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## Effects of Visual Media Programs on Job Stress and Burnout in Emergency Room Nurses

Ha-Gang Kim<sup>1</sup>, Hee-Sun Kang<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Nursing, Mokpo Catholic University,

<sup>2</sup>Associate Professor, Department of Nursing, Suncheon National University

khg9090@mcu.ac.kr, kanghs@scnu.ac.kr

### Abstract

*The purpose of this study was to identify the effects of visual programs on job stress and burnout in emergency room nurses. This study used a nonequivalent control group pretest-posttest design. There were 26 participants in the experimental group and 27 in the control group. Data collection took place from December 12, 2017 to February 17, 2018. The program comprised eight weekly 120-minutes sessions, which included understanding and assessing job stress and burnout. Data were analyzed using the Chi-square test, paired t-test, and independent t-test. As a result, levels of job stress ( $t=-20.09$ ,  $p<.001$ ) and burnout ( $t=-22.31$ ,  $p<.001$ ) decreased significantly in the experimental group. The results suggest that the Visual Media Program could be an effective strategy for reducing job stress and burnout. Therefore, it is deemed a useful intervention for improving the quality of nursing care provided in emergency rooms.*

**Keywords:** Emergencies, Nurses, Occupational Stress, Motion Pictures

### 1. INTRODUCTION

Emergency rooms receive various urgent and life-threatening injuries. Since these injuries require prompt nursing from patients that undoubtedly need medical assistance, emergency room nursing staff are incessantly under high levels of anxiety when working, and are continuously exposed to poor working environments where there is dissatisfaction with medical services, confusion, and violence[1].

Emergency room nurses with greater workload and work under intense situations experience greater job stress than general ward nurses. This is because these nurses are expected to provide active and prompt treatment for critical patients and provide nursing support from any field in the emergency room[2], which is open 24 hours a day. The work environment of emergency room nurses may stimulate personal growth and increase productivity, though it generally negatively affects their physical and mental health, and ultimately leads to a decrease in nursing service quality and organizational productivity due to high turnover rates[3].

In addition, emergency room nurses have greater levels of burnout compared to workers of other professions, and physical and mental stress due to excessive workload can negatively affect the nursing care provided. Burnout in nurses refers to a continuous state of physical and mental exhaustion due to the excessive nursing care delivered to patients. Burnout ultimately becomes a factor that lowers quality of life among nurses[4].

Job stress in nurses is closely related to burnout and reduced job efficiency, and if job stress is inappropriately

managed, it may lead to loss of responsibility and demoralization towards the job, which ultimately hinders the productivity and efficiency of the entire organization[5]. The job stress of nurses is the physical and psychological pressures of the nursing work process such as heavy work or medical service, and it lowers the morale of the nurse and impedes the ability to achieve the nursing goals. Also, Job stress is also pointed out as the major reason for turnovers[6]. Therefore, burnout should be minimized to prevent lowering the quality of nursing and to ensure efficient job performance. One of the factors that negatively affect burnout of nurses is how nurses cope with stressful situations. Since job stress can greatly vary by the stress coping method, emergency room nurses should develop capabilities and receive education on how to appropriately react to stressful situations. However, despite results of prior studies[7] that show the degree of burnout can vary by the stress coping method, there are few studies in Korea on burnout and job stress coping methods among emergency room nurses.

Recently, visual media has been used in various areas, such as counseling and education. In particular, as videos have verisimilitude that makes the video more realistic, movies allow people to more easily receive emotional insight. We indirectly experience the lives of others through visual media, and movies are used as effective tools in counseling, as people can feel the various emotions of the characters, model their lives, and acquire various problem-solving methods. Furthermore, visual media is therapeutic, as it can safely change people's attitudes and behavior in non-threatening ways.

In the modern society, visual media greatly affects people's lives, and in particular stimulates sight and sound, which allows for the people to focus easily on media and absorb information quickly. Out of visual media, movies, which integrate visual media and art, maximized the functions mentioned above, and the public naturally reacts to movies and accepts information without much doubt[8]. As such, movies are familiar and popular media and are used in various areas, as they can lead to change of awareness on life, and assist with self-awareness and self-improvement[9]. Movie therapy, which is a term coined by Berg-Cross, Jennings and Baruch[10], is a method of psychological counseling and treatment where the patients are prescribed movies as treatment. Movies are already used as self-therapy that people use for themselves in their own lives; people experience therapeutic effects within their everyday lives by sympathizing with the characters of movies, purifying their suppressed emotions, and sharing the emotions with others. Furthermore, movies allow people to reflect and act on their problems from a different perspective while keeping an appropriate distance[11].

