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Effectiveness of an Educational Program Based on Progressive Muscle Relaxation Technique for Stress Management Among Emergency Nurses

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***Abstract*---**Introduction: Job related-stress for nurses is considered a serious issue that may result in increasing nurses' emotional distress and psychological problems and has a negative effect on health care services, especially in emergency units. This study aimed to evaluate the effect of progressive muscle relaxation techniques on the levels of stress among emergency nurses at teaching hospitals in al Mosul city. Material and Method: quasi-experimental, on a total population sample consisting of 60 nurses working in the emergency units divided into two groups (30 control and 30 study) used the pre-test post-test 1 and post-test 2. conducted through the period from (1st February 2021 to 1st August 2021. Five sessions were submitted to a study group that adopted the progressive muscle relaxation program. The instrument was adopted and modified for the present study fall into two parts, the first one is the demographical characteristics of nurses consisting of seven items. The other is the work-related stress scale. 26 items were scored on a Likert scale with three levels of stress (stressful=1, occasionally stressful=2, and extremely stressful=3).

***Keywords*---**emergency nurse, management, occupational stress, progressive muscle, relaxation therapy.

Introduction

Nurses are workers exposed to high physical and emotional demands, and having to deal with pain, suffering, death, high workdays, a deficit of personnel, low wages, high responsibility, constant need for technical and technological updates. Allied to factors, such as low ability of coping with stressors, may affect individual

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health with biopsychosocial problems, and, in organizations, with increased absenteeism, high staff turnover rates and sick leaves due to occupational diseases, in addition to reflecting negatively on the quality of the service provided, consequently, reflecting on the patient safety (Silveira et al., 2020). While stress chronicity brings negative effects, promoting workplace well-being has an inverse effect, favoring improvements in individual and organizational levels. In itself stress is not an illness, but if it is excessive and prolonged, it can lead to mental and physical ill health, including depression, nervous breakdown and heart disease. (Faremi et al., 2019).

Thus, the progressive muscle relaxation (PMR) emerges as a possible strategy. PMR is a mind-body practice, which consists of directing the person's attention to certain muscle group, contracting it, keeping the contraction for a period, and then relaxing. This process is repeated with different muscle groups, in order to experience the feeling of relaxation throughout the body (Row, 2009). The presents study descript the analysis of the sample related to socio-demographic characteristics of nurses working at the emergency department and describes their level of job-related stress. This study also determines the effectiveness of stress management training programs on nurses' level of job-related stress.

Material and Method

Quasi-experimental, on a total population sample consisting of 60 nurses working in the emergency units divided into two groups (30 control and 30 study) used the pre-test post-test 1 and post-test 2. conducted through the period from (1st February 2021 to 1st August 2021. Five sessions were submitted to a study group that adopted the progressive muscle relaxation program. The instrument was adopted and modified for the present study fall into two parts, the first one is the demographical characteristics of nurses consisting of seven items. The other is the work-related stress scale. 26 items were scored on a Likert scale with three levels of stress (stressful=1, occasionally stressful=2, and extremely stressful=3). The grade of job-related stress was computed by dividing the overall score of the scale into three categories (which indicate the level of stress experienced by nurses) and grading them as follows: mild= 26-43, moderate= 44-61, and severe= 62-78.

Results

Table 1
Distribution of the Sample According to their Socio-demographic Characteristics

No.	Characteristics		Study group		Control group	
			f	%	f	%
1	**Age (year)**	20 – 29	12	40	17	56.7
		30 – 39	9	30	5	16.7
		40 – 49	8	26.7	5	16.7
		50 ≤	1	3.3	3	10
		Total	***30***	***100***	***30***	***100***
		M±SD	***33.9 ± 9.3***		***23.4 ± 10.4***	

2	**Gender**	Male	14	46.7	12	40
		Female	16	53.3	18	60
		Total	***30***	***100***	***30***	***100***
3	**Nursing qualification**	Preparatory	13	43.3	18	60
		Diploma	6	20	9	30
		Bachelor	11	36.7	3	10
		Master /Doctorate	0	0	0	0
		Total	***30***	***100***	***30***	***100***
4	**Marital status**	Single	12	40	5	16.7
		Married	15	50	25	83.3
		Widowed/er	3	10	0	0
		Separated	0	0	0	0
		Total	***30***	***100***	***30***	***100***
5	**Shift duty**	Day	19	63.3	17	56.7
		Night	5	16.7	2	6.7
		Both	6	20	11	36.7
		Total	***30***	***100***	***30***	***100***
6	**Years of experience in nursing**	≤ 5	12	40	16	53.4
		6 – 10	6	20	4	13.3
		11 – 15	4	13.3	1	3.3
		16 – 20	5	16.7	4	13.3
		21 ≤	3	10	5	16.7
		Total	***30***	***100***	***30***	***100***
		M±SD	***9.9 ± 7.8***		***10.4 ± 10.3***	
7	**Years of experience in emergency**	1 – 3	22	73.3	18	60
		4 – 6	6	20	6	20
		7 ≤	2	6.7	6	20
		Total	***30***	***100***	***30***	***100***
		M±SD	***2.9 ± 1.8***		***4.2 ± 4.1***	

