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The association between nurses' moral distress and sleep quality and their influencing factor in private and public hospitals in Iran

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Abstract:

BACKGROUND: Nurses in their workplace, for a variety of reasons, always face moral distress that is an underlying issue in the nursing profession, which can lead to problems such as reduced quality and quantity of care and sleep disorder. Besides, given the increased privatization of hospitals, this study aimed to explore the association between nurses' moral distress and sleep quality and its comparison among nurses in private and public hospitals.

MATERIALS AND METHODS: This was a descriptive-analytical study involving 150 nurses working in Ilam Province hospitals. Sampling conducted using a multistage random sampling method. Data were collected through the questionnaire of sociodemographic characteristics, the Corley's Moral Distress Scale, and the Pittsburgh Sleep Quality Index. Data were analyzed using SPSS software version 22. Descriptive statistics such as frequency, mean, ANOVA, independent t-test, multiple linear regression, and Pearson correlation coefficient at the significant level of $P < 0.05$ were calculated.

RESULTS: The analysis revealed that moral distress was positively associated with sleep quality. Furthermore, the scores of nurses' moral distress and sleep quality were different in private and public hospitals, so that the level of moral distress in the public hospital and sleep quality in the private hospital was higher and lower, respectively, but the difference was not statistically significant. Moreover, sleep quality, and the type of employment was the most important predicting variables of moral stress ($B = 1.86$) and sleep quality ($B = 2.39$), respectively.

CONCLUSION: According to the study results, a positive and significant association was found between moral distress and nurses' sleep quality. It is recommended that appropriate strategies and training program be formulated by the health-care system to increase nurses' ability to combat moral distress adverse effects.

Keywords:

Hospital, moral distress, nurses, sleep quality

Introduction

Nurses are the largest providers of community health services and have a prominent role in the health-care system.^[1] Since nurses have lasting and ongoing activity in the workplace, they encounter different types of distress and moral issues,^[2,3] of which moral distress is one.^[4] Moral distress has been widely considered in nursing since the 1980s.^[5]

The concept of moral distress was first defined by Andrew Jameton, as a phenomenon in which one knows the right action to take, but is constrained from taking it. He believed that a key element in moral distress is the individual's sense of powerlessness, the inability to perform the action perceived as ethically appropriate.^[6,7] Factors such as a lack of manager support,^[8] the power of physicians,^[4] ambiguity in task description, and the high workload^[6,9]

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can affect one's ethical commitment and create moral distress.^[4,8-11] Thus, moral distress arises when the conditions contradict an individual's beliefs and, in spite of having ability and awareness for moral judgment under the actual or mental conditions available, is incapable of doing the right moral practice.^[6]

Abbaszadeh *et al.* have considered moral distress to be common among nurses and posed the moral conditions of the work environment to be important in creating it.^[12] Furthermore, Schluter *et al.* have attributed this moral distress to a decline in the quality of care provided, futile care, futile support, and unrealistic demand.^[13]

Rage of moral distress in nurses can exacerbate fatigue, physical and mental problems, deprivation of sleep, as well as rest, which are fundamental and physiological human needs; furthermore, sleep plays a role in various physiological processes of organisms. Restful sleep provides the basis for physical, mental, and psychological well-being in humans and has a corrective and protective role.^[14-16] Sleep plays a vital role in maintaining the equilibrium of human psychosocial behavior.^[17] Sleep disorder is a common and complicated health problem.^[18] Hence, nurses, due to a rage of moral distress and irregular-shift work activity in the morning, afternoon, and night are more likely to be at risk for sleep disorders than other individuals.^[15,19]

In health-care provider systems, private and public hospitals together are responsible for health services for patient welfare and availability of quality services,^[20] which in Iran, the public sector, particularly the Ministry of Health and Medical Education, has more contributions and accounts more hospital beds. Furthermore, the presence of private hospitals is necessary as a complement to public sector services.^[21] Nurses in public sectors, as the largest group of health-care providers, face high distress and workload.^[22]

