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The effects of teaching stress management skills on the quality of life in ICU nurses

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Introduction: Job stress is one of the main factors in decreasing productivity in organizations and the leading cause of psychosomatic disorders in personnel. Since job stress of nurses working in Intensive Care Units (ICUs) is considered as an important segment in health and medical systems, it significantly affects the quality of care and the nurse's quality of life. To this end, the purpose of this research is to examine the effects of teaching stress management skills on the quality of life of the nurses working at ICU of the hospitals affiliated to Shiraz University of Medical Sciences.

Methods: The subjects of the study consisted of 60 ICU nurses with the average stress score in Osipow job stress exam working at the hospitals affiliated to Shiraz University of Medical Sciences. The subjects were randomly assigned to two groups (30 in the case and 30 in the control group). The intervention was performed as a teaching stress management workshop for eight hours throughout two-days (four hours per day), and the nurses were followed up for two months. The data were collected through a two part questionnaire including demographic characteristics and WHO Quality of life BREF and were analyzed in SPSS software using paired t test, and t-test.

Results: The findings showed that the nurses of both the case and control groups were homogeneous considering the demographic data such as age, sex, marital status, number of children, shift position, job satisfaction, number of working hours per week, work experience and the amount of income. Moreover, there was no significant difference between the mean score of the life quality before the intervention in both groups. But after the intervention, a significant increase was revealed in the mean score of the life quality of the case group as compared to that of the control group ($P<0.0001$).

Conclusion: The findings revealed the efficacy of the stress management workshop in improving the life quality of ICU nurses. During one and two months after the intervention, the mean score of the quality of life had a significance increase compared to the stage before the intervention

Keywords: ICU, Nurse, Stress management, Quality of life

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Introduction

In spite of rapid development in technology and industry and modernization of life, mankind has increasingly been susceptible to a variety of stressful conditions, particularly those in their workplace.

Worldwide, stress and anxiety affect everybody psychologically, physiologically nad socially. In other words, they affect all dimensions of life, and in general, life quality. Having been exposed to stressors, the sufferer faces physiological changes like spasm, high blood pressure, elevated heartbeat, etc. (1). There are different factors causing stress and an individual's physical, sensational, behavioral, and mental reaction to stress depends on his/her personality and the magnitude of the stress (2).

A significant type of stress is job stress which can lead to in the individual's low productivity. Stress has a direct relationship with job satisfaction and the

person's performance. The loss and costs associated with disease and the side effects of the stress in the work environment have attracted the managers' attention (3, 4). The current organizations, from a practical viewpoint, consider human resources as an intelligent asset whose life quality should be improved increasingly (5).

Job is one of the most important parts of life which can affect the life quality from two aspects. The first is the concrete properties and characteristics of the job, and the second is the person's mentality and attitude toward his/her job. For example factors such as job experience, job rank, job workload, and professional expertise can be the sources of stress. Therefore, improving life quality and decreasing job stress are gaining importance more and more in the society. Stress is a part of the life of the medical staff including nurses, especially ICU nurses, and affects their health and life quality (6). Stress is a well-known segment of modern nurses' work, and a lot of research has been done on the job stress of nurses (7, 8). On the other hand, the ICU nurses have much more stress in comparison to others since they encounter with critically ill patients, heavy work load, high number of cardiac and respiratory arrests and high rate of mortality. As a result, according to some inevitable stress causing factors, taking some measures to improve the life quality of these nurses is among the duties of the managers of Health and Medical Services organizations. One of the appropriate policies is to teach stress management skills. This type of education prepares a nurse to overcome the tensions in order to approach the problems in the most appropriate way. Considering the importance of the educational effect of stress management skills on the life quality of ICU nurses and the outbreak of psychological disorders and their serious side effects, and also because of the little research done in this field, this research was designed to tackle the problem. Therefore, the aim of this research is to determine the effects of teaching stress management skills on the life quality of ICU nurses and to determine the relationship between job stress and the life quality of ICU nurses. The hypothesis of the research is that there is a relationship between teaching stress management skills and elevating the life quality of ICU nurses at the hospitals of Shiraz University of Medical Sciences.

