Implementation of "Creative Joint-Defense Network" to Improve Nursing Quality for Endotracheal Intubation

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Abstract Introduction

According to 2014 statistics from the Ministry of Health and Welfare’s Taiwan Patient Safety Reporting System (TPR), among various tubing incidents reported by hospitals, endotracheal tubing incidents are of highest percentage (representing 97.8%) that are “harmful” to patients. Therefore, to implement the management of patient safety incidents, to prevent unplanned endotracheal tube removal, and to improve nursing quality for endotracheal intubation are issues of significant importance.

AIMS

According to the statistics unit, unplanned endotracheal tube removal rate increased abruptly from 0‰ to 4.24‰ from 2014 April to June, which is 1.2‰ higher than the unplanned extubation rate of Taiwan Clinical Performance Indicator (TCPI) in 2014. Not only does unplanned extubation cause further harm to patients, but also leads to self-blame and low morale among nurses. Ensuring patient safety and successful ventilator weaning are the unit’s foremost priorities, thus the motivation to conduct an improvement project with the purpose of applying its results to improve nursing quality for endotracheal intubation, prevent unplanned extubation incidents and to ensure the safety of patients.

METHODS

The project is divided into three stages

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<th>Stage</th>
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| First Stage: the planning stage | Establish project team, through interviews, literature review, cause and effect diagrams etc., reasons for unplanned extubation confirmed:  
1. Neglect of corner beds and cross-sector nursing care.  
2. Inexperience in intubation healthcare.  
3. Lack of auditing system.  
4. Low compliance from family members.  
5. Misunderstanding of high-risk self-extubation patients. |
| Second Stage: implementation stage | After discussion and using decision matrix to take feasibility, efficiency, cost and other factors into consideration, solutions are formulated and conducted according to results analysis:  
2. Implementation of consensus slogan for the unit team’s joint-defense communication: “Joint-Defense Human Figure Diagram”.  
3. Implementation of 3D tape three-dimensional fixing method.  
4. Implementation of bed-side empowerment tape (wufendai) fixing tutorial.  
5. Implementation of audit system for endotracheal intubation.  
6. Health education accompanied by doctors for patients’ family members with low compliance.  
7. Organization of health education work-shop for “ping-pong-gloves”.  
8. Watch patients’ 30% muscle strength’s “UE Video”. |
| Third Stage: evaluation stage | After project implementation, statistics collected from 2015 May to July showed that the unit’s unplanned extubation rate was 0‰, and endotracheal intubation completion was 100%. |

RESULTS

With the implementation of the project, unplanned extubation rate decreased from 4.24‰ to 0‰, thereby achieving the purpose of the project. Through the results of this project, rigid regulations and technicalities have been integrated with creative approaches, easing rejection against defense regulation implementations, and effectively decreasing unplanned extubation rate.

CONCLUSIONS

During the project’s implementation, there was resistance and rejection from doctors, and project members continued to discuss and negotiate with support and assistance from supervisors to successfully accomplish our goals. After implementing the creative joint-defense network concept, the unit’s unplanned extubation rate dropped from 4.24‰ before improvement to 0‰, demonstrating that medical harm from unplanned extubation can be prevented and avoided. This article hopes to be provided as reference for relative units.