

DOI: <https://doi.org/10.36489/nursing.2021v24i272p5172-5197>

# Intervening factors in the quality of life of nursing workers on a night shift

**ABSTRACT** | Objective: to analyze the intervening factors in the quality of life of nursing workers working at night. Method: analytical, cross-sectional, quantitative study carried out with 105 nursing professionals from a hospital with a night shift. Questionnaires were used for socioeconomic and demographic and quality of life assessments. The data were discussed using bivariate analysis and comparative analysis, with a significance level of 5% ( $p \leq 0.05$ ). Results: there was a statistically significant association between the general quality of life and the variables: family income of up to four minimum wages ( $p=0.02$ ), physical inactivity ( $p=0.01$ ), working time at the institution ( $p=0.02$ ) and working at night ( $p=0.01$ ) over 11 years. The psychological, physical and environmental domains negatively interfered with the subjects' quality of life, despite the fact that they classified it as good. Conclusion: therefore, health services must adopt measures to protect the health of their workers from the influence of professional factors.

**Keywords:** Quality of life; Socioeconomic factors; Shift work schedule; Tertiary health care; Nurse practitioners.

**RESUMEN** | Objetivo: analizar los factores que intervienen en la calidad de vida de trabajadores de enfermería que laboran de noche. Método: estudio analítico, transversal y cuantitativo realizado con 105 profesionales de enfermería nocturnos de un hospital. Se utilizaron cuestionarios para evaluaciones socioeconómicas, demográficas y de calidad de vida. Los datos se discutieron mediante análisis bivariada y análisis comparativo, con un nivel de significancia del 5% ( $p \leq 0.05$ ). Resultados: hubo asociación estadísticamente significativa entre la calidad de vida general y las variables: ingreso familiar de hasta cuatro salarios mínimos ( $p=0,02$ ), inactividad física ( $p=0.01$ ), tiempo de trabajo en la institución ( $p=0,02$ ) y trabajo nocturno ( $p=0,01$ ) durante 11 años. Los dominios psicológico, físico y ambiental interfirieron negativamente en la calidad de vida de los sujetos, a pesar de clasificársela como buena. Conclusión: por tanto, los servicios de salud deben adoptar medidas para proteger la salud de sus trabajadores de la influencia de factores profesionales.

**Palabras claves:** Calidad de vida; Factores socioeconómicos; Horario de trabajo por turnos; Atención terciaria de salud; Enfermeras practicantes.

**RESUMO** | Objetivo: analisar os fatores intervenientes na qualidade de vida de trabalhadores de enfermagem em jornada noturna. Método: estudo analítico, transversal, quantitativo, realizado com 105 profissionais de enfermagem de um hospital com jornada noturna. Utilizaram-se questionários para avaliação socioeconômica e demográfica e da qualidade de vida. Os dados foram discutidos por meio de análise bivariada e análise comparativa, com nível de significância de 5% ( $p \leq 0,05$ ). Resultados: verificou-se associação estatisticamente significante entre a qualidade de vida geral e as variáveis: renda familiar de até quatro salários mínimos ( $p=0,02$ ), inatividade física ( $p=0,01$ ), tempo de trabalho na instituição ( $p=0,02$ ) e de atuação no período noturno ( $p=0,01$ ) superiores a 11 anos. Os domínios psicológico, físico e meio ambiente interferiram negativamente na qualidade de vida dos sujeitos, apesar destes terem classificado-a como boa. Conclusão: portanto, os serviços de saúde devem adotar medidas para proteger a saúde de seus trabalhadores da influência de fatores profissionais.

**Palavras-chaves:** Qualidade de vida; Fatores socioeconômicos; Jornada de trabalho em turnos; Atenção terciária à saúde; Profissionais de enfermagem.

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Received on: 10/16/2020

Approved on: 11/30/2020

## INTRODUCTION

The man has sought to ease his efforts in the struggle for survival since its beginnings, and, as a consequence, the search for quality of life (QOL) is not recent. The concern with QOL at work dates back to the beginnings of human civilization, since it has been reported since that time that there was a constant search for better ways to perform a task, always aiming at better working conditions and well-being. <sup>(1)</sup> However, it was with the advent of the Industrial Revolution and the systematization of production methods in the 18th and 19th centuries that working conditions and their influence on production started to be analyzed and the influence of remuneration on workers' satisfaction and consequently on increasing productivity. <sup>(2)</sup> In a supposed harmony of interests between bosses and employees, he would claim that the prosperity of workers would be associated with the prosperity of bosses, albeit in an eminently socioeconomic way, which led to the understanding that employee satisfaction influenced production and, consequently, profitability. <sup>(1-2)</sup>

According to the World Health Organization (WHO), QoL has evolved in conceptions, the individual's perception of his position in life, based on the context of his culture and the value system in which he is inserted and in relation to its objectives, expectations, standards and concerns. <sup>(3)</sup> However, the term QOL implies a subjective approach that naturally derives several definitions. And to guide this conception, the Ministry of Health (MS) conceptualizes "QOL" associating the term to the process of human satisfaction in all aspects, that is, with the "whole - which has as reference subjective notions of comfort, well-being and individual and collective realization". In this case, the concept of QOL keeps reports with aspects of individuality and subjectivity of each subject based on their own personal judgment. <sup>(4)</sup> In this way, we can understand that QOL

can be achieved from obtaining satisfaction, personal, professional and social fulfillment and, consequently, put work in the central thinking of QOL, because it is through it that people have tried to satisfy their aspirations. <sup>(5)</sup>



However, the term QOL implies a subjective approach that naturally derives several definitions.



