Quality of Life and Sleep of a Multidisciplinary Team in the Burns Treatment Unit of Hospital São Paulo

Qualidade de vida e de sono da equipe multidisciplinar na Unidade de Tratamento de Queimaduras do Hospital São Paulo

Calidad de vida y de sueño del staff multidisciplinar de la Unidad de Tratamiento de Quemaduras del Hospital São Paulo

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ABSTRACT

Background: The aim of this study was to assess the quality of life and sleep of the multidisciplinary team of the Burn Unit. **Methods:** The Short Form-36 Medical Outcomes Survey (SF-36) and Pittsburgh Sleep Quality Index (PSQI) were used in 50 workers. **Results:** The limitation of the physical aspects, the general health, vitality, and limitation of social and mental health were significantly correlated with sleep ($p<0.05$). **Conclusions:** The work environment is not conducive to workers' self-care; rather, it is a mobilizing place for emotions and stress.
KEYWORDS: Sleep. Interdisciplinary Health Team. Workers Health. Questionnaires. Burn Units.

RESUMO

Introdução: O objetivo foi avaliar a qualidade de vida e do sono da equipe multidisciplinar da Unidade de Tratamento de Queimaduras. **Métodos:** O questionário Short Form-36 Medical Outcomes Survey (SF-36) e o Pittsburgh Sleep Quality Index (PSQI) foram utilizados em 50 trabalhadores da unidade. **Resultados:** A limitação dos aspectos físicos, da saúde geral, da vitalidade e da limitação da saúde social e mental foram significativamente correlacionada com o sono ($p<0,05$). **Conclusões:** Esse ambiente de trabalho não é propício para o autocuidado dos trabalhadores; ao contrário, é um lugar de mobilização para emoções e para o estresse.
DESCRITORES: Sono. Equipe de Assistência ao Paciente. Saúde do Trabalhador. Questionários. Unidades de Queimados.

RESUMEN

Objetivo: El objetivo fue analizar la calidad de vida y sueño del staff multidisciplinar de la Unidad de Tratamiento de Quemaduras. **Método:** El cuestionario Short Form-36 Medical Outcomes Survey (SF-36) y el Pittsburgh Sleep Quality Index (PSQI) fueron utilizados en 50 trabajadores de la unidad. **Resultados:** La limitación de los aspectos físicos, salud general, vitalidad y limitación de salud social y mental fueron significativamente interrelacionados con el sueño ($p<0,05$). **Conclusión:** Este ambiente de trabajo no es propicio para el cuidado personal de los trabajadores; sino que al contrario, es un lugar de Movilización para emociones y para el estrés.
PALAVRAS CLAVES: Sueño. Grupo de Atención ao Paciente. Salud Laboral. Cuestionários. Unidades de Quemados.

INTRODUCTION

The burn is considered a tragedy in the lives of the patients and their families, meaning for health professionals one of the biggest challenges of hospital care[1]. The pain of the burn is terrible for those who feel it and stressful for caregivers[2]. During treatment, workers experience the challenge of caring, face harsh environments, generally warmer, to perform their work which result in uncomfortable conditions for multidisciplinary teams[3]. Furthermore, they assist in alleviating the client's pain and sorrow, learning to live with intense sadness, trauma, discomfort, confused feelings, irritability, tension, anger, depression, abstinence syndrome, aggressiveness, stress, physical and psychological exhaustion[2]. In multidisciplinary teams, inter-professional relations or interlinks with coworkers and with patients should be considered in order to understand the health aspect on the behavior of the patients professionals in relation to the workplace and social life.

The Burn Unit of Plastic Surgery Division provides patient care 24 hours a day, every day of the week, without administrative withdrawal. Employees are divided into shifts, so that services can be provided day and night unabated. In this context, the need to apply questionnaires that address various aspects essential to health, such as quality of life and sleep was observed.

This relatively unexplored subject does not have a great amount of scientific evidence able to respond to questions pertaining to Occupational Health in the hospital environment. The literature presented studies assessing quality of life and sleep, particularly in specific groups of health professionals such as nurses and doctors. However, an analysis of two aspects, through the applicability of the questionnaires Short Form-36 (SF-36)[4] and Pittsburgh Sleep Quality Index (PSQI)[5] individually, with a multidisciplinary team in the context of collective work was not found.

