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Research Article

## Application of Progressive Muscle Relaxation Therapy in Overcoming Nurse's Work Stress in Depok City Regional General Hospitals

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### Abstract

**Background:** Every nurse who works in a hospital will face quite time-consuming and laborious work, especially when the bed occupancy rate (BOR) is 85%, and the work pressure of nurses is high. The effect of work stress manifests as physical fatigue, psychological changes, and behavioral changes. Nurses need to try to prevent work stress from happening for a long time by doing stress management, one of which is progressive muscle relaxation therapy.

**Objectives:** The purpose of the study was to determine the effect of progressive muscle relaxation therapy in reducing nurses' work stress.

**Methods:** The study was conducted on five resident nurses who were trained using Progressive Muscle Relaxation and then used the Nursing Stress Scale to measure stress levels before and after training. The research design was Quasi Experiment with One group pretest and post-test designs; data analysis with paired t-test.

**Results:** The results showed that there was a significant effect of implementing progressive muscle relaxation therapy on reducing nurse work stress ( $p = 0.024$ ; 95% CI).

**Conclusion:** There is a significant effect of progressive muscle relaxation therapy on the work stress response of nurses. Progressive muscle relaxation therapy is good to apply to hospital nurses who go through work stress so that stress does not occur which can risk reducing the quality of service to patients.

**Keywords:** hospital nurse, work stress, progressive muscle relaxation

### Introduction

Nursing is the science of applying using intellectual, technical and interpersonal skills and using the nursing process to help clients achieve optimal health.<sup>1</sup> Data from the Health Human Resources Development and Empowerment Agency (HRDEA) shows that the percentage of nurses in the largest among other health workers, namely 29.66% of all recapitulation of health workers or there are 296,876 total nurses in Indonesia.<sup>2</sup> Nurses'

demands to provide quality service and keep patients happy on the job can be stressful for nurses. The demand for quality care to nurses by established standards can create work stress conditions when nurses are in high demand from consumers coupled with an unsupportive work environment<sup>3</sup>; as well as the expression that stress can be experienced by everyone.<sup>4</sup> The American Association of Psychologists states that everyone has experienced work-related stress at some point.<sup>5</sup> Nurses who are stressing because of their work can cause problems from childhood to adulthood due to decreased attention at work. Research conducted in the Inpatient Room of the Salatiga City General Hospital stated that 50.3% of the 149 nurses experienced severe work stress.<sup>6</sup> Correspondingly, research conducted in the Sukoharjo Hospital Inpatient Room showed that 92.9% of the 42 research samples experienced work stress.<sup>7</sup> Another research conducted in Konawe Kepulauan Regency showed that 100% of 83 nurses experienced stress with 21,7% experiencing severe stress and 78,3% experiencing mild stress. So, nurses are of the health workers who are vulnerable to work stress.<sup>8</sup>

Every work situation can cause stress due to the reaction of the employee himself, usually, the employee experiences stress from a combination of various stressors, three main sources can cause stress, namely: environmental factors, organizational factors, and individual factors.<sup>9</sup> One person with another is likely not to react the same to a source of stress due to individual factors.<sup>10</sup> Research that analyzed the effect of the work environment on the work stress of nurses at Muhammadiyah Hospital Jombang showed the results that there was a significant influence of the conditions of the work environment on the work stress of nurses<sup>11</sup>; there is also research with the results that there is a significant relationship between social support and nurse stress<sup>12</sup>; in his research, it finding that there was an influence of individual factors on the work stress of implementing nurses.<sup>13</sup> Meanwhile, research on work stress that carrying out in the emergency room at the Semarang District Hospital found that there is a relationship between workload and nurse work stress<sup>14</sup>; and research at the Kendari City Hospital showed that there were differences in stress levels among nurses who worked morning, afternoon, and evening shifts.<sup>15</sup> Work stress can affect employees' thinking processes, emotions, and situations (Sunyoto, 2012 in Taufiqurrohman).<sup>16</sup> Stress that is allowing not only has a bad impact on the person itself but also has an impact on the hospital. The undesired effects of stress are that it can make a person less confident, angry, depressed, and can cause symptoms such as headaches and insomnia.<sup>4</sup> The results of the research found that there was a link between work stress and burnout.<sup>17</sup> Burnout will result in a desire to change jobs or turnover intention.<sup>18</sup> Turnover will harm the hospital in terms of costs, resources, and staff incentives.<sup>19</sup>

