Research Paper: Effect of Stress Management Training Based on PRECEDE Model on Prehospital Emergency Staff Occupational Tension in Mazandaran University of Medical Sciences in 2016

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ABSTRACT

Background: One of the most important sources of tension in everyone's life is their job. The aim of this study is to determine the effect of stress management training using the PRECEDE model on the occupational tension of the pre-hospital emergency staff.

Materials and Methods: This research is a quasi-experimental field trial controlled study that included emergency medical technicians from 115 emergency center for disaster management and 78 urban and road base in the Mazandaran University of Medical Sciences. According to the inclusion criteria, the subjects were randomly divided into two groups of intervention (n=65) and control groups (n=65). Data were collected using the stress factors questionnaire and questionnaire based on PRECEDE model. After the pretest, according to the results of the PRECEDE model-based instruction in 2 days, every 4 hours during 5 separate meeting it was.

Results: After the training, the variables of predisposing, reinforcing, and enabling, and the behavior in the intervention group increased significantly (P<0.05) compared to the control group. The mean score of occupational tension in the intervention group reduced from 3.18 to 2.49.

Conclusion: The findings showed that education based on PRECEDE model increases the predisposing factor (knowledge and attitude), reinforcing factor, and enhancer factor. These factors have the potential to affect the behavior more effectively. According to this, educational intervention based on PRECEDE model structures is effective on job stress and behavior. Researchers have suggested training on this pattern.

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1. Introduction

Too much stress, including tension due to work occupation, has serious and destructive effects on human health and well-being [1]. It has been reported that employed individuals are exposed to different types of pressure.

According to Karazak's control-demand theory, occupations such as nursing, which has high psychological demands and low decision-making scope, were associated with high occupational tension [2, 3] mainly due to difficult working conditions. It should be noted that although there is occupational tension in all businesses, this issue becomes more important and abundant in health-related aspects. Occupation associated with emergency and treatment systems is stressful in nature and can affect the quality of life of the employed individuals [4].

Such occupations can have irreparable risks to human lives, such as that of emergency nurses [5]. In this regard, stress management increases the ability of individuals to reduce tension and adapt to stressful situations. The value of health education programs depends on their effectiveness, which is influenced by the correct use of educational materials [6]. The PRECEDE model highlighted the design and planning process and was designed to plan individual and social changes in line with health. This model also has implications in the training program for the client and in employee training [7].

An important feature of the PRECEDE model in health education is the provision of a comprehensive view of the subject matter, which addresses the person's behavior in three different areas (predisposing factors include knowledge, attitude, belief, value and understanding of needs; reinforcing factors include social support, peer impacts, tips and clues by health care providers; enabling factors include skills of personnel, access to health services, and comprehensive resources) [8].

Many studies, including those by Van Der Ploeg and Kleber [9], Kalemoglu and Keskin [10], Essex and Scott [11], and Hegge-Deloye et al. [12], have confirmed the relationship between stress and emergency medical personnel or pre-hospital emergency technicians. According to Hazaweii et al. [13], the PRECEDE-based stress management model was effective on nursing occupational stress through time management, problem-solving method, and relaxation [13]. Medical emergencies are a community-based health management system, in which employees serve as the most important capital.

Finding strengths and weaknesses of medical emergencies, improving its quality, and dissatisfaction of pre-hospital emergency staff regarding educational interventions for stressful situations are considered important and valuable affairs. These factors could also improve the quality of service and provide more protection of human life. To the best of our knowledge, no other study has been conducted in Iran on the impact of PRECEDE-based stress management training model on the occupational stress of pre-hospital emergency staff. Hence, the present study aimed to fill up this research gap.

2. Materials and Methods

The present study was an interventional, field trial, semi-experimental field trial with control group. The research population included pre-hospital emergency staff of the Center for Medical Emergency Management of Mazandaran University of Medical Sciences in 2016. The samples included technicians working in 78 urban road emergency stations and 115 emergency services who were selected randomly using Rand Bit Excel software. The subjects were divided into intervention and control groups of 65 subjects each [14]. The inclusion criteria included all male technicians having an academic degree, being employed as a stationary technician, having at least two years of occupation experience, not having severe mental and financial problems in the last month, and not using any strong soothing drugs.