Work is an integral and essential part of human life and, depending on the way it is performed, it can generate exhausting factors and increase the pain of health-disease processes. <sup>(6)</sup> The possible disharmony in the man-work relationship and, mainly, in the work processes, may allow changes in the health of the worker to occur. This has been a focus that has been studied constantly, for example, in the area of health, especially with nursing professionals, especially in view of the work environment, which in this case becomes even more complex than other sectors, since the weight of this profession lies in the fact of the duty to take care of other lives. <sup>(7)</sup> Nursing is a profession that demands greater care, especially for working in a work environment conducive to affecting the QoL of professionals more severely, whether in the short, medium or long term. Hence the importance of assessing

the QoL of health professionals more frequently, especially in nursing. <sup>(8)</sup>

The assessment of the QOL of the nursing team offers subsidies to improve the health work process, clinical practice, the professional-user relationship and guide the (re) definition of specific public policies for these professionals in the performance of their duties. And the impact can be twofold, that is, improving the living and working conditions of these professionals can generate a positive impact on health, both for nurses and the population they care for. <sup>(9)</sup> However, this is not an easy task, especially since health professionals who work in the hospital environment have particular work conditions that make it even more difficult to evaluate and, especially, to care for their QOL. <sup>(10)</sup> The fact that they have to guarantee a full-time service with a daily workload greater than normal, even if interspersed, in two shifts or on different shifts, as it is not uncommon for these professionals to look for other jobs, or other ways to subsidize improvements financial resources. For this reason, it has been frequent to observe studies that have been evaluating the problems that this type of organization at work causes to the health of the worker. <sup>(7)</sup>

The drop in QOL of the health professional is even greater when he works the night shift, as human beings are biologically programmed to develop physical and mental activities during the day and rest at night, consequently, your body will feel the changes and will work even harder to carry out interventions in what would be the rest period, which may generate biological changes in body temperature, hormonal levels, psychic and behavioral changes or in cognitive performance. There are benefits for employees who work at night, especially the fact that nurses have greater autonomy in the performance of their duties, since they do not have the same managerial load as professionals who work during the day. However, they recognize that this also results in a negative aspect influenced by the overload of functions. <sup>(11)</sup>

Another factor to be analyzed in the assessment of the QoL of nursing professionals who work at night, is related to their mood, especially, because it is very important for the process of effective care of patients that these professionals are fully satisfied to transmit satisfaction, safety and quality in the execution of planned and unforeseen tasks.<sup>(7)</sup> Nursing professionals need a state of incessant alertness, which requires full physical, mental and emotional health, these are directly linked to the care of the human being, to the process of healing and rehabilitation of patients, so that small carelessness or failures can result in complications.<sup>(12)</sup>

Considering the relevance of this theme, the following research problem arose: what are the intervening factors in the QoL of nursing workers on a night shift at a teaching hospital in the city of Montes Claros/MG?

For this purpose, the definition of QoL proposed by the World Health Organization (WHO) was chosen, which takes into account the individual's perception and his relations with the environment. Estable QoL as an individual perception of the individual's position in life, in the context of his culture and value system in which he is inserted and in relation to his goals, expectations, standards and concerns. It is a concept of comprehensive scope affected in a complex way by physical health, psychological state, level of independence, social relationships and relationships with the characteristics of the individual's environment.<sup>(13)</sup>

Thus, this study aimed to analyze the intervening factors in the QoL of nursing workers on a night shift.

## METHODS

Monograph article entitled "Influence of night work on the QoL of nursing workers", presented to the Nursing Department of the State University of Montes Claros/UNIMONTES. Montes Claros (MG), Brazil. 2015.

This is an analytical, cross-section-

nal study with a quantitative approach, conducted at the University Hospital Clemente de Faria (HUCF) in the municipality of Montes Claros, Minas Gerais. The study sample consisted of 161 nursing professionals who work at night. Of these, 129 are nursing technicians, 31 are nurses and one is a nursing assistant. The sample included 105 professionals from different hospital sectors. 20 professionals who were on vacation during the period of data collection and 36 professionals who refused to participate in the study were excluded.

The sampling method was for convenience, in view of the accessibility of the surveyed participants. This technique is widely used and is based on capturing a sample of the population that is accessible. In other words, the individuals employed in this research are selected because they are readily available, not because they were selected using statistical criteria. Generally, this convenience represents a greater operational ease and low cost of sampling, but it has the consequence of the inability to make general statements with statistical rigor about the population.<sup>(14)</sup>

The research project, a letter of introduction and an Institutional Consent Term (TCI) were sent to the Municipal Health Department of Montes Claros (SMS-MOC), as well as an Institutional Consent Form (TCI), for research authorization. The institutions were duly informed about their guidelines and they signed the TCI in order to authorize the conduct of the research. Data collection was carried out in the 1st semester of 2015, during the month of January by the responsible researcher.

HUCF is part of the structure of the State University of Montes Claros (UNIMONTES), being a fully public teaching hospital and dedicating 100% of its installed capacity to the Unified Health System (SUS). It has 171 hospital beds and 10 home care beds (HU at Home).