Methods

This is a clinical trial study that was carried out in the year 2012 in Shiraz-IRAN. After the approval of the study by the ethics committee of Shiraz University of Medical Sciences, 60 ICU nurses according to the inclusion criteria (non-user tranquilizers, having at least 6 months of job experience, achieving Osipow score between 204-300 for women and 217-300 for men, not taking part in yoga, aerobics, meditation, and any other stress management training classes) were selected to participate in the study. The selected nurses were divided randomly into two equal case and control groups and completed the WHO QOL BREF. The validity and reliability of this life quality standard questionnaire have been tested by Najafi, et al. (9,10), in Iran and others like Yang, et al. (11), Materia, et al. in other countries (12). It includes 26 items. There are 6 items on the physical aspect, 7 on the psychological aspect, 3 on social communication, and 8 on the environment aspect. The scoring system is as follows: score 1 is given to options of not at all, and score 5 to the options of very much. And for the questions 3, 4, and 26 which have negative loads, it is vice versa. The higher score shows the higher level of life quality.

After obtaining the nurses' consent forms and explaining that participation is optional, both groups completed the questionnaire one and two months after the introductory session.

A stress management workshop was held for the case group in the fields of life quality, stress symptoms, compatible ways to manage stress, self-consciousness, etc. in two days from morning to noon, and one and two months after finishing stress management workshop, the questionnaire was completed by the education group and then collected.

The collected data were analyzed in SPSS software using paired- t-test and t-tests and repeated meager.

Results

All participants had BSc degrees in nursing. The subjects were randomly assigned to case and control groups, each containing 30 members. Most of the nurses in both groups were married. Most of them worked in cycle shifts and were not satisfied with their jobs either.

Their number of children for each nurse in each group was one or zero, and in general there was not a significant statistical difference regarding the subjects' educational level. These two groups were homogeneous considering their demographic qualitative characteristics.

Also, according to the quantitative demographic data of the studied units, the average age of the people in the education group was 31.57 ± 5.04 and in the control group 31.3 ± 5.07 ($p=0.83$). The job experience of the education group was 6.93 ± 4.98 years while this average for the control group was 5.43 ± 3.52 ($p=0.18$), and the work hours per week in the intervention group was 40.73 ± 2.26 and 37.95 ± 9.33 in the observer group.

Moreover, the subjects' income per month (in

Table 1. The mean total score of the quality of life before, a month after, and two months after the intervention in the education and control groups

Score of the quality of life in the groups	Before	One month later	Two months later	Time		
				Time	Group	Group/Time
	Mean±SD	Mean±SD	Mean±SD			
Test group	61.04 ± 2.63	70.0 ± 4.78	73.30 ± 3.20	<0.001	<0.001	<0.001
Control group	61.8 ± 2.40	61.70 ± 2.30	62.90 ± 2.50			

Rial) was 7246700 ± 630000 for the case group and 7120000 ± 820000 for the control group (p=0.5). So it was obvious that there was no significant statistical difference between the education and control groups regarding the quantitative demographic data; both groups were homogeneous.

The results of the effect of stress management workshop on the quality of life of the ICU nurses are demonstrated in Tables 1 and 2. The results of table 1 shows the total score of the quality of life of the nurses in both education and control groups before the intervention so that no statistically significant difference exists between the two groups (p=0.25)

According to Table 2, the mean total score of the nurses' quality of life in the case group has been increased significantly one and two months after the intervention.

But in the control group, the mean total score of the quality of life changed from 61.8 before the education to 61.7 a month and to 62.9 two months later. In the other words, the total score of the quality of life of the intervention group increased 8.97 a month after the intervention. But, this score increased 3.3 two months after the intervention. It means that the score of the quality of life has decreased in the second month after the intervention compared to that in the first month after intervention.