No: Number, f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

The descriptive analysis in table (1) shows that the nurses' age is 33.9±9.3 years among the study group and 23.4±10.4 years among the control group in which the highest percentage among the study and control groups refer to 20-29 years (40%) and (56.7%). The gender refers that 53.3% among the study group and 60% among the control group are female nurses. The study reported the majority of the sample was preparatory school graduated in study and control group (43.3%), (60%) respectively. The marital status refers that 50% in the study group and 83.3% in the control group are married. Regarding shift duty, more than half of nurses in both groups are working at day shift; 63.3% among the study group and 56.7% among the control group. Regarding years of experience in nursing indicates that nurses are with less than five years of experience as reported among 40% in the study group and 53.4% in the control group. While a year of experience in the emergency department indicates they have 1-3 years as seen among 73.3% in the study group and 60% in the control group.

Table 2
Overall Assessment of Job-Related Stress among Nurses in the Study and Control Group

Levels of Stress	Study Group (N= 30)												Control Group (N=30)											
	Pre-test				Post-test I				Post-test II				Pre-test				Post-test I				Post-test II			
	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D	f	%	M	S.D
Mild	0	0	55.60	5.056	21	70	41.53	5.507	22	73.3	42.07	5.539	1	3.3	55.27	6.710	0	0	57.07	5.058	0	0	58.23	3.785
Moderate	26	86.7			9	30			7	23.4			23	76.7			25	83.3			23	76.7		
Severe	4	13.3			0	0			1	3.3			6	20			5	16.7			7	23.3		
Total	*30*	*100*			*30*	*100*			*30*	*100*			*30*	*100*			*30*	*100*			*30*	*100*		

f: Frequency, %: Percentage, M: Mean of the total score, SD Standard deviation of the total score
Poor= 26 – 43, Fair= 44 – 61, Good= 62 – 78

Discussion

The study was not similar in, setting, and methods to previous peer- reviewed studies. However, the findings in the characteristics of participant emergency nurses showed different from other study results. So according to demographical data the research revealed the nurses' age is 33.9±9.3 years among the study group. With closeness in numbers between the two genders. The majority of the sample was preparatory school graduated in study and control group (43.3%), (60%) respectively. Over half are married. Regarding shift duty, more than half of nurses in both groups are working at day shift; 63.3% among the study group and 56.7% among the control group. Regarding years of experience in the emergency department indicates they have 1-3 years as seen among 73.3% in the study group and 60% in the control group.

The highly rates of male gender that reach the number of female nurses in our study du to society's negative view is behind the female nurse because it considers as dangerous job to female because the load on health system as a result of internal conflicts and wars at the last three decades in Iraq. These result is in agreement with Bailey et al. (1980) that shows 93 % are female ,the mean age of the critical care nurses was 45 years , married (69%). More than (86%) of sample had a bachelor's degree. The average level of experience in the critical care workplace was 12 years) (Veiga et al., 2019).

These result is slightly different from the study of (Yung et al., 2004) that found most of the nurses were younger and single in contrast to the participants in this study who were older and married. It appeared that older and more experienced nurses could perceive stressors and stress more than younger nurses (Yung et al., 2004), (Akinwolere, 2017). While Silveira found the participants, with a mean age of 34.7 years, post-graduates (87.5%), with an average of 10.2 years, working in daytime shifts with (68.8%) (Silveira et al., 2020).

Regarding the level of stress among nurses in the study and control groups, this study found that they experience a moderate level of stress during the pretest

time (86.7%) while their level of stress is decreasing to mild during the post-test 1 (70%) and post-test 2 (73.3%). This study is consistent with Silveira et. al, and Novais et al. they was records the mean stress level for the experimental group was decreased (60/55 p= 0.166), (p<0.001), after intervention of progressive muscle relaxation program (Silveira et al., 2020), (Novais et al., 2016).

These results are disagreed with the studies hold in Saudi Arabia, Slovenia, Hong Kong, and Malaysia. Which are record a mild level of stress (30%), (56.5%),(43.1%),and (41.1%) respectively (Abdoh S. et al.,2021), (Makhaita et al., 2014), (Cheung & Yip, 2015), and (Khodadadi, 2020). The current study is in contrast with Jordan et al. (2016) that record in his study 92% of nurses had moderate to very high stress levels (Jordan et al., 2016).

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