Original Article

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Effects of Group Acceptance and Commitment Therapy -Based Training on Job Stress and Burnout among Pediatric Oncology and Special Diseases Nurses

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Abstract

Background: Job stress is defined as the harmful physical and emotional responses happening when the requirements of the job do not match the capabilities, resources, or needs of the worker. Some jobs such as nursing are stressful. The aim of this study was to investigate the effects of group acceptance and commitment therapy (ACT) on job stress and burnout among pediatric oncology and special diseases nurses.

Materials and Methods: This interventional study was conducted on sixty nurses in special disease and oncology wards who then were assigned randomly in two group of experimental and control. During four sessions lasting for one and half, the experimental group received communication skills of ACT based on Bond and Hayes model and the control group received just communication skills. Three months after the main training in the follow-up stage, experimental and control group had two sessions lasting for 1.5 hours. During these sessions, previous contents were reviewed. Before and after the interventions and during follow up stage, the participants completed Osipow's Occupational Stress Inventory and Maslach and Jackson Job Burnout Inventory. Data analysis was done using repeated measures analysis of variance.

Results: Group training based on the ACT not only decreased total job stress ($p<0.0001$) but also diminished job stress factors, including role overload ($p<0.015$), role ambiguity ($p<0.047$), role boundary ($p<0.011$), and responsibility ($p<0.0001$). Besides, ACT-based training decreased self-decreasing achievement ($p<0.007$).

Conclusion: Group ACT-based training can decrease job stress but had no considerable effect on job burnout.

Keywords: Acceptance and commitment therapy, Job stress, Oncology, Pediatrics

Introduction

Occupational health is important and fundamental issues for societies today. Spread of urbanization, development of industry, globalization, and economic competition have made occupation a major issue in today's life. Many other aspects of life such as marriage as well as physical and mental health have a close relation with the job. One of the main issues in the field of occupation is job stress that can bring about many negative consequences. For example, according to Health and Safety Executive, more than13/5 million work day and 4 million pound were wasted from 2007 to 2009 because of job stress (1). Stress is the response of people to threatening situations or events in which people to use their power to cope this pressure (2). Job stress is defined as the harmful physical and emotional responses happening when the requirements of the job do not match the capabilities, resources, or needs of the worker (3). According to National Institute of Occupational Safety and Health, job stress is emotional response that occurs when there is no match between the demands and recourses or needs of staff (4). There are several different theories about job stress. According to Individual-Environment Fit Model, the imbalance between the persons' characteristics and the workplace leads to job stress (5). Demand-control model concerned with the interaction between levels of job pressure

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and decision making (6). In this model, assumed high-demand workers who have little control over their work are at high risk of disease and effort- reward imbalance model, lack of balance between high workload and low control on rewards for long term will lead to job stress (8). All job burnout are approximately associated with job stress (2). Job stress will lead to burnout if it continues. Job burnout is a reduction in the individual's ability to adapt to stressors and symptoms such as emotional exhaustion, depersonalization, and feeling of reduced personal accomplishment (9). Freudenberger introduces burnout as fatigue and burnout state, resulting from hard work and having no motivation (10). In his opinion, job burnout is failure, depression, excessive consumption of energy, power, or resources. Chermis believes that job burnout has three stages, including mental pressure, psychological distress, and defense coping (11). With respect to resources conservation model, job burnout happens when people are threatened by their values (12).

The development of societies depends on the employment of individuals. One of the factors that prevent full productivity from work is stress and burnout. The burden of work-related stress on employees and their families is heavy (13).

Considering the importance of nurses' health in the provided quality of care by them, focusing on strategies to affirm and increase nurses' health seems essential (14). Different factors affect the physical and mental status of nurses. Some of these factors are related to the work environment; for instance, the presence of different wards in hospitals with different working conditions (15). Identifying wards that have more stress or less job satisfaction for nursing personnel can lead to more accurate planning and more attention to these wards.

Different interventions have been used to treat job stress and burnout. A study on classroom-based interventions and pre-school teacher's stresses showed that intervention has a significant effect on improved perceived job control and job related resources (16). In another study, stress management intervention was compared with educator guidance using computer training. The findings showed that the relaxation process in both groups significantly reduced the stress (17). In Iran, the research done on the effect of group-based counseling based on the solution-based approach to reduce job stress among women employees of the Ghalamchi Foundation revealed that group counseling in this way can reduce the level of job stress among female employees (18). Research has also been conducted on burnout. In a study on the effect of decisive education on burnout among nurses working in Razi Psychiatric Center, it was demonstrated that training is effective on all aspects of burnout (19). One of the interventions in the field of job stress and burnout is the acceptance and commitment therapy (ACT). This treatment is one of the treatments introduced by the third wave of behavioral therapy that is mindfulness (20). ACT is based on functional contextualism. The goal of functional contextualism is to predict the effect of continual application of the whole organism in interaction with the historical and situational context. Creating effective behavior requires successful manipulation of events and only context variables can be directly manipulated (21). This treatment has six basic principles; namely, defusion, acceptance, contact with the present moment, observing self, values, and committed action. Defusion means a principle to prevent cognitive fusion. Fusion occurs when the person sees himself and his thoughts mixed. Acceptance involves creation of a space for feelings, senses, desires, and other unpleasant private experiences, without trying to change them, escape from them, or recapture them. Contact with the present moment means bringing full knowledge of

