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SLEEP QUALITY AND BODY COMPOSITION IN A NURSING TEAM

Vivian de Moraes COELHO[1], Camila de Oliveira SINHOROTO[2], Patrícia MAGNABOSCO[3], Valéria Nasser FIGUEIREDO[3], Omar Pereira DE ALMEIDA NETO[3]

[1] Master's Program in Sport and Physical Education at Sports and Physical Education School, University of São Paulo, Ribeirão Preto, São Paulo, Brazil.
[2] Nurse at Uberlândia Medical Center, Uberlândia, Minas Gerais, Brazil.
[3] Nursing Department at the Medical College, Federal University of Uberlândia, Uberlândia, Minas Gerais, Brazil.

Corresponding author:
Vivian de Moraes Coelho
viviancoelho97@hotmail.com

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Abstract

Recent studies have shown that nursing professionals have affected sleep quality, yet no relation between sleep quality and body composition has been established. The present study investigated the relation between body composition and sleep quality in nursing professionals. It was a transversal, quantitative, descriptive, and analytical study. Nursing workers from HC-UFU were randomly selected to participate in this study. Interviews were done with validated questionnaire to evaluate sleep quality of the professionals, and a bioimpedance exam was done with a tetrapolar device. Two hundred forty-three professionals of the nursing team participated in the survey, mostly females (n=205; 84.4%), nursing technicians (53.1%). Average abdominal circumference was 91.97±13.83 cm, body fat was 31.66±8.24% or 24.07±11.50 kg. The body mass index (BMI) was 27.09±4.63. Most participants evaluated sleep quality as bad (n=99; 40.7%) and "Sleep Latency" between 31 and 60 minutes (n=74; 30.5%) in the dominion "Subjective Sleep Quality". Correlations were observed between: percentage of body water X Sleep Duration Dominion ($r=-0.135$; $p<0.05$); water resistance in the body X Dominion Sleep Efficacy ($r=0.149$; $p<0.05$); percentage of body fat X "Disfunction During the Day" ($r=0.233$; $p<0.01$); fat mass (kg) and fat percentages X "Sleep disturbance"($r=0.148$; $r=0.177$; $r=0.182$; $p<0.01$) respectively; BMI X "Sleep Disturbance", ($r=0.146$; $p<0.05$) as well as percentage of lean mass and body water X "Sleep Disturbance" ($r=-0.244$; $r=0.247$; $p<0.01$). This is the first study comparing sleep quality with body composition data in a nursing team. It became clear that more studies should be done to obtain greater knowledge about the health profile of nursing teams and, therefore, establish better plans and solutions for the group studied.

Keywords: Body Mass Index. Health Care Professionals. Nursing. Sleep Disorders.

1. Introduction

Highly complex health services, such as hospitals operate with workers uninterruptedly. Nursing workers are some of the professionals under work shifts. That kind of dynamics has the capacity of changing physiologic processes of the body, like the circadian cycle (the one that regulates the cycle vigil and sleep) (James et al. 2017; Silva et al. 2017; Holanda et al. 2018).

The homeostatic and circadian control are important markers of the cycle vigil-sleep. Sleep architecture is defined as the distribution of phases in relation to time, and the timing structure of the cycle

vigil-sleep as the moment that vigil and sleep occur in a specific number of frequencies that compose these alternations (Li et al. 2018; Chan 2020).

Sleep can be characterized as REM (with rapid eye movements) and NREM (non-rapid eye movements) based on EEG, EOG, EMG (electroencephalogram, electro-oculogram and electromyogram, respectively). The NREM sleep is composed by 4 levels: stages I, II, III and IV. Muscle relaxation similar to vigil occurs during those stages, but with basal muscle tone (Araujo et al. 2011).