Since medical costs are lower in public hospitals, the number of people being referred to the public hospital is higher. Hence, public hospital nurses face a higher workload, work strain, and working time duration of more than ordinary ability compared to private hospitals.^[23] Therefore, they face low job satisfaction, a conflict between family and work, leaving the workplace, and greater burnout.^[24] Besides, public hospitals impose more tasks, roles, and responsibility on nurses because of the nursing shortage.^[25] Relationship with nursing management, planning, and working shifts is better in private hospitals.^[26,27] The study results of Pires *et al.* have shown that private hospitals have a better situation in terms of structural and environmental setting and the relationship between physician and nurse,^[28] yet they have lower job security and salary when compared to the public

hospitals and also do not have payroll, fee for service, overtime, the law of reprimand and encouragement, and productivity right with a clear structure.^[29]

Studies in the United States have reported moral distress severity as being moderate. Another study in the southwestern state of Colorado reported that the level of moral distress of nurses working in the intensive care unit is >80%. A study in Sweden suggested a low level of moral distress in nurses.^[30-32] Studies in the country have shown nursing morale as being moderate and high among nurses.^[33,34]

If the problem of moral distress and prolonged stress of nurses is not resolved, it could have adverse effects on patients and staff.^[8] Hence, it can exacerbate psychological problems, emotional exhaustion, instability, behavior change, interpersonal relationship disturbance, confusion,^[35] leaving the job, and inadequacy in care patients among nurses.^[3,8,10,35] Moral distress consequences affect organizations, so that low quality of care resulting from moral stress increases the duration of patients' hospitalization and consequently makes the organization face with the increased complaint and service recipients' dissatisfaction, reduced job satisfaction, frequent absences, financial problems, and treatment staff shortage.^[3,8,11]

It has been reported that 42% of nurses in Brazil, 57% of nurses in China, and 31.8% of nurses in the United States suffer from sleep disorders. Furthermore, studies conducted in Iran indicated that 91.2% of nurses in Kerman, 62.5% of nurses in Tehran, 70% of nurses in Ardabil, 68.90% of nurses in Rafsanjan, and 84% of nurses in Mazandaran suffer from sleep disorders. Thus, nurses in Iran have shown moderate-to-high sleep disorders.^[36-41] Irregular sleep-wake cycle jeopardizes the dimensions of physical, cognitive, emotional, and psychological that many of which cannot be controlled in addition to therapeutic mistakes, decreased ability to perform daily activities, and indifference relative to the help-seeker.^[42,43] Therefore, testiness, invasive behaviors, decreased social communications, depression, heart problems, diabetes, and psychological distress among people with sleep disorders are higher than other people, which affect their family and individual's quality of life.^[15,42,44-47] Moreover, nurses' sleep disorders can potentially affect patients' health.^[43] Physical and mental health and caregivers' performance, as well as efficiency and effectiveness of the organization, can affect the structural and environmental conditions in which care is undertaken.^[48] Some studies have reported that irregular sleep patterns and wakefulness can reduce sleep quality, sleep duration, and occupational performance in nurses.^[49,50]

Nursing is one of the most important jobs affecting the health of the community.^[51] Nurses are responsible for persistent monitoring of patients' care, so they are under stressful moral situations that are increasing day by day.^[50,51] Long-term moral distress can lead to nurses' physical problems and sleep disorder and affects health and patients' care, as well as the organization's quantity and quality of work.^[42,52] Given the extensive and high importance of moral distress in the nursing profession, as well as particular working conditions of nurses in terms of cultural and organizational that cause moral distress, negative consequences of it can affect professional conditions and quality and quantity of nursing care. Besides, given that the organization's managerial and support performance and the expectations of patients of nurses' service delivery differ in private and public hospitals. Moreover, although, in recent years, attention has been paid to the association of moral distress with other variables in nursing, no study was found that explores the association between moral distress and sleep quality. Hence, this study aimed to determine the association of moral distress with sleep quality in nurses and to compare among nurses working in private and public hospitals in one of the Western cities of Iran.

Materials and Methods

This was a descriptive-analytical study.

Study population

A total of 150 nurses working in clinical wards of public ($n = 95$) and private ($n = 55$) hospitals ($d = 0.05$, $z = 1.96$, $P = 0.5$, $n = z^2$. $P [1 - p/d^2]$) were selected and included using a multistage random sampling method. First, the number of nurses was estimated at public and private hospitals, and then, the sample size estimate was carried out for each public and private hospital. Finally, in each of the public and private hospitals, the questionnaire was randomly completed in each shift with regard to the number of nurses on duty. Inclusion criteria were as follows: (a) having consent to enter the study, (b) completion of the questionnaire entirely, (c) holding at least a bachelor's degree, and (d) having clinical work experience for at least 1 year and continuous attending in the workplace for 6 months.