The exclusion criteria were determined during the study and included everything that leads the subjects to refuse to collaborate further in the research. After obtaining the consent of the subjects, a questionnaire was distributed among them and then collected after completion. The questionnaire consisted of three parts: 1. Demographic section, 2. Stress factors [15], and 3. questionnaires based on the PRECEDE model [14]. The first part of the questionnaire on demographic characteristics (without the name or any other personal identification information) included 8 questions on age group, occupation category, marital status, field of study, educational level, occupation experience, type of employment, type of service base, and number of 24-hour occupation shifts.

For the second part, the questionnaire of stressful occupational factors for pre-hospital emergency was used. It contained 35 questions in 5 domains (stressors of patient care, interpersonal stressors, management factors, individual factors, and physical environment) related to nursing stressors of the pre-hospital emergency room [15]. The third part of the questionnaire (PRECEDE model) was based on all model constructs including

Table 1. Validity and reliability index of the questionnaire based on the constructs of the PRECEDE model [5]

Index	Awareness	Attitude	Enabling	Reinforcing	Behavior
CVR	0.95	095	1	1	0.95
CVI	0.75	0.75	0.71	0.71	0.72

predisposing factors such as tension awareness questionnaire and methods to deal with it, attitude towards tension, enabling factors (availability of resources, access to resources, and the skill of using them), and checklist of resource utilization skills.

The Confirmatory Factors Questionnaire contained 4 questions related to the encouragement of others and positive person's feelings after coping with stress. For stress-coping behavior questionnaire, 14 questions were considered [14]. The reliability and validity of this questionnaire (Table 1), which has been used repeatedly in similar studies, and its standardization were proven [14] [15].

First, the questionnaires were sent to eight experienced professors specialized in health education and promotion of health and four clinical psychologists through email. The questionnaires for CVR and CVI were accepted in the acceptance score range. Then, to resolve issues and reliability, this tool was available to up to 20% of the statistical sample (according to previous studies) which had criteria for entering the research. The relevant questionnaire was given to a sample of 25 subjects. Reliability of the questionnaires was obtained using SPSS v.21 software and Cronbach Alpha, which equaled to 0.896 (the desired level of reliability).

The stages of this research included three parts: performing pre-test, planning and implementing educational interventions based on the query model (which was performed only in the experimental group), and performing post-tests (1.5 months after the implementation of educational interventions) [13]. First, based on the results obtained in the pre-test, the content of the training program was designed for intervention group by emphasizing the prognostic power among the constructs of the reinforcing factor, the behavior, the enabler factor on occupational tension, and the low average score of either the total construct or each single question. Interventions were carried out in 5 sessions of the training program during 2 continuous weeks for the intervention group. Face-to-face interviews were conducted with all the subjects for about half an hour (as a reinforcing).

During the implementation of the training program, no educational intervention was performed for the control group. During the training sessions, the lecture method, collaborative educational methods such as group discussion and brainstorming, role play and practical show, discussion in small groups, performing group work, and educational materials and supplies such as sedation audio CD, relaxation booklet, tension pamphlet and poster, and stress management were used. Training sessions were held in two days within a week's interval and according to a predefined schedule at the dedicated conference hall.

These sessions held in a way that the intervention group subjects had less opportunity to attend classes given the busy life and work. Also, the reinforcing factors considered were the internal stimulus, encouragement by the educator through sending a week's message via SMS until the stage before the post-test, and positive feeling following the performance of these skills. Collected data were entered into the SPSS v.21, software and descriptive and inferential statistical analyses were carried out using regression tests, T-test, Kolmogorov-Smirnov, and Pearson correlation.

3. Results

The mean age in the intervention and control groups was 34.61±7.27 years and 6.29±34.98 years, respectively. The highest frequencies in the intervention group (43%) and control group (38%) were related to the age groups of 34-39 years and 28-33 years, respectively. The highest frequency in the intervention group was related to spouse (married) subjects with 83% and the most frequent in the control group was related to spouse (married) subjects with 82%. The average occupational experience was 5±10.35 years in the intervention group and 5.34±10.81 years in the control group. The most frequent type of base in the intervention group was related to the city base with 52% and in control group, the highest frequency observed was related to the road base with 63%. Distribution of other demographic variables is shown in Table 2.

The findings in Table 3 showed that changes have been made in each of the six variables after the intervention of the

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Table 2. Frequency distribution of demographic variables in the intervention and control groups

Variable / Group	Occupation Degree			Education Level		Employment Status			24 Hour Work Shift			
	Basic Rescuer and Technician	Middle	Superior	Diploma and Upper-Diploma	Bachelor and Master's Degree	Formal	Temporary-to-Permanent Worker	Contractual Worker	8 Shifts	10 Shifts	12 Shifts	14 Shifts
Intervention	43%	27%	30%	18%	82%	62%	11%	27%	5%	27%	37%	31%
Control	48%	23%	19%	31%	69%	60%	3%	35%	5%	32%	33%	30%

dependent variable (stress management training) in the intervention group regarding the mean of post-test and pre-test scores. However, in the control group, there was no apparent difference in the means of three variables (no intervention).

