

EFFECT OF WEB-BASED LIFE SKILLS EDUCATION ON NURSES' JOB BURNOUT

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ABSTRACT

This study aimed to assess the effect of web-based life skills education on burnout in nurses. Participants were 104 nurses who had moderate to high burnout. The intervention group received web-based life skills education over 10 weeks. A week later intervention, burnout level was measured in control and intervention groups. Comparison of mean burnout score in the intervention group before and after the intervention showed a significant reduction in total burnout score, and in emotional exhaustion and depersonalization, and a significant increase in personal accomplishment. The study showed that web-based life skills education was able to reduce level of burnout.

Keywords: Burnout, job stress, mental Health, distance Education

INTRODUCTION

Occupational burnout is a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, Jackson, & Leiter, 1996). Many studies have shown that health and medical jobs are associated with the highest level of occupational injury including burnout, and that nurses suffer burnout more than other occupations (Adriaenssens, De Gucht, & Maes, 2015; Canadas-De la Fuente et al., 2015). The incidence of burnout syndrome in professional nurses has been estimated at 40% (Brand et al., 2010). The results of a study showed that positive experiences in the workplace will lead to lower workload, interaction at work and professional commitment, while negative perceptions and long-term stresses in the workplace will cause burnout (Ahola, Toppinen-Tanner, Huuhtanen, Koskinen, & Vaananen, 2009). Occupational stresses are to blame for 30% of illnesses and absenteeism among health center employees and an annual cost of 300-400 million dollars (Brand et al., 2010). Chang et al. (2006) argued that reducing workplace stress coupled with increasing support for nurses can strengthen their mental health.

One of the effective programs for coping with mental pressures and stress is the life skills education program. Life skills education aims to prevent and manage problems and leads to increased decision-making and communication abilities and enhanced self-confidence in people (Vaghee, Meshkin Yazd, Asgharipour, & Ebrahimzadeh, 2014). According to previous studies, life skills education can positively affect promotion of general health in nurses, and reduce the incidence of disorders such as anxiety, depression and physical problems. On the other hand, high level of personal adequacy can have a major role in nurses' physical and mental health status and lead to better quality of health care provided by nurses (Sahebalzamani, Farahani, & Feizi, 2012; Nayeri, Negarandeh, Vaismoradi, Ahmadi, & Faghihzadeh, 2009).

Many studies suggest the effect of psychological interventions on nurses' burnout, in which interventions were mainly performed as face-to-face education in educational classes (Hülshager, Alberts, Feinholdt, & Lang, 2013; Kravits, McAllister-Black, Grant, & Kirk, 2010; Awa, Plaumann, & Walter, 2010). One of the revolutions in the field of education is the electronic learning approach. This educational technique contains unique user-friendly features, and provides the possibility of any time any place learning and personal education in conjunction with joint and need-based learning. What has led to rapid development of virtual learning has been the explosive growth in information and global increase in demand for these learning opportunities (Kim, & Jeong, 2007). Thus, the need for providing electronic interventions to reduce nurses' burnout is evident. The results of a review study by Du et al. (2013) in China showed that web-based education positively affected increasing knowledge, practical skills, self-efficacy, and job satisfaction in participants. The results of a study revealed that web-based supportive and educational interventions of self-efficacy proved effective on health care employees' burnout (Yank, Laurent, Plant, & Lorig, 2013). In e-learning, learners have greater access to information, and are able to use information and education sources with no time restrictions. Increased speed of personal learning and the use of creative teaching techniques at a lower cost are among the benefits of this method, such that extensive use of the internet has created new therapy opportunities to such an extent that cognitive-behavioral techniques can be provided for all in computer and web-based formats (Abbaszadeh, Sabeghi, Borhani, & Heydari, 2011; Wantland, Portillo, Holzemer, Slaughter, & McGhee, 2004).

Therefore, development of educational websites compatible with nurses' profession, as an alternative or complementary to the routine education appears necessary (Wantland, Portillo, Holzemer, Slaughter, & McGhee, 2004). Given the importance of dealing with the problem of nurses' burnout and controlling its consequences, and the importance of using modern educational methods such as web-based distant learning, the present study was conducted with the aim to assess the effect of web-based life skills education on symptoms of burnout in nurses.