Therefore, it is expected that visual media will be used as an easily and comfortably accessible tool to reduce the job stress and burnout of emergency room nurses. The purpose of this study is to operate a visual media program to reduce the job stress and burnout of emergency room nurses, and verify the effects of the program on improving stress coping and management methods and to provide support data for the stress management of emergency room nurses.

## **2. RESEARCH METHODS**

### **2.1. Research design and Samples and setting**

The study was designed with a nonequivalent control group pretest-posttest design. The participants of this study were emergency room nurses who work from two general hospitals in G city with similar sizes and environments. The sample size needed for this study was calculated using the G\*power 3.1 program by setting the two-sided significant level as .05, test power (I-B) as .80, and effect size (f) as .80. The calculation showed that there should be 26 participants in the experimental and control groups, but to compensate for the dropout rate, 30 participants were selected for each group. During the study, four participants from the experimental group and three participants from the control group dropped out due to personal reasons; thus, the final number of participants was 26 in the experimental group and 27 in the control group. The study was from January 8 to February 2, 2018. The pretest was given equally to the experimental and control groups before the start of the program, as was the posttest after the end of the eight program sessions.

## **32 2.2 Research Tools**

### **2.2.1 Job Stress**

To measure job stress, the scale was used that it developed by Loo and Kim[12], and verified the content validity using Joo[13]. This tool had a total of 43 items with nine subcategories, six items under the subcategory of nursing tasks, five items under professional role conflicts, four items under lack of professional knowledge and techniques, six items under interpersonal relationship problems, three items under conflicts with doctors, three items under psychological burdens due to medical limitations, five items under treatment of the nurses, seven items under job schedule, and four items under guardians and patients; further, all items were on a five-point Likert scale. The higher the score, the higher the stress level. The Cronbach's  $\alpha$  at tge tune if development was 94, in Joo's study, Cronbach's  $\alpha$  was 92, and in this study Cronbach's  $\alpha$  was 89.

### **2.2.2 Burn Out**

To measure burnout, the scale was used that it translated by Choi[14] of the Maslach Burnout Inventory Scale (MBI), developed by Maslach and Jackson[15]. This tool had a total of 22 items with three subcategories, nine items under the subcategory of emotional exhaustion, five items under dehumanization, and eight items under reduced self-fulfillment, and all items were on a seven-point Likert scale. Further, cross-items on the reduced self-fulfillment were processed so that the higher the score, the higher the exhaustion. The Cronbach's  $\alpha$  at the time of development was 76, in Choi's study Cronbach's was 84, and in this study Cronbach's was 93.

### **2.3 Ethical considerations**

The author of the study explained the purpose and process of the study to participants beforehand, and explained that the collected data will remain anonymous and will only be used for research purposes. Further, participants were informed that the data would not be leaked and would be kept confidential and discarded after completion of the study. Lastly, the author informed participants that they are free to stop participating during any course of the study and that the participants would not receive any disadvantages from dropping out of the study. All participants who agreed to participate signed a written consent.

### **2.4 Visual Media Program**

The program of this study was designed with visual media for recognizing and managing one's own emotions, engaging in emotional relaxation, changing environmental awareness, and adapting coping methods. The program was conducted twice a week, for 90-minutes a session, for a total of eight sessions, and all sessions were classified into introduction, improvement, and closure steps. The introduction step (session 1) was for emergency room nurses to understand the purpose and plans of the visual media program, and to create rapport among group members; the improvement step (sessions 1-7) was for nurses to understand themselves, be aware of their levels of job stress and burnout, and practice appropriate coping methods; the closure step (session 8) was for the nurses to encourage one another and wrap up the program after sharing hopes for the future (Table 1).

### **2.5 Data analysis method**

Data were analyzed using the SPSS PC<sup>+</sup> 20.0 program. The general characteristics of the experimental and control groups were analyzed with real numbers, proportions, means, and standard deviations, and the homogeneity tests of the general characteristics, self-esteem, and interpersonal relationship characteristics of the two groups were analyzed with Chi-square and the Fisher's exact test. The pretest and posttest results on self-esteem and interpersonal relationships for the experimental and control groups were analyzed with paired t-tests, and the differences in the scores from the posttests of the two groups were analyzed with independent t-tests.

### 3. RESULTS

#### 3.1 Homogeneity of the general characteristics and outcome variable of Participants

A total of 53 participants were included in this study; 48 were female (90.5%) and 5 were male (9.5%). This was because more than 90% of the emergency room nurses from both hospitals were female. The most common age group was 20s with 24 participants (45.2%) and 30s with 23 participants (41.5%); 25 were married (47.2%) and 25 were unmarried, and the most common education level was nursing college for 37 participants (50.9%) and a Bachelor's in Nursing for 13 participants (24.6%). The most common length of clinical career was 1-5 years for 25 participants (47.1%) followed by 5-10 years for 18 participants (34.0%), and the most common job satisfaction was 'not bad' for 28 participants (52.9%) followed by 'satisfied' for 18 participants (33.8%) (Table 2). Before starting the program, a homogeneity test was conducted on job stress and burnout of the two groups. The two groups were considered homogeneous, as there were no significant differences from the results of the Chi-squares, Fisher's exact test, and independent t-test (Table 3).

