



Study of Sleep Quality among Post Graduates, Final Year, Nursing Tutees and Paramedical Tutees

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ABSTRACT

Study of sleep quality among post graduates, final year tutees, nursing tutees and Paramedical tutees. 200 sample totals, includes 50 paramedical tutees, 50 postgraduates, 50 tutees in their last year, and 50 nursing tutees, were collected from the study population. All participants were given verbal consent and were assured of the privacy's confidentiality. Pittsburgh Sleep Quality Index Scale Questionnaire and Demographic Information Questionnaire, as well as other research variables such as shift work or duty detail, drink habits, need for coffee or caffeinated drinks, smoking, and use of mobile devices just before bed. In this research, the mean standard deviation age for paramedical tutees was 21.1 ± 1.04 , for final year tutees it was 24.03 ± 1.52 , for nursing tutees it was 25.28 ± 1.57 , and for postgraduates it was 28.1 ± 0.93 . Among the study population, 64% were female and 36% were male in paramedical tutees, 54% were male and 46% were female in final year tutees, 64% were male and 36% were female in nursing tutees, and 52% were male and 44% were female in postgraduates. Rotation shift work or duty was performed by 68 percent of nursing tutees, 62 percent of final year tutees, and 34 percent of postgraduate tutees. All postgraduates, final year tutees, and paramedical tutees in the study population were unmarried, but 44 percent of nursing tutees were married. 84 percent of nursing tutees, 70 percent of postgraduate tutees, 58 percent of paramedical tutees, and 40 percent of seniors drank coffee or other caffeinated beverages. Alcohol use was predicted to be 34% among postgraduates, 26% among tutees in their last year, 22% among nursing tutees, and 4% among paramedics. 28% of nursing tutees, 20% of tutees in their last year, 14 percent of postgraduate tutees, and 2 percent of paramedical tutees reported smoking cigarettes or bidis. Almost everyone was using their phone or laptop at the time of sleep. With a global mean standard deviation for ppsi score of 6.4 ± 3.42 , paramedical teachers were reported to have the worst sleep habits, followed by postgraduate tutees with a mean score of 6.01 ± 2.98 and nursing tutees with a mean score of 5.09 ± 2.26 . Final year tutees were found to have great sleep quality, with a mean global ppsi score of 3.63 ± 2.91 . There was a significant difference in sleep quality between them ($p < 0.002$). Poor sleep quality was discovered among paramedics, postgraduates, and nursing tutees. Poor sleep quality was more prevalent among paramedical tutees than among postgraduates, nursing tutees, and final-year tutees. Poor sleep quality was linked to daytime dysfunction among paramedics, postgraduates, and nursing tutees.

KEY WORDS: Sleep Quality, Nursing Tutees

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INTRODUCTION

The physiological needs of humans require sleep; It might be restorative and therapeutic. As a consequence, sleep disturbances may cause major disruptions in human functioning. As a result, the importance of obtaining enough sleep cannot be overstated. Sleep deprivation has been linked to major weight gain, cardiovascular problems including hypertension, and neurologic disorders like stroke and Alzheimer's disease. A Chinese doctor collapsed and passed away in 2018 following an 18-hour continuous duties during a shift without sleep; although a ruptured brain aneurysm was the cause of her death, it is unclear if sleep deprivation played a significant role. Sleep deprivation also weakens the immune system and impairs memory, which is particularly worrisome for healthcare professionals whose main duty is to provide medical care for the sick. Their work is delicate and requires precision, especially when it comes to making decisions, calculating dosages, and administering medications.

Sleep duration varies with age, according to the National Sleep Foundation in the United States of America: between 14 and 17 hours in the first three months of life, 12-15 hours between 4 and 11 months, 11-14 hours in toddlers, 10-13 hours in preschoolers and schoolers, 8-10 hours in teenagers, and 7 to 9 hours in adults.² However, the average sleep time varies by country; 400 patients were examined in 2009 by Sweileh et al. [3] in Nablus, Palestine, and the researchers found that the average sleep time was 6.4 ± 1.1 hours. Health professionals have poor sleep quality, according to Nazatul et al. [4] Low sleep quality was found

among Malaysian, Chinese, and Nigerian nurses by Chien et al. [5] and Aliyu et al. [6]; similar results were found among doctors by Surani et al. [7] and Vela-Bueno et al. [8]. Sleep problems can result in excessive daytime sleepiness, poor judgment, and poor neurocognitive and psychomotor function, all of which can compromise clinical judgment and endanger the patient's health [9-14]. There is clearly a lack of local knowledge about sleep problems, particularly among health personnel [6, 9].