METHODOLOGY

Procedure and Participants

The present pretest-posttest quasi-experimental study recruited nurses in Motahari and Peimanieh hospitals of Jahrom University of Medical Sciences, Iran. The study inclusion criteria were a minimum of two years clinical work, advanced diploma and higher qualifications in nursing, and moderate to a high score in at least one dimension of burnout. Unwillingness to participate, absence from more than two group interaction sessions, use of stimulants, anti-anxiety, anti-depressant, or opiates, development of a psychiatric or physical disease in the course of the present study comprised exclusion criteria.

First, the two hospitals in the city of Jahrom were randomly divided into intervention and control groups. Then, based on systematic stratified sampling, 104 nurses from both hospitals were selected (52 from Motahari hospital as intervention group and 52 from Peimanieh as control group). The study objectives were first explained and after obtaining written informed consents, demographic information such as age, sex, level of education, marital status, number of children, work experience, the ward they are occupied in, employment status, ability to work with computers and access to the Internet, having or not having mental or physical illnesses was recorded. After that Maslach Burnout Inventory (MBI) questionnaire was completed. Confidentiality of data and subjects' right to withdraw at any stage were observed in the course of the present study.

After ensuring eligibility of subjects, life skills education topics based on the World Health Organization (2005) definition, which included ten skills (self-awareness, empathy, decision-making, problem-solving, creative thinking, critical thinking, effective communication, interpersonal relationship skills, coping with emotions, and coping with stress) were taught to intervention group over ten weeks via website. The control group received no education. In the present study, a structured web-based program was used that was designed by the research team and developed under the supervision of Comprehensive Center of Excellence for Electronic Learning in Medical Sciences of Shiraz University of Medical Sciences with the following capabilities: signing-in via a specific code for each intervention group participant, viewing educational contents provided in different parts of the web as text and video, possibility of leaving a comment at the end of each topic, and chat room for group meetings. Through I-skill.ir in Persian language, participants were introduced to a skill every week, answered related tests to that skill, and practiced the skill during the week. The priority in providing educational topics was with the skills that required practical and time-consuming practice.

Table 1. Meeting schedule and web-based life skills education contents

Sessions	Contents
Session 1	Self-awareness, exercise, self-awareness test
Session 2	Coping with stress, exercise, Coping with stress test
Session 3	Coping with emotions, exercise, Coping with emotions test
Session 4	Effective communication, exercise, Effective communication test
Session 5	Interpersonal relationship skills, exercise, Interpersonal relationship test
Session 6	Creative thinking, exercise, Creative thinking test
Session 7	Critical thinking, exercise, Critical thinking test
Session 8	Empathy, exercise, Empathy test
Session 9	Problem solving, exercise, Problem solving test
Session 10	Decision making, exercise, Decision making test

Table 1 presents schedule and educational contents of web-based life skills. The first skill was self-awareness, which is considered fundamental to other skills. In this skill, subjects were introduced to fundamental elements of self-awareness, and as their weekly exercise, assessed their own weaknesses and strengths, thoughts, values and attitudes. The second and third skills were coping with stress and coping with emotions, which in addition to the following topics, required daily practical exercises, including relaxation, visualization, and deep breathing technique. In teaching interpersonal relationship skills and effective communication, verbal and non-verbal communications were stressed, and various workplace communication techniques and how to maintain a relationship with colleagues were addressed. In creative thinking and critical thinking skills, the emphasis was on a distinctive glance around review of past attitudes. For instance; nurses were asked how they would react to specific news in the workplace, or how they would react to shortage of a tool in a given situation. In teaching empathy skill, the difference between empathy and sympathy and the importance of empathy in the workplace were highlighted, and nurses' attitude was assessed through questions such as: How do you act in a situation when you are giving cardiopulmonary resuscitation and have to respond to patient's relatives who are worried about the delay in their patient's treatment? In problem-solving and decision-making skills, which were interrelated, stages of these skills and types of decision-making were taught by describing a problem. A week after completion of the sessions, the rate of burnout in intervention and control groups was measured using MBI.