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experience here and now with openness, interest, acceptance, and focusing on it. Observing self means continuous awareness of itself, which does not change and is always present. Values and committed action refer to situation in which individual will identify what is most important and deepest to him, set goals based on it, and act decisively and effectively to achieve them (22). One of the areas where ACT has been successfully applied is occupational issues. In a study, 19 patients with chronic pain in the two groups received normal medical treatment and usual medical treatment plus ACT. The findings showed that the latter group need less medical treatment compared to the first group (23). In another study on the treatment of job stress, ACT was compared with training stress relief. The findings showed that both treatments had the same effect on the psychological decline of workers. In another study, the effects of ACT on job stress, job burnout, and general health of Swedish social workers were investigated. It reduces the stress and burnout of the workers and increases their general health (24). In Iran, different therapies have been used to reduce stress and burnout such as... However, ACT has not been investigated yet in this regard. Therefore, the present study was conducted to evaluate the effectiveness of ACT-based group training in reducing stress and burnout among nurses.

Materials and Methods

The present interventional study was done using a pretest- posttest design. The statistical population included all nurses working in special diseases and pediatric Oncology wards of Shahid Sadoughi Hospital, Yazd, Iran. Among 60 nurses, 30 were randomly assigned to the experimental group and 30 were assigned to the control group. The study was approved by Ethical Committee of Shahid Sadoghoui University of Medical Sciences (Ethical Code: IR.SSU.MEDICINE.REC.1395.172).The participants could withdraw from the study whenever they wanted to. In the experimental group, group training was done based on ACT using Bond and Hayes model in four sessions, lasting for 1/5 hour (25).The participants in the control group received communication skills that was unrelated to ACT. Before and after the training sessions, two groups underwent further investigation. Subsequently, for both groups, two sessions lasting for 1/5 hour follow-up test were conducted three months after the main training. During follow-up sessions, the same contents were reviewed and practiced, and eventually the research tools were run by both groups. For data collection, the following instruments were used:

Osipow Occupational Stress Inventory (OOSI)(26): This tool is used to evaluate individual stress in six dimensions: role overload, role insufficiently, role ambiguity, role boundary, responsibility, and physical environment. Each of these dimensions is evaluated by 10 items. Items were scored using a Likert scale (1-never up to 5= most often). The Cronbach's alpha coefficient of this questionnaire is 0/89 and the Cronbach's alpha coefficient of its Persian version is 0/84(26).

Maslach and Jackson Job Burnout Inventory (MJJBI) (27): This questionnaire has been developed to measure the burnout rates of human services occupations. Twenty-three items measure the three components of emotional exhaustion, depersonalization, and self-decreasing achievement on a seven-level Likert scale from never to always. This questionnaire has two protocols: frequently and severity. The sum of these two protocol scores determines the burnout score of each individual (27). Maslach and Jackson reported this questionnaire's Cronbach's alpha coefficient of 0/90,0/79, 0/71for emotional exhaustion, depersonalization, and self-decreasing achievement, respectively (28). Cronbach's alpha

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coefficient of the Persion version is 0/79, 0/81, 0/75, respectively (29). Data analysis was done using Statistical Pachage for the Social Science (version 17) and running repeated measures analysis of variance. P<0.05 was considered as significant level.

Results

Among 60 participants, 56 (94%) were female and 4(6%) were male. The mean age of the participants was 34/28 with standard deviation of 5/32(Table I).

The results of the inter-subject test showed that the within group difference was significant in terms of overload of the role, role ambiguity, role boundary, responsibility, and overall score of interaction (Table II).

The mean and standard deviation of MJJBI subscales in three stages of evaluation are presented in Table III. The test of the inter-subject's interactions among the subjects for the subscales MJJNI (Table IV) showed that the interaction between sub-comparisons and the group was significant only for the subscale of reduction in self-decreasing achievement.

