

The Effect of Emotion Regulation Training on Occupational Stress of Critical Care Nurses

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ABSTRACT

Introduction: Occupational stress is a common, serious and costly health problem in work environment. Nursing is a very stressful job high level of stress in this job affects nurses' physical and mental health.

Aim: To investigate the effect of emotion regulation training of occupational stress on critical care nurses in two teaching hospitals in Sanandaj, Iran.

Materials and Methods: This interventional study was conducted on 60 nurses working in the Intensive Care Unit (ICU) and Critical Care Unit (CCU) in two teaching hospitals in Sanandaj, Iran. Data were collected using Expanded Nursing Stress Scale (ENSS) questionnaire. The questionnaire in both intervention and control groups before and after the training

sessions of emotion regulation training were completed. Data were analysed using SPSS Version 20. Statistical indices such as frequency, percentage, mean and standard deviation and also t-test, Chi-square test and paired t-test were used.

Results: Mean occupation stress score in the intervention group before emotion regulation training was 136.6±24.6 and after training was 113.02±16.2 ($p = 0.001$). Occupational stress dimensions including; conflict with physicians, problems with peers, workload, uncertainty concerning treatment and problems related to patients and their families in the intervention group compared with the control group was statistically significant ($p < 0.05$).

Conclusion: Emotion regulation training is effective in reducing occupation stress of critical care nurses.

Keywords: Emotion regulation skills, Job stress, Nursing

INTRODUCTION

Stress is a non-specific response in organisms caused by various stressors which threatens a person's physical and psychological health [1]. One of the most important sources of stress in the life of an individual is his occupation. Occupational stress is common, serious and costly health problem in work environment. The United Nations named it the disease of the twentieth century and in recent years the World Health Organization (WHO) declared it as an epidemic [2].

Occupational stress occurs in person/environment relationship and its three major causes are individuals characteristic, working conditions and the outcome of these two. Stress leads to psychological imbalances and has different outcomes [3]. Various studies have shown that, psychological stress imposes significant costs on employee's health and organization performance [4].

Nursing is a very stressful occupation. The high level of stress in this job affects physical and mental health of nurses [5]. There are a lot of workplace stressors in nursing such as constant exposure to patients, responsibility towards patients, working in clinical field, seeing dying patients, lack of necessary facilities in the workplace, the unpredictability of some situations [6] family problems, conflict in the workplace, low number of personnel and poor team work [7].

Workplace violence from patient's family particularly, insulting, verbal and non-verbal violence are other stressors at nursing workplace, organizational and managerial factors are some other stressors that reduce the potential ability and job satisfaction of nurses [8].

Epp K in a study showed that, critical care nurses are particularly vulnerable to developing burnout due to the chronic occupational stressors they are exposed to, including high patient acuity, high levels of responsibility, working with advanced technology and caring for families in crisis [9]. A study by Mohammad et al., showed that, 92% of critical care nurses complain from work-

related problems and stress [10]. Stress in the critical care nurses is almost two times more than that of nurses working in other wards of the hospital [11,12]. Asad Zandi et al., showed that the level of stress and anxiety of nurses working in Intensive Care Unit (ICU), emergency and kidney transplant wards is high [13]. Lai et al., in a study concluded that about 48.9% of nurses had desire to leave their profession [14].

Training is the basic method for primary prevention. Researches have shown that, skill training helps to promote mental health [15,16]. Zahedi Rad et al., showed that Mindfulness-Based Cognitive Therapy (MBCT) is effective in increasing the flow experience of nurses who work in the psychiatric hospitals and confronted to high stress [17]. Another training method to mitigate stress is emotion regulation training [18]. Emotional regulation includes all conscious and unconscious strategies used to increase, maintain, and reduce emotional, cognitive and behavioural components of an emotional response. On the other hand, emotion regulation training means reducing and controlling negative emotions and way of using positive emotions [19].

In previous studies, emotion regulation training was effective in coping with occupational stress, improving emotional skills, psychological well-being and attribution styles in students with learning disabilities, more resilience to stress and also to reduce stress, anxiety and depression [20-24].

Given the inevitability of some stressors in nursing profession and the need to prevent mental and behavioural effects of stress, implementing the measures to improve the quality of working life and training coping methods is among health managers' task [25].

