RELATIONSHIP BETWEEN QUALITY OF SLEEP AND QUALITY OF LIFE OF NURSES THAT WORKING IN SHOHADAYE KARGAR HOSPITAL OF YAZD, IRAN

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Abstract

The quality of sleep can effect on nurse's physical and mental health. Aim of this study is to investigate the association between sleeping problems and quality of life among nurses in hospital. A cross-sectional study was conducted among nurses in Shohadaye Kargar Hospital of Yazd, Iran. Total 150 nurses were selected randomly. Data was collected using a standard questionnaire for sleep quality Pittsburgh and the standard questionnaire for quality of life, in different dimensions. Data analysis was performed with SPSS software and descriptive statistical analysis was tests. The findings showed that 82.1% of the nurses had low quality sleep and 17.9% had high quality sleep. There was significant association between quality of sleep and quality of life among the nurses ($p<0.05$). Majority of nurses (74,7) worked in shifting plan, 21.3% of nurses work in the morning every time and 4.0% nurses were fixed in evening and night working plan. More than half of them (58.4%) reported it takes about 40 minutes to sleep while 53.2% of them need drugs to sleep. Also 53.2% of nurses expressed that they waked up one hour earlier than they supposed to wake up the majority of nurses had poor sleep quality, this problem led to reduces their quality of life and general health perception, mental status and physical pain significantly.
Key words: Quality of sleep, quality of life, nurses, hospital.

İRAN'IN YAZD SHOHADAYE KARGAR HASTANESİNDE ÇALIŞAN HEMŞİRELERDE UYKU KALİTESİ İLE YAŞAM KALİTESI ARASINDAKİ İLİŞKİ

Uyku kalitesi hemşirelerin fiziksel ve zihinsel sağlığını etkileyebilir. Bu çalışmanın amacı hastanedeki hemşirelerde uyku sorunları ile yaşam kalitesi arasındaki ilişkiyi incelemektir. İran'ın Yazd kentindeki Shohadaye Kargar Hastanesindeki hemşireler arasında kesitsel bir çalışma yapılmıştır. Toplam 150 hemşire rastgele seçildi. Veriler, standart Pittsburgh uyku kalitesi anketi ve standart bir yaşam kalitesi anketi kullanılarak farklı boyutlarda toplandı. Veri analizi SPSS programı ile yapıldı ve tanımlayıcı istatistiksel analizler test edildi. Bulgular, hemşirelerin %82,1'inin düşük kaliteli uykuya sahip olduğunu ve %17,9'unun yüksek kaliteli uykuya sahip olduğunu gösterdi. Hemşirelerde uyku kalitesi ile yaşam kalitesi arasında anlamlı bir ilişki vardı ($p <0,05$). Hemşirelerin çoğunluğu (%74,7) değişken mesai saatlerinde, %21,3'ü sadece sabah ve %4,0'ı akşam ve gece saatlerinde çalıştı. Yarısından fazlası (%58,4) uykuya dalmanın yaklaşık 40 dakika sürdüğünü, %53,2'si ise uyumak için ilaca ihtiyaç duyduğunu bildirdi. Ayrıca hemşirelerin %53,2'si uyanmaları gerekenden bir saat önce uyandıklarını, hemşirelerin büyük çoğunluğu uyku kalitesinin düşük olduğunu ve bu sorunun yaşam kalitesini ve genel sağlık algısını azalttığını, ruhsal durumu ve fiziksel ağrıyı azalttığını ifade etti.
Anahtar kelimeler: Uyku kalitesi, yaşam kalitesi, hemşireler, hastane.

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Introduction

Sleeping is one of fundamental human needs and as adults spend about one third of their life on sleeping, the disorders relevant to quantity and quality of sleep can have significant effect on quality of life of individuals (1). According to fifth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-V), sleep disorders include perceived distresses in quantity or quality of sleep, which may be along with disorder in sleep objective indices depending on the relevant disorder (2). Sleep problems are the most common complaint after pain disorders. Sleep disorder is a problem, from which about 25% of public population suffer in treatable manner and 9% suffer permanently (3), Eser, Khorshid & Çinar (4) observed in their study that 60.9% of nurses have weak sleep. According to a study, 50% of nurses complained about longtime napping while working in night shift, short-time napping during the day and sometimes napping in late shift (5). According to the studies in Iran, 67% of nurses suffer from sleep disorder (6).

