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Early Mobilization Practices in Intensive Care Units in Saudi Arabia: Implementation, Challenges, and Perspectives of Healthcare Providers: A Scoping Review protocol

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ADMINISTRATIVE INFORMATION

Support - N/A.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 November 2024 and was last updated on 22 March 2025.

INTRODUCTION

Review question / Objective 1- What is the scope of evidence-based literature concerning EM in ICUs within Saudi Arabia?

2- What are the perceptions, attitudes, and knowledge of healthcare providers in the ICU concerning EM for critically ill patients in Saudi Arabia?

3- What are the level of implementation of EM in ICUs in Saudi Arabia, as well as the barriers that hinder the effective application of this approach?

Background Early mobilization (EM) in intensive care units (ICUs) has garnered considerable attention globally due to its potential to mitigate various ICU related complications, such as reducing ICU acquired weakness, shortening the duration of mechanical ventilation, decreasing the incidence of delirium, and minimizing the length of stay in the ICU [1, 4]. EM is defined as the initiation of mobilization within the first 24 to 48 hours

following ICU admission [4, 5]. The components of EM encompass passive range of motion exercises, bed exercises, sitting at the edge of the bed, standing with assistance, cyclic ergometry, and ambulation with assistance [1, 6]. EM is widely recognized by healthcare providers in ICUs as a critical intervention for patients [7]. The Society of Critical Care Medicine (SCCM) has acknowledged the significance of EM by incorporating it into their ICU Liberation Bundle [1]. Furthermore, early mobilization is an integral component of the ABCDEF bundle an evidence-based approach to early mobility which has been adopted in numerous guidelines worldwide, leading to improved patient outcomes [8, 9]. EM is extensively researched and applied worldwide, with numerous innovative approaches being adopted. Even though the important of EM is well recognized among ICU healthcare providers in Saudi Arabia [10, 11] the body of evidence-based literature appears to be limited. This scarcity indicates a deficiency in the implementation of applicable EM protocols, insufficient

implementation of EM practices, a lack of awareness regarding its significance, or inadequate training for healthcare providers [10]. The scarcity of evidence-based literature in EM in Saudi Arabia indicates that ICUs in the country are significantly lagging in the development of an EM culture.

Rationale To address the paucity of literature regarding EM in ICUs in Saudi Arabia, there is a necessity for a systematic investigation to identify the scope and types of local evidence, as well as the existing gaps and areas requiring improvement. This scoping review aims to fulfill this requirement by : (1) evaluating the extent of evidence based literature related to EM in ICUs within Saudi Arabia, thereby identifying gaps and areas that require further investigation; (2) assessing the perceptions, attitudes, and knowledge of ICU healthcare providers regarding EM for critically ill patients; and (3) determining the level of implementation of EM in ICUs in Saudi Arabia, as well as the barriers that hinder the effective application of this approach. This protocol outlines the methodology and systematic approach employed in the scoping review, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guideline for protocols [12].

METHODS

Strategy of data synthesis To ensure compliance with the scoping review standards for publication in a peer-reviewed journal, the selection process will adhere to the PRISMA-ScR article selection guidelines, along with the corresponding flow diagram. Following the identification of relevant studies step, the initial step will be transferring identified studies to Rayyan, a digital platform, to eliminate duplicates and conduct double-blinded screening. Subsequently, two independent reviewers will individually assess the titles and abstracts to select studies that meet the inclusion criteria while excluding those that are unrelated or irrelevant. In cases where the relevance of a study is uncertain, the reviewer will examine the full text to ascertain its pertinence. A subset of studies will be used as a calibration exercise, during which the two reviewers will discuss any disagreements until complete consensus was reached. A third reviewer will be consulted to resolve any discrepancies between reviewers until an agreement is attained. A google form for data extraction has been developed to gather pertinent information from the selected studies. The data extraction form is designed to ensure consistency and inter-rater reliability among reviewers during the data extraction process. Initially, the form will be tested

on a subset of the studies included to evaluate its reliability, and modifications will be made as necessary. Two independent reviewers will extract the pertinent data from the selected studies. In the event of any disagreements, a third reviewer will be consulted to facilitate a discussion aimed at resolving the discrepancies.