Table I. Mean and standard deviation of subscales of Osipow Job Stress Inventory in two groups in three stages: pre-test, post-test, and follow-up

Variable	Group	Pre-test	Post-test	Follow up
Role overload	Experiment	25/93(5/18)	23/63(5/25)	23/83(3/71)
	Control	628/15(6/43)	28/48(5/06)	26/58(3/98)
Role insufficiency	Experiment	25/07(7/54)	27/47(6/36)	27/17(5/48)
	Control	25/18(7/86)	26/72(7/35)	26/67(7/17)
Role ambiguity	Experiment	23/87(2/64)	20/4(4/22)	20/57(4/22)
	Control	24/88(5/22	25/64(6/26)	25/67(5/19)
Role boundary	Experiment	25/73(3/83)	21/83(3/99)	21/6(3/14)
	Control	26/85(6/40)	25/54(5/73)	25/37(4/9)
Responsibility	Experiment	27/27(4/008)	22/7(3/72)	26/36(4/09)
	Control	29/03(5/14)	26/52(4/93)	26/12(4/16)
Physical environment	Experiment	19/97(8/41)	20/33(7/65)	20/62(8/40)
	Control	22/78(8/49)	22/78(7/92)	22/48(7/91)
Total job stress	Experiment	153/47(12/01)	130/43(15/85)	132/37(12/14)
	Control	156/88(25/1)	154/73(25/37)	152/79(19/62)

TableII. Testing the effects of within and between subject of subscales of Osipow Occupational Stress Inventory

Variable	Source of change	Degree of Freedom	F	Significance level
Role overload	Role overload	1/93	1/91	0/015
	Role overload*Group	3/85	2/6	0/04
	Between the subject	2	4/63	0/012
Role insufficiency	Role insufficiency	1/88	0/82	0/066
	Role insufficiency *Group	3/75	0/39	0/80
	Between the subject	2	0/61	0/55
Role ambiguity	Role ambiguity	2	2/75	0/047
	Role ambiguity*Group	4	3/65	0/007
	Between the subject	2	7/89	0/001
Role boundary	Role boundary	2	4/65	0/011
	Role boundary *Group	4	4/96	0/001
	Between the subject	2	3/88	0/024
Responsibility	Responsibility	1/73	9/4	0/0001
	Responsibility*Group	3/47	7/09	0/0001
	Between the subject	2	6/13	0/003
Physical environment	Physical environment	1/77	0/16	0/82
	Physical environment *Group	3/53	0/4	0/79
	Between the subject	2	4/31	0/016
Total job stress	General job stress	1/96	10/51	0/0001
	General job stress *Group	3/93	11/30	0/0001
	Between the subject	2	6/92	0/002

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TableIII. Mean and standard deviation of subscales of Maslach and Jackson Job Burnout Inventory in two groups in three stages: pre-test, post-test, and follow-up

Variable	Group	Pre-test	Post-test	Follow up
Emotional exhaustion	Experiment	16/5(9/39)	13/7(8/86)	13/47(6/31)
	Control	19/18(10/51)	19/33(9/4)	17/76(8/75)
Depersonalization	Experiment	4/93(6/30)	3/9(5/58)	3/3(2/83)
	Control	8/27(6/51)	9/48(6/81)	8/15(5/87)
loss of personal achievement	Experiment	10/47(7/46)	13/43(8/43)	14/6(9/30)
	Control	17/21(9/45)	20/61(10/64)	23/12(10/67)
Total job burnout	Experiment	31/9(16/93)	31/03(16/74)	31/37(13/91)
	Control	44/67(21/46)	49/42(19/32)	49/039(17/91)

TableIV. Testing the effects of within and between subject of subscales of Maslach and Jackson Job Burnout Inventory and its subscales

Variable	Source of change	Sum of squares	Df	means of squares	F	Significance level
Emotionalexhaustion	Emotional exhaustion	166/70	1/58	90/09	2/61	0/097
	Emotional exhaustion*Group	101/51	3/70	27/43	0/74	0/56
	Group	838/73	2	419/37	2/352	0/10
Depersonalization	Depersonalization	33/82	1/9	17/82	0/05	0/35
	Depersonalization*Group	48/83	3/8	12/86	0/76	0/55
	Group	139/39	2	695/19	12/8	0/0001
loss of personal achievement	loss of personal achievement	449/37	1/58	242/75	5/39	0/007
	loss of personal achievement	431/97	3/7	116/68	2/59	0/04
	*Group	3023/72	2	1511/87	7/012	0/0001
	Group					
Total job burnout	General job burnout	17/53	1/59	11/04	0/08	0/88
	General job burnout*Group	568/56	3/18	178/99	1/3	0/28
	Group	1425/55	2	712/78	10/24	0/0001