Study instruments

The data collection tool used in this study was a researcher-made sociodemographic questionnaire, the Corley's Moral Distress Scale (MDS), and the Pittsburgh Sleep Quality Index (PSQI), which were completed by participants using the self-reported method. The sociodemographic questionnaire consisted of ten questions, including age, gender, marital status, the

type of recruitment, working shift, work experience, education status, type of ward, interest in the profession, and the type of hospital.

Corley's MDS consists of 21 items that relevant options for each item measure the intensity and frequency of the distress. The intensity scale was rated on a five-point scale, with scores ranging from 0 (never) to 5 (very high), and the frequency scale was rated on a five-point scale, with scores ranging from 0 (never) to 5 (very frequent). Intensity and frequency are independently scored by respondents on a six-point Likert scale (range, 0–6). The total score of MSD ranged from 0 to 105.^[53]

The PSQI was used to measure the quality and patterns of sleep over the past month. It differentiates "poor" from "good" sleep by measuring seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. Each domain is rated on a four-point scale (0–3), which generates a total score ranging between 0 and 21. In this questionnaire, a score of 0–5 indicates good sleep quality, a score of 6–10 indicates relatively good sleep quality, and a score of 11–21 indicates low sleep quality.^[54] The reliability of the questionnaire in the study of Hosseini *et al.* and Babamiri *et al.* reported 76% and 74%, respectively.^[17,55]

Validity and reliability of instruments

To determine the content validity, the instruments of MSD and PSQI were given to a panel of ten experts of Ilam University of Medical Sciences, and after receiving the corrective comments which included very partial changes, the content validity was approved. To determine the reliability and applicability of the questionnaires, a pilot study consisting of 30 nurses who were not included in the main sample was performed. The Cronbach's alpha coefficient was determined 0.84 and 0.72 for MDS and PSQI, respectively, which reflects the fair reliability of the instruments. The pilot test also helps us to refine the layout of the questionnaires.

Ethical considerations

This study was approved in the Ethics Committee of Ilam University of Medical Sciences after approving in the Faculty Research Council (Grant NO: IR, MEDILAM, REC,1397,183). All participants were informed about the aim of the study and gave their written informed consent before inclusion.

Data analysis

Statistical analyses were performed using SPSS version 22 (SPSS Inc., Chicago, IL, USA). The descriptive statistics such as percentage, mean, and standard deviation (SD) were used for assessing participants' sociodemographic

characteristics. $P < 0.05$ was considered as the significance level. ANOVA and independent t -test were used to compare the scores of sleep quality and moral distress based on demographic profession-related variables. Pearson correlation coefficient was applied to determine the correlation between sleep quality and moral distress. Moreover, multivariate linear regression was used to determine the predictor variables of nurses' sleep quality and moral distress. $P < 0.05$ was considered as the significance level.

Results

The mean \pm SD age of participants in public and private hospitals was estimated at 29.68 ± 5.69 and 28.96 ± 4.88 , respectively, of whom 81.4% were between 20 and 30 years old. Women constituted 62.7% of participants. 71.2% were single, 94.4% held a bachelor degree, 91.5% had <10 years of work experience, and 95.6% of nurses worked in rotating shifts. Furthermore, 57.1% and 85.7% of participants had relatively good sleep quality and high moral distress, respectively. Other demographic characteristic-related variables are shown in Table 1.

As shown in Table 2, the estimated mean \pm SD of the score of moral distress among nurses in the public hospital was 93.79 ± 24.68 , whereas in the private hospital, it was 90.01 ± 23.83 , which the mean moral distress in the public hospital was higher compared with the private hospital, but this difference was not significant. Overall, the moral distress of nurses was high. The mean \pm SD of the score of sleep quality in public and private hospitals was 6.81 ± 3.04 and 7.69 ± 3.04 , respectively, which nurses' sleep quality in private hospitals was lower than that of the public hospital, but this difference was not significant. In contrast, a significant difference was observed in the dimensions of sleep duration ($P = 0.036$) and sleep efficiency ($P = 0.026$) in both private and public hospitals. In addition, the most problem among nurses in the public hospital was related to sleep latency (mean = 1.35), while that of the private hospital was related to sleep duration (mean = 1.59), and the lowest problem in both public and private hospitals was associated with the use of sleep medication at 0.17 and 0.23, respectively.