METHODS AND MATERIALS

After being given the go-ahead by the institutional ethics committee and the protocol review committee, this cross-sectional research was carried out at the Department of Nursing. A total of 200 samples were drawn from the study population, including 50 paramedics, 50 postgraduates, 50 final-year tutees, and 50 nursing tutees. Participants who have any acute or chronic medical disease, acute or chronic mental illnesses such as drug use disorder, sleep disorders, anxiety disorder, etc., or who have a history of psychiatric problems and are unwilling to participate in the research were excluded. All participants were guaranteed of their privacy's confidentiality, and their verbal agreement was obtained.

Pittsburgh Sleep Quality Index Scale Questionnaire and Demographic Information Questionnaire, as well as other study factors such either a job detail or a shift, drinking patterns, use of coffee or caffeinated beverages, smoulder, and usage of mobile devices just before bed.¹⁴Index of Pittsburgh's Sleep Quality A 19-item questionnaire called the PSQI is used to evaluate how well you slept in last month. The following variables affect subjective sleep quality: daily dysfunctions, sleep interruption, usage of sleep medicines, and sleep latency, duration, and efficiency are the 19 questions used to calculate the seven component scores. On a 4-point Likert scale, each component is rated from 0 (no difficulty) to 3. (0, 1, 2, 3). (Extremely tough). The sum of the seven component values yields a final global score that ranges from 0 to 21. Poor sleep is defined as a global score of 5 or above. Getting adequate sleep is indicated by a total score of 5.

STATISTICAL INVESTIGATION

SPSS (social science statistics) Software version 25.0 was used to analyse the data, and the one-way anova test was used for independent measures. The outcome was calculated using a %age and a mean. The mean value for the global pqsi score was generated separately from each participant in order to compare sleep quality throughout the study population. The standard deviation was then calculated, and lastly the p value was calculated. The same is true for the various PQSI component scores, the sleep component of the study variable scores, and the sleep and daytime dysfunction component score of the study population. At 0.05, the statistical significance level was chosen.

RESULTS

In this study, the mean age of the standard deviation of medical tutees was 21.1 ± 1.04 , for final year tutees it was 24.03 ± 1.52 , for nursing tutees it was 25.28 ± 1.57 , and for postgraduates it was 28.1 ± 0.93 . (Table 1). Among the study population, 64% were female and 36% were male in paramedical tutees, 54% were male and 46% were female in final year tutees, 64% were male and 36% were female in nursing tutees, and 52% were male and 44% were female in postgraduates (Table 2). Rotation shift work or duty was performed by 68% of nursing tutee, 62% of final year tutee and 34% of postgraduate tutee. All postgraduates, final year tutees, and paramedical tutees in the study population were unmarried, but 44 % of nursing tutees were married.

Coffee or caffeinated drinks were consumed by 84 % of nursing tutees, 70 % of postgraduate tutees, 58% of paramedic tutee, and 40% of final year tutee. Alcohol use was estimated to be 34% among postgraduates, 26% among final year tutee, 22% among nursing tutee, and 4% among paramedics. Cigarette or bidi smoking was reported by 28% of nursing tutees, 20% of final year tutees, 14% of postgraduate tutees, and 2% of paramedical tutees. At the time of sleep, almost everyone was utilising their phone or laptop. (Table3)

Poor sleep quality was shown to be the most prevalent among Paramedical tutees, with a global mean standard deviation for pqsi score of 6.4 ± 3.42 , followed by Postgraduates with a mean worldwide pqsi score of 6.01 ± 2.98 , and Nursing tutees with a mean global pqsi score of 5.09 ± 2.26 . With a mean global pqsi score of 3.63 ± 2.91 , final year tutees were found to have excellent sleep quality. There was a significant difference in sleep quality between them ($p < 0.002$). There is a significant relationship between poor overall sleep quality and daytime dysfunction in paramedics, postgraduates, and nursing tutees ($p < 0.00002$). (table 4) Residents on rotation shift duty slept worse than nursing tutees and final year tutees. Coffee or caffeinated drink consumption was higher among paramedical tutees, postgraduates, and nursing tutees than among final year tutees ($p = 0.006$). Mobile phone use during sleep was higher among paramedical tutees and postgraduates than among nursing tutees and final year tutees ($p < 0.0002$). Final-year tutees who drank

alcohol reported poor sleep quality. Nursing tutees and final-year tutees who smoked cigarettes slept poorly (table 4)