The results of the normality of the variables investigated using the Kolmogorov-Smirnov test is shown in Table 4. Independent T-test results showed that the mean scores of predisposing, enabling and reinforcing, and behavior and occupational stress factors were not statistically significant in the first stage (pre-intervention) between intervention and control groups (P>0.05) (Table 5). After training, in PRECEDE model constructs, this mean score increased significantly, and the mean score of occupational stressors decreased significantly (P<0.05).

Regarding the normality of the dependent variable (behavior), inter-method regression test was used to investigate the changes and the predictive value of the constructs of the PRECEDE model on the stressful behavior of employees. The results show that multiple correlation coefficient equaled to 0.617 between research variables, representing the correlation between behavior variables and constructs of the PRECEDE model. A significant relationship was observed between behavior variables and constructs of the PRECEDE model (awareness, attitude, reinforcing, enabling and stressor factors) (Table 6).

Based on the calculated beta coefficient, the enabling factor component with a beta coefficient of 0.556 had the most effect and attitude with β coefficient of 0.157, occupational stress with β=0.113, knowledge with β=-

Table 3. Description of research variables

Variables		Pre-Test		Post-Rest	
		Mean of Responses	Standard Deviation	Mean of Responses	Standard Deviation
Intervention group	Awareness	11.8333	2.71946	16.2333	2.65768
	Attitude	40.4000	3.88042	44.7167	4.48384
	Enabling factor	1.7833	1.74756	4.8833	0.69115
	Reinforcing factor	6.7167	1.75723	7.4833	0.96536
	Behavior	11.5500	4.16371	17.2500	2.99505
	Occupational stressor factors	3.1812	0.81550	2.4996	0.47905
Control group	Awareness	12.0500	2.65805	12.0500	2.99958
	Attitude	40.7333	3.78609	40.9000	3.62524
	Enabling factor	1.2333	1.58774	1.4000	1.59661
	Reinforcing factor	5.9667	1.83161	5.7500	2.03049
	Behavior	11.6333	4.36460	11.2167	4.50270
	Occupational stressor factors	3.1284	0.7780	3.1507	0.80995

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Table 4. Kolmogorov-Smirnov test

Variables	Intervention Group		Control Group	
	P	ks	P	ks
Awareness (pre-test)	0.489	0.535	0.390	0.902
Attitude (pre-test)	0.781	0.657	0.279	0.992
Enabling factor (pre-test)	0.053	1.249	0.510	1.279
Reinforcing factor (pre-test)	0.054	1.229	0.057	1.219
Behavior (pre-test)	0.550	0.797	0.325	0.952
Occupational stressor factors (pre-test)	0.541	0.802	0.499	0.828
Awareness (post-test)	0.224	1.046	0.347	0.935
Attitude (post-test)	0.243	1.026	0.164	1.118
Enabling factor (post-test)	0.053	1.234	0.051	1.281
Reinforcing factor (post-test)	0.051	1.256	0.056	1.216
Behavior (post-test)	0.0209	1.062	0.504	0.825
Occupational stressor factors (post-test)	0.0513	0.819	0.397	0.897

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Table 5. The average score in constructs of PRECEDE model in the intervention and control group before and after the intervention

Variable	Research Time	Intervention Group		Control Group		P of Independent T-Test
		Mean	SD	Mean	SD	
Awareness	Before intervention	11.833	2.71	12.05	2.65	0.660
	After intervention	16.233	2.65	12.05	2.99	P<0.001
	P of paired sample T-test	P<0.001		0.999		
Attitude	Before intervention	40.40	3.78	40.73	3.88	0.635
	After intervention	44.71	4.48	40.90	3.88	P<0.001
	P of paired sample T-test	P<0.001		0.806		
Enabling factor	Before intervention	1.78	1.74	1.23	1.58	0.074
	After intervention	4.88	0.69	1.40	1.59	P<0.001
	P of paired sample T-test	P<0.001		0.568		
Reinforcing factor	Before intervention	6.716	1.75	5.966	1.83	0.054
	After intervention	7.483	0.96	5.750	2.030	P<0.001
	P of paired sample T-test	P<0.001		0.541		
Behavior	Before intervention	11.55	4.16	11.63	4.36	0.915
	After intervention	17.25	2.99	11.21	4.50	P<0.001
	P of paired sample T-test	P<0.001		0.608		
Occupational stressor factors	Before intervention	3.18	0.81	3.12	0.77	0.718
	After intervention	2.49	0.47	3.15	0.80	P<0.001
	P of paired sample T-test	P<0.001		0.608		

