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## SYSTEMATIC REVIEW OF LITERATURE

As produções científicas sobre o trabalho noturno na enfermagem: uma revisão de literatura

Scientific production about night shift work in nursing: a review of literature

La producción científica acerca del trabajo nocturno en enfermería: una revisión de literatura

Marluse Silveira <sup>1</sup>, Silviamar Camponogara <sup>2</sup>, Carmem Lúcia Colomé Beck <sup>3</sup>

### ABSTRACT

**Objective:** recognizing the scientific productions that approach night shift work carried out by the nursing staff in hospitals. **Method:** this is a bibliographic, narrative, exploratory and descriptive research. The search was developed in the Virtual Health Library, from July to August 2012. **Results:** studies point to the fact that most workers are married women with spouses and/or children, who have to do housework and deal with their profession, in one or two jobs. Despite of the negative repercussion of the night shift work upon the health of the workers, they often do this shift because of their choice/personal need or professional and not by imposition of the institution. **Conclusion:** there is a growing interest in this topic, mainly in terms of repercussions of this work shift for the health of nursing professionals. It should be highlighted that it is fundamental to reduce these repercussions, as well as to diminish the hospitalization rates in a way to contribute for the promotion of health and satisfaction at work. **Descriptors:** Nursing, Night shift work, Circadian rhythm, Worker's health.

### RESUMO

**Objetivo:** conhecer as produções científicas que abordam o trabalho noturno realizado pela enfermagem em instituições hospitalares. **Método:** trata-se de uma pesquisa bibliográfica, narrativa, exploratória e descritiva. A busca foi realizada na Biblioteca Virtual de Saúde nos meses de julho e agosto de 2012. **Resultados:** os estudos apontam que a maioria destes trabalhadores são mulheres casadas ou com companheiros e/ou filhos, que se dividem entre as tarefas do lar e profissionais em um ou dois empregos. Apesar de o trabalho noturno repercutir negativamente na saúde dos trabalhadores, estes frequentemente estão neste turno por escolha/necessidade pessoal ou profissional e não por imposição da instituição. **Conclusão:** há crescente interesse na temática, principalmente em relação às repercussões desse turno de trabalho para a saúde dos trabalhadores de enfermagem. Ressalta-se que minimizar estas repercussões é fundamental, assim como reduzir os índices de adoecimento, como forma de contribuir na promoção da saúde e satisfação no trabalho. **Descritores:** Enfermagem, Trabalho noturno, Ritmo circadiano, Saúde do trabalhador.

### RESUMEN

**Objetivo:** conocer las producciones científicas que enfocan en el trabajo nocturno realizado por las enfermeras en los hospitales. **Método:** se trata de una investigación bibliográfica, narrativa, exploratoria y descriptiva. La búsqueda se realizó en la Biblioteca Virtual de Salud en Julio y agosto de 2012. **Resultados:** estudios muestran que la mayoría de estos trabajadores son mujeres casadas o con parejas y/o niños, que están divididas entre las tareas de casa y profesionales en uno o dos puestos de trabajo. A pesar del trabajo nocturno reflejar negativamente en la salud de los trabajadores, a menudo están en este turno por elección / necesidad personal o profesional y no por imposición de la institución. **Conclusión:** existe un creciente interés en el tema, sobre todo en relación con el impacto de este turno de trabajo para la salud de los trabajadores de enfermería. Es de destacar que minimicen estos efectos es esencial, así como reducir la incidencia de la enfermedad como una contribución en la promoción de la salud y la satisfacción en el trabajo. **Descritores:** Enfermería, Trabajo nocturno, Ritmo circadiano, La salud del trabajador.

◆ Nursing, Master in Nursing. Nursing of University Hospital of Santa Maria. E-mail: lussisilveira@yahoo.com.br 2 Nurse. PhD in Nursing. Professor at the Department of Nursing and PPGEnf/UFMS. Member of the Research Group Work, Health, Education and Nursing. Santa Maria, RS, Brazil. E-mail:silviaufsm@yahoo.com.br 3 Nurse. PhD in Nursing. Professor at the Department of Nursing and PPGEnf/UFMS. Member of the Research Group Work, Health, Education and Nursing. Santa Maria, RS, Brazil. E-mail: carmembeck@gmail.com.br

## INTRODUCTION

**H**uman work has taken different dimensions in the course of history. Since its beginnings in what was seen as painful and strenuous activity exercised by slaves, as condemnation of warriors who lost fights, for the poorest people or those who were being punished by the gods, to the present in guiding the time and life of people. It can be said that our life stories are mixed with stories of our professional make.<sup>1</sup>