Table 1: Mean and SD for age of tutees in the study

Age (yrs)	Mean ±SD
Post graduates	28.1± 0.93
Final year tutees	24.03± 1.52
Nursing tutees	25.28±1.57
Paramedical tutees	21.1±1.04

Table 2. Gender distribution of tutees in the study

Mean ±SD	Men	Women
Post graduates	28(52%)	22(44%)
Final year tutees	27 (54%)	23 (46%)
Nursing tutees	32(64%)	18(36%)
Paramedical tutees	18(36%)	32(64%)

Table 3. Mean global pqsi score among various factors

Demographic parameter	Paramedical tutees	Post graduates	Nursing tutees	Final year tutees
Global Pqsi score mean (SD)	5.8± 2.85	6.03± 3.02	5.32±2.12	4.07±3.16 p<0.002
Duty shift				
Duty Rotation	-	17(34%)	34(68%)	31(62%) P=0.048
Pqsi score mean	-	6.65±3.73	5.45± 2.37	4.62±3.04
Alcohol intake	02(4%)	17(34%)	11(22%)	13(26%)
Pqsi score mean	10	4.74	3.2	5.11
Cigarette or bidi smoking	01(2%)	07(14%)	14(28%)	10(20%)
Pqsi score mean	10	05	6.4	6.2
Fixed	-	28(56%)	8(16%)	14(28%)
Pqsi score mean	-	5.49	4.6	2.18
Mobile use at the time of sleep	45(90%)	48(96%)	47(94%)	49(98%)
pqsi score mean	5.8±3.43	6.06±2.86	5.06±3.92	3.71±3.01 P<0.0002
Coffee or caffeinated drink intake	29(58%)	35 (70%)	42(84%)	20(40%) P=0.006
Pqsi score mean	3.37±1.87	6.30±4.06	5.77± 3.19	5.27±2.40

Table 4: Sleep Quality, Subscale Component Comparison among Study Participants

Mean ±SD	Quality of Sleep (Global pqsi score)	Dysfunction during daytime	Latency in Sleep	Duration of Sleep	Disturbances in Sleep
Post graduates	6.01± 2.98	0.88±0.79	1.51±1.23	1.09±0.64	1.17±0.42
Final year tutees	3.63± 2.91	0.48± 0.81	0.68±0.76	0.50±0.48	1.98± 0.52
Nursing tutees	5.09± 2.26	0.87±0.78	1.23± 0.58	0.52±0.48	0.89±0.61
Paramedical tutees	6.4± 3.42	1.21±0.99	1.38±1.02	1.98±1.01	1.2± 0.71
P value	<0.002	0.004	0.013	<0.0002	0.032

Table 5: Comparison of poor sleep quality with high Pqsi score with daytime dysfunction component in the study population

Mean ±SD	Global PQSI Score	Dysfunction during daytime	P Value
Post graduates	6.03± 3.02	0.88±0.79	<0.002
Final year tutees	4.07±3.16	0.48± 0.81	<0.002
Nursing tutees	5.32±2.12	0.87±0.78	<0.002
Paramedical tutees	5.8± 2.85	1.21±0.99	<0.002

DISCUSSION

Sleep deprivation has a cumulative impact; severe accumulation may result in consequences ranging from mood changes to cognitive decline on and mistakes of judgement [15]. The purpose of this research was to

look sleep habits of healthcare professionals at tertiary hospital in a semi-urban environment. The respondents' ages ranged from 20 to 66 years, with a mean of 34.8 years; this finding was comparable to that of Kolo *et al* [9].

Woefully, every respondent were sleeping poorly, which is greater than the 85% according to Zamanian *et al.*,¹⁶ the 43.1 % reported by Ghalichi *et al.*, [17] the 54.2 % reported by Aliyu *et al.*, [6] and the 61 % reported by Kolo *et al.*, respectively; [9] Because our institution has fewer staff members, physicians are more likely to be on call often, and in an environment with they are more prone to get overwhelmed by a heavy patient load, which will cause more sleep loss and deprivation. According to a research conducted by Haytham I. Al Saif, SBFM, postgraduate tutees (86.3 %) had worse sleep quality than paramedic tutees (74.2 %) [16]. Clinical Nurses have a high rate of sleep problems (42%) [17]. According to a study done by Zahra Sepehrmanesh at Kums Hospital in Iran, 191 nurses (95.5 %) suffered sleep issues [18].

