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Research paper

Content validity testing of the ESAT©: A decision aid tool for performing endotracheal suction in children

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ABSTRACT

Background and purpose: Endotracheal tube suction performed in children can affect clinical stability. Previous research has identified clinical indicators used to perform endotracheal suction. These were used to develop the Endotracheal Suction Assessment Tool© (ESAT©). This study sought to evaluate the degree to which the Endotracheal Suction Assessment Tool© items as a whole constitute an operational definition of the construct used to determine whether a paediatric intensive care nurse should perform the endotracheal tube suction procedure.
Methods: Lynn's process for calculation of content validity and scale content validity index using a team of expert reviewers was adopted. Experts were drawn from paediatric intensive care units in Australia (n = 6), United Kingdom (n = 1), Switzerland (n = 1) and Canada (n = 1). These experts established the content validity index of the Endotracheal Suction Assessment Tool© using a minimum preset a-priori criterion agreement of 0.78 and a scale content validity index of 0.8. Scale content validity index was used to enhance the interpretability of the content validity data.
Results: All 15 items achieved the preset a-priori agreement for apparent internal consistency. Minor adjustments were required to improve the clarity of four items. The content validity index ranged from 0.8 to 1.0 and scale content validity index ranged from 0.9 to 1.0 for all items.
Conclusion: Item and scale content validity indexes of the tool were established. Further psychometric testing for construct validity and stability over time is required to establish clinical utility of the tool and practice of novice paediatric intensive care nurses and other PIC health professionals.

1. Introduction

In the paediatric intensive care (PIC) setting an endotracheal tube (ETT) may be inserted to enable airway support and mechanical ventilation in patients unable to maintain adequate oxygenation and ventilation.[1] ETT suction, a procedure to remove mucous secretions from within an ETT, is commonly performed to maintain a patent artificial airway. The procedure is not without inherent risk to the critically ill ventilated PIC patient, including complications ranging from desaturation to cardiac arrest.[1–6] Whilst there is consensus within current literature that ETT suction should only be performed when clinically indicated[7–9] our recent integrative review of clinical indicators used to initiate ETT suction failed to establish agreement regarding specific clinical indicators that should be assessed and used to guide the decision to perform ETT suction by PIC nurses.[10] This is concerning as critically ill paediatric patients require nursing care that is responsive and appropriate to the changing needs of the individual patient, yet justification for the procedure has not been clearly defined within current literature.

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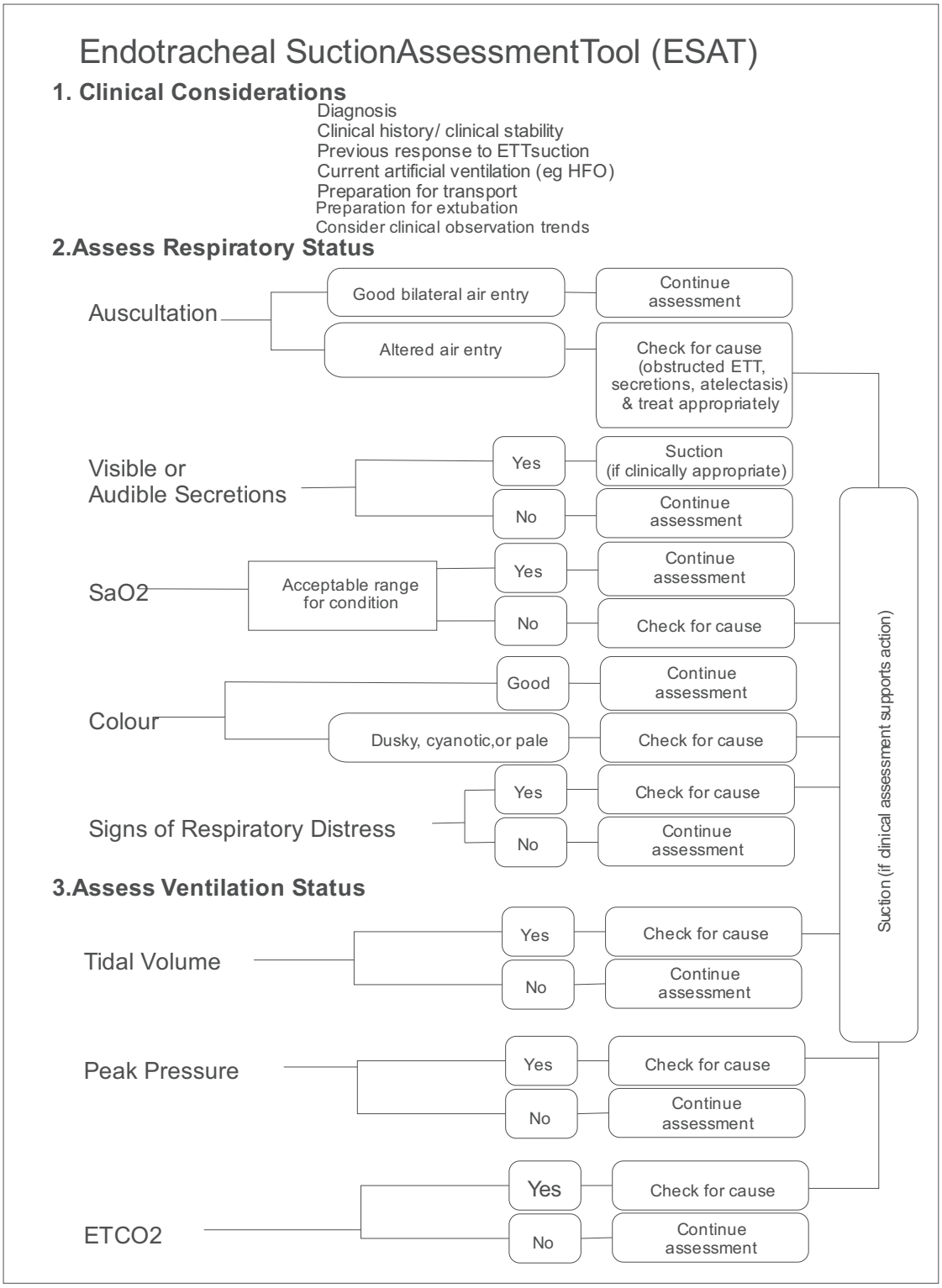

Fig. 1. Endotracheal Suction Assessment Tool.

Use of evidence-based practice tools and guidelines is associated with improved patient care and potentially improved outcomes.[11,12] Previous research by the researchers identified clinical indicators deemed most appropriate for use by nurses in the assessment of the PIC patient's need for ETT suction.[13] Subsequent work led to the development of the Endotracheal Suction Assessment Tool (ESAT)© (Fig. 1) designed to: (a) provide guidance and support for clinical decision making related to performance of ETT suction; (b) enhance clinical knowledge and practice; and (c) reduce the incidence of adverse patient outcomes associated with the procedure.[10] To ensure the clinically viability and validation of the tool requires ongoing research past the development stage. This paper describes the process used to establish the item content

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