RESULTS OF MUSCLE RELAXATION TRAINING TO REDUCE STRESS OF MEDICAL NURSES AT SIRIRAJ HOSPITAL, BANGKOK, THAILAND

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Background

- The factors that can occur to nurses are **stress, tiredness, and fatigue from work and the health-care system**. Nurse is the one who works very closest to the patients and provided 24-hour care with 8 hours a shift, 3 shifts a day—morning, afternoon and night (Tuntiplachiva, 2009).

- **Different working hours** from regular people; nurses have to **adapt their daily lives** to their work shifts that affected their psychological and physical health including to have an interaction with other people (Udomrat, 2010)

- The occupations with demanding responsibilities or routine activities caused stress, **frustration, unstable emotion, frequent illness, slow problem solving, irresponsibility, bad decision making, and mistakes that may harm patients’ lives**. The stress of health care professionals which showed that professional **nurses had the highest stress** (Wolfgang, 2008, Tammakun, 2009).
Problem Statements

• The stress affected to the nurses’ work performance lead to the negative perspective of career, ignore the patient and fatigued in working (Jones and Karen, 2010).

• 2004-2012: Increasing numbers of acute and chronic patients at Siriraj Hospital, particularly IPD and internal medicine department had the most OPD and IPD patients visit each year.

• Progressive muscle relaxation technique is a practical method controlling muscles in each part of the body regarding to the supervision without any equipment (Wolfgang, 2008). It would be a self-practice and have no complication and no required many staffs. As those qualifications, the researcher is interested in the utilization of relaxation technique for all nurses since it is ease to use and can be self-practice promoting the effective performance of and positive effect to patients.
Progressive Muscle Relaxation

- Feet
- Lower Legs
- Upper Legs
- Stomach
- Upper Arms
- Back
- Shoulders
- Chest
- Lower Arms
- Hands
- Neck
- Face
Purposes

• To compare the stress level of the experiment groups (Arm A) in **pre and post utilization** of progressive muscle relaxation technique.

• To compare the stress levels of the experimental group **(Arm A)** with post utilization of progressive muscle relaxation technique and the controlled group **(Arm B)** with information of progressive muscle muscle relaxation.

• To compare the stress level of **post utilization** of progressive muscle relaxation technique in **8 days and 2 months**.

• To measure participant’s **satisfactions** of progressive muscle relaxation technique.
Research Question

Does the muscle relaxation training can reduce stress in Medical nurses?
Methodology

Study Design: A longitudinal experimental design

Setting and Sample:

- **Registered nurses** who work in the internal medicine wards and psychological ward of Siriraj Hospital, Bangkok, Thailand between June 2003-January 2004.
- Sampling group in this study consists of registered nurses (RN) of 10 internal medicine and psychological wards (N=250)
- 180 RN had the stress level as mild and over
- Computer randomized of 30 RNs
  - 15 nurses in each group
Methodology

- **Randomly assigned and allocation concealment** to one of two treatments
  - progressive muscular relaxation by using audio recorded instructions with a live instructor (Arm A)
  - progressive muscular relaxation by using audio recorded instructions and a handbook (Arm B)
- Subjects in each group **were blinded** by instructor and participated in two session of progressive muscular relaxation sessions per week for four weeks, either with the live instructor or using their handbook
- Both Arm A and Arm B continue to **self-practice for four weeks** (8 sessions) with recorded journal
- All subjects were pre-, post-, and follow-up post-tested for stress using the Stress Measurement Model of Dougan and other, and check journal immediately after the treatment
### Methodology

**Study Pattern**

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Treatment</th>
<th>Post-test 1</th>
<th>Treatment</th>
<th>Post-test 2 (after 8 days)</th>
<th>Post-test 3 (after 2 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arm A</strong></td>
<td>T</td>
<td>X</td>
<td>T1</td>
<td>Y</td>
<td>T2</td>
<td>T3</td>
</tr>
<tr>
<td><strong>Arm B</strong></td>
<td>T</td>
<td>-</td>
<td>T1</td>
<td>-</td>
<td>T2</td>
<td>T3</td>
</tr>
</tbody>
</table>
Methodology

• **Instrument(s) for data collection**
  – Audio tape of active progressive muscle relaxation by psychological Department, the Ministry of Public
  – Thai Stress Test (TST) developed by Sujittra (2002)
  – The stress measurement model by Dougan and Others (1986: 194)
  – The assessment Questionnaires of satisfaction
  – The self record journal of the progressive muscle relaxation.
  – The hand book contains information on how to practice progressive muscle relaxation.
Methodology

Data Analysis

– Statistic Package for SPSS V. 10

1. Levels of stress scores were demonstrated by the statistic: Means and Standard Deviations.

2. The Pair t-test (dependent variables) was used to identify the different means of stress scores in Arm A before and after participating in this study.

