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Investigating the Role of Stress Management on Emotional Regulation and Quality of Sleep of Emergency Department Nurses

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Abstract

Purpose: The present study was conducted with the aim of investigating the role of stress management on emotion regulation and quality of sleep of emergency department nurses. **Method:** This research is a descriptive and correlational research design. The statistical population of the research is made up of the nurses of the emergency department of Tehran, based on the Cochran formula at the error level of 5%, 228 people were selected as a sample using available sampling method. In order to collect research data, three methods have been used: Cognitive emotion regulation strategies questionnaire by Garnevsky and Kraij (2006), Boyisi et al.'s quality of sleep questionnaire (1989) and researcher-made stress management questionnaire. Pearson's correlation coefficients were used to analyze the data. Statistical calculations were done using SPSS statistical software. **Findings:** The results of the research indicate that there is a positive and significant relationship between rest, physical activity, planning and time management with emotional regulation of emergency department nurses. Also, there is no significant relationship between rest, physical activity and planning and time management with quality of sleep of emergency department nurses. **Conclusion:** A lot of stress can cause disturbances in a person's health, which includes lack of control in emotional regulation and unfavorable quality of sleep. The results observed in this research show the great impact of stress management in controlling the emotional regulation of emergency department nurses.

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Introduction

Emotion regulation is one of the key concepts in the field of mental and physical health, which plays an important role in following treatment and improving treatment results. By influencing decision-making, judgments and social interactions, emotions can directly affect health-related behaviors and adherence to treatment programs (1). Emotion regulation means using strategies that help a person reduce, maintain or increase their emotions and includes awareness of emotions, identifying and naming them, correct interpretation of bodily sensations, understanding the factors that cause emotions, adjusting negative emotions and accepting them in sometimes it is necessary (2). This process includes a set of "physiological, behavioral, and cognitive processes" that help people regulate their emotional experiences and use them to achieve professional and personal goals. Emotion regulation not only affects physical and mental health, but also affects the quality of sleep and performance of people (3).

Sleep is one of the most important circadian cycles and a complex biological pattern that is very important due to the wide impact of sleep-wake cycle disorders on

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people's lives. Quality of sleep refers to the index of how sleep is experienced and includes the feeling of renewed energy and the absence of feeling sleepy after waking up (4). Unfavorable quality of sleep may occur as a result of daily fatigue, decreased energy, and insomnia, and negatively affect people's quality of life. Emotion regulation and quality of sleep control are known as key factors of job success. These processes include skills that help a person to manage his emotions and deal with stress and psychological pressures (5).

Currently, job-related stress has been occurring in every profession for more than a decade and is a serious issue related to health. Therefore, its study has received much attention. Countless studies have investigated stress from social, psychological and medical aspects. From the point of view of the work environment, researchers consider the main source of occupational stress to be the individual's work and professional environment (6). Other researches have focused on individual differences and investigated occupational stress from this point of view. According to the approach of "National Institute of Occupational Health and Safety" (1999), occupational stress is disturbing emotional responses that occur when there is a mismatch between the demands and requirements of the job and the talent of the individual, or the resources and needs of the worker. According to the researchers of this institute, job stress and challenge are often used in the same meaning and synonym of each other, while these two concepts are separate from each other. Physically and psychologically, the challenge gives a person energy and strength and motivates people to learn new skills in their jobs (7).

The main challenge for every employee is to find that level of stress that increases productivity without harming health. This is possible with effective stress management. One of the stress management tools that is necessary to control stress is rest. To avoid the harmful effects of stress, employees must learn to interrupt work. Being comfortable and resting properly can be learned. Basic stress-reducing activities can be used to defeat stress (8). In addition, regular physical activities not only strengthen physical power, but also help a person to face stress. Research has shown that organizations that have a place for health activities have less absenteeism, resignation and legal claims (9). Other job stress management skills include planning and time management. A lot of employee stress is the result of poor planning. Employees should have enough time to reach their work goals. Poor planning leads to confusion about goals, rapid activity, and significant incapacity. When an employee fails in practice and there is a concentration of activities, stress arises in the employee and the people around him. Typically, this concentration in activities causes failure in using opportunities (10).