It the importance of knowing the level of work stress experienced by each individual so that it can be prevented or reduced by stress management to avoid a worse impact. Stress management is by applying modality therapy; the Complementary therapy is the application of therapy using physical or electrical force; The Complementary therapy is intending to help the healing process and reduce patient complaints.<sup>20</sup> One of the modalities of therapy for dealing with work stress is progressive muscle relaxation. Progressive muscle relaxation therapy is relaxation therapy that is easy to do and does not cause dependence. This technique can increase the body's reaction against or avoidance response by reducing respiratory rate, blood pressure, pulse, metabolic rate, and energy use.<sup>21</sup> This issue is consistent with what the American Psychologist Association says about the need to manage individual stress, one of which is through the application of progressive muscle relaxation modality.<sup>5</sup> From the results of interviews with three nurses, one nurse said that sometimes she felt confused between the tasks that must be done and that tasks were not her responsibility so she found it difficult to divide her time besides that she often felt anxious if she was unable to complete tasks due to inadequate skills, one nurse said that the staff in the Asoka inpatient room at the Depok City Hospital was lacking, one nurse said that she often felt more tired when she had to go home late because the team on the next shift came late for shift operations. condition in the field, especially in hospital services,

nurses on average have excessive workload, a limited number of human resources, and policies issued by the hospital leadership to make maximum use of the number of existing nurses, because this is relating to the existing budget from the hospital.<sup>22</sup> So, researchers were interested in the extent to which progressive muscle relaxation therapy, applied to Asoka nurses who experiencing work stress, could reduce the work stress of Nurses in the Asoka Ward of Depok City Regional General Hospital.

### Methods

The study used a quasi-experimental design with a set of pre—and post-tests. The sample was a purposeful sampling of 5 nurses who met the inclusion criteria and experienced jobs. Inclusion criteria include working as an implementing nurse, working in an inpatient room, having a minimum education of a Diploma in Nursing and a minimum working period of 2 years, nurses have symptoms of stress (according to the results of the NSS questionnaire); while the exclusion criteria were not nurses who were sick or on leave, a nurse with severe muscle strain and injury, and held structural positions in the room. The measuring instrument for work stress was the Nursing Stress Scale (NSS) with 34 statements as a measuring tool developed by Gray-Toft & Anderson, (1981) and the results of the validity test ranged 0,490 – 0,830. and reliability tests 0,92.<sup>24</sup> The validity and reliability of the questionnaires were conducted with 30 nurses in the Amarylis ward. The validity test on each statement item is in the range of 0.422 - 0.877 and the reliability test with the results showing the Cronbach's Alpha value of 0.965 (0.965 > 0.6) Another research tool is an observation sheet on the implementation of progressive muscle relaxation. Data analysis uses Paired T-test / dependent T-test. This study did not go through a health research ethics test, because it coincided with the Nursing Professional Nursing Student, so it was based voluntarily. The application of progressive muscle relaxation therapy carrying out for the period 1 to 8 March 2020. After determining that nurses were willing to be respondents, then the researchers approached and contracted time to providing training in progressive muscle relaxation techniques for 10-15 minutes and ensured that the respondents could do it correctly, then the respondents asking to perform progressive muscle relaxation techniques independently, and the researchers made observations.

In addition, the researchers distributed leaflets containing progressive muscle relaxation exercises. Progressive muscle relaxation is carrying out within 10-15 minutes with progressive muscle relaxation steps, namely: a) Adjust the patient's position, b) Slowly close the eyes and concentrate on the exercise, c) Movement, the first is to train the hand muscles, d) Grasp the left hand while making a fist, e) Make the first stronger while feeling the sensation of tension that occurs. f) When the fist, is released, the client is guided to feel relaxed for 10 seconds, g) This movement of the left hand is done twice, h) Perform also on the right hand, i) Movement second level is intending to train the muscles of the back of the hand, and j) Bend your wrists back with your arms tensing the muscles in the backs of your hands and forearm are tensing. Fingers facing the ceiling.