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Table 6. Summary of the PRECEDE model

Multiple Correlation Coefficient	Correlation Sum of Square	Balanced Determination Coefficient	Estimation Criteria Error
0.617	0.381	0.354	3.911

Table 7. Comparison of the effects of constructs of the PRECEDE model on dependent variable of behavior

Coefficient	Non-Standard Coefficient		Standard Coefficient	t	Sig.
	B	Standard Error	Beta		
Constant	2.896	6.494		0.446	0.656
Awareness	-0.043	0.172	-0.019	-0.249	0.804
Attitude	0.260	0.124	0.157	2.099	0.038
Enabling factor	1.836	0.292	0.556	0.6.280	0.000
Reinforcing factor	-0.033	0.341	-0.009	-0.096	0.924
Occupational stress	-1.003	0.743	-0.113	-1.366	0.157

0.019, and reinforcing factor with β=-0.009 had the least impact on employee behavior, respectively.

4. Discussion

The findings of this study showed that the PRECEDE model training increases the scores of the predisposing (awareness and attitude), enabling, and reinforcing factors; the enabling factor had more impact on the behavior. This study also showed that the PRECEDE model training resulted in a meaningful increase in the mean of behavioral score and a significant decrease in the mean score of stress in the intervention group compared to the control group. However, the mean of occupational stress score has not decreased significantly. This research has shown that there was an inverse relationship between stress management and occupational stress. In other words, the use of stress management skills reduces occupational tension.

In this research, knowledge and attitude towards stress and its dangers and symptoms have been considered as individual and social factors effective in occupational stress. The strategies to deal with occupational stress were considered as predisposing factors. The mean score of knowledge in the first stage (pre-intervention) was not statistically significant between intervention and control groups (P=0.660). However, in the second phase (after training), the mean score of awareness increased. In addition, the mean difference in knowledge score was significant between the two groups (P<0.05). In the

study by Chen and Chang, knowledge and performance scores in the experimental group were significantly higher than that in the control group after the PRECEDE model training intervention (P=0.01) [16].

In the study by Sung Yu et al., a mind-based stress reduction program was found to be effective in reducing anxiety and tension in nursing students [17]. Oruogi et al. investigated the impact of health education program based on the PRECEDE model on the incidence of brucellosis in the rural population. Their results of the mean scores of predisposing factors (knowledge and attitude) in the intervention group showed a significant statistical difference compared to control group [18]. The findings of the current study are also consistent with and supported by the above studies.

In the present study, there was no significant difference between intervention and control groups regarding the mean score of attitude in the first stage (pre-intervention) (P=0.635). But in the second phase (after training), the mean score of attitude increased, and the difference in mean score of attitude was significant between both the groups (P<0.05). In a study by Hosseini et al., the effect of stress management training program based on the PRECEDE model on occupational stress of nurses was investigated. They could raise the attitude of the subjects in a way that this led to their increased inclination to gain knowledge on the methods to deal with stress [19]. The above studies are also consistent with our research findings.

However, unlike the above studies, Nadrian et al. showed that there was a positive and significant correlation between preventive behaviors of skin cancer and all the variables under study, except for attitude [20]. It seems that the PRECEDE model training increases awareness and attitude with respect to healthy behavior.

In the present study, learning the skills and the amount of their usage, and accessing educational resources were known as enabling factors. Educational resources included educational CD leaflets, pamphlets, posters, educational slides, solutions to cope with stress, breathing exercises, and gradual muscle relaxation. The difference in mean scores of the enabling factor in the first stage (pre-intervention) in both the groups was not significant (P=0.074). But in the second phase (after training), the mean score of enabling factor increased. The difference in mean score of the enabling factor between the intervention and control groups was significant (P<0.05).

Ebadi Far et al. investigated the impact of stress management training based on the BASNEF model on the promotion of behavior in patients diagnosed with multiple sclerosis. They showed that stress management strategies including walking, proper nutrition, and relaxation techniques caused a significant increase in performance training of intervention group after the intervention [21]. DidehVar et al. investigated the impact of PRECEDE-based stress management training on nursing occupational stress and found that the predominant and behavioral variables in the intervention group increased significantly after training, compared with the control group (P<0.05) [14]. The current research findings are consistent with the findings of the above studies.

