A Study to Assess the Effectiveness of Comprehensive Nursing Intervention on Post Extubation Dysphagia Among Endotracheal Extubated Patients in Selected Hospital

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Abstract: Background: Post extubation dysphagia is defined as the difficulty or lack of ability to effectively and competently transfer food and liquid from the mouth to the stomach after extubation. Collaborative nursing intervention is needed to improve oral intake and to reduce risk of complications. Therefore, this research aims to evaluate the efficacy of comprehensive nursing intervention on post extubation dysphagia among endotracheal extubated patients. Method: A quantitative evaluative research technique, quasi experimental non-equivalent control group posttest only design was used. The number of samples was 60; 30 in intervention group and 30 in observation group had been selected via the use of non-probability purposive sampling method. First of all, the researcher got authorization from relevant authority. The written document consent become received from the samples. Gugging swallowing screen was used to assess the dysphagia among endotracheal extubated patients. After assessing 1st posttest, comprehensive nursing intervention was given to the samples in the intervention group. 2nd post test was conducted between day 5 and day 10. Results: The findings confirmed that there was a significant variation in mean 2nd posttest dysphagia score on post extubation dysphagia between observation group and intervention group. There was considerable association between 1st posttest level of dysphagia amongst samples in intervention group and their gender. There has been no significant association between the 1st posttest level of dysphagia among samples in intervention category and their demographic variables (age, educational qualifications, diagnosis and duration of intubation). Conclusion: It appears that evidently the comprehensive nursing intervention effective in decreasing the dysphagia. Therefore, it can be suggested that comprehensive nursing intervention can be provided to post extubation dysphagia patients.

Keywords: Post Extubation Dysphagia, Endotracheal Extubation, Dysphagia, Nursing Intervention.

I. INTRODUCTION

Airway management is a vital priority for critically ill patients. Prolonged endotracheal intubation has become the standard of care in maximum of the intensive care unit. Post extubation dysphagia affects up to 62% of intensive care unit patients specifically for persons with greater than forty-eight hours’ endotracheal intubation. Post extubation dysphagia is related with slow meals consumption (potentially increasing malnutrition and dehydration), clinically acquired pneumonia, re intubation, increased length of hospital stay.

➢ Problem Statement
A study to assess the effectiveness of comprehensive nursing intervention on post extubation dysphagia among endotracheal extubated patients in selected hospital.

➢ Objectives
1. To assess and compare the posttest level of swallowing and feeding performance among endotracheal extubated cases among observation group. 2. To assess and compare the posttest level of swallowing and feeding performance among endotracheal extubated cases among intervention group. 3. To compare the posttest level of swallowing and feeding performance among endotracheal extubated cases between observation and intervention group. 4. To find out the association between the 1st posttest level of swallowing and feeding performance of endotracheal extubated cases and their selected demographic variables (age, gender, educational qualification, diagnosis, duration of intubation) in intervention group.

➢ Hypotheses
(Level of significance at p < 0.05): H1: There is a significant difference in the mean posttest score of swallowing and feeding performance between observation and intervention group. H2: There is a significant association between the 1st posttest level of swallowing and feeding performance among samples in intervention group, with their demographic variables. (H3a: age, H3b: gender, H3c: educational qualifications H3d: diagnosis H3e: duration of intubation)
II. METHODOLOGY

- **Effectiveness**
  It represents results of nursing intervention among samples. It refers to difference between mean 1\(^{st}\) posttest and mean 2\(^{nd}\) post test score on swallowing and feeding performance among endotracheal extubated patients.

- **Comprehensive Nursing Intervention**
  It refers to comprehensively organized nursing intervention regarding post extubation dysphagia. Administering nursing intervention by providing mouth care is done with a soft tooth brush using tooth paste to remove the plaque and gargle the oral cavity with mouth wash solution and moisturize lips with Vaseline. Oral motor exercises comprise bring the lips tightly together, move the tongue, open the mouth widely and inflate the cheeks each with 10 repetitions for lips, tongue, jaw and cheeks daily 2 times.