To perform the data collection, two instruments were used, the first being a

socioeconomic and demographic questionnaire (Attachment I), of its own elaboration, and the second a generic, validated questionnaire on QoL, called the WHO Short QoL Assessment Instrument (WHOQOL-Bref)<sup>(15)</sup> (Attachment II), which consists of the shortened version of WHOQOL-100, both developed by the WHO QoL Group.

The socioeconomic and demographic questionnaire was composed of the following variables: sex; age group; marital status categorized as with and without partner; self-declared color categorized as white, brown and black; participation in the economic life of the family group; family group income; the type of property in which you reside; religion; and if you have children and the quantity. Variables related to personal and professional characteristics were also evaluated: if you smoke; if you drink alcoholic beverages; which activity takes up the most time off; and whether physical activity is practiced and which. As for professional characteristics, the position held in the hospital was investigated; working time at the institution; how long I work at night; and reason for choosing night work.

The Portuguese version of the WHO-QoL-bref was developed at the WHO-QoL Center for Brazil and contains 26 questions: two general questions, which are not included in the calculation of domain scores, one referring to LIFE and the other to HEALTH. The remaining 24 questions are related to four domains and their respective facets, as follows: Domain I - physical, focusing on the following facets: pain and discomfort, energy and fatigue, sleep and rest, activities of daily living, dependence on medication or treatments, work capacity; Domain II - psychological, whose facets are: positive feelings, thinking, learning, memory and concentration, self-esteem, body image and appearance, negative feelings, spirituality, religiosity and personal beliefs; Domain III - social relationships, which includes the following aspects: personal relationships, social support, sexual activity;

Domain IV - environment, addressing the facets: physical security and protection, home environment, financial resources, health and social care: availability and quality, opportunities to acquire new information and skills, participation in, and recreation/leisure opportunities, physical environment: pollution, noise, traffic, climate, transport. This instrument considers the respondents' last fifteen days. The final scores for each domain consider the answers to each question that makes up the domain, and the higher the score the better the QOL will be assessed. The classification of both the domain and the facets was established according to the following definitions: needs improvement (when from 1 to 2,9); regular (3 to 3,9); good (4 to 4,9) and very good <sup>(5)</sup>.

After collection, the data were organized in a database using the statistical program Statistical Package for the Social Science (SPSS), version 18.0®, and submitted to descriptive analysis using absolute and percentage frequencies. Then, the bivariate analysis was performed

using the comparison of means of general QOL by Test T Student for independent samples, in order to compare the general QOL score in relation to socioeconomic and demographic variables, as well as professionals. This test took into account the assumptions of the study, as well as the distribution of quantitative variables and homoscedasticity. In addition, a comparative analysis of socioeconomic and demographic aspects was performed by calculating means and p-value based on the Student T Test. In the comparative analysis and the Test T Student, the significance level of 5% (p < 0,05) was used.

The data were collected at times previously agreed with the subjects, so as not to interfere with their professional activities. Before starting the collection, the participants were properly informed about the study guidelines in which they signed the "Informed Consent Form (ICF)" in order to authorize the research.

The study followed the ethical precepts established by Resolution No. 466, of December 12, 2012, of the National

Health Council (Conselho Nacional de Saúde - CNS), which regulates the conduct of research involving human beings.

<sup>(16)</sup> The research project was assessed and approved by the Research Ethics Committee at Universidade Estadual de Montes Claros (CEP UNIMONTES), via Plataforma Brasil, under substantiated opinion nº 911.265/2014, Certificate of Presentation for Ethical Appreciation (CAAE) nº 39684914.6.0000.5146.

**RESULTS AND DISCUSSION**

There was a prevalence of female nursing professionals (66,7%) in the total sample, most of whom were nursing technicians (70,5%), aged between 31-40 years (62,9 %), brown (63%), married (79%), is the main responsible for the family support (44,8%), family income equal to or higher than five minimum wages (MW) (39%), lives in his own property (72,4%), has two children (32,4%), Catholics (68,6%) and does not currently study (61,9%) (Table 1).

**Table 1 - Socioeconomic and demographic aspects of nursing professionals on a night shift at a teaching hospital in northern Minas Gerais. Montes Claros, MG, 2015. (n = 105)**

Variáveis (Socioeconômicas e demográficas)	Categoria profissional						Total	
	Enfermeiro		Técnico de Enfermagem		Auxiliar de Enfermagem		n	%
	n	%	n	%	n	%		
<b>Sexo</b>								
Masculino	09	56,3	26	29,5	00	0,0	35	33,3
Feminino	07	43,7	62	70,5	01	100,0	70	66,7
<b>Faixa etária (anos)</b>								
[20,30]	00	0,0	09	10,2	00	0,0	09	8,6
[31,40]	14	87,5	51	58,0	00	0,0	66	62,9
[41,50]	02	12,5	15	17,0	01	100,0	17	16,2
[51,+]	00	0,0	13	14,8	00	0,0	13	12,4
<b>Cor/Raça autodeclarada</b>								
Branco	08	50,0	16	18,2	00	0,0	24	22,9
Negro	01	6,2	12	13,6	01	100,0	14	13,3
Pardo	07	43,8	60	68,2	00	0,0	67	63,8
<b>Estado civil</b>								
Solteiro	03	18,7	18	20,5	01	100,0	22	21,0