One reason for the increase of research on the topic of professional workers' quality of life and sleep is due to the negative impact of morbidity resulting from lifestyle and inadequate occupational conditions that affect the welfare of employees in the functioning and effectiveness of organization[6].

The aim of this study was to assess quality of life and sleep in the multidisciplinary team of the Burn Unit.

METHODS

Study design

This is an individual, observational, cross-sectional and analytical study.

Place

This study was performed at the Burn Unit of Plastic Surgery Division, Department of Surgery of EPM/UNIFESP.

Sample

A sample of 50 workers (doctors, nursing staff – including nurses, nursing assistants, nursing technicians – and others) was selected to comprise the multidisciplinary team of the Burn Unit in this study. The subjects were selected according to the following inclusion and exclusion criteria.

Inclusion criteria

Age between 20 and 65 years, work at the Burn Treatment Unit, Regular exercise of profession and Graduate trainees in Medicine, Nursing and Physiotherapy.

Exclusion criteria

Under 20 and over 65 years, healthcare workers apart from the Burn Unit, employees removed from position or function and workers from provisional services to the Burn Unit.

Study question

Do the professional category or day and night shift interfere with the quality of life and specifically to the quality of sleep in a multidisciplinary team in a Burn Unit at a tertiary Hospital?

Instruments (Questionnaires and domains)

The Medial Outcomes Study-Item Short Form Health Survey (SF-36) consists of 11 questions and 36 items covering eight components (domains or dimensions), represented by physical functioning (ten items), social functioning (two items), role limitations due to physical problems (four items), role limitations due to emotional problems (three items), mental health (five items), vitality (four items), pain (two items) and general health perception (five items). The individual receives a score in each domain, ranging from zero to 100, zero meaning the worst score and 100 the best[7].

The Sleep Quality Index (PSQI) consists of seven components: the first refers to the subjective quality of sleep (i.e. the individual perception about the quality of sleep); the second to the sleep latency; the third to the sleep duration, obtained by the relationship between numbers of hours of sleep and the number of hours spent in bed but not necessarily asleep; the fourth to the habitual sleep efficiency; the fifth to the sleep disorders or conditions that compromise sleeping; the sixth to the use of medication, that is, whether or not the subject used sleep medications; and the seventh to the disturbances and daytime sleepiness, referring to the change in the willingness and enthusiasm to carry out routine activities. The maximum score is 21. Scores higher than five points indicate a poor quality of sleep pattern. The overall score is the sum of the seven components, each one ranging between zero and three points[8].

Validity of the questionnaires

The generic SF-36 is validated for the Brazilian population[4] as a tool for assessing the quality of life. The PSQI is validated for the Portuguese language as a specific instrument to measure quality of sleep[5].

Subject's Consent

All subjects signed a Written Informed Consent after being instructed about the research, as approved by the Research Ethics Committee, under the protocol number 1611/10, respecting the Guidelines and Standards for Human Research.

Data Collecting

Data collecting covered the one-month period of November 16, 2010 – December 15, 2010. There were 50 respondents, all of whom met the selection criteria of the study. The aim of the study was explained to each participant by the researchers and then a written approval was required. The interview was performed individually in a private room at the Burn Treatment Unit, lasting about 20-30 minutes. Personal data was collected via an identification form. Each subject was instructed to read and answer questions honestly. Once done, the answers were delivered to the researcher.

Twenty-seven were classified in the nursing staff category (27 – 54%), and 24 (48%) were female. Twenty-eight (56%) were older than 31 years and 24 (48%) were single (Table 1).

Statistical Analysis

The following statistical analyses were performed. Kruskal-Wallis' variance test to compare the results of the eight domains of the SF-36 and PSQI sleep quality among the medical group, nursing staff and other professionals. Spearman's correlation was performed between sleep and each domain of the SF-36. Mann-Whitney test to assess the eight domains of the SF-36 and PSQI sleep quality between independent samples from day and night shifts was also used. For this, different professionals answered questionnaires if they work at day shift or at night shift, not the same person worked at day and night shifts. Friedman's analysis of variance was made among the eight domains of the SF-36 for each professional category and for day and night shifts. The rejection of the null hypothesis level was fixed at 0.05 (5%).