According to the significance and high prevalence of sleep disorders in nursing population and its impact on personal and professional life of each nurse, today hospitals consider special priority to enhance efficiency for mental health activities of their employees (7). Sleep disorders in nurses impose high costs on health systems. The most important capital of every organization is human resource of that organization (8). Organization, inadequate working conditions, job pressures such as quantity and quality of work, working speed, conflict and ambiguity of work and sense of no control on work can affect formation and continuity of sleep problems of employees and this can itself decrease organizational efficiency and increase job accident rate (9). On the other hand, sleep disorder in workplace can affect the quality of working negatively and can destroy the quantity and quality of working and cause severe decline of professional performance, which is basically a response to needs of patients (5).

Quality of life and job activities are significantly under effect of quality of sleep of individuals (10). Night insomnia can affect quality of life, so that the probability of depression and anxiety and the ability to overcome daily stresses is decreased. Moreover, the quantity and quality of night sleep can affect cognitive performance and the concentration level of nurses to take routine activities (11).

Quality of life, according to the definition of World Health Organization (WHO) (2013), is assessment and perception of people of their life status and the assessment is under effect of cultural system and the value of position, in which they live (12). In the definition of quality of life, it has been mentioned that quality of life is a wide mental concept, which is complicatedly associated with physical health, psychological status, independence, social relations, personal beliefs and environmental factors and studying this field has become important over the years because of the pressures of life and job in the age of modernity (13). Therefore, quality of life is multidimensional, subjective and complicated concept and a comprehensive and flexible process, which encompasses all aspects of life; i.e. is a unique perception and a solution to express emotions on health or other aspects of life, which can be analyzed through expression of ideas and using

standardized instruments (14).

In this regard, studies have shown that sleep disorders can result in significant reduction of quality of life (15), depression, anxiety disorders and suicide (16), increased road accidents (17), disorder in cognitive and mental processes such as memory, attention and problem solving (18). The problems happen especially in the nurses working in different shifts (9). The problems relevant to sleep in nurse society can affect their life considerably. This is because; nursing and medication the jobs, which are involved in working shift and disorder caused by work and nursing in this regard is combined with working shift status and the sleep disorder caused by that. These shifts in working schedule and sleep can cause physical and mental pressure and emergence of problems such as digestive disorders, cardiovascular diseases, nervous fatigue, inattentiveness, bad behavior, delusion, job misconduct and aggression (19).

The results obtained from relevant studies showed that there is significant difference in consciousness level and attention of nursing employees in different working shifts (2, 6 and 10 hours after beginning the 12-hour shift) and the closer the become to the work shift, the more their consciousness and attention is decreased (20). Moreover, deprivation from sleeping can increase the collapses of airways, decrease air conduction to lungs, increase risk of accidents, falling, chronic fatigue, disruption in performance and emotions, disorder in communicating others, hob scope and health status of individuals and can ultimately decrease quality of personal life gradually (12). Sleep attacks are also reported in different shifts in nurses.

Nurses with more night shifts allocate long time to sleep to compensate their lack of sleep (21). Edell-Gustafsson, Kritz, Bogren (22) has studied the working condition and its impact on quality of sleep and health of 156 nurses and found that 34% of nurses were dissatisfied by their job condition and expressed more mental pressure, fatigue and disability in relaxation after delivery of shift because of mental pressures caused by the working environment. Moreover, chronic sleep disorder can be major risk factor in nursing mistakes and job accidents caused by fatigue, losing job, social and family problems, health problems, weak health, metabolic and endocrine disorders (23).

According to the effect of sleep disorders on different dimensions of life in nurses, it is significantly essential to conduct study in this field. This is because; analysis of the position and status of nurses in the service providing system across the world shows that nurses form the biggest group of health team employees, so that about 40% of all employees are a hospital is formed by nurses (24). Even in some countries, 80% of health affairs are taken by nurses. It means that nurses form the largest professional group in healthcare and medical system and it is important to pay attention to their problems (25). This is because; they play clear role in healthcare and medical system and the healthcare service quality is highly depended on the quality of services provided by nurses (26). Hence, analysis of the quality of life of nurses in relation to their sleep can be useful to improve quality of life of nurses. According to the facts and the importance of sufficient sleep in a job like nursing with major role in healthcare system. Aim of this study is

to investigate the association between sleeping problems and quality of life among nurses in Shohada Kargar Hospital of Yazd Province.