Casado	13	81,3	70	79,5	00	0,0	83	79,0
<b>Participação financeira no GF</b>								
Trabalho, mas recebo ajuda financeira da família.	02	12,5	03	3,4	00	0,0	05	4,8
Sou responsável apenas pelo meu próprio sustento.	02	12,5	05	5,7	00	0,0	07	6,7
Sou responsável pelo meu sustento e contribuo em casa.	07	43,8	39	44,3	00	0,0	46	43,8
Sou o principal responsável pelo sustento da família.	05	31,2	41	46,6	01	100,0	47	44,8
<b>Renda do GF</b>								
< 2 SM	00	0,0	03	3,4	00	0,0	03	2,9
3 SM	00	0,0	27	30,6	00	0,0	27	25,7
4 SM	04	25,0	29	33,0	01	100,0	34	32,4
≥ 5 SM	12	75,0	29	33,0	00	0,0	41	39,0
<b>Tipo de imóvel que reside</b>								
Próprio	10	62,4	65	73,9	01	100,0	76	72,4
Alugado	03	18,8	08	9,1	00	0,0	11	10,5
Cedido	00	0,0	04	4,5	00	0,0	04	3,8
Financiado	03	18,8	10	11,4	00	0,0	13	12,4
Outra situação	00	0,0	01	1,1	00	0,0	01	1,0
<b>Filhos</b>								
Nenhum	07	43,8	12	13,6	00	0,0	19	21,8
01	02	12,5	23	26,1	00	0,0	25	22,9
02	06	37,5	33	37,6	00	0,0	39	32,4
03 ou +	01	6,3	20	22,7	01	100,0	22	17,1
<b>Religião</b>								
Católico	12	75,0	59	67,0	01	100,0	72	68,6
Evangélico	01	6,3	22	25,0	00	0,0	23	21,9
Adventista	01	6,3	03	3,4	00	0,0	04	3,8
Nenhuma	02	12,5	04	4,5	00	0,0	06	5,7
<b>Estuda atualmente</b>								
Sim	11	68,8	29	33,0	00	0,0	40	38,1
Não	05	31,2	59	67,0	01	100,0	65	61,9

Source: Data collection, 2015.

GF = Familiar group (Grupo Familiar). SM = Minimum Wages (Salários Mínimos).

Family monthly income had a negative impact on the subjects' QoL. There was a significant correlation ( $p = 0,02$ ), with lower scores 83,0 (SD  $\pm 10,9$ ) for professionals with an income of five or more minimum wages (MW) up to four MW and higher scores of 88,0 (SD  $\pm 8,8$ ) for those with an income of up to four MW, that is, workers with lower income have higher QoL. Physical inactivity was a factor that also interfered in QOL, since there was a signifi-

cant correlation ( $p = 0,01$ ), evidenced by the highest scores for those who do not practice physical activity, 88,9 (SD  $\pm 11,2$ ), and lower for those who practice physical activity 83,9 (SD  $\pm 9,2$ ). In this study, there was still a significant correlation between the general QOL and the length of experience at the institution, with a better QOL 89,9 (SD  $\pm 8,4$ ) for professionals who have 11 or more years of experience at the institution and lower 84,9 (SD  $\pm 11,3$ )

for those aged 1 to 10 years working at the institution where the research took place. In relation to length of time working at night, there was a correlation ( $p = 0,01$ ), and scores 90,5 (SD  $\pm 11,3$ ) for professionals who have been working for 11 or more years in the night shift and lower 84,9 (SD  $\pm 11,3$ ) for those with 1 to 10 years of experience in the night shift, showing better QoL for those who have 11 or more years of experience at night (Table 2).

**Table 2 – Association of the average score of the general QOL domain with the socioeconomic and demographic and professional characteristics of the nursing team working in the night shift. Montes Claros, MG, 2015. (n = 105)**

Variáveis (socioeconômicas e demográficas)	Escore médio da QV geral			
	n	%	MAP±DP*	p-Valor
<b>Renda mensal do GF</b>				
Até 4 SM	30	28,6	88,1±10,9	0,02
≥ 5 SM	75	71,4	83,0±8,8	
<b>Atividade física que pratica</b>				
Não pratica atividade física	58	55,2	88,9±11,2	0,01
Pratica atividade física	47	44,8	83,9±9,2	
<b>Tempo na instituição (anos)</b>				
[1,10]	69	65,7	84,9±11,3	0,02
[11,+]	36	34,3	89,9±8,4	
<b>Tempo de atuação à noite (anos)</b>				
[1,10]	74	70,5	85,0±10,0	0,01
[11,+]	31	29,5	90,5±11,3	

Source: Data collection, 2015.

p-Valor: statistical significance (p<0.05) from the T-student test.

\*Mean score of general QOL presented in means and standard deviation.

MAP = Weighted Arithmetic Average (Média Aritmética Ponderada).

As for the other characteristics - sex, age, race, marital status, financial participation of the family group, religion, children, activities that occupy more time off, consumption of alcoholic beverages, smoking, reason for the option of night work and other employment relationship - no significant associations were found in relation to general QOL.

As for the length of professional practice at the institution, there was a prevalence of professionals between six and 10 years (52,4%), the majority of whom were nursing technicians (51,1%). In view of the work shift, professionals with the same period of six to 10 years prevailed, both in the institution, and working during the night shift (49,5%). Regarding the reason for the option to work during the night, 57,1% informed that it was due to their availability to be with the family, considering that most professionals are female, have a double shift and have to divide themselves between family and work (Table 3).