In the current study, encouraging the self and others and positive feelings of the person after applying stress management methods were considered as reinforcing factors. The findings revealed that the difference in the mean score of the reinforcing factor in the first stage (pre-intervention) was not significant between the two groups (P=0.054). But in the second phase (after training), the mean score of the reinforcing factor increased and was significant between intervention and control groups (P<0.05). In the study by Hosseini et al. on the use of the PRECEDE model to improve sexual performance in women with hysterectomy, it was shown that reinforcing and behavior variables in the control group significantly increased after training (P<0.05) [22]. Their findings are consistent with the findings of the current study.

In this research, the difference between the mean score of behavior in the first stage (pre-intervention) was not

significant between the intervention and control groups (P=0.915). But in the second phase (after training), the mean score of behavior increased. In addition, the difference in mean score of behavior between the two groups has changed significantly (P<0.05). Jacobson et al. reported that the combined intervention of stress management training and exercise at home had positive effects on the patients' quality of life [23]. This research also confirms the results of numerous studies in which stress management training and PRECEDE model have been used for improving behavior and the quality of life. It seems that PRECEDE–based stress management training leads to changes in behavior and improvement of quality of life.

In this research, problem-oriented methods such as the problem-solving method and decisiveness- and thrill-oriented methods such as relaxation and writing stressful cases were used in the training to manage stress. The difference in mean score of occupational stressors in the first stage (pre-intervention) in both intervention and control groups was not significant (P=0.718). But in the second phase (after training), the mean score of stressors increased, and the difference in the mean score of stressful occupational factors between the two groups has significantly changed (P<0.05).

In the study by Hosseini et al. [13], the mean occupational stress score in the intervention group was found to be decreased after the PRECEDE-based stress management training program on nursing occupational stress. Their PRECEDE-based training used methods of problem solving, time management, relaxation, and deep breathing. In the study by Ebrahimi et al., the PRECEDE-based educational program was confirmed to reduce the anxiety of nurses [24]. The findings of both these studies are also in agreement with the findings of the current study.

In this research, according to Table 7, there was a significant relationship between behavior variable and constructs of the PRECEDE model (awareness, attitude, reinforcing, enabling and, stressor factors). Some variables cannot be considered as good predictors for behavior change in employees (awareness; reinforcing factor; occupational stress), but in the enabling factor, there was minimum calculated error rate. Therefore, the enabling factors can be considered as good predictors for behavior change in the employees.

5. Conclusion

It was found that both behavioral and non-behavioral factors affect the health of individuals. Health educators should not merely consider the learner; they should also

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take into account an effective non-behavioral factor on health. Perhaps with the authorities paying more attention and eliminating shortcomings, occupational stress can be reduced to a greater extent. Nevertheless, stress management training and the methods to deal with it, was felt well in business education programs.

It is suggested that other health education models such as the BOSNOFF, which takes into account the other causes and side effects in conducting behavior management training, should also be designed and implemented. It is also recommended to examine all aspects of stress management effects before designing and implementing the models.

Acknowledgments

Conflict of Interest

The authors declared no conflicts of interest.

References

[1] Hubbard JR. Handbook of stress medicine: An organ system approach. Florida: CRC Press; 1997.

[2] Rezaei SH, Hosseini MA, Falahi M. [Effect of communication skills teaching in job stress level among nurses occupying in rehabilitation center (Persian)]. Tehran University Medical Journal. 2006; 64(1):21-6.

[3] Wu S, Zhu W, Wang Z, Wang M, Lan Y. Relationship between burnout and occupational stress among nurses in China. Journal of Advanced Nursing. 2007; 59(3):233–9. doi: 10.1111/j.1365-2648.2007.04301.x

[4] Bianchi ERF. Stress and coping among cardiovascular nurses: A survey in Brazil. Issues in Mental Health Nursing. 2004; 25(7):737–45. doi: 10.1080/01612840490486818

[5] Burns HK, Kirilloff LH, Close JM. Sources of stress and satisfaction in emergency nursing. Journal of Emergency Nursing. 1982; 9(6):329-36. PMID: 6358603

[6] Allahverdipour H. [Transient from health education traditional to health education based on theory (Persian). Journal of Health Education. 2005; 1(3):75-9.

