

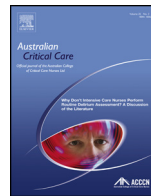


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Research paper

Clinicians' perceptions of rationales for rehabilitative exercise in a critical care setting: A cross-sectional study

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ABSTRACT

Background: Rehabilitative exercise for critically ill patients may have many benefits; however, it is unknown what intensive care unit (ICU) clinicians perceive to be important rationale for the implementation of rehabilitative exercise in critical care settings.

Objective: To identify which rationales for rehabilitative exercise interventions were perceived by ICU clinicians to be important and determine whether perceptions were consistent across nursing, medical and physiotherapy clinicians.

Methods: A cross-sectional study was undertaken among clinicians (nursing, medical, physiotherapy) working in a mixed medical surgical ICU in an Australian metropolitan tertiary hospital. Participants completed a customised web-based questionnaire developed by a clinician working-group. The questionnaire consisted of 11 plausible rationales for commencing rehabilitative exercise in ICUs based on prior literature and their own clinical experiences grouped into 4 over-arching categories (musculoskeletal, respiratory, psychological and facilitation of discharge). Participants rated their perceived importance for each potential rationale on a 5-point Likert scale.

Results: Participants ($n = 76$) with a median (interquartile range) 4.8 (1.5, 15.5) years of experience working in ICUs completed the questionnaire. Responses were consistent across professional disciplines. Clinicians rated rehabilitative exercise as either 'very much' or 'somewhat' important for facilitating discharge ($n = 76$, 100%), reducing muscle atrophy ($n = 76$, 100%), increasing muscle strength ($n = 76$, 100%), prevention of contractures ($n = 73$, 96%), reducing the incidence of ICU acquired weakness ($n = 62$, 82%), increasing oxygenation ($n = 71$, 93%), facilitating weaning ($n = 72$, 97%), reducing anxiety ($n = 60$, 80%), reducing depression ($n = 64$, 84%), reducing delirium ($n = 53$, 70%), and increasing mental alertness ($n = 65$, 87%).

Conclusions: Any shortcoming in implementation of rehabilitation exercise is unlikely attributable to a lack of perceived importance by nursing, medical or physiotherapy clinicians who are the most likely clinicians to influence rehabilitation practices in ICUs. It is noteworthy that this study examined self-reported perceptions, not physiological or scientific legitimacy of rationales, or clinician behaviours in practice.

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1. Introduction

Survivors of critical illness experience prolonged deficits in physical and psychological function that negatively impact on health-related quality of life that can persist for over 5 years.^{1–3} Clinicians working within intensive care units (ICUs) are responsible for implementing interventions that are targeted to assist critically ill patients to not only survive but to also optimise function and health-related quality of life post hospital discharge. Rehabilitative exercise introduced early in the ICU stay is one strategy that has been shown to improve patients' physical and psychological outcomes and reduce hospital length of stay.^{4,5} Rehabilitative exercises include but are not limited to range of motion exercises, resistance exercises, cycle ergometry, sitting balance, transferring from bed to chair, standing balance, marching on the spot and mobilising away from the bedside.^{5–8} Studies that have reported clinician perceptions on rehabilitative exercise have focused on barriers and strategies to the implementation of exercise interventions.^{9–12} Currently there is no literature that describes what ICU clinicians believe to be the rationales underpinning implementation of rehabilitative exercise with critically ill patients.

Clinicians working in a mixed ICU in an Australian tertiary hospital in a metropolitan setting were invited to complete a customised questionnaire with the purpose of identifying which rationales for rehabilitative exercise interventions were perceived to be important. In addition, this study aimed to determine if clinicians from different professional backgrounds share the same views regarding the relative importance of rationales for rehabilitative exercise. By identifying what ICU clinicians perceive to be important rationales for rehabilitative exercise, targeted quality improvement strategies that optimise the use of exercise interventions may be developed.