It is considered a mediator of social integration, both for its cultural as economic value, decisively influencing the way of life as well as the physical and mental health.<sup>2</sup> Thus, the occupation is not only a way to make a living, but also a form of social inclusion, and sometimes suffering generator factor, weakening, aging and illness.<sup>3</sup>

From the advent of electric light at the end of the nineteenth century during the Industrial Revolution, the nighttime came to be used more intensively, such as working hours by employees, mainly in factories. Since then, night work is being consolidated, and causes increasingly, we want a society in full operation 24 hours a day.<sup>4</sup>

In this context, it can be said that the health professions are used of night work from its origins. Regarding nursing profession, especially when it started to be developed in hospitals, providing care to patients 24 hours a day, needed to have a significant number of nursing workers developing their working hours in the night shift.<sup>5</sup>

It is understood by urban night worker who carries out his activities in a fixed shift that, by the Brazilian Constitution of 1988, should take place from the 22:00 until 05:00 am of the next day. According to article 7, section IX, of Brazil's 1988 constitution, the compensation of night work should be higher than the daytime.<sup>6</sup>

The Decree-Law No. 5452, May 1<sup>st</sup>, 1943, approving the Consolidation of Labor Laws (CLT), establishes, regarding remuneration, in Article 73, Paragraph 1 that the night hour lasts 52 minutes and 30 seconds. This is that, working seven hours at night, it receives payment for eight hours. In addition, the legislation establishes the night shift add, which constitutes a 20% increase for night time on the amount paid for the daytime, except in cases of weekly or biweekly relay.<sup>7</sup> Since the legal regime of the civil servants union, municipalities and federal public foundations, according to the law n° 8112, of December 11<sup>th</sup>, 1990, Article 75, provides for the night shift to order a 25% increase over the value of the daytime hours with the same qualifications of the CLT regime.<sup>8</sup>

It is reiterated that shift work affects, directly on the health of workers, and a form of temporal organization increasingly used, which provides for economic, technological and care needs. Workers mention that human beings are a species with diurnal and therefore it is

necessary to organic, psychological and personal adaptations that this individual develops their work activities on the night shift. Thus, work at night and sleep during the day leads to situations where the work schedule is in contradiction with the standards set by society and by our body.<sup>4</sup>

It can be said that the night journey is against everyday adopted by society. In general, work at night, produces physical discomforts such as sleep deprivation for long periods, restriction of family and social life, changes in mood and concentration level, and others which appear as factors causing wear and psychological suffering.<sup>2</sup>

Night work is identified as a potentiating implication for workers' health. Work at night promotes changes in the circadian rhythm causing biological, psychological and social changes in the individual.<sup>9</sup> However, night work is not shown by workers of nursing, just as diseases generator and imbalances to their well being. Also they are mentioned favorable factors such as greater interaction with the night work of staff and patients, as it decreases the flow of people in the unit tests and compared to the day shift, making the most quiet and calm environment; there availability of the daytime to study or perform other labor, family and home activities; more time to devote to parenting, financial gain (additional nightly and other jobs).<sup>10</sup>

In this sense, we can point out that shift work has different meanings for each worker. It is contextualized by favorable and unfavorable factors, and may be moved by the pleasure and satisfaction of working this turn or the financial need to keep in one or more jobs.<sup>3</sup> However, knowledge about the repercussions of the work at night for health and life of nursing workers can help building strategies to minimize the negative effects of night work and improve the quality of life of workers.

Therefore, this study had the guiding question: "What has been produced scientifically by Nursing on night work?" The research aimed to: recognizing the scientific productions that address night work performed by nurses in hospitals.

Recognizing the scientific productions that approach the night work done by nurses in hospitals.

## METHOD

It is a bibliographical, narrative, exploratory and descriptive research. A narrative review of the literature intends to enter data about a given subject. Articles of this kind are broad publications, appropriate to describe and discuss the development of a particular subject, from a theoretical point of view or contextual.<sup>11</sup>

It was used first the Virtual Health Library (BVS), in the database, known as LILACS (Latin American and Caribbean Literature in Health Sciences), MEDLINE (medical literature analysis and retrieval online system) and BDENF (database Nursing). This search occurred between the months of May and June 2012, in which we used the advanced form with the descriptors: night work, shift work, circadian rhythm, nursing and nursing staff after became idiomatic cut (Portuguese or English or Spanish).

It was established as inclusion criteria: research articles in their entirety, available online and free, to answer the main question of this review. And as exclusion criteria any references that were not articles and/or did not contain relevant research data, and they were not complete, online and free. We selected 24 papers to compose the corpus of this study, 20 national and 4 international and all were analyzed in full.