RESULTS

Fifty employees of the multidisciplinary team of Burn Unit were interviewed, distributed among doctors, nursing staff (including nurses, nursing assistants, nursing technicians) and others.

The Kruskal-Wallis' (Siegel's) analysis of variance was used to compare data of the eight domains of SF-36 and sleep between groups Doctors (15), nursing staff (27) and other professionals (8). Among the variables investigated, the pain domain of SF-36 had significant results for the different categories, showing that doctors have better quality of life regarding the pain ($p<0.05$), as shown in Table 2.

Spearman's correlation between sleep and each domain of the SF-36 revealed that the limitation of the physical aspects, general health, vitality, limitation of social and mental health were significantly correlated with sleep ($p<0.05$). The limitation of the physical aspects obtained $p<0.0001$ (Table 3).

The Mann-Whitney test was performed to assess the data from the eight domains of SF-36 and sleep, between independent samples of day shift (31) and night shift (12), of which on-duty workers (7) were removed. In Table 4, it is possible to notice that mental health reported significant results ($p=0.02$) when presenting night shift workers with better quality of life than the day shift workers.

Regarding shifts, the Friedman's test found that, in day shift, vitality achieved significantly worse results than the domains of functional capacity, limitations in physical activities, pain, general health, limitations in social and emotional aspects; mental health showed significantly worse than functional capacity. In the night shift, vitality had worse results than functional capacity and general health (Table 5).

TABLE 1
Distribution of the study population (n=50) and the professional category, sex, age and marital status.

Identification	Doctors				Nursing staff				Other professionals				Total	
	F		M		F		M		F		M			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Age group														
21-30 years	1	2	4	8	10	20	1	2	4	8	2	4	22	44
>31 yeas	6	12	4	8	14	28	2	4	2	4	-	-	28	56
Marital status														
Single	3	6	4	8	9	18	1	2	5	10	2	4	24	48
Married	3	6	3	6	14	28	2	4	1	2	-	-	23	46
Other	1	2	1	2	1	2	-	-	-	-	-	-	3	6
Total	7	14	8	16	24	48	3	6	6	12	2	4	50	100

F=Female; M=male; n=number; %=percentage.

TABLE 2
Professionals of the Burn Unit, according to the eight domains of the SF-36 and sleep evaluation (PSQI).

Variable	Professional Category	Mean	Median	Kruskal-Wallis test
Functional capacity	Doctors	91	95	H= 3.39
	Nursing staff	82.96	85	
	Other	81.87	80	(p) = 0.18
Limitations in physical activities	Doctors	68.33	75	H= 4.04
	Nursing staff	54.63	50	
	Other	81.25	100	(p) = 0.13
Pain	Doctors	85.53	84	**H= 7.46**
	Nursing staff	66.66	62	
	Other	67.5	62	**(p) = 0.02**
General health	Doctors	84	82	H= 5.70
	Nursing staff	76.35	82	
	Other	62.5	62	(p) = 0.05
Vitality	Doctors	63.33	63.33	H= 4.66
	Nursing staff	49.44	45	
	Other	51.87	52.5	(p) = 0.09
Limitations in the social functioning	Doctors	74.83	75	H= 3.90
	Nursing staff	63.42	50	
	Other	78.12	81.25	(p) = 0.14
Limitations due to emotional aspects	Doctors	80.02	100	H= 5.39
	Nursing staff	55.57	66,7	
	Other	79.17	33.4	(p) = 0.06
General mental health	Doctors	66.13	72	H= 0.72
	Nursing staff	66.81	68	
	Other	61	66	(p) = 0.60
SLEEP	Doctors	6.53	5	H= 0.66
	Nursing staff	7.33	7	
	Other	7.87	7	(p) = 0.71

H=value of test result; *p*=significance=$p<0.05$ (in bold=significant).