3. The Pair t-test (dependent variables) was applied to test the different means of stress scores in Arm B before and after participating in this study.

4. The 7-test was used to determine the different means of stress scores before and after participating in this study in both Arm A and B.
Ethical Consideration

The aforementioned project and informed consent have been reviewed and approved by the Ethical Committee, Faculty of Medicine, Siriraj Hospital, Mahidol University, Thailand on June 27, 2003.
Results

To compare the stress level of the experimental groups (Arm A) in pre- and post-utilization of progressive muscle relaxation technique.

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### Stress Level Mean

- **Pretest**
- **Posttest**

<table>
<thead>
<tr>
<th>Stress Level Mean</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>30</td>
<td>0</td>
</tr>
</tbody>
</table>

***t-test 5.64  
*p<.001*
Results

To compare the stress levels of Arm A with post utilization of progressive muscle relaxation technique and Arm B with information of progressive muscle relaxation.

*** t-test 2.958
p < .01
Results

To compare the stress level of Arm A post practicing the progressive muscle relaxation with instructor in 8 days and 2 months.

![Graph showing the mean stress levels over time, with a significant decrease from posttest to after 2 months.]

***t-test 5.64
p<.001
Results

To compare the differences of the mean of stress after 2 months self-practice in Arm B

*** t-test 2.98
p < .01
**Results**

To Compare **Post-tests between Arm A and B** after muscle relaxation practices

<table>
<thead>
<tr>
<th>Stress Level</th>
<th>Posttest</th>
<th>After 8 days</th>
<th>After 2 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm A stress level</td>
<td>Mean of Arm A</td>
<td>25.53</td>
<td>13.8</td>
</tr>
<tr>
<td>Arm B stress level</td>
<td>26</td>
<td>24.66</td>
<td>21.67</td>
</tr>
</tbody>
</table>
Satisfaction of progressive muscle relaxation technique

- No Side Effects: 100
- Easy to do: 93.2
- No muscle ache: 92.5
- Simple to follow: 86.6
- Feel comfortable: 75.1
Conclusions

• After the intervention, the Arm A with the instructive training the progressive muscle relaxation demonstrated lower stress than before the intervention ($p < .001$).
• Arm A with the practice of active progressive muscle relaxation training presented lower stress than Arm B with the handbook of active progressive muscle relaxation ($p < .01$).
• After two months of progressive muscle training, Arm B reported that lower stress ($p=NS$).
• The nurses illustrated the great satisfaction of active muscle relaxation.

Relax
Discussions

• To study the outcomes of progressive muscle relaxation for reducing the stress of registered nurses and compare the stress levels between the experimental group and controlled groups
  – The nurses could identify the difference between muscle spasm and relaxation including the control of muscle spasm and relaxation when the stress.

• Comparing the stress levels between the experimental group (Arm A) after practicing the progressive muscle relaxation and the controlled group (Arm B) after self study the handbook about progressive muscular relaxation.
  – The experimental group did better because the more practice promoted the skills of automatic muscle relaxation when encountering with the stress. only understanding was not enough. The practice creating the skills was necessary to reduce the stress.
Discussions

• Monitoring the outcome of active progressive muscle relaxation practiced within two months
  – The decreasing trend of stress scores of Arm A and also in Arm B stated less stress.
  – The reciprocal inhibitor would not be occurred at the same time. In the relaxing period, stress and anxiety would not be present.

• Satisfaction level of active progressive muscular relaxation
  – Physical reactions of the stress and anxiety will induce muscles spasm and other organs. Precipitating factors such as routine work and work with high risk of infection could not avoid in nursing care. Hence, the progressive muscle relaxation training would inhibit the cycle that inducing the stress.
Implications

Nursing Practice
- Revealed strong, preliminary evidence of the progressive muscle relaxation training.
- Beneficial effect for the medical nurses themselves to reduce stress- improve the quality of patient care.

Future Research
- Should study the ongoing outcomes of the effectiveness of the active muscle relaxation with larger population.
- Should monitor the outcomes after completing two months of the intervention to compare how many times of practice in a week to maintain the highest effectiveness of the active muscle relaxation.
- Should study the comparison on the effectiveness between the active muscle relaxation and other methods for reducing the stress.
References

All references are available upon request
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Thank you: Kob Khun Ka