Sleep is considered efficient when the proportion between the time that the individual slept and the time that the individual stayed in bed is 85% or more. When total sleep deprivation occurs during one night, the rebound effect occurs in the following two nights (Araujo et al. 2011; Ferreira 2016; Morrissey et al. 2020). Nursing professionals working the night shift are directly affected by that mechanism, concurring to disturbed sleep architecture, low performance, irritability, tiredness, intellect change, drowsiness during the day and sleeplessness during the night, even work accidents and increase in stress level (Araujo et al. 2011; Giorgi et al. 2017; Silva et al. 2017).

According to the World Health Organization, 90% of the global population is affected by stress (Furini 2017). Nurses work in an environment considered stressful, for its excessive workload, small number of employees, specificity of the tasks, short time to perform the tasks, dissatisfaction, physical environment of the unit, lack of training and supervision (Ferreira et al. 2015; Giorgi et al. 2017; Assis et al. 2018).

Thus, increased activity of the HPA (hypothalamus-pituitary-adrenal) axis results in sleep fragmentation, increasing the levels of circulating cortisol by the physiological cascade process (Ferreira et al. 2015; Assis et al. 2018). Furthermore, studies show higher cortisol expressions and sleep deprivation associated to BMI (body mass index) increase, since another physiological hormonal expression cascade (associated to the decrease of the anorectic leptin hormone and increase of the orectic ghrelin hormone) is activated. This association changes food intake, increasing hunger and food ingestion, justifying, once again, BMI increase (Guedes and Alves 2017; Assis et al. 2018). Even though these physio-pathological relations have been established, few studies have evaluated the construct sleep quality in association with body composition of health professionals, specifically with nursing professionals.

The results of this study can help to develop health policies not only for the workers' health but also to prevent chronic diseases, to reduce the number of sick-related leaves, retirement, precocious hospitalizations due to chronic diseases, and also to collaborate with guidelines and clinical protocols for treatment and management of obesity and insomnia. Finally, it is expected to provide higher life quality for shift workers. Therefore, this study investigated the relation between body composition and sleep quality in nursing professionals.

2. Material and Methods

Type of research

Quantitative, descriptive, and analytical study.

Location, Population, Ethical Matters

The study was done with professionals from the nursing team of the General Clinics Hospital from the Federal University of Uberlândia (Hospital de Clínicas - HCU-UFU). This is the biggest health provider in the public health services (Sistema Único de Saúde - SUS) in Minas Gerais and it is ranked as the third largest academic hospital in the educational network of the Ministério da Educação (MEC).

The project was first submitted to the responsible Department at the co-participating institution for analysis and authorization of the proposed study. The study was approved by the Ethical Appreciation Certificate Presentation: 61307816.5.0000.5152; Ethics research committee statement: 1.908.169.

Including and Excluding Criteria

The including criteria were: (i) be nursing aide, nursing technician or nurse in the permanent team at

the HCU-UFU; (ii) be at least 18 years old; (iii) having at least 2 years of work experience.

The excluding criteria were: (i) having reported sleep disturbances; (ii) professionals who were in vacation; (iii) professionals who were in sick leave. Participants with previous use of sleep medications were not excluded, in order to describe the prevalence of medication use for this purpose within the sample.

Sample Size Determination

The sample size was computed based on the evaluation of population proportion. The total sample size was estimated as 288 participants, selected through random sampling among the 1,214 nursing professionals of HC-UFU, with 364 workers from the night shift and 850 from the day, with correction for finite population and adjusting refusal to 20%, respecting the population density of the shifts studied. The confidence level was fixed in 95% and the design error in 5%. A sample was estimated for each work shift, and it was distributed as 86 night shift and 202 day shift workers. Considering refusals and dropouts, the final number was 243 people, with 173 from the day shift and 70 from the night one. Data were entered in Microsoft Office Excel® 2010 spreadsheets, by two independent persons, with double entry and data validation to double check the consistency of the spreadsheets. Eventual differences were solved by analysis of the original questionnaire. Subsequently, data were imported into Statistical Package for the Social Science (SPSS), version 21.0, for statistical analysis. Descriptive analyses were done based on simple absolute and percent frequencies for the variables, and central (average, median, mode) and dispersion estimates (standard deviation, minimum and maximum) for the quantitative variables. Pearson's Correlation test was used to compare quantitative variables. Correlations were classified as weak ($0< r < \pm0.3$), moderate ($\pm0.3 \leq r < \pm0.5$) or strong ($r \geq \pm0.5$) (Cohen 1988).

