

# The effect of yoga on coping strategies among intensive care unit nurses

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## ABSTRACT

**Introduction:** Nowadays, it has been known that individuals handle coping strategies when faced with stressful events. These strategies play an important role in individuals. Nurses are exposed to high stress, which directly affects their job satisfaction and the quality of their services. Therefore, the present study tried to investigate the effect of Yoga on stress coping strategies among nurses working in intensive care units (ICUs).

**Materials and Methods:** In this quasi-experimental study, 34 female nurses working in ICU who were qualified to enter the study were selected. Yoga exercises were administrated two sessions a week for 8 weeks in the study group. CS-R questionnaire was filled before and after intervention. The data were analyzed by descriptive and inferential (*t* test) statistical tests.

**Results:** The results of statistical tests showed that the highest application of stress coping strategies was for inconsistent stress coping strategy. There was a significant difference in the mean scores of coping strategies of stress focus, emotion focus, and ineffectiveness after Yoga exercises compared with those before the yoga sessions.

**Discussion:** With regard to the findings, 8 weeks exercises of Yoga can be considered as a complementary treatment to amend stress coping strategies. Further studies in this field are suggested.

**Key words:** Coping skills, intensive care units, nurses, yoga

## INTRODUCTION

Nowadays, stress is a major public problem, which involves individuals physically and mentally.<sup>[1]</sup>

One of the most important stressors is either the load of work or high-responsibility professions where there are human, medical, or educational issues involved.<sup>[2]</sup> Hospitals are among those stressful places; the stress increases day by day as a result of the quick change in technology, various patients' needs, treatment domains, and daily occupational conflicts. Meanwhile, the level of stress and stressors are different in various wards due to the existing differences in working conditions, ward environment, type of patients, and 'personnel's duties.<sup>[3]</sup> Intensive care units (ICUs) are among the wards under influence of various types of stress<sup>[4]</sup>

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as the patients with critical conditions are hospitalized in these wards.<sup>[5]</sup> Because nurses have high workload in all hospital wards, especially in ICUs and because they are more involved in interventions and care compared with other treatment team members, they experience high load of stress.<sup>[6]</sup> Researchers believe that mere load of work cannot result in disabling pressure to the staff, but lack of individuals' control on stressful conditions may induce instability, disappointment, low motivation, and eventually, disabling pressure among the staffs.<sup>[7]</sup> It has been recently revealed that individuals show coping strategies when exposed to stressful conditions. These strategies include physiologic, behavioral, and experimental responses, which can result in a different outcome in physical and mental health.<sup>[8]</sup> Stress coping strategies are the efforts that individuals make to enhance their adaptation with the environment, and to prevent negative outcomes of overload.<sup>[9]</sup>

Studies on stress and its effects have shown that stress coping strategies play a more important role concerning the type of response than the stress itself so that more appropriate techniques to cope with stress can lower the complications.<sup>[10,11]</sup> Based on Folkman and Lazarus theory (1984), stress coping strategies are in three categories of problem focus, emotion focus, and ineffectiveness.<sup>[12]</sup> In problem focus strategies, individuals are active and try to do something to control or lower their stress levels.<sup>[13]</sup>

In emotion focus strategies, individuals take no action to lower or control stress levels, but make effort to relax and get out of mess.<sup>[14]</sup>

Most of the people can neither solve the problem nor lower nor stand the stress and usually utilize insufficient incompatible and hazardous coping strategies, which results in more negative outcomes compared with the initial stress.<sup>[15]</sup> With regard to inevitability of some stressors in ICUs and the necessity of preventing negative effects of stress on nurses, these individuals should be helped to promote their stress coping ability and to reinforce appropriate stress coping strategies.<sup>[16]</sup> It should also be considered that nurses, as care givers to the patients, should themselves be healthy to give high-quality care.<sup>[17]</sup>

Various techniques are employed to control or lower stress, and to amend stress coping strategies and behavior.<sup>[18]</sup> They include Yoga, which has been studied and emphasized by scientists as a technique to relax the mental state and control stress through internal and external sources. These techniques are used as both preventive and recovery methods.<sup>[19]</sup> Yoga is the most ancient action-discipline system known in the world whose exercises help people to cope with stress.<sup>[20]</sup>