Considering drawbacks of stress in nurses' life that can affect their mental health and job quality, and thus, affect quality of patient's care. Providing strategies to reduce stress has special importance. This study aimed to investigate the effect of emotion regulation training on occupational stress of critical care nurses of two teaching hospitals in Sanandaj, Iran.

MATERIALS AND METHODS

This was a quasi-experimental study with control and intervention groups to assess the impact of emotion regulation training on occupational stress of critical care nurses. The study population consisted of nurses working in ICU and Critical Care Unit (CCU) of two teaching hospitals affiliated to the Kurdistan University of Medical Sciences, Sanandaj, Iran. This study was conducted from January to March 2016. The sample size was 60 nurses and there were 30 nurses in each group. To determine the required sample size, Confidence Level (CL) of 95% and test power of 80% was assumed. This study has been approved by ethics committee of Tehran Medical sciences Branch, Islamic Azad University, Tehran, Iran and its registration number is IR.IAU.TMU.REC.1395.4. The informed consent was obtained from nurses.

To prevent bias, hospital was selected randomly as intervention group and other as a control group. In order to prevent information, intervention group was selected from nurses working in ICU and CCU of Tohid Hospital and the nurses in control group were selected from those who were working in ICU and CCU of Besat Hospital. Inclusion criteria were having bachelor degree or higher in nursing, working in CCU and ICU for at least 6 months and no history of psychiatric drug consumption. The nurses who were moved to another ward, dealing with major stress such as death of a close relative and divorce were excluded.

The instrument used in this study was a standardized questionnaire. The first part was the demographic data of participants including their age, gender, ward, qualification, number of working hours, marital status, number of children and employment status. The second part of the questionnaire was the Expanded Nursing Stress Scale (ENSS) developed by Gray-Toft and Anderson [26] which was used to measure the stress level of the participants. ENSS was designed to measure nurses' stress levels and consists of 57 items with response options in a Likert scale format (1 = never stressful, 2 = occasionally stressful, 3 = frequently stressful, 4 = extremely stressful, 5 = does not apply) [27]. The Cronbach alpha level was obtained as 0.854 and its internal reliability has been reported as 0.92 [28].

Pre-test was conducted in both intervention and control groups with ENSS questionnaire. No training sessions were held for control group, but the intervention group was trained by lecturing in eight sessions of two hours. Training sessions were held for three weeks. In the first and second week three sessions and in the third week two sessions were held. Training was given by a psychologist. Pamphlets were also distributed among participants. In the first session nurses were introduced to each other and the rationale and intervention procedures and also the rules of participation in the group were expressed. In the second and third sessions differences between various kinds of emotions, short-term and long-term effects of emotions were presented. In the fourth session inter-personal skills (communication, expression and solving conflict) were explained to nurses. In the fifth session expanding attention, shifting attention and stopping mental rumination were presented. The sixth session was about changing cognitive assessment, and training marketing strategy. In the seventh session changing behavioural and physiological outcomes of emotions were explained and in the eighth session re-evaluation and elimination of barriers of implementation were clarified and presented for participants in intervention group.

ENSS questionnaire was distributed among participants in the study after three weeks from the training sessions.

STATISTICAL ANALYSIS

The data were analysed using SPSS version 20. Statistical indices such as frequency, percentage, mean and standard deviation and also t-test, Chi-square test and paired t-test were used.

RESULTS

Results of this study showed that there were no statistically significant differences between the two groups in terms of mean age, work experience, number of children, as well as the frequency distribution of gender, marital status and education [Table/Fig-1].

Mean occupation stress score in the intervention group before emotion regulation training was 136.6 ± 24.6 and after training was 113.02 ± 16.2 . Based on the paired t-test there were statistically significant difference ($p = 0.001$). Mean occupation stress score in the control group was 136.06 ± 28.7 and 136.32 ± 28.5 , there was no significant difference statistically ($p = .165$).

Occupational stress dimensions including; conflict with physicians, problems with peers, workload, uncertainty concerning treatment and problems related to patients and their families in the intervention group compared with the control group was statistically significant ($p < 0.05$), but in the control group there was no significant difference before and after test statistically [Table/Fig-2].

There was no significant difference between mean scores of following occupational stress dimensions; death and dying, inadequate preparation and discrimination after emotion regulation training in two intervention and control groups ($p > 0.05$).