2. Methods

2.1. Design

A questionnaire was administered to a cross-section of clinicians using a web-based survey platform.

2.2. Questionnaire development

The questionnaire was developed by a clinician working group which included clinical physiotherapists, an intensive care consultant and a health services researcher experienced in the design of web-based questionnaires for clinical analysis. The purpose of the questionnaire was to ascertain current intensive care clinicians' perspectives with regard to the rationale of incorporating rehabilitative exercise with critically ill patients. The clinician working group compiled a list of plausible rationales for commencing rehabilitative exercise with critically ill patients from the literature and their prior experiences working with clinicians in critical care settings.^{5,13,14} For each of these rationale a 5-point Likert rating scale was provided for participants to rate their perceived importance of each rationale, with 1 and 5 representing the least and greatest importance ratings on this scale respectively. The 11 rationales to be rated in this study were grouped into 4 categories: musculoskeletal, respiratory, psychological and facilitation of discharge (see Figs. 1–4 for specific rationales). Participants were invited to nominate any additional rationales, but none were identified. Demographic data regarding the participants were also collected and included: clinical discipline, years of experience working in current ICU, and years of experience working at other ICUs.

Facilitate Discharge From ICU

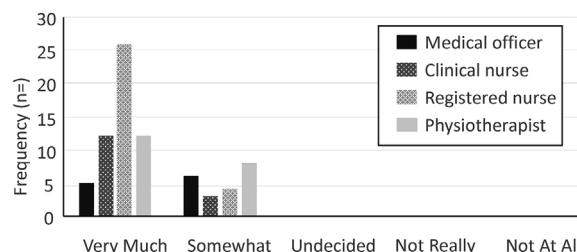


Fig. 1. Perceptions of importance of facilitate discharge rationale.

2.3. Setting, participants and procedure

The target sample were clinicians currently working in a 30 bed mixed medical surgical ICU in a tertiary hospital in Brisbane, Australia. The participants were from either a medical, nursing or physiotherapy discipline. For analysis the nursing cohort was divided into two groups: registered nurses and clinical nurses. Clinical nurses are senior nurses staff who have: completed a post graduate qualification in critical care nursing, a minimum of four years' experience, completed advanced competencies such as: advance haemodynamic monitoring and fulfil clinical leadership roles including: unit co-ordination, quality improvement activities and supervision of junior staff. Potential participants were invited to participate via the hospital email system. The invitation email provided a brief description of the study and a hyperlink to the web-based platform. Three email reminders were sent out over a 3-month period to encourage staff to complete the questionnaire. The questionnaire was promoted in the departmental electronic newsletter, and with promotional posters placed in the staff dining room.

Ethical approval for the study was obtained for the Metro South Human Research Ethics Committee (HREC/12/QPAH/009) and from the Queensland University of Technology University Human Research Ethics Committee (1400000587). Participants provided informed consent on the web-based survey platform prior to their participation.

2.4. Analysis

Descriptive statistics were used to summarise the sample characteristics and perceived importance ratings. Distribution of responses was examined using frequency histograms. Mean and standard deviation (SD) were calculated for normally distributed data and median and interquartile range (IQR) presented for non-normally distributed data.

3. Results

A total of $n = 76$ participants completed the questionnaire (82% completion rate among those confirmed to have received the invitation to participate). The nursing discipline had the greatest representation in the questionnaire ($n = 45$, 59% of participants). Overall, the sample had a range of experience levels working in ICU settings (from <1 year to 36 years). More than half ($n = 41$, 54%) of the participants had gained experience working in different intensive care settings to where this study was conducted either within Australia or internationally (Table 1).

All questionnaire participants considered rehabilitative exercise as either 'very much' or 'somewhat' important for facilitating discharge (Fig. 1). There was a strong perception of support for the musculoskeletal rationales for rehabilitative exercise by clinicians from all professions (Fig. 2). All clinicians considered rehabilitative

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