**Post extubation dysphagia:** It refers to lack of ability to effectively and competently transfer food and liquid from the mouth to the stomach after extubation.

The conceptual framework referred in this research was modified Imogene King’s Goal Attainment Theory. The research was conducted in Shanmuga Hospital, Salem. A quantitative study with evaluative approach, quasi experimental non-equivalent control group posttest only design was applied for this research. The sample size was 60. Non-probability purposive sampling technique was used. 30 samples had been opted in each group. Researcher were given written permission from relevant authority and acquired written consent from the samples. Data was collected by using gugging swallowing screen scale. On day one, 1\(^{st}\) posttest was conducted by using gugging swallowing screen scale for post extubation dysphagia patients. After conducting the 1\(^{st}\) posttest, comprehensive nursing intervention was provided to the samples in intervention group. Between day 5 and day 10, 2\(^{nd}\) post test was conducted.

III. FINDINGS

A. Demographic Variables
Regarding Samples Age, In Intervention Group, Most 13 (43.33%) Samples Were In The Age Group 41-60 Years. In The Observation Group, Most 13 (43.33%) Samples Were In The Age Group 41-60 Years. In Relation To The Samples Gender, In Intervention Group, Most 18 (60%) Samples Were Males. In The Observation Group, Most 19 (63.33%) Samples Were Males. In Relation To The Samples Educational Qualifications, In Intervention Group, Most 10 (33.3%) Samples Had No Formal Education. In Observation Group, Most 10 (33.33%) Samples Had School Education And 10 (33.33%) Samples Were Graduates. Regarding The Diagnosis, In The Intervention Group, Most 14(46.67%) Samples Were Diagnosed With Respiratory Disease. In Observation Group, Most 13 (43.33%) Samples Were Diagnosed With Respiratory Disease. Regarding Duration Of Intubation In The Intervention Group, Most 13(43.33%) Samples Were Intubated For 3-4 Days. In The Observation Group Most 13 (43.33%) Samples Were Intubated For 3-4 Days.

B. Findings Concerned to Effectiveness of Comprehensive Nursing Intervention on Post Extubation Dysphagia Among Endotracheal Extubated Patients.

- Analyses of 1\(^{st}\) Posttest and 2\(^{nd}\) Posttest Level of Dysphagia amongst Samples in Intervention and Observation Group.

**Fig 1:** Bar Diagram Suggests the Percentage Distribution of Samples Based Totally on 1\(^{st}\) Posttest and 2\(^{nd}\) Posttest Level of Dysphagia among Samples in Intervention and Observation Group.
Figure 1 suggests that on 1st posttest, in the intervention group, most 17 (56.7%) samples had severe dysphagia, 13 (43.3%) samples had moderate dysphagia, 0 (0%) samples had mild dysphagia, 0 (0%) samples had no dysphagia. In the observation group, during 1st post est 16 (53.3%) samples had severe dysphagia, 14 (46.7%) samples had moderate dysphagia, 0 (0%) samples had mild dysphagia, 0 (0%) samples had no dysphagia. The intervention group received 8.3 fold intervention and resumed swallowing and oral care intervention while the control group.

On 2nd posttest, in the intervention group, 20 (66.7%) samples had mild dysphagia, 10 (33.3%) samples had no dysphagia. In the observation group, 17 (56.7%) samples had moderate dysphagia, 13 (43.3%) samples had mild dysphagia.

Comparison of Mean 1st Posttest and Mean 2nd Posttest Level of Dysphagia among Samples Between Intervention Group and Observation Group.