Study design

Data collection was done for 12 months (from January 2018 to December 2018). The study subjects were approached at the beginning of the shift and the best time for data collection was arranged, according to the following protocols.

Clinical questionnaire:

Sleep quality of the sample was evaluated using the *Pittsburgh Sleep Quality Index* (PSQI) (Bertolazi et al. 2011), containing ten questions. Questions one to four are subjective, while question five to ten are objective. Questions five, nine and ten provide space to record comments of the respondent, whenever required. The questions of PSQI encompass seven components, which are analyzed based on the instructions for scoring each one of them, varying from zero to three points. Maximum sum of this instrument is 21 points, with scores above five indicating a bad quality of sleep pattern.

Physical and bioimpedance exams

A detailed physical exam was done by the interviewer after the questionnaire was completed, and included:

1. Measurement of abdominal circumference (cm), weight (kg) and height (m) in a standardized scale and digital balance with a precision of 0.5 kg.
2. Bioimpedance test was done after the participants had been directed to remove all metal objects, such as piercings, watches, bracelets, necklaces, among others, and had not ingested alcoholic or caffeinated beverages in the previous 24 hours; nor had any intense physical activity in the previous 24 hours; they had to urinate thirty minutes before the evaluation and remained relaxed for five minutes before starting the evaluation. BIA metrics of upper limbs was done using the equipment OMRON® model (OMR) (HBF-306BL), with the participant standing up, holding the equipment metal sensors with extended elbows and arms forming a 90° angle in relation to the trunk.

3. Results

Two hundred and forty-three nursing professionals of the General Clinics Hospital of the Federal University of Uberlândia participated of this study. Among them, 84.4% (n=205) were female, married (n=131; 53.9%), white (n=105; 43.1%). Seventy one percent worked on the day shift and 29% on the night one. The other descriptive variables are presented in Table 1.

Table 1. Descriptive variables of professional and socio-demographic profile of the nursing team of the General Clinics Hospital of the Federal University of Uberlândia – MG, 2018.

Variable	Number	Percentage (%)
Gender		
Female	205	84.4
Male	38	15.6
Civil status		
Single	59	24.3
Married	131	53.9
Divorced	27	11.1
Widowed	2	0.8
Lives with partner	24	9.9
Ethnicity		
White	105	43.1
Mulattoes	85	35
Black	44	18.1
Asian	8	3.3
Native indian	1	0.4
Religion		
Catholic	97	39.9
Protestant	73	30
Spiritist	35	14.4
Umbanda or Candomblé	4	1.6
Other	10	4.1
With no religion	24	9.9
Academic degree		
Nursing Aid	25	10.3
Nursing Technician	129	53.1
Nurse	89	36.6
Post graduation		
Yes	137	56.4
No	106	43.6
Position		
Nursing Aid	69	28.4
Nursing Technician	127	52.3
Nurse	47	19.3
Shift		
Day	173	71.2
Night	70	28.8
Other Institution		
Yes	37	15.2
No	206	84.8

In relation to life habits, only 95 (39.1%) of the participants regularly practiced physical activities. The prevalence of non-transmittable chronic diseases (NTCD) was 4.1% for DM, 18.9% for SAH and 11.9% for dyslipidemias. Smoking was prevalent on 31.5% of the participants, and the use of medication was observed in more than one half of the sample (54.7%).

Table 2. Descriptive variables of the clinical profile of the nursing team of the General Clinics Hospital of the Federal University of Uberlândia – MG, 2018.