Discussion

The purpose of this study was to investigate the effect of ACT-based group training on stress reduction and burnout among pediatric oncology and special diseases nurses. Findings of this study showed that ACT-based group training caused changes in job stress and its subscales that is consistent with the findings of other studies (36, 40, 38). In other words, the role overload means that there is more work than one's time and energy (26) so that the person has to work more than a certain time and cannot finish the job at a given time (29). In harmony with Karasek's et al. theory, high demand and low control bring about stress in a person. (6). In this situation, the inconsistency of effort-reward also leads to job stress (8). When the work environment is overcharged, the person may have a kind of neglect and attention to the job. Using its observation technique, ACT can help the person to experience less stress by increasing self-awareness and self-control. In addition, the role overload may lead to an increase in negative thoughts to increase the individual's efforts to resolve these thoughts or avoid empirical avoidance, leading to more stress. Though more training, these thoughts can stop stress (25). In addition, role overload can depend on individual perception of occupation and the size of the job, and this issue can be controlled by changing the person's perception (14). In fact, ACT may reduce job stress by changing perceptions and creating more psychological flexibility than role overload.

The role ambiguity or role conflict is another factor in job stress that was reduced following ACT group training in the present study. Ambiguity includes evaluative criteria of the role and individual awareness in the conflicting priorities and expectations occurred in the workplace and the (19). If the job demands of a person be ambiguous and

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conflicting and the person does not know what the manager or colleagues expect from him, he/she will feel stress (5). In such cases, ACT may help him by providing him/her more psychological flexibility in order to better address his/her important and contradictory expectations (30). In addition, the defusion of person from his roles and attention to observing and coherent self help him experience less stress (21).

The role boundary is another component of the job stress that was reduced by ACT group training in this study. The role boundary implies conflict in the roles that are expected from the person (26). When there is no boundary between the various roles of an individual in the organization and his occupational range is unclear, the person feels stress. In these cases, ACT helps achieve greater coherence through the observer exercise and set goals and have commitment to them (23).

Individual responsibility is also one of the other stressors (5). Individual responsibility pertains to individual's sense of responsibility for more efficiency and the well-being of others in the workplace (24). To reduce the stress caused by excessive responsibility, creating greater psychological flexibility to accept responsibility, limitations and disabilities of yourself and others, accepting stressful thoughts and emotions, and sharing responsibilities can contribute to reducing stress (28). Based on the findings of this study, ACT did not change some components of job stress. The role insufficiency refers to the imbalance between the individual's level of skill, education, and experiential characteristics and the needs of the workplace. Role insufficiency occurs when a person feels that he is not sufficiently capable of a role. ACT contributes to the acceptance of personal limitations and disabilities. Failure to find such a finding in the current study can be due to several reasons: first, subjects may report less insufficiency; second, people may not accept that they have no specific job ability, while emphasis is placed on acceptance at the event. Moreover, many of role insufficiency components may have an objective role, such as the level of education and therefore the mental perception that ACT focuses on it will not change. ACT did not change the subscale of the physical environment that can be due to objectivity of this concept. ACT has more emphasis on mental factors and the shift of the person's mental affairs from the lack of acceptance to acceptance. In addition, the physical environment of the work may be appropriate from the beginning, so there is no need to change. The findings also showed a reduction in the overall score of job stress. In a nutshell, ACT-based training had an impact on the reduction of job stress and it is suggested to be used as a method to reduce stress. However, the changes made by the ACT seem to involve more mental components, and the components of emotion were less effective. This is completely consistent with the purpose of treatment and the expectation of this type of treatment. ACT increases mental flexibility, changes individual perceptions, acceptance of thoughts and negative feelings, and reduces empirical avoidance, widespread awareness and attention to self-observation and continuity, individual defusion from temporary roles and characteristics, and the recreation of values and commitment, and ultimately results in job stress reduction (24,26).

Concerning the effect of ACT training on burnout, one study indicated that this method only reduced the sense of self-decreasing achievement and did not affect emotional exhaustion, depersonalization, and overall job burnout (20). This finding is inconsistent with previous studies (17). Emotional exhaustion means feeling tiredness and excitement by one's work.

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Emotional exhaustion is a factor that results from continuous stress(14). Emotional exhaustion may require deep and individual treatments and cannot be reduced by group training. Depersonalization means looking at other objects as a result of intense emotional exhaustion. In order to correct this kind of look, there is a need for individual, accurate and in-depth training, and group training is not enough (14, 15).

ACT was effective in self-decreasing achievement. In addition, since the component of widespread consciousness is used in ACT, it may help increase a person's awareness about his or her position and thus reduce the sense of self-decreasing achievement. According to our study, ACT did not have a significant effect on reducing burnout. This may be due to the fact that burnout is a process that will occur over a long period of time, and therefore it requires a deeper and longer workload (23).

The lack of monitoring the performance of homework assignments outside of training sessions, the failure to investigate the mechanism of effect of ACT on stress and burnout, and the lack of comparability of ACT with other treatments were the limitations of this study.

Conclusion

Group ACT-based training can decrease job stress but had no considerable effect on job burnout.

Conflicts of interest

The authors declare no conflict of interest.

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