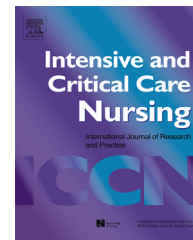




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ORIGINAL ARTICLE

Survey of Italian intensive care unit nurses' knowledge about endotracheal suctioning guidelines



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KEYWORDS

Endotracheal suctioning;
Knowledge;
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Summary

Background: Endotracheal suctioning is a common procedure performed by intensive care nurses in order to establish and maintain gas exchange, adequate oxygenation and alveolar ventilation in critically ill patients under mechanical ventilation. As this procedure is associated with several complications and risks nurses should have an adequate knowledge on how to perform the procedure according to the evidence-based practice. Previously only a few studies have analysed nurses' knowledge of the guidelines on endotracheal suctioning.

Aim: To evaluate the knowledge of the American Association of Respiratory Care (AARC, 2010) evidence-based guidelines on the endotracheal suctioning technique by Italian intensive care nurses in different hospitals.

Materials and methods: An anonymous questionnaire based on previous studies was sent to a selected sample composed of the intensive care unit (ICU) nurses of 16 ICUs in 11 Italian hospitals.

Results: The questionnaire was sent to 379 nurses, with 65% of questionnaires returned completed. The total percentage of correct answers was 58%, and nobody completed the questionnaire without mistakes. Moreover, only 2.5% ($n = 6$) of the nurses gave 9/10 correct answers. Correct answers were more common amongst the more experienced ICU nurses.

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Conclusion: Italian ICU nurses' knowledge of guidelines on endotracheal suctioning was not complete; however, experienced nurses demonstrated a better knowledge of the subject.
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Implications for Clinical Practice

- Endotracheal suctioning is associated with risks and complications and it is considered one of the most painful experiences among ICU patients.
- The lack of updated knowledge about endotracheal suctioning among ICU nurses could be dangerous for mechanically ventilated ICU patients.
- A better training and education about the updated guidelines among nurses is warranted.

Introduction

Endotracheal suctioning is one of the most common procedures performed by intensive critical care nurses in order to establish and maintain gas exchange, adequate oxygenation and alveolar ventilation in critically ill mechanically ventilated patients (AARC, 2010; Pedersen et al., 2009). Physiologically, there are several mechanisms that allow removal of dangerous microorganisms from the respiratory system; the ciliate cells, the local immune system and the cough reflex. Nevertheless, in patients on mechanical ventilation the endotracheal tube inhibits these physiological processes, making suctioning unavoidable in order to remove endotracheal secretions and to prevent atelectasis and alveolar collapse. This procedure is associated with complications and risks: bleeding, lesions of the tracheal mucosa, infections, atelectasis, hypoxaemia, cardiovascular instability and elevated intracranial pressure (AARC, 2010; Pedersen et al., 2009). Moreover it is considered one of the most painful experiences among ICU patients (Patak et al., 2004). Several studies (Day et al., 2002a,b; Pedersen et al., 2009) and guidelines provide data on when and how to perform the procedure.

In 2010 the American Association of Respiratory Care (AARC) published the AARC Clinical Practice Guidelines on endotracheal suctioning of mechanically ventilated patients with artificial airway, based on 10 recommendations. Nevertheless, only a few studies analysed if the guidelines for endotracheal suctioning are known and correctly followed by ICU nurses. Day and collaborators in the UK conducted the most important research on the topic (Day et al., 2001, 2002a,b, 2009). They showed that nurses are often not aware of the existence of guidelines and studies on this issue; moreover they found that there is a considerable discrepancy between guidelines and nurses' practice. Endotracheal suctioning guidelines are widely available in Italy through websites and scientific literature, though not in the Italian language. No study evaluated the knowledge of Italian ICU nurses about endotracheal suctioning guidelines.

Aim

To evaluate the knowledge of the evidence-based American Association of Respiratory Care (AARC, 2010) guidelines

on the endotracheal suctioning technique by Intensive care nurses in different Italian hospitals.

Materials and methods

Design

Cross-sectional survey (Lo Biondo-Wood and Haber, 2001).

Research questions

What is the knowledge of Italian ICU nurses about best practices regarding endotracheal suctioning? Does knowledge vary among experienced vs. inexperienced ICU nurses?

Setting

Eleven hospitals situated in five Regions in the North-centre of Italy (Liguria, Lombardy, Piedmont, Umbria and Tuscany) were recruited to participate by convenience sampling. At the time of the survey there were 413,616 nurses in Italy, while the number of Italian ICUs was approximately 333; there is no official national register. The number of ICUs in the regions investigated was 85.

Instrument development

A panel of experts in the field of critical care nursing techniques developed a multiple-choice questionnaire, lacking a validated model from the literature, with only one correct answer. The questionnaire was subjected to a brief test phase, conducted with a small subset of respondents. In every question the "I do not know" choice was offered. The questionnaire was anonymous and it requested some supplementary information about the respondents, to investigate how long they had been working as nurses and how long they had worked in an ICU. The questionnaire included 10 questions, each describing a clinical case to facilitate the interpretation of the questions and the context of the procedures. The questions were based on the 10 recommendations of the American Association of Respiratory Care guidelines (AARC, 2010) and the review by Pedersen et al. (2009).

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