There was a significant relationship between the component Daytime dysfunction and the overall global mean sleep quality in our research of paramedical tutees, postgraduates, and nursing tutees. Daytime dysfunction was discovered to be highest among paramedical tutees (68%), followed by nursing tutees (64%), postgraduate tutees (60%), and final year tutees (30%). According to El Hangouche's research, paramedic trainees experienced poor sleep quality, excessive daytime drowsiness, and psychological disturbance. 19 According to Kolagary *et al.* 65 % of nurses reported difficulties performing everyday tasks owing to sleep disorders. According to the Zahra Sepehrmanesh research, 19.5 % of Nurses exhibited daytime dysfunction. In our research, 64% of Nurses had daytime dysfunction [19, 20].

In our research, nursing tutees had a larger PQSI component sleep latency issue than Paramedical tutees, Postgraduates, and Final Year Tutees. According to the Salehi *et al.* research, nursing tutees reported a larger sleep delay issue [20]. In our research, greater use of medicine reported by 30 % Nursing tutees, followed by 10 % Post graduates, 8 % Paramedical tutees, and 2 %Tutees in their final year, but these differences for the overall component of sleep medicine use were not statistically significant.

In our study, postgraduates and staff nurses on rotating shifts experienced poor sleep quality; postgraduates had a higher mean PQSI score than staff nurses and final year tutees. According to the findings of the Alshahrani *et al.* research, healthcare professionals who work shifts had inferior quality of sleep [21].

According to this research, paramedics who took coffee and or caffeinated drinks having poor quality of sleep and a higher PQSI score, followed by postgraduates, nursing tutees, and final-year tutees. Medical tutees and postgraduates who used their phones while sleeping had poor sleep quality. Those who smoked cigarettes had worse sleep quality than the rest of the study group, although there was no statistically significant difference between them. Giri PA discovered that paramedical tutees who drank coffee, smoked, and used mobile phones/laptops experienced sleep disturbances [15].

Poor sleep quality has been seen among paramedics, postgraduates, and nursing tutees. Paramedical tutees are the future physicians who will care for patients, therefore greater academic learning will result in excellent doctors for the public.

Sleep issues affect tutees' cognitive capacities and activities such as memory, focus, self-assurance, optimistic ideas, and feelings, learning potential, and academic performance [22].

Postgraduates and nursing tutees are the forerunners in health-care delivery in hospitals. Postgraduates must care for patients while maintaining an academic commitment. Sleep deprivation impairs nurses' judgement and performance, leading to clinical mistakes and mishaps [23]. Postgraduates have worse quality of life, weariness, burnout, sleep issues, and other factors may all contribute to medical errors in performance [24, 25].

CONCLUSION

Poor quality of sleep was linked to during the day, among paramedics, postgraduates, and nursing tutees. Other variables, such as postgraduates and nursing tutees on rotation shift duty, had poor sleep quality. Coffee or other caffeinated beverage usage was associated with poor quality of sleep among paramedics, postgraduates, and nursing tutees. Medical tutees and postgraduates who used their phones before going to bed had poor sleep quality.

REFERENCES

1. Chinese Doctor Dies from Stroke after Working 18 Hours: Reports. [Last accessed on 2018 Feb 06]. Available from: <https://www.channelnewsasia.com/news/asiapacific/chinese-doctor-dies-from-stroke-after-working-18-hours-reports-9827212>.
2. National Sleep Foundation Recommends New Sleep Times. [Last accessed on 2018 Feb 06]. Available from: <https://www.sleepfoundation.org/press-release/national-sleep-foundation-recommends-new-sleep-times/page/0/1>.