[7] Rafieifar Sh. [Comprehensive plan of health education (Persian)]. Tehran: Mehrravash Publication; 2006.

[8] Green LW, Kreuter MW. Health promotion planning: An educational and environmental approach. Houston: Mayfield Publishing Co; 1991

[9] Van Der Ploeg E, Kleber RJ. Acute and chronic job stressors among ambulance personnel: Predictors of health symptoms. Occupational and Environmental Medicine. 2003; 60(suppl 1):40-6. PMCID: PMC1765729

[10] Kalemoglu M, Keskin O. Burnout syndrome at the emergency service. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2006; 14:37-40.

[11] Essex B, Scott LB. Chronic stress and associated coping strategies among volunteer EMS personnel. Prehospital Emergency Care. 2008; 12(1):69–75. doi: 10.1080/10903120701707955

[12] Hegg Deloye S, Brassard P, Prairie J, Larouche D, Jauvin N, Poirier P, et al. Prevalence of risk factors for cardiovascular disease in paramedics. International Archives of Occupational and Environmental Health. 2015; 88(7):973–80. doi: 10.1007/s00420-015-1028-z

[13] Hosseini Z, Moeini B, Hazavehei SMM, Aghamollai T, Moghimbeigi A. [Effect of educational stress management, based on Precede model, on job stress of nurses (Persian)]. Medical Journal of Hormozgan University. 2011; 15(3):200-8.

[14] Didehvar M, Jalili Z, Zareban I, Bakhshani N M, Shahrakipour M. [The effect of stress management education based on PRECEDE model on occupational stress of nurses in hospitals of Iranshahr, Iran (Persian)]. Strides in Development of Medical Education. 2015; 12(3):472-84.

[15] Motie MR, Kalani MR, Samadi A, Eshaghi H, Ghobadi P. [Prevalence of job stressors in male prehospital emergency technicians (Persian)]. Journal of Fundamentals of Mental Health Spring. 2010; 12(1):420-9.

[16] Chen Y, Cheng Y. Effect of PRECEDE-PROCEED model to promote the knowledge and behavior toward occupational protection among vocational nursing students. Chinese Journal of Nursing. 2013; 9:017.

[17] Song Y, Lindquist R. Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students. Nurse Education Today. 2015; 35(1):86–90. doi: 10.1016/j.nedt.2014.06.010

[18] Oruogi MA, Bayt Asghari A, Charkazi A, Jvaheri J. [Survey on effect of health education intervention on reduction of brucellosis incidence in rural areas of Khomein based on PRECED framework (Persian)]. Journal of Health. 2012; 3(2):50-8.

[19] Hosseini Z, Hazavehei MM, Imanzad M, Ghanbarnezhad A, Gharlipour Z. [Occupational stress and mental health relationship in nurses (Persian)]. Journal of Shahid Beheshti School of Nursing & Midwifery. 2014; 23(82):6314.

[20] Nadrian H, Tol A, Shojaeizadeh D, Khalili Z, Hossaini M, Beigom Aghamiri Z. [Development an educational program in order to promote skin cancer preventive behaviors using PRECEDE model among students in Tehran City (Persian)]. Journal of Health System Research. 2013; 9(9):979-92.

[21] Ebadi fard Azar F, Solhi M, Goldoost F. [The effect of stress management education based on BASNEF model to promote behaviors of patients with Multiple Sclerosis disease (Persian)]. Bimonthly Journal of Hormozgan University of Medical Sciences. 2012; 16(4):325-32.

[22] Hosseini N, Amini A, Alamdari A, Shams M, Vossoughi M, Bazarganipour F. Application of the PRECEDE model to improve sexual function among women with hysterectomy. International Journal of Gynecology & Obstetrics. 2015; 132(2):229–33. doi: 10.1016/j.ijgo.2015.07.019

[23] Jacobsen PB, Phillips KM, Jim HSL, Small BJ, Faul LA, Meade CD, et al. Effects of self directed stress management training and home based exercise on quality of life in cancer patients receiving chemotherapy: A randomized controlled trial. Psycho Oncology. 2012; 22(6):1229–35. doi: 10.1002/pon.3122

[24] Ebrahimi Iraqi Nezhad Z, Tol A, Shojaeezadeh D, Khorsandi M, Bagheri F. [Effectiveness of PRECEDE model for health education on anxiety of nurses employed in hospitals of Arak University of Medical Sciences: Application of PRECEDE model constructs anxiety of nurses and PRECEDE model (Persian)]. Journal of Health System Research. 2015; 10(4):752-65.

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