Transforming the Healthcare Simulation Spectrum:
Now, Next and Beyond
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SESAM — PROMOTING SIMULATION IN HEALTHCARE EDUCATION

SIMGHOSTS

Enhance Nurse Engagement & Learning Experience: Eye Tracking Technology in Ventilator Management Simulation Training Workshop for COVID-19 Pandemic

醫院管理局 HOSPITAL AUTHORITY

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Introduction and Aim

Introduction

Managing ventilator troubleshooting and related emergencies were time-critical and sophisticated. Limited resources in isolation settings for COVID-19 heighten the challenges.

Eye-tracking technology demonstrated a new direction in clinical training and debriefing. Related studies in airway management and emergency management showed unique values in learning and provided new insight into training and debriefing. Differences between novices and experts on gaze behaviour and visual strategies were presented.

Aim

The use of eye-tracking technology in clinical simulation training was very limited in the Asia region. This observational study explores the acceptance and potential of eye tracking technology in clinical simulation training.

Description

Clinical simulation training on essential ventilator management in COVID-19 was organized at Nethersole Clinical Simulation Training Center (NCSTC) with the Department of Medicine. The group size consisted of eight to ten participants.

In each scenario, four to five participants were invited to participate in the scenario. One participant was asked to wear an eye-tracking device voluntarily. The rest of the participants observed the scenario via a 4-screen B-line Medical System, in which one screen showed a first-person view with gaze focus revealed in real-time.

Eye-tracking device

Participants visual focus

Debriefing started immediately after each scenario with visual strategies and gaze behaviours related to ventilator management and team leadership in confined isolation settings.


Visual pattern of participants were revealed via eye-tracking device to evaluate the performance in ventilator management, patient deterioration, team leadership in the debriefing session.

All participants filled in 6 questions concerning the eye-tracking device with a Likert scale of 6 at the end of the course. Written comments about the eye-tracking application were freely entered by participants. Comments from trainers from medical domain experts were received.

Results

Two classes were held on 22 Sep 2020 and 24 nurses attended the training. Four participants wore eye-tracking devices.

6-point Likert scale

Understanding of CRM	**5.4**
Enhance knowledge transfer	**5.3**
Case management	**5.3**
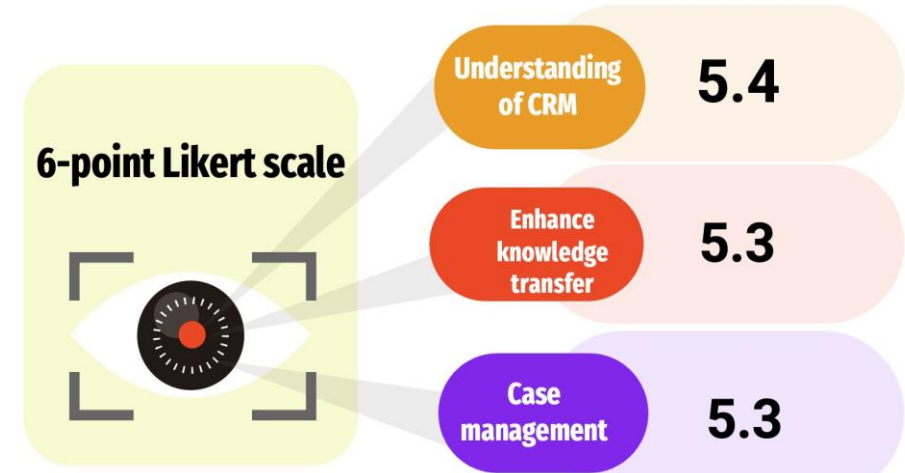
Comments from participants
- It help me to immerse into the scenario even as an observe
- It let me to visualize the scenario and visual pattern of the participants
- Eye tracking learning is really up-to-date

Comments from trainers
- Useful for debriefing, as better understanding the action of participants
- Improve debriefing quality, which is impossible to be achieved by other methods

Eye-tracking technology demonstrated unique training values in clinical simulation as good feedback tools for training and enhancing the knowledge transfer in clinical assessment and case management by enriching the quality of debriefing. Further studies were validated to explore the further application of the technology in other domains in clinical training.

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