometimes we lay on stretchers, mattresses, or even on the floor, where we lie on a sheet. It's all improvised. There are rooms that do not have adequate ventilation, no windows. Then it gets hot, stuffy. And there is a lot of noise, people coming in all the time. We end up not resting, but instead, as we usually say, just stretching our legs."

CI-C: I don't know because it has been a while since I've rested.

CSD of Central Idea C: "I don't know because it has been a long time since I've rested."

DISCUSSION

The analysis of the importance of napping during night jobs presented the following ideas: napping is important because it provides rest and alertness, reduces fatigue and the risk of errors, and is a physiological need. These statements resemble the research report presented at the 2008 annual meeting of Associated Professional Sleep Societies (APSS). In the report, nurses reported that short naps (of 20-30 minutes) were sufficient for improving alertness, presenting a restorative function⁽⁸⁾.

During night work, sleepiness and fatigue can reduce the attention of workers and lead them to mistakes. A study conducted with nurses who worked during the night shift for longer than a year showed that they were at a higher risk for work injuries with medical leaves⁽¹⁵⁾. The feelings of guilt, shame and fear experienced by Nursing staff after the occurrence of errors at work may, in turn, interfere negatively with work⁽¹⁶⁾.

The data from the current study corroborate other findings stating that napping during night work was shown to be an important strategy for increasing the level of alertness among health professionals^(9,10), air traffic controllers⁽¹⁷⁾, factory operators⁽¹⁸⁾ and drivers⁽¹⁹⁾, as well as reducing the occurrence of errors and accidents at work.

Naps, or simply rest, during night shift work was also effective in the reduction of fatigue complaints. These results were also found in studies with physicians and nurses⁽⁹⁾ and computer operators⁽²⁰⁾, in which naps during night shifts were associated with reductions in sleepiness and fatigue complaints.

As described in the literature⁽²¹⁾, napping during the night shift could have the role of "anchor" sleep, which is also quite beneficial for the chronobiological aspect. This confirms the importance of this strategy in minimizing the

symptoms of sleepiness and fatigue caused by the organization of night work, as reported in the statements of the interviewees.

In the current study, the statements did not include reports on the preference for a certain time of the night to nap. Research conducted in a laboratory⁽²²⁾ showed the influence of the nap duration and the time at which it occurred in the performance of night shift workers. Naps that occurred after the middle of the night were considered better in terms of sleep quality than those that occurred earlier in the night. However, performance was found to be worse after later naps due to sleep inertia⁽²²⁾. Results of other experimental research⁽²³⁾ showed that alertness improved with a nap of 30 or 50 minutes at different times during the night shift. These conflicting results show that there is no consensus in the literature about the best time and duration for a nap during the night shift.

Concerning the environment in which the naps occurred, we observed positive and negative statements. The absence of beds, lack of privacy, inadequate ventilation, presence of light and noise were factors considered negative by several interviewees. However, other workers did not mention these factors and were satisfied with the designated napping location.

Individual differences in the perception of working conditions and the tolerance to night work⁽²⁴⁾ may be one explanation for these seemingly contradictory discourses. For this reason, rest areas of only average quality may not meet everyone's needs. It is important to support nurses and provide comfortable environments in order to provide them the necessary rest during the night shift⁽²⁵⁾.

Regarding the scheduling of naps, as noted in a previous study conducted in São Paulo⁽¹⁰⁾, we found that Nursing teams take turns in groups such that their work sector is not understaffed. Several interviewees complained about the informality of naps despite being allowed. Similar statements were also reported in a Canadian study⁽²⁵⁾ in which several nurses reported that they felt tired, but were afraid to take a nap.

Permission for Nursing teams to nap during night work remains controversial, mainly because this group of workers deals with continued assistance to patients. As the demands of night jobs are often considered to be lesser than those of day jobs, the number of employees is typically reduced in the night shift⁽²⁶⁾. This reduction complicates the organization of napping during working hours. Therefore, aspects of the organization of work must be considered so that they may be used in Nursing teams' discussions about the regulation of nap during night work.

The statements suggest that several aspects of night time rest/naps should be improved. Environmental factors (venti-

lation, lighting, and noise), location of the room (away from the sector area), and lack of time (depending on the demands that prevent workers from leaving the workplace) were some of the impediments to achieving satisfactory naps.

In view of these reports, it is important that aspects of the physical and organizational environment are taken into account when planning the nighttime naps in hospitals. Simply offering a place to rest is not sufficient for obtaining the benefits of the nighttime nap on the work environment.

Study limitations

The interviews in this study were not analyzed according to sector and job function. Because these variables could have an important role, especially in regard to the perception of the site and schedule of naps, future studies should evaluate the influence of function and sector.

ACKNOWLEDGMENTS

We thank Professor Fernando Lefèvre for his assistance during the initial phase of this study, suggesting the script of the interview.

The author Aline Silva-Costa is sponsored by FAPESP (2008/51616-3); Roberta Nagai was sponsored by CAPES during her Doctoral studies; Milena Maria de Araújo was sponsored by CNPq/PIBIC; Frida Marina Fischer receives productivity Grant IB from CNPq.

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