Eligibility criteria Articles included in the scoping review must be pertinent to at least one of the review's objectives. This includes examining the perceptions, attitudes, training, and knowledge of ICU healthcare providers, the implementation of EM within ICUs, and the application of EM for critically ill patients of all ages in Saudi Arabia. All forms of publications will be considered for inclusion in the scoping review, including (but not limited to) original studies, reviews, guidelines, grey literature. There are no restrictions regarding the publication date of the research studies. Only articles published in English will be accepted for inclusion. It is imperative that all articles are available in full text; those that are not will be excluded from consideration. Reviews containing data pertaining to ICUs and/or Saudi Arabia that are not presented separately will be excluded from the scoping review.

Source of evidence screening and selection A comprehensive search of six electronic databases, including PubMed, Medline, Web of Science, ScienceDirect, Google Scholar, and EBSCO, will be conducted utilizing keywords relevant to the target populations, intervention, as well as geographic location. Individual keywords or combinations of keywords will be employed, depending on the database, using the Boolean operators AND and OR. The keywords selected for this study are categorized into two distinct groups. The first group pertains to the population, encompassing the types of patients under investigation, such as "ICU", "critical care", "intensive care", and "Mechanical ventilator". The second group relates to the intervention, specifically focusing on EM and other terms associated with physical activity, such as, "mobilization", "mobility", "ambulation", "physical therapy", "physiotherapy", and "rehabilitation". Additionally, Keyword pertaining to desired geographic location, such as "Saudi", will be included in order to specify the scope of the search. Furthermore, the search will not be limited to the predetermined keywords; additional measures will be taken to enhance the research by conducting citation tracking and hand-searching within relevant journals.

Data management Identified studies will be transferred to Rayyan, a digital platform, to eliminate duplicates and conduct double-blinded screening.

Presentation of the results Following the data extraction step, extracted data will be reported descriptively and summarized in a narrative format. The report will commence with a detailed description of the general information pertaining to the evidence included in the review. Subsequently, the findings will be categorized thematically in accordance with the review questions. Additionally, gaps in the literature and areas for further investigation will be identified, and recommendations will be provided.

Language restriction Only articles published in English will be accepted for inclusion.

Country(ies) involved Saudi Arabia.

Other relevant information The scoping review seeks to synthesize the existing literature regarding EM practices in ICUs within Saudi Arabia, with a particular emphasis on identifying current research gaps. This synthesis is anticipated to encourage the conduct of additional evidence-based studies and to enhance awareness of the methodologies employed in the implementation of EM practices in Saudi Arabian ICUs.

Keywords ICU, critical care, intensive care, mechanical ventilator, mobilization, mobility, ambulation, physiotherapy, physical therapy, rehabilitation, Saudi.

Dissemination plans As this review does not involve human participants, it was not necessary to obtain ethical approval from the Institutional Review Board (IRB). The findings of this scoping review are intended for submission to medical journals and for presentation at relevant conferences.

Contributions of each author

Author 1 - Mohammed Alhazmi - Author 1 developed the protocol and conceived the idea with the assistance of Author 2. Author 1 will oversee the scoping review process and will draft the final manuscript with the support of Author 2. author 1 will be the third reviewer.

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Author 2 - Adel Alshabasy - Author 2 conceptualized the scoping review in collaboration with Author 1. Author 2 will serve as the first reviewer during the screening phase and will also assist Author 1 in drafting the manuscript.

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Author 3 - Ibrahim Abushoshah - Author 3 will serve as the second reviewer during the screening phase and will also participate in the editing of the manuscript. author 3 will be a reviewer in the screening phase. also, author 3 will be part of editing the manuscript.

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