### Results

The research data resulted from univariate and bivariate data processing. The result of univariate data processing is the characteristics of the registered nurses, including age, gender, and sex, and years of service, as shown in Table 1 below:

**Table 1.** Frequency Distribution of Nurse Characteristics in the Asoka Inpatient Room, Depok City Regional General Hospital (n=5)

No	Internal Factor	Total (n)	Percentage (%)
1	Sex Female	1	40,0

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	Male	4	60,0
2	<b>Educational Background</b>		
	Nursing Diploma	4	80,0
	Professional Nursing	1	20,0
3	<b>Age</b>		
	< 30	2	40,0
	≥30	3	60,0
4	<b>Marital Status</b>		
	Mary	5	100,0
	Not Married	0	0,0
5	<b>Working Period</b>		
	≤ 5 years	1	20,0
	> 5 years	4	80,0

Source: Own data, 2020

Based on table 1 shows the characteristics of respondents based on the age of 5 nurses in the Asoka inpatient room at the Depok City Regional General Hospital, it found that a sample aged 30 years was 2 (40.0%), dominated by female nurses as many as 4 people (80%), the latter education was 4 people Diploma in Nursing (80%), and all are marrying (100%), and have worked > 5 years as many as 4 people (80%).

**Table 2.** Average Differences in Nurse Stress Values Before and After Intervention of Progressive Muscle Relaxation Therapy in the Asoka Inpatient Room, Depok City Regional General Hospital (n= 5)

Intervention	Work stress value	n	Mean	SD	Mean Difference	SE	P-value
Progressive Muscle Relaxation Therapy	Pre-test	5	62,60	19,321	8,200	8,641	0,024
	Post-test	5	54,40	15,502		6,933	

Source: Own data, 2020

Based on table 2 shows the average value of nurses' work stress before and after receiving Progressive Muscle Relaxation Therapy from 5 respondents in the Asoka inpatient room at the Depok City Regional General Hospital using the Correlation T-test, it was found that the average work stress response of nurses before being given Progressive Muscle Relaxation Therapy was 62.60 (SD = 19.321; SE = 8.641), while the average work stress response of nurses after receiving Progressive Muscle Relaxation Therapy was 54.40 (SD = 15.502; SE = 6.933). The difference in the mean work stress response of nurses before and after giving Progressive Muscle Relaxation Therapy was 8,200. This could be explained by the fact that the more frequently the respondents used progressive muscle relaxation therapy, the more it affected the reduction of nurses' work stress values. Use of Progressive Muscle Relaxation Therapy resulted in a P-value = 0.024 where a P-value <0.05 means that there is a significant effect of providing Progressive Muscle Relaxation Therapy on the work stress value of nurses.

## Discussion

The results of this age-related study are in line with research conducted on Nurse Work Stress in Hospitals and Primary Health Care Facilities involving 124 nurses that shows that the majority of respondents aged 30 years were 64 (51.6%) respondents compared to those aged <30 years as many as 60 (48.4%) respondents; and nurses aged 40

years and over were better able to manage stress, explaining that older nurses are mentally stronger and more mature, smarter, rational-thinking, better at managing emotions, tolerant/flexible to differences in thoughts and attitude, and have higher levels of intelligence.<sup>23</sup> Emphasizing from the book *Fundamental of Nursing* that a person at a young adult age is at a stage where career maturation occurs to achieve a goal or career peak.<sup>26</sup> As to gender, women dominate the work of nurses because of the motherly nature of nurses, namely, of the mother instinct philosophy that most nurses come from women because a woman has an instinct to care for herself and others as reflected in a woman with a simple instinct in caring for herself, health in the family.<sup>27</sup> Looking at the most data on nurses with a Diploma in Nursing education, looking at facilitating vocational graduates who are ready to work and starting with policies, according to Keputusan Menteri Kesehatan (Kepmenkes) No. 1239 of 2001, which states the minimum standard of nurse education in health service institutions, namely Diploma III Nursing,<sup>28</sup> and confirming by the nursing law article 16 paragraph 5 which contains higher nursing education, namely vocational education, academic education, and professional education.<sup>29</sup> Skills and knowledge in caring for, dealing with patients and their families, and doctors as co-workers will generally be better if the nurse's background is highly educating (Herqutanto et al. 2017). The higher the education level, the more realistic assessment will be.<sup>30</sup>