**Table 3 – Demographic aspects related to the professional situation of the nursing staff who work at night in a teaching hospital in northern Minas Gerais. Montes Claros, MG, 2015. (n = 105)**

Variáveis (socioeconômica e demográfica)	Categoria profissional							
	Enfermeiro		Técnico de Enfermagem		Auxiliar de Enfermagem		Total	
	n	%	n	%	n	%	n	%
<b>Tempo na instituição (anos)</b>								
[1,5]	03	8,8	11	12,5	00	0,0	14	13,3
[6,10]	10	62,4	45	51,1	00	0,0	55	52,4
[11,20]	03	18,8	25	28,4	00	0,0	28	26,7
[21,+]	00	0,0	07	8,0	01	100,0	08	7,6
<b>Tempo de atuação à noite (anos)</b>								
[1,5]	04	25,0	18	20,5	00	0,0	22	21,0
[6,10]	10	62,4	42	47,7	00	0,0	52	49,5
[11,20]	01	6,3	24	27,3	00	0,0	25	23,8
[21,+]	01	6,3	04	4,5	01	100,0	06	5,7
<b>Motivo da opção pelo trabalho noturno</b>								
Questão salarial	00	0,0	07	8,0	00	0,0	07	6,7
Disponibilidade para a família	02	12,5	20	22,7	00	0,0	22	20,9
Possui outro vínculo empregatício	09	56,3	51	58,0	01	100,0	61	58,0
Estudos em geral	05	31,2	10	11,3	00	0,0	15	14,4

**Possui outro vínculo**

Sim	14	87,5	57	68,4	00	0,0	71	67,6
Não	02	12,5	31	35,2	01	100,0	34	32,4

Source: Data collection, 2015.

Thus, analyzing the information about some life habits that could interfere in the subjects' QOL, it was demonstrated that of these, only 5,7% are smokers, 51,4% are not alcoholics and 36,2% only drink socially. Still, 48,5% occupy their free time watching TV and 44,8% do not practice physical activities. It was also noticed that nurses tend to exercise more

than nursing technicians, which is related to a better QOL. As a result, the low level of physical activity coupled with constant stress can directly interfere in the QOL and health of these professionals. When asked how they assess their QOL, 53,4% considered their QoL good, 30,5% neither good nor bad, and 9,5% bad, 1,9% said it was very bad and only 5,7% repor-

ted have a very good QOL. Regarding satisfaction with their health status, 44,7% considered themselves satisfied with their health and, 20,0% reported feeling dissatisfied, another 26,7% said they were neither satisfied nor dissatisfied (Table 4).

Table 5 shows that there is a significant difference between the domains studied. The psychological, physical and

**Table 4 – Personal and social aspects related to the professional categories of the nursing team that works at night in a teaching hospital in northern Minas Gerais. Montes Claros, MG, 2015. (n = 105)**

Variáveis (socioeconômica e demográfica)	Categoria profissional						Total	
	Enfermeiro		Técnico de Enfermagem		Auxiliar de Enfermagem		n	%
	n	%	n	%	n	%		
<b>Fuma</b>								
Sim	15	93,8	84	95,5	00	0,0	99	94,3
Não	01	6,2	04	4,5	01	100,0	06	5,7
Frequência de consumo de bebida alcoólica								
1-2 vezes por semana	01	6,3	08	9,1	00	0,0	09	8,6
3-5 vezes por semana	01	6,3	03	13,4	00	0,0	04	3,8
Não sou etilista	10	62,4	43	48,9	01	100,0	54	51,4
Bebo ocasionalmente	04	25,0	34	38,6	00	0,0	38	36,2
<b>Atividade que pratica nas folgas</b>								
Assistir TV	03	18,8	47	53,4	01	100,0	51	48,5
Ir ao cinema	02	12,5	01	11,1	00	0,0	03	2,9
Ouvir música	01	6,3	07	8,0	00	0,0	08	7,6
Ir a bares/boates/similares	00	0,0	03	3,4	00	0,0	03	2,9
Leitura	06	37,4	13	14,8	00	0,0	19	18,1
Atividade física	02	12,5	06	6,8	00	0,0	08	7,6
Outras	02	12,5	11	12,5	00	0,0	13	12,4
<b>Atividade física que pratica</b>								
Corrida	01	6,3	09	10,2	00	0,0	10	9,5
Caminhada	05	31,3	25	28,4	00	0,0	30	28,5
Academia	01	6,3	08	9,1	00	0,0	09	8,6
Natação	01	6,3	02	2,3	00	0,0	03	2,9
Trilha	00	0,0	01	1,2	00	0,0	01	1,0
Outras	01	6,3	04	4,5	00	0,0	05	4,8
Nenhuma	07	43,5	39	44,3	01	100,0	47	44,7

Como você avalia a sua QV								
Muito ruim	00	0,0	02	2,3	00	0,0	02	1,9
Ruim	01	6,3	09	10,2	00	0,0	10	9,5
Nem ruim, nem boa	04	25,0	28	31,8	00	0,0	32	30,5
Boa	11	68,7	43	48,9	01	100,0	55	53,4
Muito boa	00	0,0	06	6,8	00	0,0	06	5,7
Quão satisfeito você esta com sua saúde								
Muito insatisfeito	00	0,0	03	3,4	00	0,0	03	2,9
Insatisfeito	06	37,5	15	17,0	00	0,0	21	20,0
Nem satisfeito, nem insatisfeito	03	18,8	24	27,3	01	100,0	28	26,7
Satisfeito	07	43,7	40	45,5	00	0,0	47	44,7
Muito satisfeito	00	0,0	06	6,8	00	0,0	06	5,7

Source: Data collection, 2015.

environmental domains had a lower score ( $p= 0,008$ ,  $p= 0,029$  and  $p= 0,041$ ) respectively, thus presenting greater interference in the subjects' QoL. The higher the score, the better the QOL, and that  $p$  values between 0.01 to 0,029 should be considered as they are aspects that need immediate improvement and  $p$  values between 0,03 to 0,039 demonstrate domains that are regular.