According to the Pearson correlation test, a significant and positive correlation was found between the intensity of moral distress and daytime dysfunction ($r = 0.255$, $P = 0.002$), as well as between the frequency of moral distress and daytime dysfunction ($r = 0.199$, $P = 0.015$) and sleep disorder ($r = 0.193$, $P = 0.0018$). Furthermore, the correlation between the total moral distress and sleep disorder ($r = 0.182$, $P = 0.026$), daytime dysfunction ($r = 0.232$, $P = 0.006$), as well as the total sleep quality ($r = 0.192$, $P = 0.019$) was significant and

Table 1: The descriptive results of demographic characteristics, sleep quality, nurses' professional, and moral distress based on the hospital's type

Variable	Frequency (%)	
	Public	Private
Age		
20-30	57 (62.6)	48 (81.4)
31-40	24 (26.4)	11 (18.6)
41-60	10 (11)	0 (0)
Gender		
Male	44 (48.4)	22 (37.3)
Female	47 (51.6)	37 (62.7)
Marital status		
Married	37 (40.7)	17 (28.8)
Single	54 (59.3)	42 (71.2)
Education status		
Bachelor	80 (87.9)	56 (94.9)
Master	7 (7.7)	2 (3.4)
PhD	4 (4.4)	1 (1.7)
Work experience (years)		
1-10	58 (63.7)	54 (91.5)
11 and over	33 (36.3)	5 (8.5)
Workplace sector		
Special	43 (47.3)	27 (45.8)
General	48 (52.7)	32 (54.2)
Working shift		
Steady	4 (4.4)	7 (11.9)
Rotating	87 (95.6)	52 (88.1)
Type of recruitment		
Formal	42 (46.2)	0 (0)
Informal	49 (53.8)	59 (100)
Interest in profession		
Yes	70 (76.9)	54 (91.5)
No	21 (23.1)	5 (8.5)
Sleep quality		
Good	31 (34.1)	15 (25.7)
Relatively good	52 (57.1)	13 (22.0)
Low	8 (8.8)	31 (52.0)
Moral distress		
Low	0 (0)	0 (0)
Moderate	13 (14.3)	11 (18.6)
High	78 (85.7)	48 (81.4)

positive. This meant that by increasing intensity and frequency of moral distress, daytime dysfunction and sleep disorder increase, and consequently, the total score of moral distress and sleep quality disorder would increase [Table 3].

According to the results of ANOVA, the mean score of sleep quality was higher among the younger age group (20–30 years old) ($P = 0.046$). The t -test showed that those with formal recruitment ($P = 0.001$) had a higher level of sleep quality, which was statistically significant. Furthermore, the results did not show a significant difference in variables of gender, marital status, education status, work experience, workplace sector,

Table 2: Sleep quality and moral distress based on the hospital's type using independent t-test

Variables	Mean±SD			P
	Public	Private	Total	
Sleep quality				
Subjective sleep quality	1.18±0.976	1.25±0.975	1.21±0.973	0.680
Sleep latency	1.35±1.00	1.42±1.05	1.38±1.02	0.674
Sleep duration	1.27±0.882	1.59±0.930	1.400±0.912	0.036
Habitual sleep efficiency	0.637±1.03	1.05±1.19	0.800±1.11	0.026
Sleep disturbances	1.16±0.654	1.13±0.507	1.15±0.599	0.771
Use of sleeping medication	0.175±0.569	0.237±0.536	0.200±0.555	0.510
Daytime dysfunction	1.02±0.988	1.00±1.00	1.01±0.989	0.895
Global score	6.81±3.04	7.69±3.04	7.16±3.06	0.085
Moral distress				
Intensity	47.29±12.19	45.25±11.21	46.49±11.82	0.303
Repeat	46.49±12.98	47.76±13.56	45.81±13.19	0.434
Global score	93.79±24.68	90.01±23.83	92.30±24±34	0.355