Methodology

Cross-sectional study was conducted among 150 nurses employed in Shohada Kargar Hospital in Yazd Province of Iran in 2019. There were 275 nurses in the hospital and 54.0% of them participated to the study. The study samples were selected randomly. Inclusion criteria in this study are: having BA in nursing and at least 1 year of working experience. Data collection instrument in this study includes demographic information questionnaire (age, gender, working experience and using alarm clock to wake up at the morning) and the validity and reliability of the questionnaire was also confirmed using content validity and retest. Pittsburgh Sleep Quality Index=PSQI was also used. The questionnaire was developed by Daniel J Buysse et al (26, 17) to measure the quality of sleep and to help diagnose people with sleep disorders and contains 18 items and is formed of 7 subscales: Subjective Sleep Quality, Sleep latency, Sleep duration, Efficiency sleep, Sleep Disturbances, Use of Sleep Medications and Day Time Dysfunction. The score for each item was in range (0-3) and score for each part was in maximum range equal to 3. Overall mean values of the 7 subscales form the total value of the instrument ranged from 0 to 54. The higher the score is, the lower quality of sleep would be and this true for all components and on overall score. The score higher than 5 refers to undesirable quality of sleep. The validity of IQPS was confirmed in Turkey with Cronbach's alpha of 0.8 and the reliability of the scale was also reported to 0.93 to 0.98 using retest (28). The reliability of this test was reported to 0.88 in Iran by Hussein abadi et al (29).

The Standard Quality of Life Questionnaire was used containing 12 items (short form 12) relevant to 8 dimensions: physical performance, limitation of function because of physical problems, limited function because of mental disorders, energy, mental status, social performance, physical pain and general health and understanding. In this questionnaire, maximum and minimum values for each dimension of quality of life were in range of 0-100. In the questionnaire, 100 was the best quality of life and 0 was the worst quality of life.

At the first, the procedure of the study and the time of performing that were explained to the samples and after gaining their consent to participate in this study, the questionnaires were distributed among them. Research Ethics Committee of Shahid Sadoughi University of Medical Sciences, Yazd (IR.SSU.REC.1398.217) approval was obtained. Data analysis was done using SPSS software and independent t-test and Spearman correlation test.

Results

The socio-demographic information of the participants shows in table 1. Majority of nurses (74.5%) were female only 25.5% of them were male nurses. In terms of age range, majority of nurses (58.8%) were in age range more than 35 years old. Around one third (38.6%) of nurses reported that they use alarm clock to wake up at the morning. In terms of working shift, 21.3% of nurses were permanently working in morning shift while 74.7% of them were working on circulating shift and 4.0% were permanent nurses of evening and night shifts.

Table 1: Demographic information of participants.

Category	Variable	Frequency	Percent (%)
Age	20-25 years old	5	3.6
	26-30 years old	9	5.3
	31-35 years old	35	23.4
	36-40 years old	88	58.8
	41-45 years old	13	9.0
Gender	Female	112	74.5
	Male	38	25.5
Using alarm clock	Used	58	38.6
	Not used	92	61.4
Working shift	Permanent morning	32	21.3
	Circulating	112	74.7
	Permanent night	6	4.02

Here, the results related to descriptive indices of quality in table 2 show that mean value of quality of life in nurses was equal to 49.97±9.9 and mean value of quality of life of nurses was obtained to 8.98±5.7. Mean value of quality of life and quality of sleep in nurses based on working shift is presented in table 2 and mean value of quality of life in different dimensions and overall quality of life nurses is presented in table 3. More than half (58.4%) of nurses mentioned that about 40 min after going they sleep, 53.2% of nurses claimed that they wake up at morning 1hr earlier than the desired time and 53.2% of them needed medication before sleep while 39.3% claimed that they wake up repetitively at night.

Table 2: Mean value of quality of life and quality of sleep of nurses.