TABLE 3
Professionals of the Burn Unit, according to the correlation of the eight domains of SF-36 and PSQI.

SF-36 and PSQI variables	Spearman's correlation test		
	r	r^2	(p)
Functional capacity x Sleep	0.2118	0.0448	0.1398
Limitation in physical aspects x Sleep	**0.5130**	**0.2631**	**0.0001**
Pain x Sleep	0.1608	0.0258	0.2645
General health x Sleep	**0.3714**	**0.1379**	**0.0079**
Vitality x Sleep	**0.4488**	**0.2014**	**0.0011**
Limitation in social functioning x Sleep	**0.5102**	**0.2603**	**0.0002**
Limitations due to emotional aspects x Sleep	0.1852	0.0342	0.1978
Mental health x Sleep	**0.4314**	**0.1861**	**0.0017**

r=value of correlation; *p*=significance=$p<0.05$ (in bold=significant).

TABLE 4
Workers per shift of the Burn Unit, according to the eight domains of the SF-36 and evaluation of sleep (PSQI).

Variable	Shift	Median	Mann-Whitney analysis (independent samples)
Functional capacity	Day	85	Z(U)= 0.37
	Night	90	*p*= 0.70
Limitations in physical activities	Day	75	Z(U)= 0.60
	Night	50	*p*= 0.54
Pain	Day	74	Z(U)= 0.02
	Night	67	*p*= 0.97
General health	Day	77	Z(U)= 1.62
	Night	88.5	*p*= 0.10
Vitality	Day	50	Z(U)= 1.12
	Night	57.5	*p*= 0.26
Limitations in social functioning	Day	75	Z(U)= 0.10
	Night	68.75	*p*= 0.91
Limitations due to emotional aspects	Day	66.7	Z(U)= 0.44
	Night	66.7	*p*= 0.65
Mental health	Day	64	Z(U)= 2.31
	Night	78	***p*= 0.02**
Sleep	Day	5	Z(U)= 0.55
	Night	9.5	*p*= 0.57

Z(U)=value of analysis; *p*=significance=$p<0.05$ (in bold=significant).

TABLE 5
Comparison between workers of day and night shifts of the Burn Unit, according to the eight domains of the SF-36.

Variable	Median		Friedman's analysis of variance (p<0.05)	
	Day shift	Night shift	Day shift	Night shift
Functional Capacity (FC)	85	90	FC > V FC > MH	FC > V
Limitations in physical activities (LPA)	75	50	LEA > V	ns #
Pain	74	67	Pain > V	ns
General health (GH)	77	88.5	GH > V V < FC V < LEA	GH < V
Vitality (V)	50	57.5	V < Pain V < GH V < LSF V < LEA	V < FC V < GH
Limitations in social functioning (LSF)	75	68.75	LSF > V	ns
Limitations due to emotional aspects (LEA)	66.7	66.7	LEA > V	ns
Mental health (MH)	64	78	MH < FC	ns

ns=non-significant.

DISCUSSION

In this study, the SF-36 and PSQI were applied in 50 individuals, of which females were prevalent (38 – 74%), a percentage slightly lower than the 89.9% reported in a similar study with a single professional category[9]. These data reaffirm that, historically, the activities of caring for the sick, with its technological characteristics of watching, sanitizing, feeding, following the standards of social division of labor, have been and still are delegated to the female figure[10]. The large contingent of female employees of the Burn Treatment Unit attracts attention as well as in other institutions, since the demand for physical effort in this unit is excessive and includes the preparation of shower and large wound dressings for burn-debilitated patients and the consequences of the treatment, escharotomies, debridement and grafts, which require immobilization or reduced mobility. Moreover, the high expenditure of muscular strength and excessive use of physical energy have caused problems in posture and general fatigue, becoming more severe as one finds a predominance of women in the labor force employed at the hospital[11].