Regarding the socioeconomic and demographic profile, of the 105 professionals surveyed, it was found that 66,7% are female, 62,9% are between

31-40 years old. Several studies point to a trend towards the feminization of the workforce in the health sector, a predominance that is justified by the fact that health courses have historical-social characteristics that attract more students of this gender. <sup>(5,8,17)</sup> The work carried out in the hospital environment is more harmful to women, given that many of the activities developed there require great muscular strength and, consequently, cause greater physical wear. <sup>(10,13)</sup>

Regarding age, the nursing team at HUCF had an average of 35 years, which

according to the Brazilian Institute of Geography and Statistics (IBGE), in 2010, the team consists of young adults. This is a positive condition for the development of work activities and for the performance of a good QOL. There is an intense risk relationship between the increase in the average age and the possibility of negative interference in the performance of the QOL of nursing professionals. <sup>(5)</sup> Individuals in the age group between 41-50 years old are more prone to structural imbalance, which constitutes a greater predisposition to decreased QOL. <sup>(18)</sup> On

**Table 5 – Analysis of the intervening factors in QoL in relation to WHOQOL-Brief, of the data collected from the nursing team that works at night in a teaching hospital in the north of Minas Gerais. Montes Claros, MG, 2015. (n = 105)**

Variáveis	n	DOMÍNIOS							
		FÍSICO		PSICOLÓGICO		RELAÇÕES SOCIAIS		MEIO AMBIENTE	
		Média	p	Média	p	Média	p	Média	p
<b>Sexo</b>									
Feminino	70	61,17	0,02	76,15	0,008	75,18	0,13	57,59	0,04
Masculino	35	54,21		65,19		69,13		52,48	
<b>Estado civil</b>									
Casado	83	59,36	0,91	72,21	0,13	73,54	0,83	55,48	0,04
Solteiro	22	59,48		75,63		74,87		58,82	
<b>Categoria profissional</b>									
Enfermeiro	16	60,03	0,91	76,14	0,008	74,83	0,24	62,17	0,01
Técnico de enfermagem	88	58,26		67,32		70,52		52,75	
Auxiliar de enfermagem	01	59,67		78,33		75,26		58,56	

Source: Data collection, 2015.



the other hand, younger people find it easier to adapt at night and, therefore, less damage to their QOL when developing work at night. <sup>(19)</sup>

Regarding race, the study showed that 63,8% consider themselves brown and 22,9% white. Regarding marital status, 79.0% are married and 72,4% have children. The percentage of subjects with married marital status did not differ from the characterization presented in other studies that more than 50% were married. <sup>(3,8,20)</sup>

Authors state that married individuals are more likely to have better QOL due to the comfort and emotional and financial support that this provides, but, they add that the fact of being married, especially for women, can represent an obstacle to QOL, as it brings with them greater responsibilities and a greater accumulation of functions which would result in greater overload and greater physical and emotional stress. <sup>(8,13,17,19,20)</sup>

Regarding the professional category, 83,8% of the service's nursing professionals are nursing technicians. Other studies developed also demonstrated the predominance of nursing technicians in health services, according to data presented by the Federal Nursing Council (Conselho Federal de Enfermagem - COFEN) in 2014, in Brazil, nursing technicians corresponded to a percentage of 43% and nurses corresponded only 20% of nursing professionals. <sup>(21)</sup> Observing the working time in the institution, 52,4% work in the service for a period between six to 10 years, 26,7% between 11 and 20 years. Regarding the time of work at night, 49,5% reported working at night for a period between six to 10 years and 23,8% between 11 to 20 years. The time that a nursing professional remains in the same service can be considered a stressor that interferes with the performance of QOL at work, especially for nurses since they are normally responsible for the management of the service. <sup>(22)</sup> In another study, 25% of the surveyed subjects worked at night for a period of time greater than eight years. <sup>(23)</sup>

The main reasons that influenced professionals to choose night work are: the interest in improving their incomes, because, at this time, workers are entitled to an additional night shift, and the possibility of reconciling other jobs. <sup>(11)</sup> However, in another study, it is stated that night conditions are more likely to trigger negative factors that can, in turn, interfere with the health of workers, and consequently,



Regarding race, the study showed that 63,8% consider themselves brown and 22,9% white. Regarding marital status, 79.0% are married and 72,4% have children.



reduce the QOL of these professionals. <sup>(22)</sup> This is evidenced and it was demonstrated that the professionals opted for the night period for financial and personal issues, such as dedication to the family. <sup>(19)</sup>

Regarding the nursing assistant, it was not possible to consider it as a variable that could be assessed individually, but it is still necessary to point out that this subject had characteristics very different from the others (nursing technicians and assistants), such as being in an age group above of the general average of this study, being between 41 and 50 years old, black, divorced, and having more than three children. QOL results from intrinsic and extrinsic conditions to human beings and, therefore, not only personal and socioeconomic and demographic conditions will be sufficient to fully understand the factors involved in the development of people's QOL, especially when this quality can still be influenced by the conditions of job. <sup>(5,8,10,13,17,19)</sup> Most subjects exercise more than one workload, that is, 67.6% of the total population participating in the research have more than one job, and this may interfere with QOL and influence the satisfaction of these workers, professionals who have more than one employment relationship stays longer in the hospital environment and, therefore, they are more subject to the risks existing in these places, due to the accentuated exposure, be it physical or psychological.