Variable	Number	Percentage (%)
Physical Activity	95	39.1
Diabetes	10	4.1
Hypertension	46	18.9
Dyslipidemia	29	11.9
Smoker	7	2.9
Alcohol	76	31.3
Medicine use	133	54.7
Antihypertensive	41	16.9
Contraceptive	27	11.1
Thyroid stimulating hormone	19	7.8
Antidepressant	22	9.1
Folic acid	3	1.2
Anti-acid	9	3.7
Vitamin supplement	14	5.8
Anxiolytic	8	3.3
Anti-diabetic	8	3.3
Anti-lipidemics	11	4.5
Vasodilators	3	1.2

Evaluation of body composition, through physical examination and bioimpedance, showed that abdominal circumference was 91.97±13.83 cm, body fat (%) was 31.66±8.24, body fat (kg) was 24.07±11.50, and BMI was 27.09±4.63. The average value of basal metabolism and its standard deviation were 1,404.87 ± 184. All other characteristics evaluated by bioimpedance are presented in Table 3.

Table 3. Bioimpedance descriptive variables of the nursing team of the General Clinics Hospital of Federal University of Uberlândia – MG, 2018.

Variable	Minimum	Maximum	Average ± SD
Abdominal circumference	60	140	91.97 ± 13.84
Hip circumference	56	139	105.55 ± 11.39
Bfat%	10.2	54	31.660 ± 8.25
Bfatkg	5.8	117.5	24.071 ± 11.50
$Tfat_{min}$	14	30	23.71 ± 3.48
$Tfat_{max}$	20	45	29.76 ± 3.49
BMI	18.4	44.8	27.092 ± 4.64
ResisA	271	980	536.15 ±101.00
BMR	1125	2143	1404.87 ± 184.57
$TWgt_{min}$	32	87	55.39 ± 9.01
$TWgt_{max}$	37	100	66.38 ± 10.02
LeansKg	35.4	83.3	49.218 ± 8.90
Leans%	31.5	89.8	68.019 ± 8.78
Wtrlt	24.7	61	35.943 ± 6.48
Wtr%	33.6	95	50.164 ± 6.95
$Twtr_{min}$	44	56	48.71 ± 2.72
$Twtr_{max}$	52	89	55.96 ± 3.33

*AC: abdominal circumference; HC: hip circumference; Bfat%: body fat percentage; Bfatkg: kilograms of body fat; Tfatmin: minimum percentage of body fat; Tfatmax: maximum percentage of body fat; BMI: body mass index; ResisA: water resistance in the organism; BMR: basal metabolism; TWgtmin: recommended minimum weight; Twgtmax: recommended maximum weight; LeansKg: kilograms of lean mass; Leans%: percentage of lean mass in the organism; Wtrlt: amount of water in the organisms; Wtr%: percentage of water in the organism; Twtrmin: minimum percentage of water for the organism; Twtrmax: maximum percentage of water for the organism.

Descriptive analysis of sleep quality was evaluated by the Scale of Pittsburgh (Table 4). In the dominion “Subjective Sleep Quality” most of the interviewed had bad sleep quality (n=99; 40.7%) and “Sleep Latency” between 31 and 60 minutes (n=74; 30.5%). Most of them had “Sleep Duration” greater than 7 hours (n= 76; 31.3%) and “Customary Sleep Efficiency” greater than 85% (n= 159; 65.4%).

The greatest frequency of "Sleep Disturbances" was once to twice per week (n=116; 47.7%). Most of the sample did not use medication for sleeping (n=190; 78.2%). Finally, most of the group evaluated presented a small "Disfunction During the Day" (n=87; 35.8%).

The correlation analysis between the construct sleep quality and body composition highlighted that water percentage in the organism had a negative, weak and significant ($p<0.05$) correlation with the Dominion Sleep Duration ($r= -0.135$). Also, there was a positive, weak and significant ($p<0.05$) correlation between water resistance in the organism with the Dominion Customary Sleep Efficiency ($r= 0.149$). Finally, body fat percentage had a positive, weak and significant ($p<0.01$) correlation with the dominion "Disfunction During the Day" ($r=0.233$).