Yoga as a word means union or collecting, which is interpreted as the unity and coordination between spirit, body, and the individual's soul as well as coordination between negative pressure and the ability of flexibility. It also enhances individuals' ability to cope with stress and promotes their focus and decision making in critical and stressful conditions.<sup>[21]</sup> In a study in 2007 to investigate the effect of Tai Chi Yoga and meditation and promotion of nurses' health and their problem-solving ability, it was revealed that Yoga promoted nurses' health, their decision-making ability, and their concentration on giving care in critical conditions.<sup>[22]</sup> Another study conducted on 17 nonprofessional caretakers showed that there was a noticeable increase in their stress coping strategies after 8 weeks of Yogic exercises.<sup>[23]</sup> Since the main goal of nursing is to promote the level of public health, and as inappropriate responses and application of nonefficient coping strategies can jeopardize individuals' health, taking actions toward promotion of stress coping strategies and reduction of stress side effects are considered among nurses' duties.<sup>[24]</sup>

As already conducted researches and interventions on stress coping strategies, especially among nurses, are not only very few but also controversial, and with regard to the fact that the intervention in the present study (Yoga) and its effects on stress coping strategies have not been already conducted in Iran, the researcher decided to study the effect of Yoga on stress coping strategies (problem focus, emotion focus, and ineffectiveness) among nurses in ICUs.

## MATERIALS AND METHODS

This is a two-group, single-stage, before and after quasi-experimental study conducted in the Alzahra Hospital in 2011.

In the present study, Yoga was independent and the stress coping strategies were dependent variables. The population studied was all nurses of whom some were with acceptable inclusion criteria in ICUs of Alzahra Hospital were selected as the subjects. Inclusion criteria were having 1 year of work experience in ICU, working just in ICU at the time of study, having at least BS of nursing and no history of joining similar researches.

The data collecting tool was a two-section questionnaire. The first section included demographic characteristics containing age, marital status, working shift, position in the ward, monthly hours of work, and so on.

The second section was Coping Stress Revise (CS-R). CS-R is a questionnaire to measure coping skills and investigates the method of response to stress. This is a multidimensional tool designed by Carver, Scheier, and Weintraub in 1989 based on Lazarus stress and behavior self-discipline model. It includes 72 questions on three stress coping strategies (problem focus, emotion focus, and ineffectiveness). This questionnaire was first translated into Persian by Zolfaghari, Mohammad Khani, and Ebrahimi in 1992 and was revised based on Iranian culture. Its results of reliability through test-retest method showed its highest percentage to be 76% so that this questionnaire has a high validity not only as a measuring tool for coping strategies against specific situations but also as a coping desire.<sup>[13,24]</sup>

The above questionnaires were given to the subjects before and after intervention, the filling details were taught and secrecy of the information was guaranteed. Yoga classes were held twice a week (each session, 1 h<sup>[22,25]</sup> for 8 weeks). Hatha Yoga techniques were selected as intervention for the present study through literature review and consultation with the experts. Hatha Yoga includes breathing exercises (pranayama), physical movements (asana), and deep relaxation (shavasana). The classes were conducted by the researcher under supervision of a Yoga expert. In Yoga classes, the first 10 min were devoted to deep breathing relaxation techniques. Then, professional Yoga techniques (asana) were exercised for 40 min and the last 10 min were spent on the same relaxation exercises.

The collected data were analyzed by descriptive inferential (independent *t* test) statistical tests through SPSS18.

## RESULTS

From a total of 36 nurses attending Yoga classes, 34 finalized the study and filled out the questionnaires. Inferential tests showed that all the nurses attending in this study had a BS degree. The mean age of nurses was 33.53 (7.69) with range of 24–52 years and mean monthly hours of their work was 2.4.18 (29) h. Most of the subjects were married (44.1%) and staff nurses (82.4%). The highest frequency was for those casual staff (61.8%) [Table 1]. The mean score of problem focus strategy was 13.68 before intervention, whereas it reached 16.53 after that and independent *t* test showed a significant difference ( $P < 0.001$ ). With regard to emotion focus, the mean score before intervention was 13.50, whereas it changed to 12.97 after intervention and the independent *t* test showed a significant difference ( $P = 0.014$ ). The mean scores for state-trait focus changed from 11.97 before intervention to 14.68 after and the independent *t* test showed a significant difference ( $P < 0.001$ ). It can be concluded that 8-week Yoga exercises could significantly affect stress coping strategies [Table 2].

