Evaluation of Sleep Disorders inon-call staff of the Ignace Deen National Hospital in Conakry

ABSTRACT

Introduction : Sleep disorders in night staff are not well understood and their impact on daily life deserves to be researched. The objective was to study sleep disturbances among on-call staff at the HNID.

Material and methods: This was a cross-sectional prospective study of a period of 6 months from January 3 to June 30, 2020, using a self-administered, anonymous questionnaire with on-call and on-call staff of the HNID.

Results : The frequency of sleep disturbances in our study was 52% (n = 320). The average age of the respondents was 29.43 ± 6.62 years, the most represented age group was 20 to 40 years (93.44%). There was a male predominance with 66% (210) with a sex ratio (M / F) of 1.91. Among our patients 97.5% lived in Conakry and 2.5% outside Conakry. Singles represented 67.81%. The overweight was 32.7%. the average length of rest dayswas 5.75 ± 2.04 days with a compensatory rest rate of 37%. %. In univariate analysis, a significant relationship was found between sleep disturbances and BMI (P = 0.03), lack of rest after care (P = 0.01), coffee consumption (P = 0.00) as well as the use of the computer in the evening (P = 0.00).

Conclusion :Sleep disorders, although very rarely mentioned, are a reality among HNID caregivers. The need to recruit staff to relieve services and sleep hygiene education would be a good track to improve working conditions.

UNDER PEER REVIEW

Keywords: Sleep disorder, on-call duty, Ignace Deen National Hospital in Conakry.

Introduction

Sleep disorders are not only disturbances in the quantity and/or quality of sleep or its cycles, but also abnormal behavioral or physiological events occurring during sleep. They include a

wide range of events. The medical exercise, is based on a system of on-callto ensure continuity of care [1]. The caregiver must maintain a state of alertness to ensure proper care and always postpone their sleep.[2]

Their working conditions (stress, demands, extreme vigilance, night working hours) can affect their sleep[3]. Several studies around the world have shown the impact of medical exercise on the onset of sleep disorders (36.3-55%). The lack of data on sleep disorders among medical personnel in GUINEA, the need to study the existence of these disorders and their impacts on health and quality of life, are the main reasons. The objective was to study sleep disturbances among on-call staff at the HNID.

Material and methods

The Ignace-Deen National Hospital served as the framework for this work.

This was a cross-sectional study of a descriptive and analytical type for a duration of 6 months from 02 January to 30 June 2020. Our study covered all on-call care staff. All on-call care staff present and having agreed to participate in this study were included. Not included in this study were medical personnel who are not on duty, part-time and absent.

The first part of the questionnaire corresponds to socio-professional data and the second part corresponds to the validated French version of the PSQI. It includes 19 self-assessment questions and five questions posed to the spouse. Only self-assessment questions are included in the score. Participants were asked to limit their responses to incidents that occurred in the previous month. The questions in this section are divided into seven components, which are respectively: subjective sleep quality, sleep latency, sleep duration, habitual sleep effectiveness, poor form during the day, use of a sleep aid medication, and sleep disorders. The sum of the score of each of the seven "components" (from 0 to 3) constitutes the overall score of the PSQI, which can therefore vary from 0 to 21 points. A score of zero indicates no difficulties, while a score of 21 indicates major difficulties. According to the PSQI, a total below or equal to 5 indicates good sleep quality. A total greater than 5 makes it possible to diagnose poor sleep quality with a sensitivity of 89.6% and a specificity of 86.5% (kappa 0.75, $p< 0.001$).

Our data was collected with the permission of the hospital management and department heads. We conducted an interview in each department with participants on staffs or

UNDER PEER REVIEW

individually to explain how to fill out the forms. We made sure during collection that each sheet was filled in correctly.

The data were entered and analyzed using Epi-Info Version 7.2 software. Descriptive analysis used the calculation of percentages for qualitative variables and the calculation of means and standard deviations for quantitative variables. In addition, bivariate analyses were performed to identify factors associated with sleep disorders. Only the variables for which p is 0.05 were selected.

Medical secrecy was maintained throughout our study. The entire procedure was explained to the patients beforehand. We took into account the patients' verbal and non-committal consent.

Results

According to the PITTSBURGH Sleep Quality Index, 168 (52.5%) caregivers out of 320 had sleep disorders. The average age of our caregivers was 29 years +/- 7, with extremes 20 and 62 years, the most represented age group was 20 to 40 years. There was a male predominance in our series with a sex ratio (H/F) of 1.91. 50.94% (n = 320) of caregivers were in medical and support services versus 49.06% in surgical services with 80.62% medical doctor. 6.25% of caregivers were obese. the average number of days between night shift is 5.83 +/- 1.85 days with extremes 3 and 12 days. 11.25% of caregivers performed consecutive night shifts per week with an average number of 0.18 to 0.59 and extremes 1 and 3 shifts. Of the caregivers, 37% (n=320) benefited from safe rest with an improvement in off-duty sleep in 78.63% (n=117) and an improvement in work efficiency in 80.34% (n=117). The turnout rate was 6.87%.