#### 3.2 Effect of a Cinema Therapy Program on Job Stress and Burnout between Experimental and Control Groups

After analyzing the differences between the pretest and the posttest of job stress in the experimental and control groups, it was shown that job stress in the experimental group decreased from a mean of 171.69 to a mean of 141.85, while that of the control group also decreased from a mean of 171.93 to a mean of 167.48. There was a statistically significant difference in the change in job stress of the two groups ( $t=-20.09$ ,  $p<.001$ ). Furthermore, after analyzing the difference between the pretest and the posttest of burnout from the experimental and control groups, it was shown that the burnout of the experimental group decreased from a mean of 88.69 to a mean of 51.96, and that of the control group increased from a mean of 88.22 to a mean of 91.48. There was a significant difference in the change in burnout of the two groups ( $t=-22.31$ ,  $p<.001$ ) (Table 4).

### 4. DISCUSSION AND CONCLUSION

The purpose of this study was to apply the program and to verify the effectiveness of emergency room nurses who face various stress situations in complex clinical settings to reduce job stress, burnout and increase coping ability. The results of the study showed that emergency room nurses who participated in the program reduced their job stress and burnout at significant levels.

Emergency room nurses experience greater job stress and burnout compared to other jobs and other nurses, due to unexpected emergency situations and lack of emergency medical staff[16]. In particular, job stress was the greatest factor for burnout of emergency room nurses and as burnout is affected by individual personalities and characteristics, those with tough characteristics are less likely to face burnout[17]. Toughness of nurses can also allow nurses to control themselves with appropriate coping methods given various stress factors, which leads to effectively mediating stress[18]. Furthermore, as stress may also be decided by the reaction types of individuals, there should be active interest and education on developing abilities to appropriately cope with various situations to reduce job stress or burnout of emergency room nurses[19].

Movies expand and reconstruct ideas, and also conceptualize them. They allow people to change their ideas and reflect on their thoughts with an objective outlook, and also provide visual images and vividness to model the characters' progress. In addition, the positive effects of movies are that they allow people to find their egos by identifying themselves with ideal characters, to find significance in their lives comfortably, and to change their outlook on life[20]. Furthermore, people can lower their guards and suppression while watching movies, and can face their problems from an appropriate psychological distance[21]. Lastly, movies can make people satisfy their desires without harming others, and in particular, stimulate the people mentally and emotionally in terms of their awareness, attitude, and behavior[22].

Movie therapy is a type of therapeutic counseling from a counselor to the subject with movies. It allows the

subjects to reflect on their problems with the correlation among the counselor, subject and movies, and is an emotional process to investigate solutions to a problem[23]. This study is significant as it applied an intervention program using visual media to reduce job stress and burnout of emergency room nurses and verified the effects of the program. Therefore, it is expected that the program used in this study will reduce the job stress and burnout of emergency room nurses, and improve these nurses' quality of life.

The following are some suggestions based on the results of this study. First, as this study focused on emergency room nurses from two general hospitals of a single area, it is insufficient to apply these results to all nurses. In the future, there should be studies that expand the scope of the participants and areas. Second, it is suggested to increase the number of male nurses, who have been recently increasing in number in the emergency nursing field. Third, there should be regular programs from nursing institutions on stress and emotional management to reduce job stress and burnout of emergency room nurses.

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Table 1. Using the Visual Media Program

Phase	S*	Goal	Movies	Activity
Introduction step	1	Understanding the program/ Building member intimacy		Informing the purpose of the program and process Understanding and watching movies in therapy. Building intimacy and reliability in members
Improvement step	2	Self -recognition	The Blossom	<ul style="list-style-type: none"> <li>•Introduction (This session provides an explanation to the subjects)</li> <li>•Self – insight in the family.</li> <li>•Learning expressions of suppressed emotion and emotional uplift in the family</li> <li>•Understanding – self/ sharing self-beliefs</li> <li>•Dividing groups and making announcements</li> </ul>
	3	Emotion recognition of stress	The Day	<ul style="list-style-type: none"> <li>•Introduction (This session provides an explanation to the subjects)</li> <li>•Focusing on stress emotions (emotion -card)</li> <li>•Expressing stress emotions with role play</li> <li>•Dividing groups and making announcements</li> </ul>
	4	Stress control and reduction of burnout I		<ul style="list-style-type: none"> <li>•Introduction (This session provides an explanation to the subjects)</li> <li>•Understanding stress</li> <li>•Self-stress - control</li> <li>•recognition of inner-resources (recognition of strong point and weak point)</li> <li>•Dividing groups and making announcements</li> </ul>
	5	Stress control and reduction of burnout II		<ul style="list-style-type: none"> <li>•Introduction (This session provides an explanation to the subjects)</li> <li>•Relaxation therapy training (breathing method, muscle relaxation, imagery method)</li> <li>•Forgiving and accepting</li> <li>•Dividing groups and making announcements</li> </ul>