The score of the quality of life of the control group before the intervention was much better than that of the education group, but a month after it there was a decrease of 0.1 in the score of the quality of life, and two months later there was only an increase of 1.2 in the score of the quality of life (p<0.001).

Discussion

Stress disorders can be managed by a psychological or medicinal method. The medicinal methods have their own side effects. Psychological methods include favorite activities such as yoga, music, meditation, swimming, and praying to God. The aim of this study was to examine the effects of stress management workshop on the ICU nurses' quality of life (13).

Table 2. The average of the score of the dimensions of the quality of life before, one month later, and Two months later after intervention in the education and control groups

The dimensions of the quality of life	Group	Time					P
		before	One month later	Two months later	Time	Group	Group/Time
		Mean±SD	Mean±SD	Mean±SD	<0.001	<0.001	
Physical	Test	61.16±3.58	70.20±6.09	73.76± 4.78	<0.001	<0.001	<0.001
	Control	60.96±6.47	60.20±2.92	62.66±3.79			
Psychic	Test	61.40±3.76	70.26±5.99	73.26±3.48	<0.001	<0.001	<0.001
	Control	62.60±4.24	61.96±2.38	63.23±2.99			
Social Communications	Test	60.96±2.60	70.76±5.07	73.13±3.87	<0.001	<0.001	<0.001
	Control	61.00±4.79	62.33±2.77	63.16±2.79			
Environment	Test	60.56±3.31	69.46±4.90	73.33±3.12	<0.001	<0.001	<0.001
	Control	63.00±4.77	61.50±2.76	62.63±2.79			

Teaching stress management skills led to an increase in the quality of life of the education group as compared to that of the control group in this research. The role of working factors in the pathology of the psychological problems of nurses has been obviously emphasized. But few studies have been done on the effects of psychological effects on these people (14).

ICU nurses' quality of life and the other dimensions including physical, psychological, environmental and social communications are disturbed because of the stresses of the job environment. Nurses need psychic and somatic balance in order to lead a healthy life, and any change, especially unpleasant ones of life, or of job environment, is considered as a threat to this balance. In fact, stress disturbs the psychic and somatic balance of a person.

The existence of different factors in the job environment like the physical job environment, responsibilities, the limitation of functions, and the dualism of role, etc. leads to an increase in the nurses' stress and, indirectly, can have a negative effect on their quality of life. However, through teaching the methods of stress management, one can decrease the amount of stress and improve the quality of life.

By the use of stress management techniques and teaching self-relaxations, one can decrease the physical stress and the physiological anxiety symptoms in nurses. This also results in the improvement in the quality of life to a great degree. The unpredictable nature of the ICU patients causes nurses to suffer from permanent stress. By the use of stress management techniques, these nurses learn to control their daily stress and tensions.

According to the obtained findings, we can state that education can have a positive effect on the total score of the ICU nurses' quality of life in one and two months after education. The total score of the quality of life in the follow up stage is in compliance with the findings by Choobfouroush et al. that show that the behavioral cognitive treatment of stress management causes the improvement of the total score of the quality of life of the infertile women (15).

Also, the results of this research are in the same line with those of Neshatdoust who found that the total score of the quality of life of the people suffering from Alopecia after behavioral-cognitive treatment of stress management up to 66 and 46 in the post-test and follow up stage, respectively (16). The results of this study also agrees with the findings of Bourbeau et al. (17), Gadoury et al. (18), Decramer et al. (19), Martinovic et al. (20), and Au et al. (21).

Table 3 displays the comparison of the dimensions of the nurses' quality of life before, one month, and two months after the intervention. The score of the quality of life after the intervention increased in all dimensions.

According to this Table, the average of the score of the quality of life of the physical dimension in the education group had an ascending trend so that it increased from 61.16 before the intervention to 70.20 one month later and to 73.76 two months later, and in the control group, the 60.96 score before the intervention increased to 61.2 one month and to 62.66 two months after the intervention which is not statistically significant.

