
Spring 2024 Virtual OTD Capstone Symposium

OTD Capstone Symposia

Spring 4-10-2024

The Role of OT in Treating ECMO Patients in the ICU: A Scoping Review

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Recommended Citation

Roe, S. C., Blackwell, A., & Hohman, W. (2024, April 10). The Role of OT in Treating ECMO Patients in the ICU: A Scoping Review. Poster presented at the Virtual OTD Capstone Symposium, University of St Augustine for Health Sciences. Retrieved from <https://soar.usa.edu/otdcapstonesspring2024/15>

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The Role of OT in Treating ECMO Patients in the ICU: A Scoping Review

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BACKGROUND

- Extracorporeal membrane oxygenation (ECMO) maintains medical stability of critically ill patients; obstacles to recovery arise due to associated prolonged bedrest and immobility (Wojack et al., 2021)
- Developments in ECMO, safety protocols, and team coordination have increased involvement of occupational therapy (OT) and physical therapy (PT) in ECMO patient care (Orozco-Hernandez et al., 2020; Tonna, 2022)
- Rehabilitation for ECMO patients supports functional independence and mood, while facilitating decreased length of ventilation, hospital stay, hospital spending, and mortality rates (Chatziefstratiou et al., 2023; Haji et al., 2021)
- Research lacks detail on the distinct role that OT has alongside PT on the ECMO care team contributing to a decreased understanding of OT and delayed referrals (Cerier et al., 2023; Mayer et al., 2022)

PROBLEM

The role of OT practitioners in treating ECMO patients is ambiguous due to literature that poorly defines OT; often grouping it with physical therapy when describing this interprofessional critical care team.

RESEARCH QUESTIONS

PRIMARY: What is the role that occupational therapists have in treating adult ECMO patients alongside the interdisciplinary ICU care team?

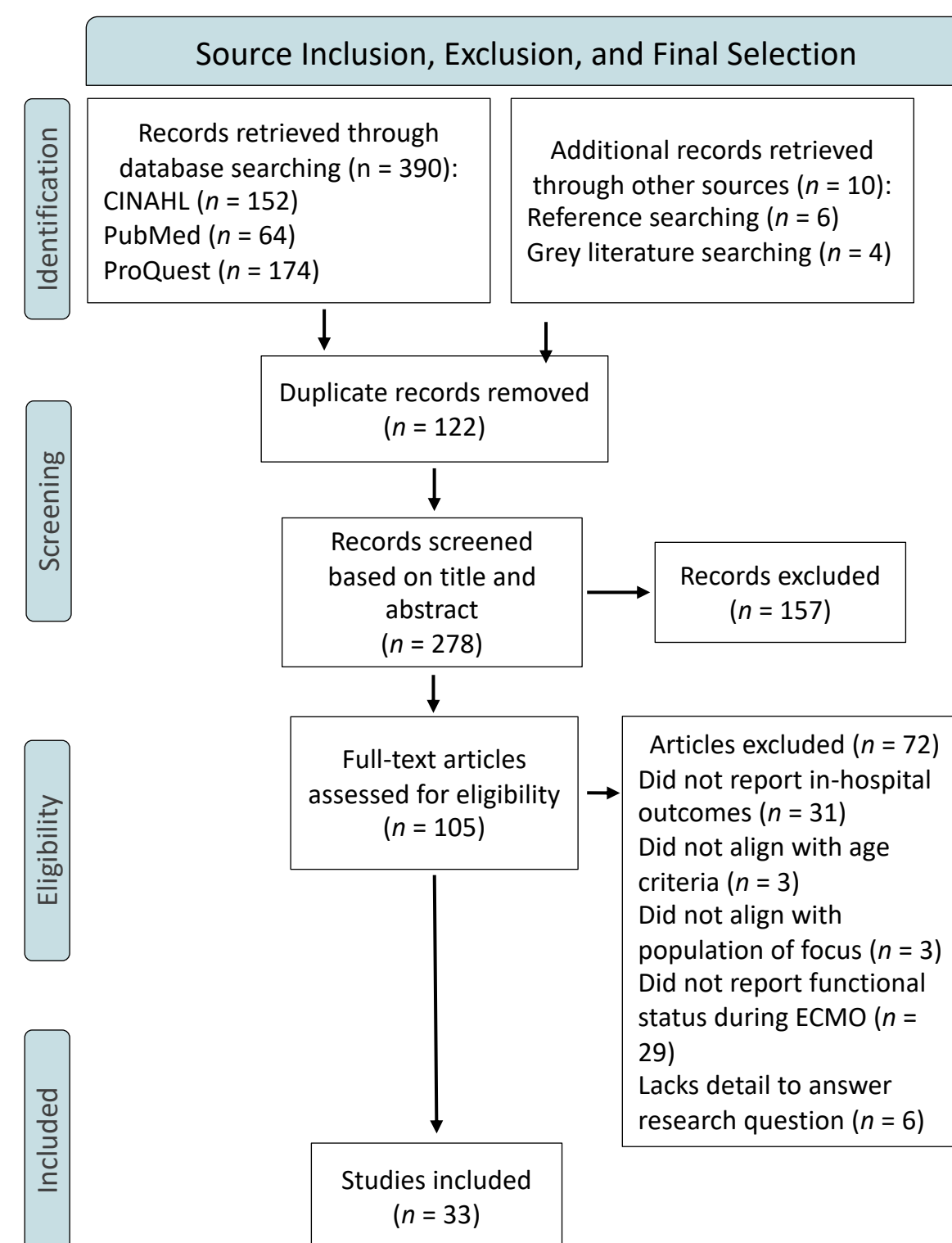
SECONDARY: What percentage of patients who received occupational therapy services while on ECMO were discharged home from the hospital?