All nurses in the data are marrying, this is at risk of triggering work stress because the research results show that married conditions can affect one's emotions, where there is a change in the relationship that shifts towards relationship maturity that provides comfort and interdependence, so that married individuals have friends to share in solving a problem.<sup>31</sup> Families can be a source of stress because of family-work conflicts when the workforce faces a conflict between their roles at work and their roles in everyday life, women who work also have multiple roles in the family, this is a source of work stress because The role of women is more than that of men because they also have to carry out their responsibilities in the household continuously.<sup>32</sup> The length of work in table 1 > 5 years means that nurses have good experience in dealing with hospital situations because experience is a reference material or individual comparison in dealing with almost the same incident.<sup>30</sup> Hours of work or work experience are factors that companies consider when looking for workers.<sup>33</sup> The results of this study are in line with previous research that the Effect of Progressive Muscle Relaxation Therapy on Stress Response of Emergency Room Nurses at UPTD Siantan Hilir Health Center Pontianak with quantitative research methods using pre-experimental design with one group category (One Group Pre-Test and Post Test Design). 16 emergency room nurses who experienced a stress response using a progressive muscle relaxation therapy instrument in the form of NSS (Nursing Stress Scale), and showed a decrease in stress response scores. The median pretest value of 19.50 decreased to 17.50 in the posttest with a significant value of  $P = 0.001$ , so it can be concluded that there is an effect of progressive muscle relaxation therapy on the stress response of ER nurses at UPTD Siantan Hilir Health Center.<sup>34</sup>

Progressive muscle relaxation therapy is relaxation therapy that is easy to do and does not cause dependence. This technique can increase the body's reaction against or avoidance response by reducing respiratory rate, blood pressure, pulse, metabolic rate, and energy use.<sup>21</sup> Tensing and relaxing the muscles in each part of the body gradually to make the body feel relaxed is the method used in performing progressive muscle relaxation techniques.<sup>35</sup> Progressive muscle training is useful for reducing muscle stiffness, and stress, lowering blood pressure, and blood sugar, increasing endurance for activities in daily life, strengthening immunity, being physically healthy, and improving living standards.<sup>36</sup> Progressive muscle relaxation is a stress management method that is a form of mental therapy in the adjunct therapy.<sup>37</sup> Progressive muscle relaxation directs the patient's attention to the distribution of emotions when muscle groups are relaxed and compares it to times when muscles are tense so that the client can manage situations during stress. The ability to manage stress affects the client's emotional stability. Progressive muscle relaxation



exercises recommended by nurses are a form of educational support, namely a treatment system aimed at self-care of patients independently.<sup>38</sup> Progressive muscle relaxation can reduce stress, muscle tension, and anxiety by relaxing or relaxing the muscles.<sup>39</sup> After all the movements are complete, allow the entire body to relax, tighten the muscles and gradually stretch from the head to the bottom of the body for about 10-15 minutes.<sup>40</sup> This fact can be explained by the fact that the more frequently respondents used progressive muscle relaxation therapy, the greater its effect on reducing the stress of nurses' work.

### **Conclusion**

There is a significant effect of progressive muscle relaxation therapy on the work stress response of nurses. Progressive muscle relaxation therapy is suitable for hospital nurses who have work pressures to avoid creating stress that can reduce the quality of service to patients. The results of this study can be used as data, basic information, and reference material for further researchers in developing research related to the work stress of nurses in hospitals, health centers, or other health care units by expanding the study of the method of comparing the frequency of implementation of interventions to carry out progressive muscle relaxation exercises. So that it is finding which is more efficient in the frequency of implementing progressive muscle relaxation exercises and can quickly reduce the value of nurses' work stress, and researchers can use analysis with General Linear Model Repeated Measurements

Condition of workers, especially nurses in several hospitals, which researchers have observed and examined, the problems found are almost uniform, namely the shortage of nurses, and the top leadership takes a temporary policy by utilizing the number of existing nurses, because to provide or recruit new nurses requires a budget, While the determining budget is the government, especially public hospitals, while the private sector depends on the hospital owner's policy, the nurses experience excessive workloads so they will feel the pressure of work. This research has proven that progressive muscle relaxation therapy can be applied by nurses who have excessive workloads so that they become fatigued and become work stressed.

### **Conflict of Interest Declaration**

The authors have no conflicts of interest to declare.

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