Age ranged from 21 to 61 years with a mean of 33 years, with the majority (28 – 56%) older than 30 years, confirming studies in which 72.70% ranged from 20 to 40 years[10]; 47.10% from 21 to 40 years[12]; 76.20% from 35 to 49[13]; 41.6% from 31 to 40[14]; and 50% from 26 to 35[15]. Although the mean age of the participants have pointed to a group of younger adults, one aspect observed among workers that could have health effects was the presence of professionals with age around 60 years[11]. At this age there are some changes in the quality of life and health of the general population, such as higher chances of developing diabetes, hypertension, and/or obesity; being overweight; and going through menopause for women (who represents the majority of this study population).

Regarding marital status, twenty-four (48%) were classified as single and 23 (46%) as married. This last result does not differ much from the data of other authors[12,16], in which, respectively, 41.20% and 47.98% of the subjects were married.

In the professional category, it was observed that, regarding the pain, doctors had better quality of life than the nursing staff and other professionals ($p=0.02$). General health, although not significant results in the analysis of variance of Kruskal-Wallis ($p=0.05$), showed that doctors also have a better quality of life in relation to the others. These data corroborates another study[17] which pointed out that many professionals in the medical category are concerned about carrying out pleasurable activities, establishing priorities and avoiding excessive tension in their daily routine.

In the medical category, vitality had the poorest results compared to the domains of physical functioning, bodily pain, general health and limitations due to emotional aspects[18]. Mental health presented worse results than functional capacity and general health. Similar results were reported by experts[10,19], who assessed the quality of life of residents of the operating room using the SF-36 and found impairment in emotional, social and physical vitality and mental health.

Regarding the nursing staff, it was noted that vitality achieved significantly worse results than functional capacity and general health; functional capacity showed better results than physical limitation. Among other professionals, vitality was significantly worse than limitation of functional capacity and limitations in physical aspects. The difference between the professional categories was justified in another study by interpersonal relationships in health team are referred by many professionals as a contributing factor to stress coming from the environment where they develop work activities[20].

Every nurse who is involved with the care of burn victims knows that stress is a part of burn nursing. Most of the time it is taken for granted that the various visual and psychological stressors are a part of our units. From the tragic accident to the elderly person or the curious child, the self-inflicted bum, the assault cases, the injustice of the abused or neglected child, the disabling or disfiguring burns, and the accidents that could have, or should have, been prevented - what an impact this must have on all of us. We practice a depth of teaching, we are witness to an amount of suffering, and we experience a level of involvement with our patients and their families that might be unique to burn nursing[21].

This study suggested that most of the stress reported by the burn nurses contains an emotional component, with issues relating to factors as follows: pain, the children, the dying patient, the patients who do not try to help in their recovery (perceived as uncooperative, manipulative, and/or angry), and interstaff conflicts, either nursing or medical. The most common methods of coping with work-related stress at work were talking with co-workers and maintaining a sense of humour. After work, the most common methods of coping came in the form of physical activity and talking with family and/or friends[21].

A burn unit that functions as a team and has a sense of team support most probably enhances the staff's ability to cope with the various stressors of their unit. Creating an atmosphere conducive for emotional venting and problem solving, and the involvement of supportive services such as psychology or chaplaincy may be beneficial in helping the nurses cope. Other areas of stress may be contended with increasing scheduling options, providing a means for further burn education, and keeping the patient to nurse ratio low. A recommendation would be that each unit should assess what are their areas of greatest stress for their nurses, how are the nurses coping with these stressors and what the unit itself can do to lessen the stress and promote coping. If the unit can develop methods for stress reduction in the workplace, the result may be increased coping and satisfaction for their nurses with the building of invaluable burn nurse experience[21,22].

The correlation between sleep and the domains of SF-36 had significant results ($p<0.05$), in relation to limitation of physical aspects, general health, vitality, limitation of social aspects and mental health. These variables interfered with the quality of sleep of the multidisciplinary team, the reverse may also be considered in the correlation of these variables. This assessment suggests that a very demanding job can affect the quality of sleep, showing that the inference of work

per shift may be milder than the type of work performed associated with quality of life of the individual. Regarding only the quality of sleep, twenty-six (52%) of the employees had poor quality of sleep, an estimate scarcely found in literature. A distinct instrument of PSQI found that 51.85% of the professionals had much altered sleep[23]. It is noteworthy that, compared to other specialists[24] who found 92% of professionals with scores higher than 5, the multidisciplinary team at the Burn Treatment Unit has a good quality of sleep.