Table 1: Comparison of Mean 1st Post Test and Mean 2nd Post Test Level of Dysphagia Amongst Samples Between Intervention Group and Observation Group  \( n=60(30+30) \)

<table>
<thead>
<tr>
<th>Group</th>
<th>1st Post Test</th>
<th>2nd Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Intervention group</td>
<td>9.5</td>
<td>1.59</td>
</tr>
<tr>
<td>Observation group</td>
<td>9.67</td>
<td>2.06</td>
</tr>
<tr>
<td>Unpaired t test</td>
<td>0.35 ( \text{NS} )</td>
<td>11.40 *</td>
</tr>
</tbody>
</table>

* \( \text{Significant at } p<0.05 \text{ level; NS – Not significant; Unpaired } t_{58} = 2.00 \)

The value suggests that the mean 2nd post test score in intervention group was 18.5 with standard deviation 1.33 and the mean 2nd post test score in observation group was 14.17 with standard deviation 1.62. The unpaired ‘t’ value of mean 2nd post test score of intervention group and observation group was 11.40 which had been statistically significant at \( p<0.05 \) level of significance.

The findings suggest that there has been statistically significant difference in the mean 2nd posttest level of dysphagia amongst samples in the experimental group and control group. Therefore, the research hypothesis \( H_1 \) was accepted and the null hypothesis \( H_{0(1)} \) was not accepted. This means that comprehensive nursing intervention was effective in reducing the post extubation dysphagia among endotracheal extubated patients.

The findings had been acknowledged through the following study: Chug –pei wu, et.al., (2019) conducted interventional study to assess the effectiveness of swallowing and oral care intervention for patients following Post extubation. This was a quasi-experimental study and was conducted in 13 intensive care units in Taiwan. A purposive sample of 170 patients with post extubation dysphagia was selected for this study. Data collection was conducted using functional oral intake scale. The intervention group obtained swallowing and oral care interventions while observation group received no treatment. The results of this study suggested that the intervention group received 8.3 ± 4.2 days of intervention taking 15.4 min daily with no reported adverse event during and immediately after intervention and resumed total oral intake after extubation (95 % CI 1.08-2.91). Stratified by age group, older participants (>65 years) in intervention group were 2.47 fold more likely than their younger participants to resume oral intake (95 % CI 1.31-4.67). The intervention group also had significantly higher salivary flows 14 days following extubation (95 % CI 0.29-1.06). There was a highly statistically significant difference between samples in intervention and observation group. The author concluded that the nursing intervention such as mouth care, oral motor exercises, salivary gland massage, and swallowing education was safe and effective with samples of intervention group.

C. Findings Related to Association of 1st Posttest Level of Dysphagia Among Samples in Intervention Group and Their Selected Demographic Variables.

The chi-square value of 1st posttest level of dysphagia among cases in intervention group and age was 1.72, their educational qualifications was 0.83, their diagnosis was 0.06, duration of intubation was 0.38, which were less than the table value. This refers that there was no significant association found between 1st posttest level of dysphagia among cases in intervention group and their selected demographic variables (age, educational qualifications, diagnosis, duration of intubation) at 0.05 level of significance. Therefore, the research hypothesis \( H_{2(a)}, H_{2(b)}, H_{2(d)}, H_{2(e)} \) was not accepted. The chi-square value of 1st posttest level of dysphagia among samples in intervention group and their gender was 4.43, which was more than the table value. This refers that there was significant association found between 1st posttest level of dysphagia among samples in intervention group and their selected demographic variables (gender) at 0.05 level of significance. Therefore, the research hypothesis \( H_{2(h)} \) was accepted.

IV. LIMITATIONS

Generalization of the research was limited to the samples only.
V. CONCLUSION

This research was conducted to evaluate the effectiveness of comprehensive nursing intervention on post extubation dysphagia amongst endotracheal extubated patients. The results of the study projected that there was a statistically significant difference in the 1st posttest and 2nd posttest level of dysphagia among samples between observation and intervention group. It is evident that comprehensive nursing intervention was effective in reducing post extubation dysphagia among endotracheal extubated patients.

REFERENCES