	6	Training Ability to respond to the environment I		<ul style="list-style-type: none"> <li>•Introduction (This session provides an explanation to the subjects)</li> <li>• Searching self – role in the organization</li> <li>•Yes/no experience role play</li> <li>•Dividing groups and making announcements</li> </ul>
	7	Training Ability to respond to the environment II	Dancing Queen	<ul style="list-style-type: none"> <li>•Introduction (This session provides an explanation to the subjects)</li> <li>•Searching for support resources (safe place, people, situation)</li> <li>•Having positive energy and confidence</li> <li>Improving the relationship with the doctor and group member (Role play)</li> <li>•Dividing groups and making announcements</li> </ul>
Close step	8	Closing program	Kung Panda	<ul style="list-style-type: none"> <li>•Sharing encouragement and compliments</li> <li>•Recognizing individual changes and empowering practical motivation</li> <li>•Having hope for the future</li> </ul>

S\*: Session

**Table 2. Homogeneity Tests for Subjects' Characteristics and Study Variables**

Characteristics	Categories	n (%)		M±SD	x <sup>2</sup> / Fisher's exact	p
		Exp. (n=26)	Cont. (n=27)			
Gender	male	3(11.5)	2(7.4)		.265	.669
	female	23(88.5)	25(92.6)			
Age (years)	20 - 29	11(42.3)	13(48.1)		32.02±7.22	.712
	30 - 39	11(42.3)	12(40.7)			
	40 - 49	2(7.7)	2(7.4)			
	50 - 59	2(7.7)	1(3.7)			
Marital status	Married	13 (50.0)	12 (44.4)		.501	1.00
	Single	12(46.2)	13(48.1)			
	Other (divorce or bereavement.)	1(3.8)	2(7.4)			
Religion	Christian	8(30.8)	9(33.3)		2.07	.603
	Buddhism	1(3.8)	4(14.8)			
	Catholic	9(34.6)	7(25.9)			
	No religion	8(30.8)	7(25.9)			
Education	Nursing college	12(46.2)	15(55.6)		.533	.818
	Nursing bachelor's degree	7(26.9)	6(22.2)			
	Nursing Master's degree	7(26.9)	6(22.2)			
Total career	clinical 1 < 5	11(42.3)	14(51.9)	8.11±7.43	.898	.829

(years)

	5 < 10	9(34.6)	9(33.3)		
	10 ≤ 20	3(11.5)	2(7.4)		
	20 ≤	3(11.5)	2(7.4)		
Motivation for job selection	Interested in the job to help others	6(23.1)	5(18.5)	2.76	.474
	Suggestion of family and relatives	8(30.8)	5(18.5)		
	Job security	12(46.2)	15(55.6)		
Job satisfaction	very satisfied	3(11.5)	1(3.7)	2.21	.531
	satisfied	7(26.9)	11(40.7)		
	not bad	14(53.8)	14(51.9)		
	not satisfied	2(7.7)	1(3.7)		

**Table 3. Homogeneity Test for Job Stress and Burnout (N=53)**

Variables	Exp.(n=26) Mean±SD	Cont.(n=27) Mean±SD	x <sup>2</sup> / Fisher's exact	t	p
Job Stress	171.69±8.85	171.93±4.94	24.89	-.119	.255
Burnout	88.69±8.15	88.22±10.75	30.60	.179	.127

Exp.=Experimental group; Cont.=Control group.

**Table 4. Effect of a Cinema Therapy Program on Job Stress & Burnout between the Experimental & Control Group**

(N=53)

Variables	Groups	Pretest	Posttest	paired t	p	independent t	p
		Mean±SD	Mean±SD				
Job Stress	Exp.(n=26)	171.69±8.85	141.85±5375	19.80***	<.001	-20.09***	<.001
	Cont.(n=27)	171.93±4.94	167.48±3.24	4.91***	<.001		
Burnout	Exp.(n=26)	88.69±8.15	51.96±3.75	-45.63***	<.001	-22.31***	<.001
	Cont.(n=27)	88.22±10.75	91.48±7.09	-65.54***	<.001		

Exp.=Experimental group; Cont.=Control group.