



To improve Tracheostomy Care Knowledge and Inter-Professionals learning in Tracheostomy Care through establishing sense of urgency and e-learning program

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BACKGROUND

In Tan Tock Seng Hospital (TTSH), tracheostomy trainings were offered for different professions by their respective departments. Because of this variation, training materials and skills taught were not standardized, resulting in confusion amongst multi-professionals in tracheostomy care and may compromise patient safety.

A tracheostomy education workgroup with representation from Anaesthesiology, Otolaryngology, Nursing, Respiratory Therapy (RT), Physiotherapy (PT) and Speech Therapy (ST) departments worked together to design an inter-professional e-learning tracheostomy management education program and study its effectiveness.

METHODOLOGY

The workgroup gathered baseline data in General Medicine and Neurology general wards, MICU, CCU, NICU, SICU, PT, ST and RT Departments. A pre-course survey pertaining to demography and tracheostomy-related knowledge was conducted. This data guided the workgroup to design the curriculum and 6 modules were developed:

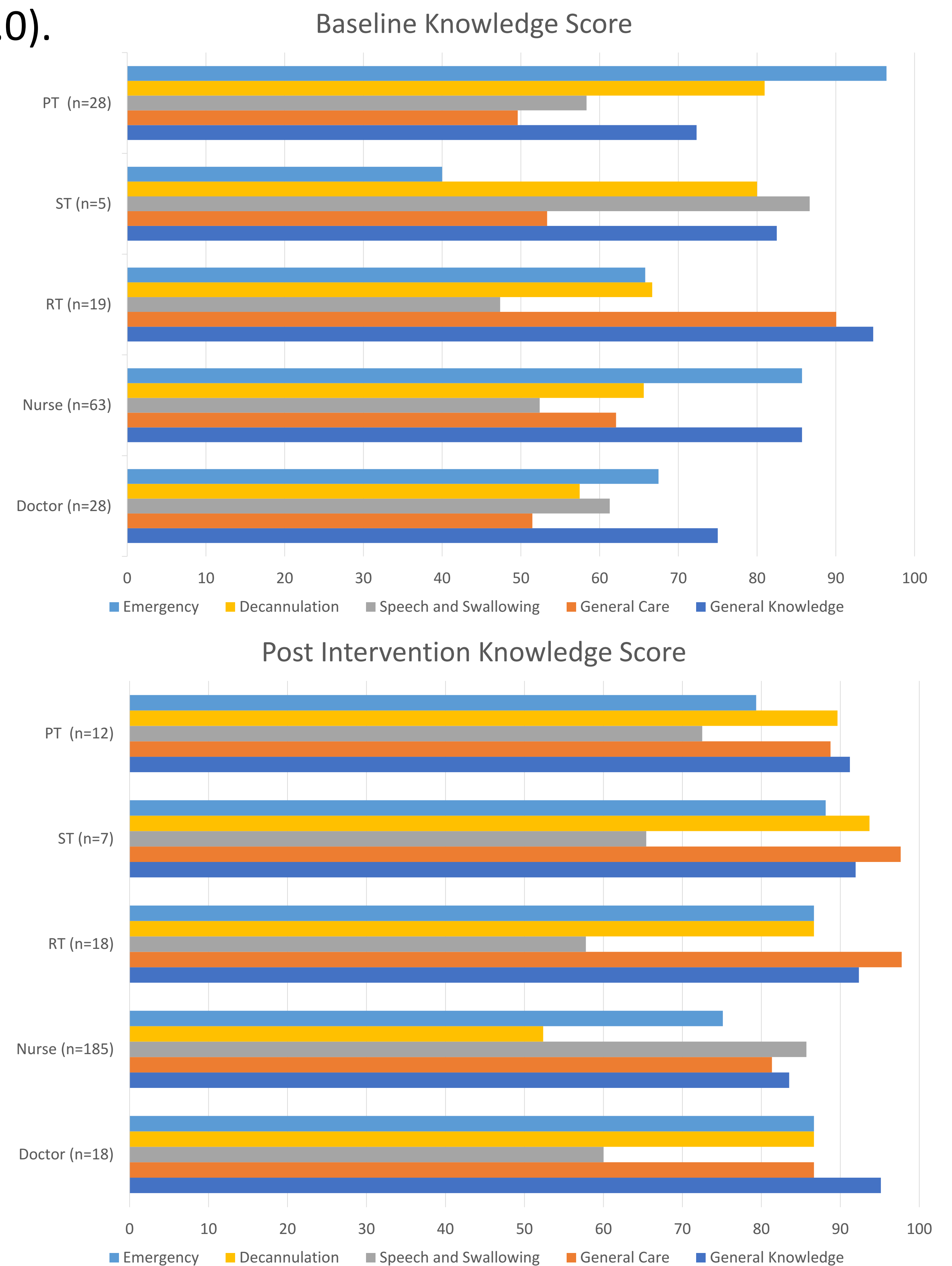
MODULE 1: GENERAL KNOWLEDGE	MODULE 2: GENERAL CARE	MODULE 3: TRACH CHANGE
<ul style="list-style-type: none"> Definition Anatomy Why tracheostomy Tracheostomy tube parts Types of tracheostomy tubes 	<ul style="list-style-type: none"> Stoma Care Site assessment Cuff pressure Maintaining tube patency <ul style="list-style-type: none"> Humidification Cleaning via: <ul style="list-style-type: none"> Suctioning Washing of inner cannula 	<ul style="list-style-type: none"> Changing tracheostomy tube Contraindication for change Procedurist and location of change Patient Safety Recognising Risk Techniques Set up Pre & Post Care
MODULE 4: SPEECH AND SWALLOWING	MODULE 5: DECANULATION	MODULE 6: EMERGENCIES
<ul style="list-style-type: none"> Facilitation of speech <ul style="list-style-type: none"> With ventilation Without ventilation Non-verbal communication Impact on swallowing Swallowing interventions 	<ul style="list-style-type: none"> Readiness of Decannulation Weaning Process Emergency Protocol during spigotting 	<ul style="list-style-type: none"> Tube dislodgement Tube misplacement Tube obstruction Post haemorrhage (TI Fistula) Tracheoesophageal Fistula

240 participants: 18 doctors, 185 nurses, 7 ST, 12 PT and 18 RT were instructed to watch a video clip, presenting a real patient case to create sense of urgency for learning before the e-learning. Their demography was matched to the pre-course group. MCQs scores after each module were captured. 116 participants also participated in a post course survey to provide feedback about this program using a 5-point Likert scale.

RESULTS

This study has shown that the program significantly improved participants' tracheostomy management knowledge using Anova test. The mean score for baseline group was 68.16% whereas the

mean score for post-intervention group was 79.08%. The learners' feedback for this program was positive on the Likert scale. The resultant mean scores were: Usefulness of knowledge (4.2), Promotion of inter-professional knowledge (4.1), Understanding of roles of multi-professionals (4.0), the video informativeness (3.8), and the sense of urgency created by the video (4.0).



DISCUSSION / FUTURE DIRECTION

In conclusion, this inter-professional e-learning tracheostomy management education program has improved learners' knowledge across various professional groups' domain knowledge. The learners' feedback for this inter-professional e-learning education program has been positive. Nonetheless, this education program does not follow through participants' competency in clinical practices or assess the 'do' stage competency of Miller's Pyramid.

Future direction:

- Competency assessment can be done in a simulated setting
- To encourage continuous interaction and knowledge sharing among professional groups post intervention through community of practice or virtual platform like Facebook@work.