Tools/Instruments

Job Burnout. MBI is the most common tool to measure occupational burnout. It consisted of 22 propositions and measures 3 aspects of occupational burnout. Nine propositions (Number 1,2,3,6,8,13,14,16,20) determine emotional exhaustion, 5 propositions (Number 5,10,11,15,22) determine depersonalization and 8 propositions (Number 4,7,9,12,17,18,19,21) determine personal accomplishment. The scores obtained for each of the three aspects were categorized as low, moderate and high. Table 2 shows levels of occupational burnout sub-scales.

Table 2. Levels of job burnout sub-scales

Levels	Subscales		
	Emotional Exhaustion	Depersonalization	Personal accomplishment
high	27 or more	13 or more	0-31
Moderate	17-26	7-12	32-38
Low	0-16	0-6	39 or more

The scoring in this test is done according to 7-point likert ranging from 0, “never” to 6, “every day”. Frequency scale and Intensity scale are used in this questionnaire. In this study frequency scale was used. Emotional exhaustion score equal or higher than 17 or depersonalization equal or higher than 7 or personal accomplishment score equal or lower than 38, are considered as occupational burnout (Maslach et al., 1996).

Maslach et al. (1996) reported internal consistency of the questionnaire as follows: 0.9 for emotional exhaustion, 0.79 for depersonalization and 0.71 for personal accomplishment. Cronbach’s alpha was reported 0.71-0.90 by Maslach et al. (1996). Its test-retest reliability was reported 0.60-0.80 with a one month gap using. The validity of studies in Iran that used Maslach questionnaire complies with the validity reported by primitive sources. Validity of this test was calculated using Cronbach’s alpha factor, 0.82 and for emotional exhaustion, depersonalization, and personal accomplishment 0.80, 0.78 and 0.84 respectively (Mehafarid, Khakpour, Jajarmi, & Alizadeh mousavi, 2015).

Demographic characteristics. Demographic characteristics, including age, sex, level of education, marital status, number of children were obtained. Additionally, length of work experiences, the ward they were occupied in, employment status, ability to work with computers and access to the Internet, having or not having mental or physical illnesses were recorded.

Data Analysis Method

Data were analyzed using SPSS Version 16 by descriptive and analytical statistical methods including chi-squared test and T-test.

FINDINGS

The mean age of intervention and control group was 34.6 ± 6.21 and 33.34 ± 5.64 year respectively. Comparing the two groups in terms of mean age ($P=0.25$) showed no significant difference between them.

Table 3. Comparison of the frequency distribution of the participants in the intervention and control groups based on demographic characteristics

Variables	Intervention group (n=52) N(%)	Control group (n=52) N(%)	$\chi^2 \dagger$	P-Value
Sex				
Male	13(25)	10(19.2)	0.5	0.31
Female	39(75)	42(80.8)		
Marital Status				
Single	14(27)	7(13.5)	3.46	0.17
Married	36(69.2)	44(84.6)		
Divorced	2(3.8)	1(1.9)		
Number of children				
0	23(44.2)	17(32.7)	3.84	0.42
1	13(25)	18(34.7)		
2	13(25)	15(28.8)		
3	3(5.8)	1(1.9)		
4	0(0)	1(1.9)		
Education Degree				
Associate	2(3.8)	1(1.9)	5.13	0.16
Bachelor	42(80.8)	49(94.3)		
Master	8(15.4)	2(3.8)		
Ward				
Special	28(53.9)	27(52)	0.03	0.84
General	24(46.1)	25(48)		
Employment Status				
Permanent employment	37(71.7)	29(55.7)	5.38	0.14
Fixed term contract	7(13.5)	5(9.6)		
Quasi fixed term	4(7.7)	11(21.2)		
Contract	4(7.7)	7(13.5)		

$\chi^2 \dagger = Chi-square$

According to Table 3, no significant difference existed between the two groups before intervention in terms of sex, marital status, the number of children, ward, employment status and education degree ($P > 0.05$).