## DISCUSSION AND CONCLUSION

This study was conducted to investigate the effect of Yoga on stress coping strategies of ICU nurses. The results showed that the mostly used strategy in this group of the nurses was state-trait focus strategy. Rodrigues and Chavez, in their study on ICU nurses showed that the mean score of state-trait focus strategy was higher compared with other strategies.<sup>[26]</sup>

Li and Lambert also reported similar results,<sup>[27]</sup> but Lim

*et al.*, in their study concluded that the most selected strategy was problem focus strategy among ICU nurses.<sup>[28]</sup> There are controversial study results in different countries. Comparison of the results of the present study and other studies revealed that nurses' mean working hours was higher resulting in an increase of stress and lower ability to cope with that. The results of the present study showed that 8 weeks of Yoga exercise could make significant changes in the studied stress coping strategies (problem, emotion, and state-trait focus) among ICU nurses.

An independent *t* test was employed to compare mean scores of stress coping strategies. The results of this test showed that Yoga could significantly increase problem focus strategy. This type of coping is considered as an efficient and helpful strategy as the individuals try to seek for strategies either to solve the problem or to lower mental pressure to the lowest level.<sup>[13]</sup> With regard to emotion focus strategy, the results showed that intervention could significantly lower stress. Researchers claim that application of this type of strategy can induce inappropriate effects in individuals.<sup>[14]</sup> Finally, with regard to state-trait focus strategy, which had the highest mean score in the present study compared with other strategies, Yoga made a significant reduction.

In a study by Mahajan (2010) to investigate the effect of Yoga exercises on nursing students, it was revealed that these exercises could significantly increase problem focus strategies and reduce state-trait focus ones.<sup>[29]</sup>

Schell *et al.* obtained similar results. They showed that Yoga could enhance problem focus strategy and diminish the state-trait focus one.<sup>[30]</sup> Meanwhile, no significant change concerning emotion focus strategy was found in any of these researches.

The controversy made in these results is as a result of differences in sample size, shorter time of intervention, and consequently application of fewer techniques compared with the present study. Puymbroeck *et al.* report that short time interval of Yoga exercises masks its real effects.<sup>[23]</sup>

Despite the results of the present study as well as other studies on the effect of Yoga on stress coping strategies, long-term effect of these exercises after they stop is unknown

**Table 1: Sociodemographic characteristics of nurses**

Variable	N	%
Marriage status		
Single	15	44
Married	19	56
Employment status		
Formal	13	38
Contract	21	62
Type of shift		
Rotating	28	82
Fixed	6	18
Ranking		
Nurse	32	94
Head nurse	2	6

**Table 2: Comparison of the coping strategies—mean pre- and post-Yoga**

Time coping strategies	Before		After		<i>t</i> Test	
	M	SD	M	SD	T	P
Problem focus	2/49	13/68	1/83	16/53	11.40	<0.001
Emotion focus	2/86	13/50	2/64	12/97	2.60	0.014
Ineffective	3/35	14/68	2/40	11/97	9.60	<0.001

to us and they might be only temporary. After all, it can be concluded that as 8-week Yoga exercises and relaxation can promote stress coping strategies, they can be considered as a complementary medicine. One of the limitations in the present study was that the study was conducted on women and nurses of only one hospital and that cannot be generalized for the whole population.

### Suggestions

It is suggested to investigate the effect of Yoga on stress coping strategies of other nurses working in other wards as well as their job satisfaction.