Table 4. Descriptive variables on sleep quality, evaluated by the Pittsburgh's Scale, of the nursing team of the General Clinics Hospital of Federal University of Uberlândia – MG, 2018.

Dominion	N	%
Subjective Sleep Quality		
Very good	36	14.8
Good	91	37.4
Poor	99	40.7
Very poor	17	7.0
Sleep Latency		
< or = 15 minutes	62	25.5
16 to 30 minutes	73	30.0
31 to 60 minutes	74	30.5
> 60 minutes	34	14.0
Sleep duration		
> 7 hours	76	31.3
6 to 7 hours	74	30.5
5 to 6 hours	48	19.8
< 5 hours	45	18.5
Customary sleep efficiency		
> 85%	159	65.4
75 to 84%	45	18.5
65 to 74%	24	9.9
<65%	15	6.2
Sleep disturbances		
None	4	1.6
Less than once per week	105	43.2
Once or twice per week	116	47.7
3 times per week or more	18	7.4
Use of medication to sleep		
None	190	78.2
Less than once per week	12	4.9
Once or twice per week	14	5.8
3 times per week or more	27	11.1
Disfuntion during the day		
None	59	24.3
Small	87	35.8
Moderate	67	27.6
Severe	30	12.3

Quantification of body fat mass in kilograms had positive, weak, and significant ($r=0.148$) ($p<0.05$) correlation with the dominion "Sleep Disturbance", and also with minimum and maximum percentages of body fat ($r=0.177$; $r=0.182$) ($p<0.01$), respectively. The correlation between BMI and "Sleep Disturbance" was positive, weak, and significant ($r=0.146$) ($p<0.05$), while the percentage of lean mass and body water had negative, weak and significant correlations ($r= -0.244$; $r= 0.247$), respectively, ($p<0.01$) with the same dominion. Both minimum and maximum percentage of water for the organism presented negative, weak, and significant correlations ($r= -0.185$; $r= -0.198$), respectively, ($p<0.01$) with the above-mentioned dominion.

4. Discussion

Since the early organization of society, women have been seen as the care providers, first, at home. Subsequently, with the advent of host and support houses for the ill, maintained by church, women entered this space as care providers, since only men could study and become physicians. Thus, this historical setting still affects nursing teams, which is evident in the present study, in relation to the social-demographic profile, where the majority of the team is female, married and catholic. Also, it is found that most of them are nurse technicians, which could be explained by the time required for conclusion of the courses – a technical formation demands two years, while a bachelor's degree in nursing requires five years – and, for some it is more viable to invest in a faster education (Silva and Freitas 2018). Also, the proportion of nurses to nursing technicians, adopted by the HC-UFU is 77% nursing technicians, and 23% nurses (COFEN/FIOCRUZ).

Table 5. Pearson's correlation between body composition and sleep quality of the nursing team of the General Clinics Hospital of Federal University of Uberlândia – MG, 2018.

Body Composition	Dominions PSQI						
	QSS	LA	DurS	EHS	DisS	MedD	DDD
CA	-0.029	0.039	0.055	0.051	-0.002	0.017	-0.045
CQ	-0.025	0.035	0.038	0.049	0.004	0.014	-0.032
Bfat%	0.104	0.103	0.120	0.116	0.233**	-0.033	0.096
Bfatkg	0.049	0.081	0.084	0.013	0.148*	0.000	0.086
Tfatmin	0.006	0.055	-0.027	0.013	0.177**	0.022	-0.003
Tfatmax	0.013	0.060	-0.020	0.009	0.182**	0.015	-0.001
IMC	0.083	0.080	0.122	0.037	0.146*	-0.028	0.046
ResisA	0.000	0.004	0.004	0.149*	-0.12	-0.029	0.029
BMR	0.016	-0.059	-0.030	-0.097	-0.105	-0.090	0.029
TWgtmin	-0.008	-0.055	0.024	-0.71	-0.050	-0.078	0.020
Twgtmax	-0.010	-0.028	-0.006	-0.95	-0.040	-0.087	0.010
LeansKg	-0.026	-0.046	-0.005	-0.102	-0.084	-0.094	-0.020
Leans%	-0.088	-0.074	-0.090	-0.110	-0.244**	0.019	-0.087
Wtrlt	-0.007	-0.041	0.016	-0.095	-0.075	-0.085	-0.003
Wtr%	-0.057	-0.107	-0.135*	-0.084	-0.247**	0.002	-0.083
Twtrmin	-0.006	-0.080	-0.012	-0.012	-0.185**	-0.013	0.034
Twtrmax	-0.005	0.029	0.043	-0.018	-0.198**	-0.045	0.075