Table 4. Comparison of the mean scales of Occupational Burnout of the participants in the intervention and control groups before intervention

Occupational Burnout	Intervention group Mean±SD	Control group Mean±SD	t	P-Value
Total score	51.42±13.92	56.54±17.87	- 1.62	0.10
Emotional exhaustion	23.75±9.73	27.15±11.27	- 1.64	0.10
Depersonalization	8.88±5.36	9±6.12	-0.10	0.91
Personal Accomplishment	29.21±6.69	27.67±5.74	1.25	0.21

Comparing burnout scores before intervention in Table 4 showed no significant difference between the two groups in total score and scores of three components of burnout ($P > 0.05$).

Table 5. Comparison of the changes in the mean scales of Occupational Burnout in participants in the intervention and control groups before and after the intervention

Occupational Burnout	Before Intervention		After Intervention	
	Mean ± SD	Mean ± SD	Between groups P value	Within groups P value
Total				
Intervention	51.42±13.92	29.38±13.78	t:-10.68, P<0.001	t:9.42, P<0.001
Control	56.54±17.87	60.90±16.20		t:-1.55, P=0.12
Emotional exhaustion				
Intervention	23.75±9.73	13.32±6.04	t:-9.38, P<0.001	t:7.56, P<0.001
Control	27.15±11.27	27.85±9.38		t:-0.40, P=0.68
Depersonalization				
Intervention	8.88±5.36	5.12±4.40	t:-5.91, P<0.001	t:5.38, P<0.001
Control	9±6.12	10.38±4.68		t:-1.53, P=0.13
Personal Accomplishment				
Intervention	29.21±6.69	37.05±5.82	t:11.2, P<0.001	t:7.73, P<0.001
Control	27.67±5.74	25.33±4.80		t:2.51, P=0.01

Table 5 shows mean total and subscales' scores of burnout in intervention and control groups before and after the intervention. In the intervention group, mean scores of burnout and emotional exhaustion and depersonalization subscales significantly reduced after the intervention, and mean score of personal accomplishment significantly increased.

DISCUSSION AND CONCLUSION

The present study results showed that web-based life skills education was able to reduce scores of burnout and emotional exhaustion and depersonalization subscales, and increase personal accomplishment score in the intervention group after the intervention. Although many studies have been conducted throughout the world on burnout and factors affecting it, few studies have provided strategies for reducing burnout. In a study, Awa et al. (2010) reviewed 25 studies on intervention programs for burnout prevention conducted between 1995 and 2007. Their results showed that burnout-reducing intervention programs were useful and educational courses and implementation of programs that include personal and organizational measures should be provided and assessed. In 17 studies, personal interventions were provided, which included cognitive-behavioral education, psychotherapy, counseling, and teaching adaptive skills, communication skills, social support, and relaxation exercises. In two studies, interventions included organized measures such as restructuring work process and performance evaluation, and six studies provided combined personal and organizational interventions. Subjects that participated in these interventional programs experienced burnout less than others. These results concur with those of the present study, although in the present study only personal interventions were used.

The majority of studies conducted to investigate the effect of educational interventions on burnout were in person and face-to-face, such as a study by Ireland et al. (2017) which was conducted to investigate the effect of mindfulness training on stress and burnout reduction. In their study, 44 internists that worked in the emergency department of a major hospital in Australia were invited via e-mail to take part, and were randomly divided into intervention (23 internists) and control (21 internists) groups. The intervention group received mindfulness training and psychotherapy exercises one hour per week for 10 weeks. Then, stress and burnout before, during, and after intervention were measured. The results showed significant reductions in stress and burnout in the intervention group compared to control. This study agreed with the present study and suggested that despite the differences in type intervention, subjects, and the study population, these interventions can be used to reduce stress and burnout in health care personnel. In their study, stress and burnout were measured using Copenhagen Burnout Inventory (CBI), but in the present study, burnout before and after the intervention was measured using MBI.