3. Sweileh WM, Ali IA, Sawalha AF, Abu-Taha AS, Zyoud SH, Al-Jabi SW. Sleep habits and sleep problems among Palestinian tutees. *Child Adolesc Psychiatry Ment Health*. 2011;5:25. [PMC free article] [PubMed] [Google Scholar]
4. Nazatul SM, Saimy I, Moy FM, Nabila AS. Prevalence of sleep disturbance among nurses in a Malaysian government hospital and its association with work characteristics. *JUMMEC*. 2008;11:66-71. [Google Scholar]
5. Chien PL, Su HF, Hsieh PC, Siao RY, Ling PY, Jou HJ, et al. Sleep quality among female hospital nursing tutees. *Sleep Disord* 2013. 2013:283490. [PMC free article] [PubMed] [Google Scholar]
6. Aliyu I, Ibrahim ZF, Teslim LO, Okhiwu H, Peter ID, Michael GC. Sleep quality among nurses in a tertiary hospital in North-West Nigeria. *Niger Postgrad Med J*. 2017;24:168-73. [PubMed] [Google Scholar]
7. Surani AA, Surani A, Zahid S, Ali S, Farhan R, Surani S. To assess sleep quality among Pakistani junior physicians (House officers): A cross-sectional study. *Ann Med Health Sci Res*. 2015;5:329-33. [PMC free article] [PubMed] [Google Scholar]
8. Vela-Bueno A, Moreno-Jiménez B, Rodríguez-Muñoz A, Olavarrieta-Bernardino S, Fernández-Mendoza J, De la Cruz-Troca JJ, et al. Insomnia and sleep quality among primary care physicians with low and high burnout levels. *J Psychosom Res*. 2008;64:435-42. [PubMed] [Google Scholar]
9. Kolo ES, Ahmed AO, Hamisu A, Ajiya A, Akhiwu BI. Sleep health of healthcare workers in Kano, Nigeria. *Niger J Clin Pract*. 2017;20:479-83. [PubMed] [Google Scholar]
10. Buysse DJ, Reynolds CF 3rd, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Res*. 1989; 28:193-213.
11. Carskadon MA, Dement WC. Cumulative effects of sleep restriction on daytime sleepiness. *Psychophysiology*. 1981;18:107-13. [PubMed] [Google Scholar]
12. Kolo ES, Ahmed AO, Hamisu A, Ajiya A, Akhiwu BI. Sleep health of healthcare workers in Kano, Nigeria. *Niger J Clin Pract*. 2017;20:479-83. [PubMed] [Google Scholar]
13. Zamanian Z, Nikeghbal K, Khajehnasiri F. Influence of sleep on quality of life among hospital nurses. *Electron Physician*. 2016;8:1811-6. [PMC free article] [PubMed] [Google Scholar]
14. Ghalichi L, Pournik O, Ghaffari M, Vingard E. Sleep quality among health care workers. *Arch Iran Med*. 2013;16:100-3. [PubMed] [Google Scholar]
15. Aliyu I, Ibrahim ZF, Teslim LO, Okhiwu H, Peter ID, Michael GC. Sleep quality among nurses in a tertiary hospital in North-West Nigeria. *Niger Postgrad Med J*. 2017;24:168-73. [PubMed] [Google Scholar]
16. Prevalence of and risk factors for poor sleep quality among post graduates in training in KSA Haytham I. AlSaif, SBFM 1
17. Han Y, Yuan Y, Zhang L, Fu Y. Sleep disorder status of nurses in general hospitals and its influencing factors. *PsychiatraDanubina*. 2016; 28(2):176-83.
18. Sepehrmanesh Z, Mousavi G, Saberi H, Saei R. Sleep quality and related factors among the nurses of the Hospital of Kashan University of Medical Sciences, Iran. *International Archives of Health Sciences*. 2017; 4(1):17-21.
19. El Hangouche AJ, Jniene A, Abouddrar S, Errguig L, Rkain H, Cherti M, et al. Relationship between poor quality sleep, excessive daytime sleepiness and low academic performance in Paramedical tutees. *Advances in Medical Education and Practice*. 2018; 9:631.
20. Salehi K, Alhani F, Sadegh-Niat KH, Mahmoudifar Y, Rouhi N. Quality of sleep and related factors among Imam Khomeini hospital nursing tutees. *Iran J Nurs*. 2010; 23:25-18
21. Alshahrani SM, Baqays AA, Alenazi AA, AlAngari AM, AlHadi AN. Impact of shift work on sleep and daytime performance among health care professionals. *Saudi Med J*. 2017; 38(8):846.
22. Giri PA, Baviskar MP, Phalke DB. Study of sleep habits and sleep problems among Paramedical tutees of Pravara Institute of Medical Sciences Loni, Western Maharashtra, India. *Annals of medical and health sciences research*. 2013; 3(1):51-4.
23. Pagnin D, de Queiroz V. Influence of burnout and sleep difficulties on the quality of life among Paramedical tutees. Springer Plus, 2015, 4:676.
24. Surani S, Murphy J, Shah A. Sleepy nurses: are we willing to accept the challenge today? *Nurs Adm Q*. 2007; 31(2):146e51. <http://dx.doi.org/10.1097/01.NAQ.0000264863.94958.40>
25. West CP, Tan AD, Habermann TM, Sloan JA, Shanafelt TD. Association of resident fatigue and distress with perceived medical errors. *JAMA*, 2009, 302:1294300

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