SD=Standard deviation

Table 3: The results of the Pearson correlation coefficient between sleep quality and moral distress among studied nurses

Mood	Subjective of sleep quality	Sleep latency	Sleep duration	Habitual sleep efficiency	Sleep disturbances	Use of sleeping medication	Daytime dysfunction	Global score
Intensity								
r	0.109	0.077	0.029	-0.035	0.160	-0.034	0.255	0.164
P	0.186	0.348	0.726	0.669	0.051	0.684	0.002	0.046
Frequency								
r	0.085	0.146	0.031	0.070	0.193	-0.028	0.199	0.207
P	0.300	0.075	0.709	0.393	0.018	0.735	0.015	0.011
Global score								
r	0.099	0.117	0.031	0.021	0.182	-0.031	0.232	0.192
P	0.229	0.156	0.709	0.798	0.026	0.703	0.006	0.019

and working shift in terms of sleep quality ($P > 0.05$). Besides, those who were interested in their profession had lower moral distress, which was statistically significant ($P = 0.034$). Other variables did not show a significant difference ($P > 0.05$) [Table 4].

Multiple linear regression model was used to assess the most important predictor of the mean of sleep quality and moral distress. The most important predictor variable of nurses' sleep quality and moral distress was the type of recruitment ($B = 2.39$, $P = 0.001$) and sleep quality ($B = 1.86$, $P = 0.006$), respectively [Table 5].

Discussion

This study aimed to determine the association between nurses' moral distress and sleep quality and to compare it in private and public hospitals. The moral distress among nurses in the public hospital was higher than that of the private hospital, but this difference was not statistically significant. It seems that in public hospitals, high workload, an insufficient workforce, as well as a lack of proper collaboration between physician and nurse and only execution of the doctor's orders and exposure to a high mortality rate play an important in the causation

of moral distress. A study by Jalali *et al.* showed that moral distress in emergency nurses is high,^[56] which is in agreement with our results. In studies by Shafiei *et al.* and Fernandez-Parsons *et al.*, the nurses' moral distress was reported poor,^[57,58] which was not consistent with our study. This difference can be attributed to the study design method. The present study was conducted in private and public hospitals with more sample size in all clinical wards.

In our study, nurses in the private hospital had lower sleep quality, which was not statistically significant. It appears that factors such as the preoccupation of job insecurity, low salary and patients' high expectations, as well as a lack of efficient managers in treatment arenas and the type of encounter are the major reasons in low sleep quality among nurses. Moreover, the most type of sleep disorder among nurses in both public and private hospitals was associated with their short nighttime sleep duration and disturbance in sleep onset, and the lowest was related to use of sleep medication. It can be said that nurses' sleep disorder and its quality are due to splitting the working shift and disruption in the circadian rhythm. These results were compatible with previous studies,^[36,40] in which the authors showed that the most and the lowest sleep disorder among nurses is

related to a disturbance in sleep onset^[36] and the use of sleep medication,^[40] respectively.

The findings of this study showed a significant and positive association between sleep quality and moral

distress. It is worth noting that after an extensive review of the literature, the authors were unable to find a study that has assessed the relationship between sleep quality and moral distress among Iranian nurses.

Table 4: The comparison between demographic characteristics and nurses' moral distress using ANOVA and independent t-test

Variable	Sleep quality		Moral distress	
	Mean±SD	P	Mean±SD	P
Age				
20-30	7.56±3.21	0.046	91.40±23.83	0.591
31-40	6.14±2.51		92.91±26.24	
41-60	6.500±2.36		99.600±23.96	
Gender				
Male	7.36±3.20	0.472	93.80±22.86	0.506
Female	7.00±2.95		91.13±25.51	
Marital status				
Married	6.87±2.95	0.387	96.70±24.63	0.097
Single	7.32±3.12		89.83±23.97	
Education status				
Bachelor	7.15±3.15	0.453	92.97±27.800	0.541
Master	6.44±2.00		87.77±15.59	
PhD	8.600±1.34		82.400±25.37	
Work experience (years)				
1-10	7.35±3.13	0.177	91.25±24.25	0.177
11 and over	6.57±2.80		95.42±24.66	
Workplace sector				
Special	7.47±3.21	0.245	98.38±22.91	0.440
General	6.88±2.91		86.98±24.44	
Working shift				
Steady	6.54±2.01	0.491	85.00±21.26	0.437
Rotating	7.20±3.13		92.88±24.54	
Interest in profession				
Yes	6.93±0.263	0.050	92.37±25.64	0.034
No	8.23±3.50		91.96±17.20	
Type of recruitment				
Formal	5.76±2.71	0.001	97.91±26.57	0.427
Informal	7.70±3.03		90.20±23.20	