METHOD

A scoping review was conducted based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines and recommendations from Joanna Briggs Institute (Peters et al., 2015; Peters et al., 2020; Tricco et al., 2018). This project did not involve human subjects and did not require IRB approval.

DATABASES SEARCHED: CINAHL, PubMed, and ProQuest. Grey literature was obtained to generate a holistic portrayal of ECMO patient experiences in the intensive care unit (ICU).

INCLUSION CRITERIA: Literature on the ICU course of adult ECMO patients (≥ 18 years), written in English, published between 2014 - 2024, and referencing OT practitioners' role on the ECMO patient care team or therapeutic interventions for ECMO patients that fall within the scope of OT as defined in the Occupational Therapy Practice Framework Fourth Edition (OTPF-4) was considered (AOTA, 2020).



RESULTS

ROLE OF OT: 8 of 33 sources (24%) identified OT as part of the ECMO patient care team; describing applicable OT interventions alongside PT (Cerier et al., 2023; George et al., 2022; Jividen, 2023; Labreche et al., 2021; Mayer et al., 2022; Patrick & Adams, 2021; Schumacher et al., 2019; Sheasby et al., 2022).

Role on Interprofessional Team:

- Coordinate therapy sessions with interprofessional ECMO care team
- Educate nursing staff for carryover
- Evaluate ECMO patients' independence in ADLs/functional performance, individualize treatment plans, and grade interventions
- Work alongside PT to facilitate early mobilization of ECMO patients

Domains of Focus in ECMO Patient Care:

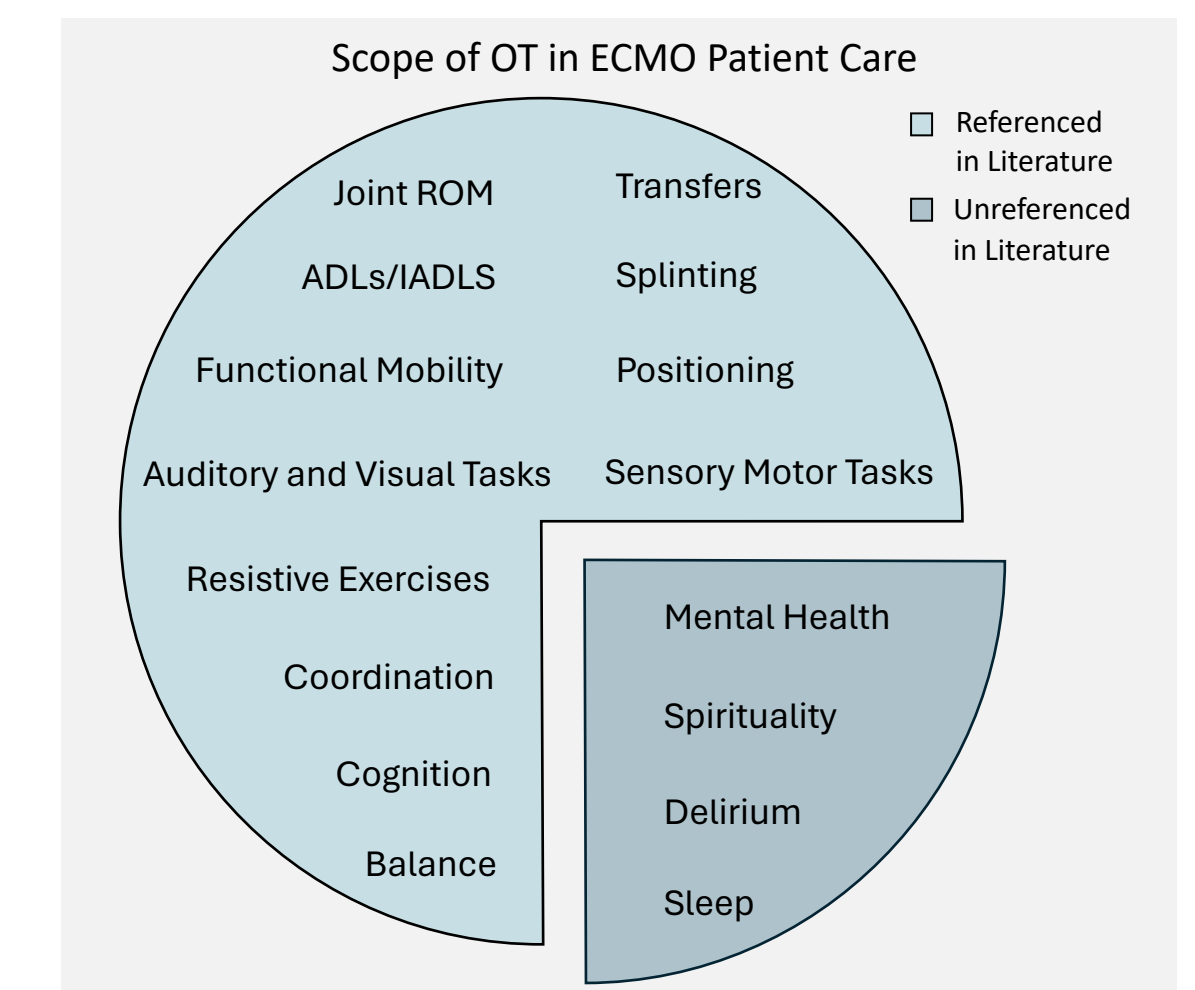
- Occupation-based interventions through supporting independence in ADLs and IADLs including toileting, grooming, functional communication, and leisure participation
- Exercise-based interventions including use of tilt tables, passive range of motion (ROM) resistance training, deep breathing, head/neck strengthening, postural control, weight shifting, dynamic balance, core stability, cycling, and marching
- Functional mobility interventions including in-bed mobility and transfers
- Interventions to support occupations including splinting and positioning
- Cognitive and auditory/visual interventions
- Activity-based interventions of sensory motor tasks and gross/fine motor coordination

DISCHARGE LOCATION: 2 of 8 sources that referenced involvement of OT reported discharge disposition (Labreche et al., 2021; Mayer et al., 2022).

- Case report: 1 patient discharged to a transplant home with family assistance
- Retrospective study: 26% of patients who received OT/PT discharged home versus 21% of control group without PT/OT

DISCUSSION

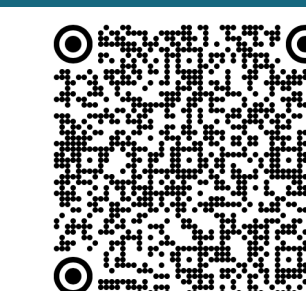
Though 8 articles mentioned OT, domains applicable to the scope of OT were present in all 33. ECMO patient deficits in sleep, delirium, mental health, and spirituality were widely reported (Krupa et al., 2021; Patrick & Adams, 2021; Wu & Huang, 2019; Yeow et al., 2024). The role of OT in ECMO patient care is under-reported in current literature, especially regarding sleep, delirium, mental health, and spirituality. Future research should investigate the full scope of OT practitioners' role fulfillment in ECMO patient care to advocate for OT in this setting.



IMPLICATIONS FOR OT PRACTICE

- OT practitioners have a role in ECMO patient care with the interprofessional team
- When treating ECMO patients in the ICU, OT practitioners may address independence with ADLs, IADLs, cognition, joint ROM, resistive exercises, sensory motor tasks, splinting, positioning, auditory and visual tasks, balance, coordination, transfers, and functional mobility through meaningful interventions

REFERENCES



SPECIAL THANKS

