

# Research on assessment of simulation teaching and its application on endotracheal suction in China

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ABSTRACT

By removing secretions, endotracheal suctioning is a crucial procedure to maintain airway patency. Today, suctioning operators can also be family members who are providing care. The most efficient way for operators to learn the tracheal suctioning technique has been found to be through the use of a simulation system. While the trachea's size varies depending on the age group. Attention has been drawn to simulation education as a useful method of instructing proper tracheal suctioning techniques that involve verified principles and logic. In order to thoroughly understand the pertinent information about anesthesia nursing education, look up and learn the research results related to this topic, and further determine the research topic, the paper systematically summarized and sorted the research status both domestically and internationally in China.

**Key words:** endotracheal suction, airway, suctioning technique

## INTRODUCTION

Air travels through the respiratory tract from the nose to the lungs. The process of exchanging air between the alveoli and the environment outside is known as ventilation. From a region of high pressure to one of low pressure, air flows in bulk. Tachypnoea or bradypnoea are examples of abnormal respiration that can occur when a person's respiratory system is abnormal. An improper gas exchange between the lungs, blood, and tissues can result in respiratory failure. For additional life-saving care, a patient with acute respiratory failure should typically be admitted to an emergency critical care unit. For critically ill patients, mechanical ventilation is a life-saving treatment. Endotracheal tubes (ETTs) are inserted into the trachea to help with breathing and remove tracheal secretions. Critically ill patients on mechanical ventilators are in urgent need of endotracheal suctioning therapy for proper oxygenation. It is the duty of the nurse to give patients who are being mechanically ventilated comprehensive care and to address any technical difficulties with the suctioning procedure. It calls for a nurse to have the utmost amount of solid knowledge based on evidence. One of the essential nursing care procedures used to remove accumulated tracheal secretions from the patient's respiratory tract and preserve its patency is endotracheal suctioning. For the procedure to be successful and to avoid risks and complications, medical professionals must have competent skills. It has shown promise in lowering procedure-related complications to educate the nurses on evidence-based recommendations.

## LITERATURE REVIEW

The medical students in china use a Team Based Learning (TBL) method through simulation to better understand the suction process. The benefit of this approach from the perspective of the student is that it promotes high-level thinking skills like synthesis, evaluation, and creation, cultivates literacy, and fosters teamwork abilities. On the other hand, it also helps the teacher by providing a clear understanding of how to take into account the needs of both quality education and education geared toward exams. It is simpler to move from the teacher's gravity center to the students' gravity center. Activities in the classroom that combine a variety of contemporary educational concepts can be beneficial for students at all levels. As mentioned in Figure 1.

## Simulation teaching model

The Delphi method is a procedure that's primarily employed in research and economics with the goal of gaining consensus on

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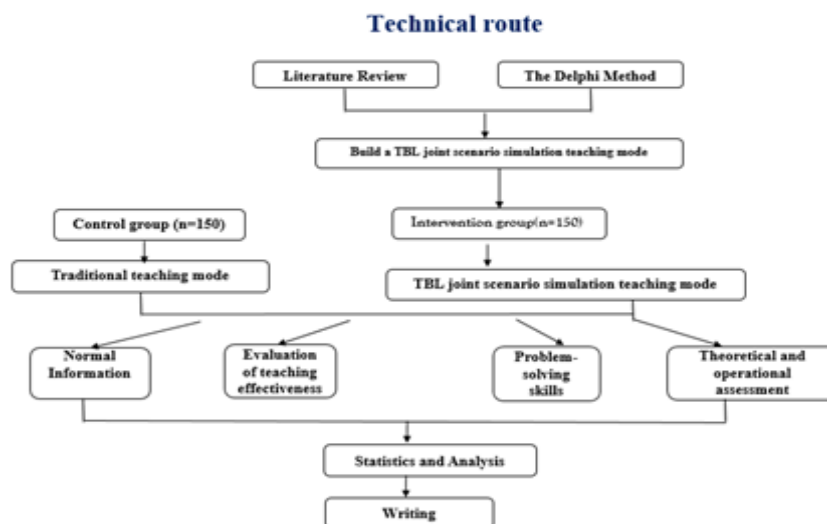