It is noteworthy that the variables used to select the productions were: title, author, subject matter, methodological approach, instrument, analysis method, subject type, year of publication and journal.<sup>12</sup> A descriptive analysis of the material based on thematic content analysis framework was held. The Thematic Content Analysis is a research technique that allows making replicable and valid interpretations about data for a particular context, through specialized and scientific procedures.<sup>13</sup>

## RESULTS AND DISCUSSION

The analysis of 24 scientific publications resulting from the systematic search on night work in nursing pointed that studies mostly have a quantitative approach comprising fourteen studies (58%), followed by qualitative method with nine (38%), and only one study qualitative quantitative (4%).

As for the annual distribution of production, it was found that the studies were published from 1988 to 2011, with intensification of publications over the past decade, accounting for 80% of the total during this period.

Regarding the subject of the studies, there was a predominance of those who nursing staff investigated (58,3%), totaling 14 articles. Those who had as subjects only nurses were seven (29,15%), with academics were two (8,33%) and nursing aides an article (4,16%). Investigations show that these subjects mostly are married or with partners and children, which are divided between the chores of the household and one or two jobs.

From a descriptive analysis of 24 selected articles, it can be seen that there is significant interest in seeking the reasons why nursing workers opt for work in the night shift and on the repercussions of this in the life of these workers.

The studies analyzed reiterates that shift work is inherent in the nursing work mainly hospital for demanding an assist in 24 hours, and sometimes becomes tiring and exhausting the worker.

From the reading of selected productions emerged three categories, namely: "Sleep and physical fatigue and mental nursing in night shift work"; "Perceptions of the nursing staff about the night work 'and' effects on health and quality of life of nursing workers in the night shift."

### 4.1- The sleep and the physical and mental fatigue of nurses in night shift work

The study mentions, mostly to sleep deprivation and the inability to retrieve it the next morning, after working hours, as the main factor of physical and psychological wear of nursing workers performing night scales. The daytime sleep after a night-shift work is fragmented and of poor quality. This sleep fragmentation is given by several factors such as: the need to provide care to others, performing essential tasks in the family and social context and the circadian behavior of sleepiness. These authors reiterate that a night of rest after a night working hours of 12 hours is not enough to recover effectively this sleep debt, primarily as a result of changes in biological rhythms caused and aggravated by this nocturnal wakefulness.<sup>14</sup>

Studies point that working does not reset the lost sleep, after a night of work, often having difficulty sleeping due to insomnia and fatigue caused by lack of adequate rest. When they can stand this is done in the afternoon, since, in the morning, they need to continue the

work day, increasing the risks of accidents and the impact on their health, due to sleep deprivation.<sup>15, 16, 17</sup>

Organic imbalances and changes in sleep pattern, stand out as significant for the physical and psychological wear of workers.<sup>18</sup> Thus, it is understood by ineffective or inadequate sleep who from polysomnography recordings is characterized by short and incomplete periods as the cycles, and many awakenings.<sup>19</sup> In this context, reduced sleep and out of the usual time, causes disorders of circadian making them more susceptible to disease individuals, such as infections, aging, gastric changes, mood (anxiety or depression), memory disturbances and concentration, irritability, impotence, physiological and psychological distress.<sup>17,20</sup>

Regarding the evaluation of sleep quality, the publications emphasize that when this is done in daytime, proves significantly worse compared to the night. In addition, studies show that nurses who work night investigated, showed sleep habits split almost in its entirety<sup>(16,19)</sup>. In this construct, out with concern that 100% of nurses had poor sleep quality, and among nursing assistants this rate reaches 88%.<sup>21</sup> Adding to these data, 72% of nurses and 70% of the auxiliary indicated excessive daytime sleepiness (EDS), after a night of work, 60 to 70% of shift workers report difficulty sleeping.<sup>16,19</sup>

There is existence of greater individual variability in the perception of alertness over the hours on duty. It can be said that with the increase in working hours, there is a gradual decrease alertness and consequently increased risks of accidents and mistakes, especially in jobs where there is greater physical and cognitive demands.<sup>14</sup>

It is emphasized that this drop in alertness is expected, since it is during this period that has the lowest expression of the circadian regulation component of the alert. Added to this increased fatigue and sleep debt, because at the end of the night journey, this worker is reaching one waking time 20-22 hours, counting from his last sleep episode.<sup>14</sup>