In a study was investigated the effect of psychological education intervention on stress reduction and burnout prevention in American nurses. The purpose of this study was to develop and evaluate a psychological-educational program to be used in the development of a stress management program. A total of 248 nurses were selected as subjects, and received psychological-educational intervention over a six-hour educational session. Their results showed that psychological-educational interventions that included topics such as specific nursing risk factors, relaxation techniques, and identifying coping strategies through art will lead to positive strategies of self-care and stress and burnout reduction (Kravits et al., 2010). This study had no control group, while in the present study, intervention and control groups were subjected to inter- and intra-group comparisons.

Studies conducted in the recent decades investigating web-based educational interventions in nurses have pointed out the effectiveness of this educational technique. For instance, a study conducted by Du et al. (2013) reviewed nine randomized clinical trials on this subject, and showed that web-based distant learning had equal or better effects in acquiring knowledge compared to the conventional educational methods, and had a positive role in improving skills and performance of nurses. This study also showed that participants were happier with web-based education. These results concur with those of the present study. Studies investigating web-based educational interventions in nurses have not focused on their burnout and mostly concentrated on such issues as self-efficacy and stress management.

Yank et al. (2013) investigated the effect of web-based self-efficacy education on professional skills of healthcare employees in 57 personnel that were divided into six groups, comprising 19 internists, 10 family physicians, 13 physiotherapists, 7 nurses, and 8 occupational health specialists. All six groups received web-based self-efficacy education over four weeks based on Bandura's theory. Comparing the results of self-efficacy test before and after intervention showed that web-based self-efficacy education had positive effects on healthcare employees, and this reduced burnout and increased self-esteem and self-management skills toward patient support. In their study, the intervention was conducted on different groups, and comparing scores of these six groups after intervention showed a positive effect of education, while in the present study, intervention and control groups consisted of nurses. Their results agree with those obtained in the present study. It seems that user-friendly style of these interventions provides employees with the opportunity to receive these types of training at home and at a low cost.

Yamagishi et al. (2007) studied the effect of web-based education on stress management in Japanese nurses. In this study, 32 nurses from 14 wards of a hospital in Hiroshima completed communication, occupational stress and depression criteria questionnaire, of whom, 26 remained until the end of the intervention. Educational contents included a definition of communication, various self-expression skills, and techniques for improving communication skills, which were taught over three weeks through video, discussion, role-play and counseling. The results obtained showed improvement in knowledge, attitude, decisive behaviors and stress management in nurses immediately and a month after education. Their results agree with those obtained in the present study. In their study, educational contents were taught as communication skills over three weeks, while in the present study, 10 skills were taught over ten weeks in nurses' burnout, and one of which was effective communications.

The web based intervention can be effectively used for other mental health problems and ages. A study in Iran was performed to evaluate a web-based anger management program for parent-female adolescents' conflicts. 140 female adolescents who were studying in eight female high-schools was selected. 70 adolescents in the intervention group participated in an 8 weeks web-based program, while 70 adolescents in the control group did not undergo any intervention. The program was a multimedia environment which had such features as a personal password for every individual, presentation of the educational material through texts, video and images, the possibility to leave comments on every part, weekly discussion panels and chat rooms for weekly group interaction. The results of this study showed that using a web-based anger-management intervention could reduce parent-adolescent conflicts in the case of female adolescents (Yektatalab, Khodadadi, Moattari, Hosseiny, & Zare, 2017).

The present study is one of few studies to have used web-based life skills educational intervention in nurses' burnout. The following factors could have affected generalizability of the results: the difference in people's interest in learning skills, and specified exercises at the end of teaching each skill, reduced learning due to a

large number of working hours and subsequent fatigue. Other limitations included internet cut-off, lack of access to topics in personnel's free time, and subject expansion limitations for greater attraction in web pages. The results showed that web-based life skills education reduced burnout in the intervention group compared to control. It seems that teaching life skills such as coping with stress, coping with emotions, empathy, effective communications, interpersonal relationship skills, problem-solving, creative thinking, and critical thinking can strengthen personal strategies for coping with symptoms of burnout.

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