UNDER PEER REVIEW

Table I :The socio-occupational data

Charasteristics	Number of staff	Percentage
Age group (years)		
AverageAge	29years ±7 (n=320)	
Sex		

Male	210	65,62%
Female	110	34,38%
Mariage situation		
Singles	216	67,50%
Divorce	1	0,31%
Marrieds	103	32,19%
Qualification		
Nurses	48	15,00%
Medicaldoctor	258	80,62%
Pharmacy	2	0,63%
Biologist	2	0,63%
Midwife	10	3,13%
Seniority (years)		
< 1	223	69,69%
1 - 5	60	18,75%
> 5	37	11,56%

Table II : Fashion and lifestyle

lifestyles	**YES**	**NO**	**P-value**
Tobacco	92(28,75%)	228(71,25%)	NS
Coffee	208(65%)	112(35%)	0,00
Tea	256(80%)	64(20%)	NS
Alcohol	14(4,38)	306(95,62%)	NS
Energy drinks	189(59,06%)	131(40,94%)	NS
Playing sports in the evening	18(5,63%)	302(94,37%)	NS
Evening use of the computer	32(10%)	288(90%)	0,00

UNDER PEER REVIEW

Table III : Components of the PSQI

Components of the PSQI.	**The determinants of sleep quality in the PSQI**	**N(%)**
The subjective quality of	Good	242 (75,62 %)

sleep	bad	78(24,37 %)
SleepLatency	≤ 3 0minutes	221(69,06%)
	>30 minutes	99(31,94%)
The duration of sleep	>6 hours	172(53,75 %)
	≤6 hours	148(46,25%)
The effectiveness of sleep	≥85 %	299(93,44%)
	<85 %	21(6,56 %)
The presence of sleep disorders	Lack of sleepdisorders	8(2,61%)
	Presence of sleepdisorders	312(97,39 %)
Takingmedication for sleep	Not in the last month	286(89,38 %)
	in the last month	34(10,62%)
Feeling in bad shape during the day	Not in the last month	87(27,19%)
	in the last month	233(72,81%)

UNDER PEER REVIEW

Table IV : Bivariate analysis of socio-occupational factors associated with sleep disorders

Factors	SD(yes) *	SD(No)	RR	IC	P-value
Age	29,04	29,85	-	-	0,27

(Female/Male)	52/116	56/94	0,8	0,67-1,07	0,17
BMI	46/122	59/93	0,77	0,6-1,001	0,04
(maried /Single)	52/115	51/101	0,87	0,69-1,09	0,23
(nurses/medicaldoctor)	20 /143	28/115	0,75	0,52-1,06	0,07
seniority atworkplace	4,96	5,54	-	-	0,60
Seniority Professional	5,67	8,01	-	-	0,10
Days per Week	4,81	4,69	-	-	0,25
Hour per day	8,7	8,5	-	-	0,63
On-call	12/156	10/142	1,04	0,7-1,55	0,84
Compensatoryrest	118/50	85/67	1,3	0,5-0,9	0,01
Sleep duration during on-call	2,45	2,36	-	-	0,50
Successively on-call	21/147	15/136	1,12	0,83-1,51	0,40
Number of on-call successively	1,68	1,86	-	-	0,50

***Sleepdisorders**

UNDER PEER REVIEW

Discussions

The objective was to studysleepdisturbancesamong on-call staff at the HNID

Poor sleep quality was defined, as is the case in most international studies referenced, by a score greater than 5 on the PSQI, which is a validated scale[4].

Other studies [5–7] reported 43%, 55%, and 58.2% of sleep disorders, respectively.

The high frequency of sleep disorders in our study could be explained by the lack of staff for proper rotation of the night shift and the fact that HNID is one of the reference hospital in the country resulting in increased workload.

HAFSA et al [8] had found 68% (n = 262) in medical services and 32% in surgical services. Our results could be explained by the fact that the majority of HNID services have a duty line and therefore caregivers were in a balanced proportion between medical and surgical services.

LODDE et al [2] had reported 4.7%(n=239) of obesity. Although the dietary context differs from one country to another, this similarity could be the cause of a change in the nycthemerical rhythm resulting in a change in the dietary rhythm leading to weight gain. To this in our context would be added the lack of regular physical activity.

SLIM et al [5] had reported 13.86% successive weekday on-call. Also, LODDE et al [2] reported an average on-call of 6 days; 38.1%(n = 239) benefited from safe rest with 60.4%(n=91) improved off-duty sleep and 80.344%(n = 91) improved work efficiency. This low rate of safety rest could be explained by a need to increase income to compensate for low pay, sometimes greater (physiological and fulfillment) needs.

The majority of caregivers used these stimulants for various reasons: to stay awake, get a boost of energy, get motivated.

This period of sleep latency in our study could be related to tired induced by on-call due to the high workload and the sometimes long home-hospital commute. The total duration of sleep in our study is less than 6 hours. Almost half of this could be explained by the fact that most of our caregivers were of Muslim faith and therefore got up early for the first prayer on the one hand and on the other hand that they had to leave home early for the hospital. The low rate of drug use and good sleep efficiency in the majority of caregivers may be due to the fact that they are young with less predisposition to insomnia and thus find a restorative sleep when they get to sleep.

The bivariate analysis between sleep disorders and different variables showed a significant correlation with BMI, lack of safe rest, coffee consumption and evening computer use.

Excess weight was linked to sleep disorders , These results are consistent with other studies [8,9]. Also, the lack of safe rest was linked to the onset of sleep disorders, this same link was found by SLIM et al [5].There is also a significant link between coffee consumption and sleep disorders. Other studies [10,11] stated that high coffee consumption is positively associated with poor sleep quality. However, HFSA et al [8] had not found a link. Computer use in the evening was found to contribute to poor sleep quality. MESQUITA et al [12] had found the same link.

UNDER PEER REVIEW

Conclusion

Sleep disorders exist among HNID caregivers. The practice of on-call at caregivers is at the root of a disturbance of sleep time, which could involve the caregiver's responsibility towards the patient. The influencing factors are diverse and sometimes constitute elements of the content of the work inherent in this form of organization.

If safety rest is a necessary response to sleep disorders, it probably isn't enough. A better globalization of the prevention and management of these disorders would be necessary to improve the quality of sleep and the socio-professional life of caregivers.

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