In the study done by Javaheri, et al. on the efficacy of stress management skills on the quality of life of the women suffering from post-traumatic epilepsy, the results showed the improvement of the score of the quality of life concerning the physical dimension so that it increased from 10.4 before the education to 17.1 in the post-test stage and to 16.6 in the follow up stage. But in the control group, the score of this dimension changed from 12.9 before the education to 14.6 in the post-test and to 13.3 in the follow up stage ($p<0.001$) (22).

Also, in the study done by Rezayi et al. with the aim of finding the influence of behavioral-cognitive interventions of stress management on the quality of life of the women suffering from asthma, the results demonstrated that the educational program was effective in the improvement of the physical dimension of the quality of life one and two months after the education so that the score of the physical dimension of the quality of life in the education group changed from 137 before the education to 165.33 in the post-test and to 150 in the follow up stage (23). Therefore by the use of stress management skills and relaxation techniques, the anxiety symptoms decrease in people.

According to Table 2, the mean score of the quality of life in the psychological dimension has had an ascending trend so that this score showed a significant increase from 61.4 before the education stage to 70.26 a month after and to 73.26 two months after the intervention ($p<0.001$). But in the control group this score changed from 62.6 before the education to 61.96 a month later and to 63.23 in two months after the intervention. These findings suggest that education is effective concerning this dimension of the quality of life.

In the study by Soltani, Khalife et al. aiming to examine the effects of stress control skills on the health of dentists; it was found that such education caused the psychic health of the dentists to improve in the education group compared to that in the control group (24). The findings of the present research are in the same line with those of the other research on the psychic dimension [Hashemi (25), Ansari (26), Benson (27)]. Also, in the study by Goldstein, et al.

on the effects of cognitive therapy on the patients suffering from epilepsy, it was found that depression and psychological problems tended to be relieved considerably (28).

According to Table 3, the mean score of the quality of life in the social communication dimension one and two months after the intervention showed a significant increase compared to the stage before the intervention ($p<0.001$).

Regarding this dimension, the score was 60.96 before the intervention which increased to 70.76 one month and to 73.13 two months after the intervention in the test group. But in the control group, this score was 61 before the intervention which increased to 62.33 one month and to 63.16 two months later; however, the difference was not statistically significant.

Moreover, the score of the quality of life in the environment dimension of the education group increased from 60.56 before the intervention to 69.46 one month and to 73.33 two months after it; this increase was statistically significant ($p<0.001$).

But in the observer group, the score of the environment dimension increased from 63 before education to 61.5 one month and 62.63 two months after it; this difference was statistically insignificant compared to that in the education group.

Considering the obtained findings, we can state that such education caused nurses to improve their quality of life significantly in the social communications and environment dimensions .In a study by Nayyeri, et al., it was found that the educational program was effective regarding the social communications and environment dimensions of the students' quality of life. The results agree with the findings of the present research.

Sararoudy, et al. examined the efficacy of the psychological intervention in the enhancement of the quality of life of the patients suffering from chronic obstructive pulmonary disease, and demonstrated that education caused an increase in the quality of life of the studied subjects in the social communications and environment dimensions (29).

Conclusion

According to the results, in both education and control groups, there was a statistically significant difference in all physical, psychic, social communications, and environment dimensions one and two months after the intervention between the education and the observer groups ($p<0.001$). These findings suggest improvement of the dimensions of the quality of life in the education group. The researchers believe that this subject can be related to the acquisition of knowledge by the nurses on stress management skills. Moreover, as Table 3 displays the quality of life has increased one month after the intervention in all dimensions (physical-psychic, social communications, and environment) but this rare has been slowed down two months after the intervention. This can be due to the interruption in holding the workshop and the researched units being far from this workshop.

According to the results of the present and previous research, it is necessary to take measures in order to hold stress management educational courses for all organizations with the aim of decreasing job stress and increasing satisfaction and the nurses' quality of life. We suggest that in future research, other types of psychotherapy methods such as relaxation training, writing feelings, biofeedback, hypnosis, and yoga be used and find their effects on these dimensions of life.

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