DISCUSSION

In the present study, the mean occupational stress score in intervention group before intervention was 136.6 ± 24.6 . In a study by Farhadi et al., mean occupational stress score of critical

Demographic Characteristics	Intervention Group	Control Group	p-value
Age (Years) ($\bar{x} \pm sd$)	31 \pm 5.2	31 \pm 5.9	0.63 *
Work Experience (Year) ($\bar{x} \pm sd$)	2.8 \pm 3.9	1.4 \pm 3.1	0.15 *
Number of Children	0.53 \pm 0.61	0.81 \pm 1.16	0.79 *
Gender	Male (20%)	6 (20%)	1 **
	Female (80%)	24 (80%)	
Marital Status	Single (36.7%)	10 (33.3%)	0.95 **
	Married (63.3%)	20 (66.7%)	
Education	Bs (93.3%)	27 (90)	0.59 **
	Ms (6.7%)	3 (10%)	

[Table/Fig-1]: Demographic characteristics of nurses in the intervention and control groups.

*t-test ** Chi-square; Bs- Bachelor's; Ms- Master's

Groups/ Dimensions of Occupational Stress	Intervention Group			Control Group		
	Before	After	p-value	Before	After	p-value
	$\bar{x} \pm sd$	$\bar{x} \pm sd$		$\bar{x} \pm sd$	$\bar{x} \pm sd$	
Death and Dying	17.6 \pm 3.1	16.9 \pm 3.1	0.385	17.33 \pm 4.2	17.33 \pm 3.1	1
Conflict with Physicians	12.3 \pm 2.8	10.6 \pm 2.3	0.001	12.70 \pm 2.9	12.81 \pm 3.0	0.326
Inadequate Preparation	6.09 \pm 1.6	6.8 \pm 1.6	0.161	6.93 \pm 1.6	6.98 \pm 1.6	0.326
Problems with Peers	11.3 \pm 4.1	9.8 \pm 2.8	0.001	12.16 \pm 3.4	12.26 \pm 3.5	0.18
Problems with Supervisors	17.9 \pm 3.8	14.6 \pm 2.5	0.001	17.06 \pm 1.6	17.1 \pm 4.0	0.86
Workload	22.9 \pm 4.8	17.7 \pm 3.1	0.001	23.06 \pm 5.45	23.10 \pm 5.45	0.326
Uncertainty Concerning Treatment	23.9 \pm 4.9	17.7 \pm 2.7	0.001	23.00 \pm 5.7	23.1 \pm 5.6	0.654
Patients and Their Families	18.4 \pm 4.6	13.4 \pm 2.2	0.001	18.5 \pm 4.7	18.4 \pm 4.8	0.536
Dis-crimination	5.3 \pm 2.7	5.3 \pm 2.7	1	5.40 \pm 1.77	5.43 \pm 1.79	0.326
Total Score	136.6 \pm 24.6	113.02 \pm 16.2	0.001	136.6 \pm 28.7	136.32 \pm 28.5	0.165

[Table/Fig-2]: Mean score of occupational stress and its dimensions before and after Emotion regulation training in intervention group comparing with first and second test in control group.

*paired t-test

care nurses working in ICU of two hospitals in Urmia, Iran before intervention were 120.88 ± 18.69 and 121.36 ± 19.88 [29]. The findings of a study by Hosseini et al., showed that, the mean score

of nurses' occupational stress after intervention was 113.29 ± 12.41 [30]. These findings are consistent with our study. In a study by Mahmoudirad and Bagherian which was conducted in Birjand, Iran nurses' occupational stress score was 44.91 ± 11.22 , which was lower than our study [31]. Also, in a study by Khazli et al., the mean score of nurses' occupational stress was less than our study [32]. Perhaps the reason is difference in study population, in our study, samples were selected from CCU nurses and in Mahmoudirad's and Khazli's study, it was selected from nurses working in other wards.

In our study, the highest mean score of occupational stress dimensions before emotion regulation training in the intervention group belonged to uncertainty concerning treatment, workload, problems related to patients and their families, problems with supervisors, death and dying, conflict with physicians, problems with peers, inadequate preparation and discrimination respectively.