When this double journey is established at different times and in the role of caregiver, it is even more worrying, as these professionals are required greater attention and detail. A double workday can bring losses such as absenteeism, increase in the possibility of accidents at work, lack of interest in professional development, apathy, directly reflecting on the assistance provided. <sup>(5,6,8,20)</sup> However, they observed that the double working hours can contribute, on the one hand, to the improvement of the financial situation, but in general they know that this

alone is not enough. <sup>(19,22,23)</sup> The fact of working in more than one job, should be a contributing factor to the improvement of QoL, since, consequently, it improves the financial situation of these people, but, however, studies show that nurses who have a greater number of employment relationships present worse QOL compared to those who have less employment. <sup>(8,20,22)</sup>

In addition, another relevant factor for those who work at night is the period devoted to sleep, when studying the influence of night work on the health of nurses, they concluded that their QOL is influenced, mainly, by two aspects, sleep/rest and tiredness/wear. <sup>(18)</sup> They describe the satisfactory QoL of nursing professionals, but point out that sleep can be considered a disadvantage for QOL since these individuals have less time to rest, which contributes to premature aging, mental and emotional exhaustion and impaired social life. <sup>(19,20,23)</sup>

Night work has positive aspects such as longer time to study, greater chance of increasing family income with a second job, but it is essential that the professional respects his own limits since this process can generate physical imbalances which can compromise the development of its activities and the quality of the assistance provided. <sup>(7)</sup> However, physical exhaustion is less harmful than psychological/emotional exhaustion, as it cannot always be easily identified. And this type of injury is very common among nursing professionals who work in the hospital environment, since they constantly deal with death and suffering. It is worth mentioning that physical problems can also be triggered by psychological problems, such as stress. <sup>(22)</sup>

In this research, the nurses' satisfaction score with their health was lower compared to other professionals. Even so, it was found that most subjects were more satisfied than dissatisfied with their health. Other research has associated the health problems of nursing workers with a reduction in QOL at work, espe-

cially for night shift workers because it is responsible for triggering an imbalance in eating habits, sleep, ability to concentrate, changes in mood and in life familiar and social. <sup>(7,18)</sup> A study carried out in the southeastern region of the country



It is worth mentioning that physical problems can also be triggered by psychological problems, such as stress.



showed that 80,0% of nursing professionals rated their health as good, even though the physical, psychological and environmental domains had shown a reduced QOL. <sup>(24)</sup>

It is important to note that in all domains the female sex had a better QOL than the male, but women represented the majority in this study. This data was also found in a study that aimed to assess the QOL and the work capacity of nursing professionals in a large hospital. <sup>(5)</sup> Regarding the comparison of marital status and position with the domains, a significant association was observed in relation to the psychological and environment domains. <sup>(25)</sup>

Among the "physical", "psychological", "social relationships" and "environment" domains, the psychological domain had the greatest impact on the subjects' QoL. In another study, they affirm that the psychological suffering generated by long working hours, accelerated rhythms of production, repressive and authoritarian pressure, the absence or scarcity of rest breaks during the working hours reflects in a lower QOL. <sup>(8,20)</sup> It should be noted that the social relations domain, which did not present a considerable association in this study, must be constantly observed by health services since it is pointed out by authors as intervening in the QoL of health professionals. Night work makes it difficult to maintain the social relationship, especially because this time causes some social isolation due to not being a common shift. <sup>(5,22,25)</sup>

## CONCLUSION

This is a local study, carried out only with the night nursing team of only one hospital in the municipality of Montes Claros. Thus, the sample becomes insufficient in order to carry out a more in-depth comparative analysis on the factors that interfere with your QOL at the local level, thus characterizing a study limitation. Still, the study design itself confi-

gures another limitation, since the cross-sectional analytical study is not able to show the temporal relationship between the risk factor and the disease, and may impair inferences about the cause and effect relationship, as well as not allowing the determination of absolute risk.

This study demonstrated that the factors "family income", "physical acti-

vity", "working time at the institution" and "working time at night" negatively influenced the workers' QoL. Although the participants classified their QOL as good, there was a negative interference from the domains "psychological", "physical" and "environment" in the QOL in relation to sex, as well as the "environment" domain in relation

to marital and "psychological" and "environment" domain in relation to the position held by the subjects. It is necessary for health services to adopt measures to protect the health of their workers from the influence of professional factors, which will result in better QoL of professionals, increased productivity and improved assistance. 🐦

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ATTACHMENT I

Socioeconomic and Demographic Questionnaire

Sex:

Male  Female

Age group (years):

[20,30]  [31,40]  
 [41,50]  [50,+]

Ethnicity:

White  Black  Brown

Marital Status:

Single  Married

Professional category:

Nurse  Nursing Technician  
 Nursing assistant

Financial participation in the family group:

I work, but I get financial help from the family.  
 I am responsible only for my own livelihood.  
 I am responsible for my livelihood and contribute at home.  
 I am primarily responsible for supporting the family.

Family group income:

< 2 Minimum wages.  
 Three minimum wages.  
 Four minimum wages.