In their research, Ketabi and Mousavi Asl (2024) investigated the effectiveness of stress management training based on the cognitive-behavioral approach on reducing emotional problems, quality of sleep, and intensity of pain experience in women with chronic tension headaches. The results indicate that stress management training based on cognitive-behavioral theory has a significant effect on emotional dysregulation, quality of sleep and intensity of pain experience. Stress management treatment based on cognitive-behavioral theory was effective and efficient in reducing emotional problems, quality of sleep and intensity of pain experience in women with chronic tension headache (11).

Vaziri Khiavi et al. (2023) presented a research entitled "Effectiveness of stress management treatment on emotional regulation and quality of life of patients with Corona". The results showed that there was a difference between the two experimental and control groups in the post-test of emotion regulation variables ($p<0.001$) and quality of life components ($p<0.001$). Also, the results were stable during the follow-up period. The results showed that stress management treatment was effective in improving the emotional regulation and quality of life of corona patients, therefore, health professionals can use the stress management training method along with other effective methods to improve the psychological characteristics related to corona (12).

Montazeri et al. (2022) investigated the impact of a mindfulness-based stress reduction program on the amount of occupational stress and quality of sleep of nurses. The average age of the research sample is 35 ± 6. Most of them were nursing experts, married, women and had rotating shifts. Statistical analysis was performed. It showed a significant difference between the average stress scores after the intervention in the test and control groups, but there was no significant difference between the quality of sleep scores of the two groups after the intervention. Although the quality of sleep scores in the test group were better than the control group. Considering the significant effects of the mindfulness-based stress reduction program on nurses' stress, it is suggested that such interventions be included in nurses' training programs (13).

Liu et al. (2020) in their study titled the relationship between mindfulness, quality of sleep and work-family conflict in Chinese nurses; they reported unfavorable quality of sleep in nurses. In line with the analytical goals of the study, the results showed that the average occupational stress of nurses after the intervention in the test group and the second round in the control group is significantly different (14).

Gallegos et al. (2018) in their study entitled Secondary analysis of changes in quality of sleep in older

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adults in a randomized clinical trial of stress reduction with mindfulness; observed a significant difference in the quality of sleep scores of the experimental group compared to the control group (15).

The method of research

The research design is descriptive and correlational. The statistical population of the current study consists of emergency department nurses (number = 2139) who were selected as a sample based on Cochran's formula at the 5% error level.

In this research, three questionnaires were used as data collection tools:

Cognitive emotion regulation questionnaire: The Cognitive Emotion Regulation Strategies Questionnaire was designed and compiled by Garnevsky and Kraij (2006) in order to measure the cognitive emotion regulation strategies. The cognitive emotion regulation questionnaire has positive components including positive refocusing, refocusing on planning, acceptance and positive reevaluation based on the Likert spectrum from (1 never) to (5 always) measures cognitive emotion regulation strategies. Cronbach's alpha coefficient in Aghaei's research (2016) for this questionnaire was estimated to be above 0.70, and also, the content, form and criterion validity of this questionnaire was evaluated as appropriate (16).

Quality of sleep Questionnaire: This questionnaire was created by Boisi et al. in 1989. This tool has 19 items and 7 sections (subjective quality of sleep, falling asleep late, sleep adequacy, sleep period, sleep disorder, use of sleeping pills and incomplete performance during the day), each section is scored from 0 to 3. The score of the instrument is obtained through the total score of the sections, so the range of scores is 0 to 21, and a higher score means a more unfavorable quality of sleep. Boisi et al. (1989) reported the convergent validity of the tool as 0.88 and its reliability with Cronbach's alpha method as 0.89. Also, Najafi Qazaljeh et al. (2014) have reported the reliability of the tool with Cronbach's alpha method, 0.91 (17).

A researcher-made stress management questionnaire based on the Likert scale, including items including rest, physical activities, and planning and time management. The validity of the questionnaire was confirmed by the professors and the reliability of the tool was obtained using Cronbach's alpha measurement of 0.77.

In order to analyze the data, descriptive and inferential statistical methods have been used. Pearson's correlation coefficients were used for data analysis. Statistical calculations were done using SPSS statistical software.

Findings

Descriptive indexes of questionnaire scores are presented as follows:

Table 1. Descriptive indices of emotion regulation scores and its subscales

Statistical index Subscale	Mean	Standard deviation
Positive refocusing	22.6	99.3
Refocus on planning	46.8	81.4
acceptance	0.119	25.3
Positive reassessment	0.696	0.595
Total excitement setting	99.29	89.14

The results of Table 1 show that the highest mean is related to the acceptance subscale and the lowest mean is related to the positive refocusing subscale.

