"R1 Nightmares": a resident-led on-call medical emergency simulation course for junior residents
Cauchemars de R1: un cours de simulation pour les urgences durant la garde dirigé par des résidents et destiné aux résidents juniors

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Implication Statement

On-call medical emergencies can be a source of anxiety for junior medical residents. Senior resident teachers are well-positioned to teach a safe approach to managing on-call emergencies, and simulation-based training has educational and patient safety advantages. We describe the implementation of a resident-facilitated, on-call emergency simulation course for first-year residents. The course was low-cost, time-efficient, increased residents' self-rated comfort with acutely deteriorating patients and was highly recommended by participants. The "R1 Nightmares" course could be adapted for other residency programs and institutions.

Énoncé des implications de la recherche

Les urgences durant la garde peuvent être une source d'anxiété pour les résidents juniors. Les résidents seniors se trouvent en situation privilégiée pour enseigner une approche sûre de la gestion des urgences sur la garde. De plus, la formation basée sur la simulation présente des avantages sur le plan pédagogique et sur le plan de la sécurité des patients. Nous décrivons la mise en œuvre d'un cours de simulation d'urgences survenant durant le service de garde destiné aux résidents de première année et animé par leurs collègues séniors. Nécessitant peu de temps et de ressources financières, le cours a permis aux résidents d'améliorer leur niveau de confort auprès des patients dont l'état se détériore rapidement et il a été fortement recommandé par les participants. Le cours « Cauchemars de R1 » peut être adapté à d'autres programmes de résidence et à d'autres établissements.

Background

First-year medical residents often feel ill-prepared to independently respond to on-call medical emergencies.[1] The management of on-call emergencies is generally learned through classroom teaching and "on the job" experiences. Simulation-based training confers educational and patient safety advantages by allowing learners to practice skills and receive feedback based on direct observation.[2]

The "Nightmares Course" at Queen's University (Kingston, Ontario) is a longitudinal simulation curriculum that increases resident-reported comfort managing on-call emergencies.[3] It comprises six sessions over six months and cost $264 per participant.

Staff physicians facilitate the "Nightmares Course," similar to most existing simulation programs. The course we describe here is a resident-facilitated adaptation of the "Nightmares" curriculum into a single-session. Near-peer clinical teaching leverages cognitive and social congruence between learners and teachers and may provide comparable simulation instruction quality when compared to staff physicians.[4-6]

Innovation

We implemented a single-session, resident-facilitated "R1 Nightmares" simulation course for first-year internal medicine and neurology residents at the University of Calgary. Scenarios were selected via a poll of first-year residents. Cases were adapted from the Queen's "Nightmares" course or developed by residents and faculty with content expertise. Case objectives included evaluating patient stability, prioritizing management steps, and calling for help. The Internal Medicine Curricular and Neurology Residency Training Committees approved the course. The Alberta Research Community Consensus Initiative Screening Tool determined ethics board approval was not required.

The 90-minute course took place in a simulation laboratory during protected academic time early in first-year residency. The course consisted of (1) a pre-brief outlining the structure and objectives, (2) rotation through five 10-minute scenarios (chest pain, dyspnea, stroke, seizure, and shock), with two minutes per station for direct feedback, and (3) a 30-minute group debrief facilitated by two senior residents with debriefing training. Four scenarios used mannequins (SimMan 3G, Laerdal, Toronto, Canada) while the stroke scenario used a volunteer standardized patient. Senior residents facilitated scenarios and acted as embedded participants. The debrief emphasized familiarizing learners with local resources for urgent patient management, including the rapid assessment and stroke teams.

Evaluation

The R1 Nightmares Course has run from 2019-2021 with a total of 115 participants (104 internal medicine, 11 neurology). The cost per participant was $25 for simulation lab rental. Participants completed an anonymous post-course survey with five-point Likert scale responses ("strongly agree" to "strongly disagree").

The post-course survey revealed that 96.5% (*n* = 111) agreed or strongly agreed they felt more comfortable with their approach to acutely deteriorating patients. Most agreed they felt more comfortable with each scenario (Figure 1A) and that scenarios were relevant and representative of ward emergencies (Figure 1B). All participants (*n* = 115) agreed or strongly agreed they would recommend R1 Nightmares for future residents.

Next steps

The Calgary R1 Nightmares Course is a resident-facilitated, single-session on-call emergency simulation course that increased residents' self-rated comfort managing acutely deteriorating patients. The course targets resident-identified learning needs and could be adapted to other specialities and institutions. The course used our institution's simulation laboratory but could be successfully implemented elsewhere without the requirement for advanced simulation resources.
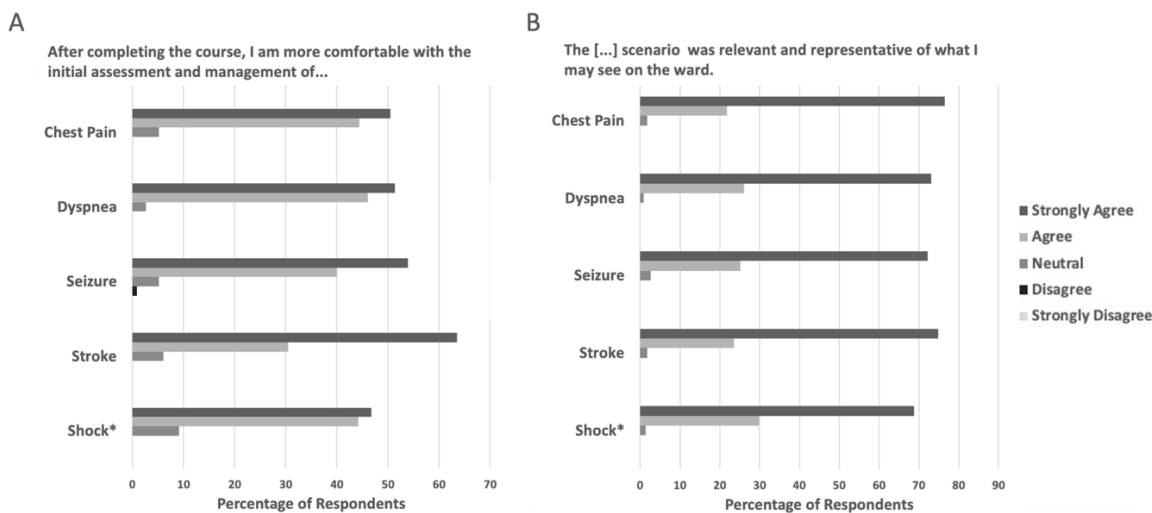

Figure 1. Post-course participant survey results (n = 115*)

*Post-course participant (A) self-rated comfort with the initial assessment and management of medical emergencies after completing the R1 Nightmares course, and (B) perceived relevance and representativeness of each simulation scenario. Each item was evaluated on a five-point Likert scale from strongly agree to strongly disagree. *A total of 77 participants evaluated the shock scenario as it was not included in the inaugural (2019) course.*

References

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