In a study by conducted in Australia Peter et al., which was the most occupational stress score was obtained on death and dying, workload and problems related to patient and their families dimensions, respectively [33]. In the present study in the intervention group before training, workload was the second and problems related to patients and their families was third in rank. Hence, our study is consistent with the study by Peter. The reason of differences between our study and Peters' study perhaps is caring of incurable patients he mentioned in his study and also lack of clinical guidelines in our hospitals.

Gholam Nejand and Nikpeyma in a study using osipow occupational stress inventory, investigated causes of occupational stress among nurses in public hospitals in Tehran. They concluded that, lack of reward; encouragement and increased workload were the first and second causes of occupational stress respectively [34]. In the present study also workload obtained second score in the intervention group before training.

In a study by Farhadi et al., the highest mean score of occupational stress dimensions was related to death and dying [29]. Hosseini and Mahmoudirad et al., showed that, before training in the intervention group the highest mean score of occupational stress dimensions were related to death and dying, workload, conflict with physicians, uncertainty concerning treatment and conflict with peers respectively [30,31]. As mentioned earlier, the reason is, difference in study population in our study samples were selected from CCU's nurses and in other studies they were selected from nurses working in other wards.

In the present study the mean occupational stress score in intervention group before intervention was 136.6 ± 24.6 which decreased to 113.02 ± 16.2 after intervention. Scores of all dimensions of occupational stress compared with the pre-training was reduced significantly ($p < 0.001$) except for inadequate preparation and discrimination.

In a study by Mahmoudirad and Bagherian mean occupational stress score before training was 44.91 ± 11.22 that after training decreased to 40.43 ± 9.06 significantly. In the intervention group nurses also mean score of conflict with physicians and workload decreased after the intervention than before which is consistent with our study [31].

Matourypour et al., reported that, the mean score of nurses' anxiety before and after the intervention did not differ significantly [35]. The cause of the difference with our study may be related to measuring tool, because, they used NSS instead of ENSS which has more dimensions. The ENSS is an expanded and updated version of the classic Nursing Stress Scale (NSS). It was the first instrument to measure nursing stress. The original 34 items of NSS measured the frequency and major sources of stress in patient care situations. Changes in health care delivery and workplace

of nurses encouraged French et al., to identify stressful situations not reflected in the NSS scale and develop an expanded version. The final ENSS contained 57 items in nine subscales. Internal consistency reliability was assessed using Cronbach's coefficient alpha. The 57-item ENSS showed improved reliability ($\alpha = 0.96$) over the original NSS ($\alpha = 0.89$) [36].

Mackenzie et al., showed that mindfulness-based stress-reduction technique even in the short 4-week courses can help nurses reduce their occupational stress [37] this finding in terms of the effectiveness of mindfulness training on occupational stress is consistence with our study because we trained mindfulness skills to nurses in the second session of emotion regulation training.

Nooryan et al., showed the effect of the emotional intelligence components on stress and anxiety of physicians and nurses working in ICUs in Iran. They concluded that physicians and nurses experience high level of stress and the ability to effectively deal with emotion intelligence and emotional information in the workplace assists employees in coping with occupational stress and should be developed in stress managing trainings [38]. The results of this study are consistent with our study in terms of the effect of education on reducing job stress using emotional intelligence components. Lan et al., showed that mindfulness training is effective in reducing stress and promoting well-being among critical care nurses [39]. Sarid et al., investigated the impact of Cognitive and Behavioural Interventions on perceived stress levels of nurses. They showed that the stress level in the intervention group had decreased significantly ($p < 0.05$) after training but stress levels remained unchanged in the control group. This study is consistent with our study [40]. The results of a study by Rickard et al., demonstrated the effect of organizational intervention to reduce occupational stress and turnover in hospital nurses. They concluded that in spite of high stress in working environment, using appropriate interventions, nurses' stress can reduce. This study also is consistent with our study [41].

Mindfulness-based methods such as emotion regulation training completely improved psychological well-being and self-control by decreasing stress and anxiety [42,43].

LIMITATION

Individual differences and personality traits as well as cultural, social and motivation of nurses could affect their opinion, so they may respond to questions with some considerations.

Psychological state of nurses as well as information seeking from other sources other than those stated by researcher during training sessions may have an impact on nurse's responses.

CONCLUSION

The results showed that, emotional regulation training is effective in reducing occupational stress of critical care nurses. Training programs to be applied as solution for reducing stress and promoting well-being of critical care nurses.

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