Five or more minimum wages.

Type of property you reside in:

Own  Rented  
 Given  Funded  
 Other situation

Children:

None  One  
 Two  Three or more

Religion:

Catholic  Evangelical  
 Adventist  Spiritist  
 Others  None

Currently studying:

Yes  No

ATTACHMENT II

WHO Abbreviated QOL Assessment Instrument (WHOQOL-Bref)

Instructions

This questionnaire is about how you

feel about your quality of life, health and other areas of your life. Please answer all questions. If you are not sure which answer to give to a question, please choose from the alternatives that seem most appropriate to you. This can often be your first choice.

Please keep in mind your values, aspirations, pleasures and concerns. We are asking what you think of your life, taking the last two weeks as a reference. For example, thinking about the past two weeks, a question could be:

	Nada	Muito pouco	Médio	Muito	Completamente
Você recebe dos outros o apoio de que necessita?	1	2	3	4	5

You should circle the number that best matches how much support you need from others in the past two weeks. Therefore, you should circle the number 4 if you received "a lot" of support as below.

	Nada	Muito pouco	Médio	Muito	Completamente
Você recebe dos outros o apoio de que necessita?	1	2	3	4	5

You must circle the number 1 if you have not received "Nothing" in support. Please read each question, see what you think and circle the number and it seems to you the best answer. You must circle the number 1 if you have not received "Nothing" in support. Please read each question, see what you think and circle the number and it seems to you the best answer.

N	Variável	Nada	Muito pouco	Médio	Muito	Completamente
1	Como você avaliaria sua qualidade de vida?	1	2	3	4	5
N	Variável	MI	I	NSNI	S	MS
2	Quão satisfeito(a) você está com sua saúde?	1	2	3	4	5

Legenda: MI = Muito Insatisfeito; I = Insatisfeito; NSNI = Nem Satisfeito, Nem Insatisfeito; S = Satisfeito; MS = Muito Satisfeito.

The following questions are about how much you have been feeling in the past two weeks.

N	Variável	Nada	Muito pouco	Mais ou Menos	Bastante	Extremamente
3	Em que medida você acha que sua dor (física) impede você de fazer o que você precisa?	1	2	3	4	5

4	O quanto você precisa de algum tratamento médico para levar sua vida diária?	1	2	3	4	5
5	O quanto você aproveita a vida?	1	2	3	4	5
6	Em que medida você acha que a sua vida tem sentido?	1	2	3	4	5
7	O quanto você consegue se concentrar?	1	2	3	4	5
8	Quão seguro(a) você se sente em sua vida diária?	1	2	3	4	5
9	Quão saudável é o seu ambiente físico (clima, barulho, poluição, atrativos)?	1	2	3	4	5

The following questions ask how completely you have felt or are able to do certain things in the past two weeks.

N	Variável	Nada	Muito pouco	Médio	Muito	Completamente
10	Você tem energia suficiente para seu dia-a-dia?	1	2	3	4	5
11	Você é capaz de aceitar sua aparência física?	1	2	3	4	5
12	Você tem dinheiro suficiente para satisfazer suas necessidades?	1	2	3	4	5
13	Quão disponíveis para você estão as informações que precisa no seu dia-a-dia?	1	2	3	4	5
14	Em que medida você tem oportunidades de atividade de lazer?	1	2	3	4	5
8	Quão seguro(a) você se sente em sua vida diária?	1	2	3	4	5
9	Quão saudável é o seu ambiente físico (clima, barulho, poluição, atrativos)?	1	2	3	4	5

The following questions ask how well or satisfied you have felt about various aspects of your life in the past two weeks.

N	Variável	MR	R	NRNB	B	MB
15	Quão bem você é capaz de locomover?	1	2	3	4	5

Legenda: MR = Muito Ruim; R = Ruim; NRNB = Nem Ruim, Nem Bom; B = Bom; MB = Muito Bom.

N	Variável	MI	I	NSNI	S	MS
16	Quão satisfeito(a) você está com seu sono?	1	2	3	4	5
17	Quão satisfeito(a) você está com sua capacidade de desempenhar as atividades do seu dia-a-dia?	1	2	3	4	5
18	Quão satisfeito(a) você está com sua capacidade para o trabalho?	1	2	3	4	5
19	Quão satisfeito(a) você está consigo mesmo?	1	2	3	4	5
20	Quão satisfeito(a) você está com suas relações pessoais (amigos, parentes, conhecidos, colegas)?	1	2	3	4	5
21	Quão satisfeito(a) você está com sua vida sexual?	1	2	3	4	5
22	Quão satisfeito(a) você está com o apoio que você recebe de seus amigos?	1	2	3	4	5
23	Quão satisfeito(a) você está com as condições do local onde mora?	1	2	3	4	5
24	Quão satisfeito(a) você está com o seu acesso aos serviços de saúde?	1	2	3	4	5
25	Quão satisfeito(a) você está com o seu meio de transporte?	1	2	3	4	5

Legenda: MI = Muito Insatisfeito; I = Insatisfeito; NSNI = Nem Satisfeito, Nem Insatisfeito; S = Satisfeito; MS = Muito Satisfeito.

The following questions refer to how often you have felt or experienced certain things in the past two weeks.

N	Variável	Nunca	Algumas vezes	Freqüentemente	Muito freqüentemente	Sempre
26	Com que frequência você tem sentimentos negativos, tais como mau humor, desespero, ansiedade, depressão?	1	2	3	4	5