Most analyzed studies point to the need for rest during the night working hours, and appropriate environment in order to minimize the risk of accidents, adverse events to patients and health problems of these workers. However, evidence that the rest rooms are uncomfortable, especially in relation to inadequate ventilation, dressing absence, excessive noise, privacy restrictions, since men and women share the same space. They reiterate that do not provide conditions for the realization of the rest, reflecting directly in the care provided and the quality of life of workers, since the double and triple working hours are a reality.<sup>17</sup>

The night rest is provided by law, through Decree-Law nº 5442, May 1<sup>st</sup>, 1943, of the Consolidated Laws Labor, which says that workers in the night shift enjoy the right to rest for at least one hour and a maximum of two hours.<sup>8</sup> It is reiterated that the comfort of this rest environment is viewed by workers as a factor to be considered when thinking about humanization and professional development.<sup>17</sup>

Thus, it is concluded that shift work is a process that affects the life and labor development of the individual. By keeping vigil at night and sleep during the day, the circadian cycle is inverted, causing physiological changes and the worker's personal habits (time of waking, sleeping, eating, practicing physical and leisure activities), social and family, or their way of living. One can elucidate these changes in circadian rhythms cause disorders

in the biological, psychological and social context for nursing workers who develop nighttime working hours.

#### 4.2 Perceptions of nursing workers on night work

The analyzed studies show that the perceptions of the nursing staff on the night shift focus primarily on favorable to list factors that promote satisfaction and losses linked to dissatisfaction to be in this shift.

It is evident that there are facilitators and complicating factors inherent in night work.<sup>10</sup> Regarding the former, the subjects reported having more free time for activities other than labor (when you're rested), able to follow their children's education and care for the home and family, reduce costs as the home of shift work, be able to have another job, increased monthly income with additional nightly, quieter work environment. Among the factors that hinder, they highlighted the daytime sleep without quality, premature aging, mental and emotional exhaustion, impaired social life, social isolation and work, altered mood, difficulty to perform the service (lack in support services).

In this regard, studies meet their data with respect to certain difficulty of workers to realize the implications and meanings of the night journey to their life and work, which sometimes translates into satisfied or not with their work activities. One of the studies show that more than half of employees (55,8%) are dissatisfied with night work and the quality of care they provide<sup>22</sup>, another mentions that most professionals were satisfied in work at night, especially by financial advantages, such as the possibility of having another job, and receipt of additional nightly.<sup>2, 23</sup>

The publications show that the night service nursing workers are this turn by necessity, not by choice (72,5%)<sup>18, 22, 24</sup>, in the case of a permeated option for financial needs is not justified by job satisfaction, as the reality of low wages paid to nursing, which requires them to have more than one job, one of which will need to be at night. More than two thirds perform other activities after the night shift, and of these, 80,85% have another job.<sup>22</sup> Much of workers lay not in the number of hours required to recover from the wear and fatigue of the working day. Only 16,17% of respondents sleep five or more hours the next morning. In addition, the study notes that the number of employees on the night shift is reduced, resulting in workload for those who remain.<sup>18</sup>

One of the publications cited dissatisfaction for 75% of workers with the service, when you make a comparative study between shifts morning, afternoon and night in an institution in which the activities are developed in alternating shifts. To inquire them about the best time to work, 58,3% opted for the morning shift, 41,6% chose the afternoon and no elected the night shift as well to develop their work activities. Maybe this dissatisfaction index, as relevant, in relation to work should the need to perform their workday at night.<sup>16</sup>

In the meantime, it is mentioned that the night working hours, sometimes shows up more painful for women than for men. One of the publications analyzed, found that the (re) organization of daytime routine seems to be more difficult for women who work at night, when compared to men, especially, the role they play within the family and society.<sup>17</sup>

The studies point to the need for further investigations about the perceptions of nursing staff in relation to night working hours, since they have demonstrated difficulties in talking about them, which leads us to think that maybe try to ignore them by the need to maintain this shift.

It is mentioned also that this topic in research is important because shift work is a reality of hospital nursing, since this night journey is the counterpoint of the normal circadian rhythm, which can promote changes in the lives of these workers, bringing them physical, mental, family and social repercussions, and indicate ways for prevention and health promotion of nursing workers.

