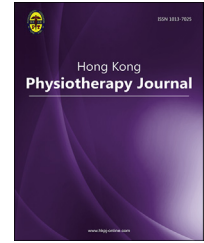




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RESEARCH PAPER

# Australian critical care nursing professionals' attitudes towards the use of traditional "chest physiotherapy" techniques



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## KEYWORDS

critical care;  
nursing staff;  
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modalities;  
questionnaire

**Abstract** *Background:* Chest physiotherapy techniques, such as percussion, postural drainage, and expiratory vibrations, may be employed in a critical care setting. Physiotherapists are primarily responsible for their provision; however, nurses have also traditionally implemented these treatments. It is unclear whether nurses consider chest physiotherapy to be a part of their role, or how they perceive their knowledge and confidence pertaining to these techniques.

*Objective:* To investigate the attitudes of nurses towards traditional chest physiotherapy techniques.

*Method:* A total of 1222 members of the Australian College of Critical Care Nurses were invited to participate in an anonymous online survey.

*Results:* There were 142 respondents (12%) with the majority ( $n = 132$ , 93%) having performed chest physiotherapy techniques in clinical practice. Most of them considered that the provision of chest physiotherapy was a part of nurse's role. Commonly cited factors influencing nurses' use of chest physiotherapy techniques were the availability of physiotherapy services, adequacy of nursing staff training and skill, and perceptions of professional roles.

*Conclusions:* Nurses working in critical care commonly utilised traditional chest physiotherapy techniques. Further research is required to investigate the reasons why nursing professionals

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might assume responsibility for the provision of chest physiotherapy techniques, and if their application of these techniques is consistent with evidence-based recommendations.

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## Introduction

Physiotherapy is an integral part of the management of people with respiratory dysfunction [1,2]. In order to address issues such as impaired alveolar ventilation and retention of pulmonary secretions, physiotherapists commonly prescribe and implement a variety of treatment techniques. Physiotherapy techniques used to treat respiratory dysfunction have traditionally included percussion, vibrations, postural drainage, deep breathing exercises, incentive spirometry, and positive expiratory pressure therapy [3,4]. Collectively, these have been referred to as 'chest physiotherapy' techniques.

Chest physiotherapy techniques are employed in numerous clinical settings including critical care. Critically ill intubated and mechanically ventilated patients are at a high risk of developing respiratory complications, such as pneumonia, pulmonary secretion retention, and atelectasis, due to periods of prolonged immobilisation, the presence of an artificial airway, and positive pressure mechanical ventilation [5–7]. All these factors contribute to impaired mucociliary clearance and reduced lung volume. In order to enhance secretion clearance, optimise oxygenation, improve lung compliance, and prevent further respiratory complications, physiotherapy techniques are frequently applied to this patient population [2,5,8].

Historically, chest physiotherapy techniques have been performed routinely as a prophylactic measure in the management of critically ill patients, regardless of their underlying pathophysiologic condition [9–11]. However, this has been shown to be of limited value and is, therefore, no longer recommended [2]. In recent years, there have been advancements in the evidence base regarding the use of chest physiotherapy techniques, resulting in subsequent changes in their application [4]. Physiotherapists also incorporate many other techniques, such as ventilator hyperinflation and early mobilisation, into their management of people in the critical care setting [6,12,13]. Physiotherapy professionals have adopted a more problem-based framework in which an intervention addresses the patient's problems arising from the underlying pathophysiology. Consequently, traditional chest physiotherapy techniques are now used less frequently, selectively, and only when specifically indicated. This has facilitated more individualised and targeted treatment selection, potentially contributing to optimised patient outcomes and more effective resource utilisation in critical care [5].

Although physiotherapists have been primarily responsible for the provision of chest physiotherapy techniques, other health professionals, particularly nursing staff, have

also traditionally implemented these treatment modalities. As such, nurses may view chest physiotherapy delivery as a part of their role in routine respiratory care [14]. This may be, in part, due to the prior education and training nursing professionals have received in their original entry-level qualification. Alternatively, this could be due to limitations in physiotherapy service availability in the critical care setting [15]. It is possible that nursing staff have assumed the responsibility of providing ongoing physiotherapy treatment outside of usual weekday working hours.

If chest physiotherapy techniques are to be used in the critical care setting, it is vital that all healthcare professionals involved in their provision have a sound understanding of, and implement them, in accordance with current evidence-based practice to ensure optimal patient outcomes and safety. It is unclear whether nursing professionals continue to use traditional chest physiotherapy techniques as a part of their role in critical care, what their opinions are, and, additionally, how highly they regard their knowledge and confidence pertaining to these techniques. Therefore, the aim of this study was to investigate the use of, and attitudes towards, traditional chest physiotherapy techniques by nursing professionals in critical care.

## Methods

### Design and setting

A cross-sectional national survey of critical care nurses working in Australia was conducted between March and July 2015. Approval for the study was granted by The University of Newcastle, Human Research Ethics Committee (Callaghan, Australia).

### Survey instrument

In the absence of a published and/or validated instrument for the investigation of attitudes of nursing professionals regarding traditional chest physiotherapy techniques, a survey was custom designed. The survey content was developed by the research team and informed by the project aims and available literature.

Prior to dissemination, two expert critical care nurses independent of the research team and main sample reviewed the survey content and utility. Feedback regarding readability and structure was provided and minor modifications were made accordingly. The final survey instrument (Appendix 1) consisted of 28 questions divided into five sections. Sections covered participant characteristics and workplace information, previous training and

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