Between shifts, mental health was significantly impaired in the day shift in relation to the night shift, different result from the majority of published studies, in which night work is associated with essentially different a routine from the one adopted by the wider community in relation to the social and biological rhythms. The consequences for this type of employee include insomnia, irritability, drowsiness during the day, "hangover" feeling, chronic fatigue complaints, digestive malfunction, which in long-term lead to diseases related to gastrointestinal and nervous system and effects on work safety and quality of life of this group's member and their families[25,26].

Regarding the day shift, it was found that vitality achieved significantly worse results than the domains of functional capacity, limitation of physical aspects, bodily pain, general health, limitations in social and emotional aspects. It was noted that mental health presented worse results than functional capacity. In the night shift, vitality had the poorest results compared to functional capacity and general health. In the health area, schemes of work are different for each person, and night shifts are usually less frequent than the day shifts. Overnight activities are distinct from those determined for the other expedients[27]. Shift work is a necessary and common practice in many organizations, especially in hospitals. It is a type of work schedule that considerably affects health professionals. Studies show that the interference in the personal relationship/family most often cited is the effect of shift work, followed by withdrawal of social activities and difficulty of life planning, living with the family, having friends and maintaining good social relationships[14,24].

The most affected domain among the professional categories and shifts was vitality, followed by physical aspects, emotional aspects, and mental health; similar results were found in a study in which most affected domains were pain, vitality, physical and emotional aspects[14]. The lack of rest and entertainment triggers stress, which is considered a negative problem, of perceptual nature, resulting from the inability to deal with the work pressure sources. Stress is considered an important factor in pathological aspects of mental health and causes consequences mainly in the form of problems in physical and mental health; job satisfaction, which compromises workers' peer relationships due to the institutional demand; the organization of work and the lack of time for self-issues and self-care. Finally, the predominance of suggestions about interpersonal relationships and work organization bring the focus back to the individual, now as a professional in relationships within an organizational context with its peculiar characteristics. These characteristics do not prevent organizational transformation and restructuring, because the purpose is to ensure that the organization reaches both individual and organizational goals[10,25].

In multidisciplinary teams, inter-professional relations or interlinks with coworkers and with patients should be considered in order to understand the health aspect of the professionals' behavior in relation to the workplace and social life. This aspect is not the aim of this study, but it is important to be assessed, and some questions appear here, as what is the reason why some professional choose treat burns where they find difficult patients, most with psychic problems that there were before or that appear during the treatment. What kind of personality and psychological traits that lead professionals to work in a very difficult area, where tension is always present and suffering is the rule? This is an important question to be assessed.

There were some study limitations, like the literature found on the quality of sleep and quality of life of the workers is not abundant, meaning that it is not an ideal base to analyze the multidisciplinary team in a tertiary health care unit, or compare it to these results. The physical and mental mood, coupled with the daily events in the moment of the interview, could influence the data collection. Misinterpreted reading of the questions from SF-36 and PSQI may have occurred although the principal investigator and the supervisor were present during the interview to clarify questions contained in the surveys.

The workplace comprises repetitive routines, situations of risk, death and dying processes, and even suffering and pain of others. These experiences coupled with the bustle of everyday life lead individuals to seek defense or coping mechanism to handle stressors to which they are exposed. The mechanisms translate into disinterest in others, mechanical actions, failure to perceive the other as a human being, devaluation of care and self-devaluation as a person and professional. Therefore, the way work environments are currently structured does not favor employees' self-care; by contrast, they are naturally mobilizing places of emotions, feelings and stress[23].

The lack of rest and entertainment, justified by the most affected domains (vitality, physical, emotional and mental health) can trigger the devaluation of self-care, which hinders the ability to handle events in general. It is concluded that the structure of the current working environment does not favor such care, but rather mobilizes emotions, feelings and stress.

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CONFLICT OF INTEREST

All authors declare that there are any financial and personal relationships with other people or organizations that could inappropriately influence this study.

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