Table 2. Descriptive indices of stress management scores

Statistical index Stress management	Mean	Standard deviation
rest	21.24	99.3
physical activity	39.15	99.3
Planning and time	34.18	98.5

The results of Table 2 show that the highest average is related to rest and the lowest average is related to physical activity.

Table 3. Descriptive indices of quality of sleep scores

Statistical index	Mean	Standard deviation
quality of sleep	73.16	70.1

In the following, research hypotheses will be examined.

Hypothesis 1: There is a relationship between stress management and emotion regulation of emergency department nurses.

In order to investigate this hypothesis, Pearson's correlation coefficients were calculated between stress management and emotional regulation of emergency department nurses, and then the significance test of correlation coefficients was performed. The results are presented in Table 4.

The results of Table 4 show that the correlation coefficients calculated between rest and total emotion regulation (0.191), physical activity and total emotion regulation (0.245) and time planning and management and total emotion regulation (0.358) in A level of less than 0.001 is significant. In general, it can be concluded that there is a significant relationship between rest, physical activity and planning and time management with emotion regulation of emergency department nurses. It is noteworthy that the relationship between rest and physical activity and planning and time management with emotion regulation is positive.

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Therefore, by increasing the scores of rest and physical activity and planning and time management, the emotion regulation of emergency department nurses also increases. The calculated determination coefficients indicate that, in general, planning and time management (12.21), physical activity (5.62) and rest (3.38) explain the percentage of changes in emotional regulation of emergency department nurses.

Table 4. The results of correlation coefficients for the relationship between stress management and emotion regulation

Statistical index	Correlation coefficient	significant level	coefficient of determination
Rest - regulation of excitement	0.191	0.001	38.3
Physical activity - emotion regulation	0.245	0.001	62.5
Planning and time management - emotion regulation	0.358	0.001	21.12

Hypothesis 2: There is a relationship between stress management and quality of sleep of emergency department nurses.

In order to investigate this hypothesis, Pearson's correlation coefficients were calculated between stress management scores and quality of sleep of emergency department nurses, and then the significance test of correlation coefficients was performed. The results are presented in Table 5.

Table 5. Correlation coefficient results for the relationship between stress management and quality of sleep

Statistical index	Correlation coefficient	significant level
Rest - quality of sleep	0.054	0.362
Physical activity - quality of sleep	0.61	0.299
Planning and time management - quality of sleep	0.039	0.518

The results of Table 5 show that the correlation coefficients calculated between stress management scores and quality of sleep are not significant. In general, it can be concluded that there is no significant relationship between rest, physical activity and planning and time management with quality of sleep of emergency department nurses.

Discussion

The present study was conducted with the aim of investigating the role of stress management on emotion regulation and quality of sleep of emergency department nurses. The research findings are presented as follows:

Hypothesis 1: There is a relationship between stress management and emotion regulation of emergency department nurses.

There is a significant relationship between rest, physical activity and planning and time management with emotion regulation of emergency department nurses. It is noteworthy that the relationship between rest and physical activity and planning and time management is positive with emotion regulation. Therefore, by increasing the scores of rest and physical activity and planning and time management, the emotion regulation of emergency department nurses also increases (9).

Hypothesis 2: There is a relationship between stress management and quality of sleep of emergency department nurses.

The calculated correlation coefficients between stress management scores and quality of sleep are not significant. In general, it can be concluded that there is no significant relationship between rest, physical activity and planning and time management with quality of sleep of emergency department nurses (11).

Conclusion

In today's world, stress is known as one of the plagues of human power. In fact, one of the main behavioral concerns in the emergency department of hospitals is job stress, which widely has a direct effect on people and job performance by inducing feelings of discomfort, causing inevitable failures, depression and other negative feelings. The effect of stress on health can be very diverse based on individual responses; So that a lot of stress can cause a disturbance in a person's health, which includes lack of control in emotional regulation and unfavorable quality of sleep (16). The results observed in this research show the great impact of stress management in controlling the emotion regulation of emergency department nurses.

The limitations of the research include the use of a questionnaire and the possibility of bias in answering the questions. In addition, the generalization of the research results is also cautious. It is suggested that this research be done for other statistical communities as well.

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Authors contribution

F. R. conceptualized the study objectives and design.

Conflict of interest

None

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Ethics

None

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