SD=Standard deviation

According to the findings, there was a significant and negative association between interest in the profession, workplace sector, and moral distress, suggesting that interest in profession may result in decreased moral distress. Furthermore, in this study, nurses working in the ICU had higher moral distress, which is in agreement with previous studies indicating that moral distress is higher among nurses working in ICU^[59,60]. By contrast, the study by Shafipour *et al* and Borhani *et al.* showed no significant association between the type of ward and moral distress which was not consistent with our result.^[6,61]

According to the findings, the association between age and sleep quality was significant and negative. This meant that those with higher age had lower sleep quality, which was in agreement with the study of Hosseini *et al.* and Ahmadabadi *et al.*^[51,55] On the other hand, a study by Bahri *et al.* showed no association between sleep quality and age, as well as between marital status and clinical ward.^[62] Besides, Ansari *et al.* indicated that nurses with higher age had better sleep quality,^[63] which was not in agreement with our study. In this study, low sleep quality might be due to the high intellectual preoccupation of older nurses, problems, and other family troubles, which result in difficulty falling asleep. The findings of this study showed a significant and positive association between sleep quality and the type of recruitment, as well as moral distress, so that individuals who were formal recruitment had better sleep quality. People with formal recruitment appear to have a better job prospect, more satisfaction relative to their salary, as well as lower intellectual preoccupation, and consequently, better sleep quality. In a study by

Table 5: The results of multiple linear regression for predictor variables of sleep quality and moral distress

Mood	Sleep quality				Moral distress				
	B	SE	T	P	B	SE	T	P	
Basic value	-1.80	3.76	-0.480	0.632	138.71	28.11	4.93	0.001	
Age	0.033	0.048	0.694	0.489	-0.141	0.385	-0.367	0.714	
Gender	-0.323	0.501	0.645	0.520	-3.66	4.05	-0.904	0.368	
Marital status	0.817	0.610	1.33	0.183	-6.31	4.94	-1.27	0.203	
Education status	0.817	0.610	1.33	0.183	-6.31	4.94	-1.27	0.203	
Work experience	0.112	0.636	0.176	0.861	0.140	5.14	0.027	0.978	
Workplace sector	-0.130	0.508	0.256	0.799	-10.73	4.00	-2.68	0.008	
Working shift	0.733	0.952	0.770	0.442	3.800	7.71	0.493	0.623	
Interest in profession	0.888	0.680	1.30	0.114	-2.86	5.53	-0.518	0.606	
Type of employment	2.39	0.650	3.68	0.001	-8.83	5.45	-1.62	0.107	
Sleep quality					1.86	0.670	2.78	0.006	
Moral distress	0.029	0.010	2.78	0.006					

SE=Standard error

Bozorg Sohrabi *et al.* and Salehi *et al.*, sleep quality was not associated with recruitment status, which was not consistent with our results.^[40,41]

One of the limitations of the study was that the questionnaire was completed during the working shift that crowded worksite might result in minor and inadvertent mistakes in the completion of the questionnaire. Hence, participants were asked to complete the questionnaire at home or during their break time. Another limitation was that data were collected using the self-report method. Moreover, one strength of the study was the use of a standard questionnaire and participation of nurses from different wards.

Conclusion

According to the study results, a positive and significant association was found between moral distress and nurses' sleep quality, that is, those with higher moral distress had lower sleep quality, which, in turn, can lead to a disturbance in quality of nursing services provided, nurses' private life, and their other roles. Thus, it is recommended that in the subsequent studies, factors influencing sleep quality and nurses' moral distress considering the type of wards, systems, and managerial practices be considered. Besides, proper strategies need to be taken into account for improving nurses' sleep quality and moral distress.

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Conflicts of interest

There are no conflicts of interest.

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