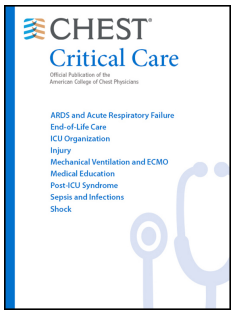

Importance of Reconnection with ICU Survivors to ICU Recovery Program Clinicians

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Key Words:

Burnout; clinician well-being; critical illness survivorship; ICU recovery; outcome measures; post-ICU clinic

Abbreviations list:

CAIRO	Critical and Acute Illness Recovery Organizations
COREQ	Consolidated Criteria for Reporting Qualitative Research
ICU	Intensive care unit

Title: Importance of Reconnection with ICU Survivors to ICU Recovery Program Clinicians

Presently, intensive care unit (ICU) recovery care has appropriately focused on ICU survivor and caregiver outcomes. The provision of ICU recovery services through specialized post-ICU programs are one approach clinicians and researchers have focused their efforts on to improve outcomes[1]. Yet, the impact of these ICU recovery programs on other parts of healthcare delivery, specifically workforce well-being, are unknown. Addressing clinician well-being and burnout is a major priority of leading critical care societies, healthcare systems, and governments since 2014[2-4]. Despite the negative impact of burnout on healthcare systems internationally, especially within critical care, there is limited evidence of feasible and sustainable interventions.

Previous research has highlighted that reconnecting with the ICU team is valued by ICU survivors during recovery[5]. A reasonable next step is to examine this relationship from the perspective of the clinician. Therefore, using multi-site international qualitative data, we sought to explore how ICU recovery programs may influence clinician well-being.

Methods

The Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist was used to report this study[6].

Study design

We conducted a qualitative study using semi-structured interviews with international ICU recovery program clinicians involved with the Critical and Acute Illness Recovery Organization (CAIRO). CAIRO is a global learning collaborative of multidisciplinary clinicians (physicians, nurses, social workers, psychologists, pharmacists, rehabilitation therapists)[7]. CAIRO aims to promote, support, and advance innovations in critical and acute illness recovery through outreach, education and research[7]. The [redacted]

Institutional Review Board (#STUDY19090073) approved this study. Informed consent was obtained from participants.

Data collection

This analysis was nested within a study which sought to understand how the COVID-19 pandemic changed ICU recovery programs[8]. We included clinicians with experience in both ICU and ICU recovery program settings. We employed a stratified sampling strategy to consider diversity in age, sex, practice setting, and years of experience. All clinicians contacted completed the study.

All interviews were conducted by phone or videoconference by a researcher with qualitative methodology and interviewer experience, who was known to some participants (redacted). Interview durations were 15-35 minutes and occurred between February and March 2021. All interviews were audio-recorded, transcribed verbatim, and de-identified. Interview guide content was created using previous literature in the field and iterative discussion across the research team[8]. The aim of the guide, which was reported in detail previously[9], was to explore how the COVID-19 pandemic had influenced the delivery of care in the ICU recovery setting. This analysis delineates responses which were related to clinician wellbeing and the wider impact of care delivery.

Data Analysis

We analyzed data to explore how ICU recovery programs may influence clinician well-being. Analysis, based upon the constant comparative method, was conducted by 3 experienced qualitative researchers (redacted)[10]. No analytical software was used. An initial coding frame was developed using open coding for a subset of interviews and then applied to subsequent interview transcripts. To guard against idiosyncratic coding, intermittent double-coding was performed on 20% of the transcripts. All discrepancies in coding were reviewed and resolved by consensus. Following iterative discussions with the research team, data saturation was deemed to be achieved for the aims of the overarching study.

Results

Twenty-nine ICU recovery program clinician interviews, representing 15 international sites (Canada, United States, United Kingdom) (**Table 1**), yielded narratives of clinicians describing the wider impact of ICU recovery programs. Two themes were generated: reconnection between clinicians and ICU survivors, and the impact of this reconnection on clinicians. **Table 2** details supporting quotes.

Theme 1*:* Reconnection with ICU survivors

Participants reported that authentic reconnection, interaction, and communication with ICU survivors allowed them to acknowledge and value the survivor's individual response to critical illness. Through a bidirectional compassionate relationship, clinicians shared that the act of feeling appreciated by the survivor during the clinic visit provided both the "*stamina to keep going*" and a positive feedback loop, not accessible by any other mechanism. Participants described the positive impact of this reconnection on individual well-being (**Table 2**).

