The Effects of Respiratory Rehabilitation Program on Perceived Self-Efficacy and Dyspnea in Lung Cancer Patients

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Learned objective

• To examine the effects of respiratory rehabilitation program on perceived self-efficacy and dyspnea in lung cancer patients.

* Grant by Fac. of Graduate Studies & Fac. of Medicine Ramathibodi Hospital, Mahidol University*
CANCER TODAY
The five most commonly diagnosed cancer types

Percentages of new cancer cases and cancer deaths worldwide in 2018

**Incidence**
1. **Lung**
   - 11.6% of all new cases
   - 2,094 million
2. **Breast**
   - 7.1% of all new cases
   - 2,089 million
3. **Colorectal**
   - 10.2% of all new cases
   - 1.8 million
4. **Prostate**
   - 5.7% of all new cases
   - 1.3 million
5. **Stomach**
   - 5.7% of all new cases
   - 1.0 million

For both sexes, all cancers for all ages, worldwide in 2018

**Mortality**
1. **Lung**
   - 18.4% of all cancer deaths
   - 1.3 million
2. **Colorectal**
   - 9.2% of all cancer deaths
   - 827 000
3. **Stomach**
   - 8.2% of all cancer deaths
   - 783 000
4. **Liver**
   - 8.2% of all cancer deaths
   - 782 000

For both sexes, all cancers for all ages, worldwide in 2018

Data source: GLOBOCAN 2018
Available at Global Cancer Observatory (http://gco.iarc.fr)
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Dyspnea occurs as a symptom most frequently in lung cancer, where it might affect 29-87% of people with primary disease of the lung, bronchus and trachea.

(Thanomjit & Thanasilp, 2011; Jittaruch, Thanasilp & Pudthong, 2015)
Management of Dyspnea in cancer patients.

Management of dyspnea in cancer patients involves the following stepwise approach

- Assessment of dyspnea
- Management of specific dyspnea syndrome
- Non-pharmacological management
- Oxygen
- Pharmacological treatment
- Other potential drugs

(Boonprasop, 2012; Jantarakupt & Porock, 2005)
• “The role of **pulmonary rehabilitation in lung cancer** has gained increasing attention with **positive effect on patients**, but it hasn’t been well described because of **limited research to date.**”

(Wang, Liu, Rice, & Belani, 2016)
The quasi experimental research design aimed to examine the effects of respiratory rehabilitation program on perceived self-efficacy and dyspnea in lung cancer patients.
Initially, there were 28 people with NSCLC lung cancer stage 4 who met the research criteria participated in the study.

- Divide into 2 groups, control = 14, experimental = 14
Research instruments

**Screening**
- ECOG
- 6CIT

**Proceed**
- Respiratory rehabilitation program
- Respiratory rehabilitation hand-book
- Check-list form
- follow up recording form
- Behavior assessment form

**Data collection**
- Demographic
- ESAS
- Self-Efficacy
- CDS
We allocated patients to the control group or experimental group according to their time of outpatients visited.

First: data collection in control group, second in experimental group for prevent contamination.

**September 2018 – October 2018**

Control group
(routine nursing care)

**November 2018 – December 2018**

Experimental group
(respiratory rehabilitation program)
**Method**

**Experimental**
- Respiratory Rehabilitation Program
- Follow up by phone (wk.3)
- Follow up by phone (wk.6)
- End of program

**Inclusion criteria**
- Self-Efficacy & Dyspnea wk. 1
- Self-Efficacy & Dyspnea wk. 4
- Self-Efficacy & Dyspnea wk. 8

**Control**
- Routine Nursing Care
- Respiratory rehabilitation handbook

**Follow up by phone**
- (wk.3)
- (wk.6)
• **Demographic data**: Descriptive statistics

• **Assumption**: Test Normality with Shapiro-wilk test

• **Compare Self-Efficacy and Dyspnea**: Two-way repeated measure ANOVA
Fig. 1: Mean of perceived self-efficacy during 8 wk.

Fig. 2: Mean of dyspnea during 8 wk.
Table 1: The effect of respiratory rehabilitation program on perceived self-efficacy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source of Variance</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>$F^S$</th>
<th>p-value</th>
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<tbody>
<tr>
<td></td>
<td>Between group</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>4172.190</td>
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<td>66.566</td>
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<tr>
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<td>Within group</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Time</td>
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<td>.000</td>
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<td>Time x Group</td>
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<td>1640.571</td>
<td>52</td>
<td>31.549</td>
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</table>

S = Sphericity Assumed, SS = sum of square, df = degree of freedom, MS = mean square
Table 2: The effect of respiratory rehabilitation program on dyspnea

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source of Variance</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p-value</th>
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<tbody>
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<tr>
<td>Dyspnea</td>
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<td><strong>Within group</strong></td>
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<tr>
<td></td>
<td>Time</td>
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<td>7.790</td>
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</table>

S = Sphericity Assumed, SS = sum of square, df = degree of freedom, MS = mean square

Different at least 1 couple

Time group interaction
### Table 3: Pairwise comparison of The effect of respiratory rehabilitation program on perceived self-efficacy and dyspnea by Bonferroni method.

<table>
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<tr>
<th>Variable</th>
<th>Time</th>
<th>Mean different</th>
<th>Std. Error</th>
<th>p-value</th>
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<td>Self-Efficacy</td>
<td>Week 1&lt;sup&gt;st&lt;/sup&gt; – week 4&lt;sup&gt;th&lt;/sup&gt;</td>
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<td>.000</td>
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<td>Week 1&lt;sup&gt;st&lt;/sup&gt; – Week 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>-36.643</td>
<td>1.540</td>
<td>.000</td>
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<td>Week 4&lt;sup&gt;th&lt;/sup&gt; – Week 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>-14.143</td>
<td>1.495</td>
<td>.000</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>Week 1&lt;sup&gt;st&lt;/sup&gt; – week 4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>1.929</td>
<td>.625</td>
<td>.014</td>
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<tr>
<td></td>
<td>Week 1&lt;sup&gt;st&lt;/sup&gt; – Week 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>3.250</td>
<td>.768</td>
<td>.001</td>
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<tr>
<td></td>
<td>Week 4&lt;sup&gt;th&lt;/sup&gt; – Week 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>1.321</td>
<td>.830</td>
<td>.371</td>
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• Based on finding of the study, the respiratory rehabilitation program should be used in order to promote self-efficacy and relieve dyspnea in lung cancer patients.

• The respiratory rehabilitation program was suitable for preparing patients with low to moderate dyspnea and was aimed at delaying dyspnea exacerbation while helping patients to manage dyspnea.
In terms of nursing practice, nurses and healthcare teams can implement the respiratory rehabilitation program among lung cancer patients with dyspnea between in-patients and out-patients department without knowledge on breathing techniques.

Care plans can be tailored to each patient beginning from the early stage to stage four.
Thank you for your attention