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### REFERENCES

- Rizzolo D, Zipp GV, Stiskal D, Simpkins S. Stress management strategies for students: The immediate effects of yoga, humor, and reading on stress. *J Coll Teach Learn* 2009;6:79-88.
- Fathi M. Evaluation of stress factors and nurses in special sections of Kurdistan University of Medical Sciences in 2004. *Sci J Kurdistan Univ Med Sci* 2004;7:53-62.
- Urden LD, Stacy KM, Lough ME. *Critical care nursing: diagnosis and management*. 6<sup>th</sup> ed. St. Louis, MO: Mosby; 2010.
- Mealer ML, Shelton A, Berg B, Rothbaum B, Moss M. Increased prevalence of post-traumatic stress disorder syndrome in critical care nurse. *Am J Respir Crit Care Med* 2007;175:693-7.
- Guido L, Linch GF, Andolhe R, Conegatto CC, Tonini CC. Stressors in the nursing care delivered to potential organ donors. *Rev Lat Am Enfermagem* 2009;17:1023-9.
- Rabie Siahkali S, Avazeh A, Eskandari F, Khaleghdoost Mohamadi T, Mazloom S. A survey on psychological and environmental factors on family anxiety of the hospitalized patients in intensive care units. *IJCCN* 2011;4:175-80.
- Davis M. Eshelman ER. Key MM, The relaxation and stress reduction, translated by Nahid Khajeh. 6<sup>th</sup> Edit. Ahvaz. Teymorzadeh, 2005
- Weinstein N, Brown KW, Ryan R. A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *J Res Pers* 2009;43:374-85.
- Forozandeh N, Delaram M. Effect of cognitive behavioral therapy on coping methods non-medical student university of medical sciences. *Shahre Kord Univ Med Sci J* 2003;5:26-34.
- Akochehian SH, Rohafza HR, Hasanzadeh A, Mohammad Shrif H. Associated with social support and coping strategies in a psychiatric ward nurses. *J Med Sci Gilan* 2008;18:41-6.
- Heydaripahlavan A, Gharakhni M, Mahjoub H. A Comparative Study of Stressful Life Events and Stress Coping Strategies in Coronary Heart Disease Patients and Non-Patients. *Sci J Hamadan Univ Med Sci* 2010;17:33-8.
- Matsumoto M, Sato T, Ohnishi M, Kishimoto Y, Terada S, Terada SH. Stress-coping strategies of patients with gender identity disorder. *Psychiatry Clin Neurosci* 2009;6:715-20.
- Mohammad Shrif H. Associated with social support and coping strategies in a psychiatric ward nurses in hospitals affiliated to medical sciences university of Isfahan, professional medical PhD thesis. Isfahan, Iran: Isfahan University of Medical Sciences; 2004.
- Hayati F, Mahmoodi M. Coping strategies in women with breast cancer referred to hospitals affiliated to medical sciences universities of Tehran city. *Iran J Breast Dis* 2008;1:38-43.
- Rüsch N, Corrigan PW, Powell K, Rajah A, Olschewski M, Wilkniss S, et al. A stress-coping model of mental illness stigma: II. Emotional stress responses, coping behavior and outcome. *Schizophr Res* 2009;110:65-71.
- Allaf Javadi M, Parandeh A, Ebadi A, Haji Amini Z. Comparison of life quality between special care units and internal- surgical nurses. *Iran J Crit Care Nurs* 2010;3:9-10.
- Dehghan Nayeri N, Adib Hajbagheri M. Stress relaxation effect on quality of life and resident students in student dormitories. *J Res Feyz* 2006;10:50-7.
- Fortinash K. *Psychiatric mental health nursing*. 4<sup>th</sup> ed. Mosby: Elsevier; 2008.
- Freedman M. Hanks J, Yoga at work: 10- minute yoga workouts for busy people, translated by Fatemeh Alagheband. Tehran. Mitra, 1996
- Demerik F, Yoga therapy, translated by Kebabi Hossen, 2<sup>nd</sup> edit. Tehran. Faragoft, 2006
- Eby L, Brown NJ. *Mental health nursing care*. 2<sup>nd</sup> ed. New Jersey: Pearson Prentice Hall; 2009.
- Raingruber B, Robinson C. The effectiveness of Tai Chi, yoga, meditation, and Reiki healing sessions in promoting health and enhancing problem solving abilities of registered nurses. *Issues Ment Health Nurs* 2007;28:1141-55.
- Van Puymbroeck M, Payne L, Hsieh PC. A phase I feasibility study of yoga on the physical health and coping of informal caregivers. *Evid Based Complement Alternat Med* 2007;75:11-7.
- Ramezani S. Effect of humor education on mental health and coping styles of nurses in emergency departments in hospitals affiliated to medical sciences university of shiraz, MS Thesis. Shiraz, Iran: Shiraz University of Medical Sciences; 2006.
- Javnbakht M, Hejazi Kenari R, Ghasemi M. Effects of yoga on depression and anxiety of women. *Complement Ther Clin Pract* 2009;15:104-2.
- Rodrigues AB, Chaves EC. Stressing factors and coping strategies used by oncology nurses. *Rev Lat Am Enfermagem* 2008;16:24-8.
- Li J, Lambert VA. Workplace stressors, coping, demographics and job satisfaction in Chinese intensive care nurses. *Nurs Crit Care* 2008;13:12-24.
- Lim J, Bogossian F, Ahern K. Stress and coping in Singaporean nurses: A literature review. *Nurs Health Sci* 2010;12:251-8.
- Mahajan A. The effectiveness of yoga on the student. *Int J Yoga Pract* 2010;2:56-62.
- Schell FJ, Allolio B, Schonecke OW. Physiological and psychological effects of Hatha-Yoga exercise in healthy women. *Int J Psychosom* 2002;1:46-52.

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