Theme 2*:* Impact of reconnection on clinicians

Participants described feeling valued by ICU survivors and their families when interacting with them, contributing to role fulfilment and job satisfaction (**Table 2**). Participants also discussed the dissemination of ICU survivor recovery stories with the broader ICU clinical team through several methods including secure staff newsletters and monthly emails, patient consented photos and videos, written stories, and thank you letters from ICU survivors and families. Participants perceived a direct effect of these stories on balancing negativity bias with exposure to positive outcomes. This occurred through translating the benefits of ICU care during the pandemic into care successes seen in the ICU recovery program.

Discussion

In this study, conducted when COVID-19 made clinician well-being a more discernible problem, we describe the potential wider benefits of ICU recovery programs on clinician well-being via reconnection with ICU survivors following discharge. Improvements in ICU survivor and clinician well-being may be reinforcing of one another. In particular, ICU survivors endorse the importance of interpersonal interactions when reconnecting with the ICU team as they navigate recovery[5]. Our findings indicate that there may also be a link between ICU clinician well-being and reconnecting and/or feeling valued and appreciated by those we care for in the ICU.

While ICU recovery programs are not available in all healthcare systems, participants also described other potential low-cost mechanisms to accomplish reconnection including small scale changes such as written updates and visits to the ICU by survivors during recovery. Future work is required to understand how these strategies could be systematically operationalized and captured in a psychologically safe manner. A structured reconnection with the ICU survivor recovery journey appears, across multiple centers, to have the potential to improve ICU clinician well-being. These novel data provide a working hypothesis for clinician well-being research: does the reconnection with ICU survivors and their families support ICU clinician well-being?

The study is limited as it was not designed to interrogate this research question; thus, other theories may have been missed. As there is heterogeneity in geography and institutional culture among participants, not every provider of ICU recovery care may experience the benefits described. Finally, although rigorous qualitative methods were employed, other interpretations are possible.

Conclusion

This analysis offers the hypothesis that ICU recovery programs as a mechanism to reconnect ICU clinicians with ICU survivors may provide wider benefits and positive well-being outcomes. The scalability of low-cost and potentially high-value ICU survivor-clinician feedback loops warrants future consideration.

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Table 1. Characteristics of CAIRO Clinicians Interviewed

Total participants	N=29
Age, median (IQR)	42 (39, 52)
Sex, no. (%)	
Female	21 (72.4%)
Male	8 (27.6%)
Professional role, no. (%)	
Physician	10 (34.5%)
Nurse	5 (17.2%)
Pharmacist	4 (13.8%)
Physical Therapist	3 (10.3%)
Social Work	2 (6.9%)
Psychologist	2 (6.9%)
Respiratory Therapist	1 (3.4%)
Speech Therapist	1 (3.4%)
Occupational Therapist	1 (3.4%)
Practice Setting, no. (%)	
Academic	20 (69.0%)
Non-Academic	4 (13.8%)
Both	5 (17.2%)
Years in Professional Role, median (IQR)	16 (7, 21)
Years Working in Post-ICU clinic, median (IQR)	3 (1, 4)

Table 2. Themes and Exemplary Quotes

Theme	Exemplary Quotes	Participant
Reconnection between clinicians and ICU survivors	*"I think even for the nurses and the staff, when they see the patients, it's huge. It gets really emotional on both ends."* [in reference to survivor visits to the ICU]	Participant 7 (nurse)
	"...now I would say from burnout standpoint, I don't think there's a better way to treat that [than]*... working in the post ICU clinic... because you do get to see the good ones, because you tend to remember the bad ones, unfortunately".*	Participant 2 (pharmacist)
	"One of the happiest parts of my job is when I can bring back some success stories to the ICU. I get permission from the patients to get a photograph of them and share with our ICU nurses... they really only see these patients when they're doing pretty badly".	Participant 1 (physician)
Impact of reconnection on clinicians	*"...it's so rewarding [in reference to working in an ICU recovery program]. I think I always sort of selfishly talk about the impact the clinic has on me." "...just to see patients they cared for and how that impacts their* [ICU clinician] *joy-in work scores and things."... I just think it's helped me. It's nice to see some people getting better."*	Participant 9 (physician)
	"And I think all of us who do this type of practice with human beings in front of us know what the deliverable is. When somebody says, 'Thank you' and 'oh my goodness, this means so much'. Why do we do this? This is why we do this." [in reference to ICU survivors]	Participant 11 (physician)