Working shift	Mean ± SD*	Mean ± SD*
Morning	8.4±0.5	68.2±12.11
Circulating	9.4±0.4	56.8±14.1
Evening and night	11.3±5.9	32.0±12.7
Overall	**8.98±5.7**	**49.97 ±12.5**

**Standart deviation*

Table 3: Mean value of different dimensions of quality of life in nurses.

Dimensions of quality of life	Mean ± SD*
Physical performance	70.5±10.4
Limited function because of physical disorder	59.7±11.9
Limited function because of mental disorder	48.9±9.1
Energy	41.8±8.7
Mental status	41.8±9
Social performance	63.8±7.2
Physical pain	54.5±9
General health perception	42.2±6.3
Total quality of life	49.97±9.9

**Standart deviation*

The results showed that 82.1% of the nurses had low quality sleep and 17.9% had high quality sleep. Also, the average quality of sleep and the average quality of life score in the group of night workers were lower than other personnel. Spearman correlation coefficient (p=0.073) showed the inverse relationship of drug mean between sleep quality score and quality of life of nurses.

Table 4: Frequency distribution of sleep quality among nurses.

Sleep quality categories	Frequency	Percentage (%)
Low sleep quality	123	82.1
High sleep quality	27	17.9
Total	150	100

Discussion

The main result of this study on correlation of quality of sleep and quality of life showed that low quality of sleep can lead to low quality of life in individuals and the most negative effect of quality of sleep can be respective on dimensions including general health perception, mental status and physical pain of nurses and lowest effect on energy. Therefore, with decreased quality of sleep, quality of life of nurses was also decreased.

Moreover, obtained results showed that 82.1% of nurses have low quality of sleep and 17.9% of them have high quality of sleep. This result is in consistence with findings of Eser et al (4), which reported that 60.9% of nurses have weak quality of sleep. Moreover, this result is in consistence with findings of Jafari Roodbandi and his colleagues (30) reporting that 83.2% of nurses suffered from poor sleep and approximately 50% had moderate to excessive sleepiness. In discrimination of low quality of sleep in nurses, it could be found that circulation of shifts and night shift can be considered as the most important factor disrupting natural nigh sleep of nurses. This is because; mean value of quality of sleep and the mean value of quality life in night shift nurses was lower than other personnel. In discrimination of other results, it could be mentioned that job stress and working pressure can decrease quality of sleep of nurses. The results of this study showed that work shift nurses have lower quality of sleep and quality life than nurses in other shifts. This result is in consistence with findings of DeMoss, McGrail, Haus (31) on analysis of health and work factors in nurses and showing that nurses with mostly night shifts make more medication mistakes and have lower level of energy and more sleep disorders compared to nurses in other working shifts. Navy and Hood (32) reported in their research that night shift nurses have more physical and emotional stresses and more social and family problems than other nurses. Also, the results showed that 29.5% of nurses used to apply sleep medication before sleeping. Also, Kageyama et al (7) analyzed the insomnia factors in female nurses working in hospital and found that 23% of nurses used to apply sleep medication to treat their sleep disorders. During the time taking to sleep, 58.4% of nurses claimed that it takes about 40 min to sleep; although Kalagary (33) analyzed the sleep disorders in nurses working in hospital and found that more than 50% of nurses suffer from disorder in starting sleep, so that they sleep 30-40 min after going to bed. As

secondary results, the results obtained from using alarm clock to wake up at the morning showed that using alarm clock as a solution to regulate sleep was reported in 38.6% of nurses and 53.2% of them claimed that they wake up 1hr before the time they want to wake up and this shows insomnia of end of sleep or early wake up because of stress. In this regard, Campus and Martino (34) also studied nurses and found that the nurses with morning shift wake up earlier at the morning compared to other nurses and majority of them use alarm clock to wake up at the morning.

Conclusion

More than half of them (58.4%) reported it takes about 40 minutes to sleep while 53.2% of them need drugs to sleep. Also 53.2% of nurses expressed that they waked up one hour earlier than they supposed to wake up. The majority of nurses had poor sleep quality, this problem led to reduces their quality of life and general health perception, mental status and physical pain significantly. The findings of the study suggest that to train the nurses in regard with importance of good sleep and sleeping schedule as the main caregivers of patients can be important tasks of nursing managers.

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