*p<0.05; **p<0.01; *QSS: Subjective Sleep Quality; LA: Sleep latency; DurS: Sleep Duration; EHS: Customary Sleep Efficiency; DisS: Sleep Disturbances; MedD: Use of medication for sleeping; DDD: Disfunction during the day.

The clinical profile indicates that the group practicing physical activities is very small, which could justify the prevalence of NTCD in the group, such as diabetes mellitus, systemic arterial hypertension, and dyslipidemia (Guedes and Alves 2017; Assis et al. 2018).

Body composition of the sample analyzed presented average abdominal circumference (AC) greater than that recommended by the directives of WHO, which is up to 80 cm for women and up to 94 cm for men. Considering that most of the sample is female, AC is above the recommended, indicating an increased risk of developing diseases related to the cardiovascular system (Oliveira and Rodrigues 2016).

The same trend was observed with average body fat (%), which was greater than the normal limit (30%) for adult women up to 49 years old, corroborating for possible imbalances in the cardiocirculatory system. It is known that overweight directly affects sleep quality (Guedes and Alves 2017; Assis et al. 2018). That can be confirmed by the correlation of the average Body Mass Index (BMI), of 27 (greater than the normal standard, between 18 and 25), with the dominion Sleep Disturbance, which states that the greater the BMI, the worse the sleep quality and the greater the incidence of sleep disturbances.

The average value of water percentage in the body was 50.16%, while the ideal is between 70 and 75% (Kyle et al. 2004; Lemos and Gallagher 2017). It becomes evident that water intake is below the necessary, indicating dehydration and malnutrition of body tissues, which can negatively impact cardiovascular and renal functions. Moreover, it can be observed that the greater the water content in the body, the better the customary efficiency of sleep and the lesser the amount of sleep disturbances. Fat tissue does not offer the same resistance (impedance) as muscle tissues, for example. The water percentage could also be explained by the fact that body fat of the study group was high (Carvalho et al. 2018).

Despite the small number of studies with similar methodological profile in the literature, hindering comparisons, global evaluation of sleep quality of the sample was considered poor, with sleep latency and sleep disfunctions during the day. Such data converge with that of studies with similar epidemiological design (Santos et al. 2016; Guerra et al. 2016; Simões and Bianchi 2017).

A study with nursing technicians pointed that more than 75% of the sample had sleep quality impaired. This aspect can be explained by the work shift that is imposed to nursing professionals, by the exposition to stressing factors, or by double employment (Simões and Bianchi 2017).

In contrast, a study done with students majoring in Nursing, pointed that more than 57% of that group presented good subjective sleep quality, which is the opposite of the present study (Lopes et al. 2019). Hypothetically, this could be explained by the fact that the former group consists of students, not subjected to labor schedules and shifts.

Literature data about sleep latency, i.e., the time a person takes to fall asleep after laying down, are more optimistic than the one found here (Lopes et al. 2019). Another study pointed that sleep latency was longer in persons with lower frequency of physical activity and with global sleep quality impaired. It is known that healthy life habits are positive predictors in the construct sleep quality and in other global constructs, such as life quality related to health (Silva et al. 2017).

Sleep latency can be altered by several factors, such as hormonal and psychobiological ones. It can be inferred, once again, that the effect of stressing factors, to which health professionals are subjected to in their work environment (Rodrigues et al. 2017), affect their sleep latency.