#### 4.3 Impact on health and quality of life of nursing workers in the night shift

Most analyzed studies show that night-shift workers trivialize the suffering and minimize the impact of this working time in their lives, often motivated by the need to keep it. These studies describe the night shift as a risk factor for the health of workers and it fits the definition of occupational hazard. It is understood by occupational hazard a condition or set of circumstances with the potential to cause adverse effects, such as: death, injury, illness or damage to workers' health, property and the environment.<sup>25</sup>

In this context, night work has been advertised as a continuous, multiple source repercussions for workers' health, such as: changes in periods of sleep and wakefulness (transgressing the rules of human physiological functioning), malaise feelings and fatigue, the biological rhythm disorders, poor posture, overhead skeletal muscle, mental illness and the exacerbation of pre-existing symptoms, infections, premature aging, insomnia, anxiety, changes in emotional state, mood changes (irritability), memory and concentration disorders, gastrointestinal diseases, cardiovascular, body weight increase, constipation, impotence and the like. It is noteworthy, too, losses in the participation of organized social activities, family, marital, etc.<sup>2,9</sup>

There are changes in the quality of life of workers promoted by night work mainly by changes in their circadian rhythm, that impact on physical, psychological and social changes in this population.<sup>18</sup> Reiterate that there are difficulties in adjusting their diurnal adopted by relatives and friends, as well as the inconsistencies affecting the relationship with their spouse and losses in living with the family. It compounded by the increased risk of occupational accidents due to sleepiness and fatigue, as are workers who mostly accumulate more than one job and/or occupation.<sup>18</sup>

Another aspect worth mentioning is concerning impacts on the lives and health of nursing workers who develop 12-hour work days. Although there is no unanimity among the authors of the reports analyzed, it is clear that excess of hours maximizes the effects of workload, contributing to the onset or acceleration disorders and/or diseases, early functional aging, and others. This fact makes urgent careful evaluation of occupational exposure to stressors during extended shifts, as well as possible adverse effects on health and performance of workers.<sup>14</sup>

Stress involving night work results mainly from the incompatibility of the circadian rhythm and changes in social and family life. It adds further that disruption of the circadian



rhythm, added to sleep deprivation and reduced home, impacting negatively on human development, in alertness and well-being.<sup>23, 25</sup>

In contrast, one sleeps during the day, at which the body is prepared for the activities, adding that the company is in full motion, the noise, the daylight contribute to sleep is not restful. This reversal produces serious health problems that often go unnoticed by the workers.<sup>23, 25, 26</sup>

Most studies reiterates that, despite the night shift has a negative impact on workers' health in several aspects, such as: sleep habits and rest, circadian rhythms, metabolism, release of hormones, and others; in family, social relationships, they often work this turn for personal and professional needs, attributed to such a choice, mainly due to family reasons (care of the home and children), financial (need for more than one job and/or additional night) and personal (study during the day or long commute to work).

Therefore, it can be noted from the analyzed productions, a growing interest in researching the impact on the lives of nursing staff promoted by night working hours. It is essential to call the attention of hospitals to this problem and, especially, about the illness rates of these workers according to their work activities.

These institutions need to develop promotional programs, preventive health and quality of life of workers of the night nursing, since it is an uninterrupted assistance. As well as it is of relevance that these workers also develop personal strategies and/or in groups to stay healthy on their workplace as it develops the care to others, often in double and triple working hours in over many years, spending most of their time at work need to cultivate joy and pleasure at work.

## CONCLUSION

It can be seen from this narrative review of the literature, that shift work is inherent in nursing care, especially hospital because it requires attention 24 hours a day. The studies mention the sleep deprivation and the inability to retrieve it the next morning, after working hours, as main factors of physical and mental wear for workers.

It is evident that night work brings multiple effects on the lives of workers. The publications highlight that despite the night work pass sometimes negatively in the health-disease in the family and social relationships of the workers; they often work this turn to meet their personal and/or professional needs. It can be said that these workers find it difficult to perform their activities in this shift, since they are against their circadian rhythm, biological and physiological and, often, the scope of the decisions of their unit and institution.

We emphasize the relevance of this work, as evidenced gaps in scientific knowledge, both nationally and internationally, studies with research data that address the night work, as well as their meanings, feelings and especially research that addresses the strategies used by these workers to stay healthy this shift, since they need to stay in it for a few or many years. It is thought that these studies contribute data, comments and information to facilitate the assembly of institutional programs and personal habits that resonate in the prevention and promotion of health and quality of life of these workers.

It is suggested the production of more studies about the night work as well as its impact on the lives of nursing staff in order that calls the attention of institutions, teams and individual workers to this problem. You see the need to think about institutional and personal strategies that promote the appreciation, motivation, prevention and health promotion of these shift workers.

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Contact of the corresponding author:  
Silviamar Camponogara  
Rua Visconde de Pelotas, 1230/201 - Santa Maria - RS  
CEP 97015-140  
E-mail: silviaufsm@yahoo.com.br