Fig.1. Flowchart of teaching mode

a particular research question or topic by gathering opinions. Establishing a research group is the first step. The panel will be made up of experts in nursing education, management, and clinical nursing [1]. The main duties include assembling the Delphi Law Expert Consultation Form, deciding on the standards for expert consultation, choosing the experts who will participate, and compiling and evaluating the expert consultation's outcomes [2]. The second phase entails creating an inquiry form by reviewing the literature and pertinent national curriculum policies, creating an inquiry form with a pre-test, revising and improving it, and creating an inquiry form for the preliminary airway attraction curriculum setting. Experts can modify, supplement, and delete indicators at all levels using the consultation form's modification suggestion and supplementation item columns [3]. The selection of the expert is the third stage. Consider the familiarity, authority, and professional representation of the experts with the research topic in accordance with the implementation requirements of Delphi. Chinese medical experts were first chosen for this study's initial participants, and the Inclusion Criteria clinical work and education in medicine; senior deputy or higher; at least a bachelor's degree; ten or more years of professional experience; Ensure ongoing participation throughout the study's duration; Be willing to support the growth of this research work by filling out the expert consultation questionnaire. The final airway suction curriculum is included in the implementation phase after taking all options into account [4].

350 medical and nursing interns from different universities are research subjects. All medical students must learn airway attraction because they are all hospital interns. Before beginning the internship, students have finished all required coursework, successfully passed the test, and demonstrated their understanding of and willingness to participate in the research process by signing the informed consent form [5].

establishing a teaching group using TBL and a dynamic case scenario simulation. The team leader of the nursing department, who is in charge of directing the entire intervention implementation process, is among the members of the team with the primary responsibility for these tasks [6]. Head nurse of the intervention group to assist in the development of intervention research and

supervise the implementation. Investigator who oversees the entire intervention implementation process, improves the details, and ultimately recovers the data in the study [7]. Teachers must have at least five years of clinical teaching and work experience, as well as strong language expression abilities. The main training material focuses on the TBL and dynamic case scenario simulation concepts, as well as related theoretical information, operational procedures, etc.

In order to complete the collection of pertinent teaching case data, the researcher worked with the hospital scenario simulation teaching nursing research group. The research group members pooled their individual clinical expertise to choose typical clinical case materials related to the topic through the hospital medical system. It complies with the requirements of taking cases from the side in real clinical practice, as well as the principles of scenario authenticity and case adaptability [8]. It also ensures that cases are relevant to the teaching content and learning objectives. Students were given 15 to 20 minutes to finish it independently at the start of class to see what impact that had. The topics are straightforwardly organized and primarily focus on the relationship between new and existing knowledge in order to introduce the new knowledge that will be learned in the course on the basis of the students' prior knowledge [9]. For the purpose of simulation review, the teacher gathers fictitious classmates, patients, family members, doctors, etc. in the classroom. Each character taking part in the simulation assesses the performance of the simulated students. To discuss what it's like to be involved, pretend to be classmates. In-class observers' explanations are supplemented by other students [10].

One data collector is suggested in order to guarantee consistency in data collection. Before the study begins, a project mobilization meeting is held, where the project leader will train the team members who will be collecting the data and go over in detail how to complete each section of the data collection form. The case is briefly presented by the teacher for 15 minutes. The teaching teacher leads the students involved in the current case to the simulation ward where they have 20 minutes to get ready. For the students who are still in the classroom, the teacher then provides additional case-related exam results so that they can better understand the case.

The TBL teaching model has also been adopted by some domestic universities and used in introductory courses and clinical teaching settings. Simulators are used in case scenario simulation training routines for clinical nursing skills so that medical students can more thoroughly respond to potential dynamic changes and experience the tension and sense of substitution in actual clinical settings.

## CONCLUSION

In China, simulation teaching has advanced significantly over the past ten years, and more and more simulation courses are being created and used by medical students. However, the majority of instruction focuses on skill simulation, and scenario simulation instruction has only recently begun to develop. This area of study needs to be further explored.

Each group of participants takes on the role of the case, working together to complete the tasks set forth by the teaching teacher. The simulation ward typically has a standardized patient (abbreviated SP), while individual scenes include family members and medical professionals. The instruments and items in the simulation ward are set up in accordance with the actual clinical configuration, which can be used to operate on SP patients in real life.

It takes a total of 60 minutes for students in the classroom to watch the simulated ward via broadcast equipment, during which time group members can discuss and note the benefits and drawbacks of the students' operation. According to studies, the main ideas and problems will be explained briefly, and the pertinent information will be appropriately expanded and supplemented in order to strengthen the knowledge acquired.

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