Moreover, complaints in the domain sleep disturbances were prevalent. It is known that insomnia has some trigger factors, and situations of stress and anxiety are common predisposing factors. Also, insomnia is directly related to increased time to fall asleep in values above 30 minutes. People suffering with insomnia, frequently, present fragmented sleep pattern, with night awakening episodes, and are tired and sleepy during the day (Corrêa et al. 2014).

A study done with Medicine students identified that 50% of the sample analyzed, studied with sleep disturbances. In general, it is observed that the constructs sleep quality, stress and anxiety are commonly affected in health students and professionals (Ribeiro et al. 2014).

Until now, no studies were found evaluating body composition and the correlation of these variables with sleep quality in nursing professionals. However, a generic interpretation of the findings in this study points that greater concentration of fat, greater BMI and low body water concentration (tissue dehydration) negatively impacted sleep quality, specifically on sleep disturbances, customary sleep efficiency and sleep duration. Although no studies, with similar methodological profile, were found demonstrating such correlations, other studies demonstrated general causal relation between increased body fat and impaired sleep (Carvalho et al. 2015; Lustosa et al. 2016; Monçale Neto et al. 2016; Ruthes et al. 2017; Zimberg et al. 2017; Andrade et al. 2018; Cardoso and Chagas 2019; Heath et al. 2019).

A previous study demonstrated the association reason of chance of 13.95% ($p<0.001$) for the occurrence of sleep obstructive apnea syndrome with high risk for obese patients, in comparison with overweight (7.02%) and eutrophic (2.14%) ones, and 25% of the individuals presented high consumption of fat (Carvalho et al. 2015).

Evidence points that sleep affects feeding habits and, consequently, energy balance and body weight regulation, with intimate relation with the development of cardiovascular diseases and other NTCD. A reduction in sleeping hours can trigger increased ingestion of foods with low nutritional value, leading to overweight (Heath et al. 2019).

Attention must be drawn to the relation between greater likelihood to work difficulties and occupational accidents with persons presenting sleep disturbances (Monçale Neto et al. 2016). For this reason, the need of tools optimizing sleep quality and life quality of nursing and health professionals has been frequently emphasized in order to reduce iatrogenic situations.

The previous use of medication that impact sleep quality may emerge as an important limitation of this study, and it is suggested to be specifically investigated in future research. In addition, although the sample size has internal consistency and is representative, the number of participants could be larger, allowing other analyses and statistical inferences. Future research in multicenter and with larger number of participants is suggested, to obtain external consistency of the theme.

5. Conclusions

The findings of this study pointed that: (i) most participants were women, white, married, and with technical formation in nursing; (ii) a small percentage of the study group practiced physical activities; in contrast, most of the participants had DM and SAH and use medication of several pharmacological classes; (iii) body composition highlighted high abdominal circumference, high levels of body fat, high BMI, reduced proportion of water in body composition, and low percentage of lean mass in the organism; (iv) an impaired sleep quality construct was evidenced by poor subjective sleep quality, high sleep latency, frequent sleep disturbances, and sleep disfunction during the day; (v) sleep disturbance, customary sleep efficiency and sleep duration correlated with the variables of bioimpedance, such as BMI, body fat, and body water percentage.

This is a pioneer study in relation to its approach, comparing sleep quality and body composition of a nursing team, since no other studies were found with similar methodological design, nor with the target population. It became evident that more studies are required to obtain a more comprehensive understanding of the health profile of nursing teams and, subsequently, establishing better plans and solutions in relation to this group (improvement in sleep quality and body composition, thus improving life quality, in general, of the workers of a nursing team).

It is expected that these results will cooperate for the optimization of health policies for both integral health of the health professional, and the formulation of policies for the prevention of chronic diseases, reducing the number of sick leaves, early retirement, and hospitalization due to acute expression of chronic diseases, as well as cooperating with directives and clinical protocols for treatment and management of obesity and insomnia.

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