

a simulation-based training focused on reducing restrictive practices in acute settings with the aim of improving skills and knowledge in caring for mental health patients.

Methods: The simulation courses were interprofessional and delivered online over 2 days. Day one involved didactic teaching around common mental health presentations, de-escalation skills, the public health approach to reducing restrictive practices when working with mental health patients in the Acute Trust, legal frameworks, referral pathways, and personal wellbeing. Day two comprised of 4–5 scenarios covering a range of common mental health presentations in the acute Trust, including Delirium/agitation/psychosis; Emotionally Unstable Personality Disorder, Angry Relative scenario, Hypoxia and craving meds/cigarettes, Bipolar. The simulations involved specially trained actors as simulated patients to ensure consistency and to allow for improvisation in their responses to participants. Actors represented the diverse communities of South London, and Equality, Diversity, and Inclusion was considered from the development stages discussed in debriefings. Participants (n=65) completed a pre- and post-course questionnaire measuring their confidence in course specific skills and human factors skills, as well as collecting qualitative feedback on their experience of the course and intention to apply the learning.

Results: Participants (n=65) showed a statistically significant difference between their pre- (M=90.40, SD=19.96) and post- (M=100.03, SD=21.01) course human factors scores, $t(64)=5.06$, $p<.001$, CI[0.359, 0.891], with a moderate effect size of $d=0.63$. There was also a statistically significant difference between their pre- (M=33.11, SD=6.18) and post- (M=38.83, SD=4.59) course specific skills scores, $t(64)=8.78$, $p<.001$, CI[0.778, 1.393], with a large effect size of $d=1.09$.

Conclusion: The course was effective at improving participants' self-efficacy in working with mental health patients. Improving knowledge, skills, and confidence across disciplines and professions in Acute Trusts will enhance the quality of care that mental health patients from diverse backgrounds receive when requiring hospital care.

REFERENCES

1. De Mooij LD, Kikkert M, Theunissen J, Beekman AT, De Haan L, Duurkoop PW, Van HL, Dekker JJ. Dying too soon: Excess mortality in severe mental illness. *Frontiers in Psychiatry*. 2019;10:855.
2. The Stationary Office. Mental Health Act 1983: Code of Practice. (2015). Norwich. 3: 98–338.

THE EMERGING ROLE OF 3D PRINTING IN AIRWAY TRAINING: A NARRATIVE REVIEW

Graham Picton¹; ¹Department of Anaesthetics, Cardiff and Vale University Health Board, Cardiff, United Kingdom

10.54531/FWBG1538

Background: 3D printing allows for the rapid production of novel 3 dimensional (3D) models. Its use, both for medical [1] and non-medical purposes, has seen exponential growth in recent years. Including the 3D printing of airways as part of the preassessment process [2]. Within medical education it has already been used for a variety of purposes [3]. Here we explore how it is being used for simulation-based training in airway management and how its use could be further developed.

Methods: Pubmed was searched using the terms; 3 dimensional (or 3D) and printing and airway or anaesthesia/

anaesthetic and teaching (or training or education). Papers were excluded if their focus was not on airway training, if they were not written in English or did not contain original research. The themes of model creation process and their role for teaching was reviewed.

Results: 20 results were returned. However, 13 did not focus on airway management, leaving only 7 results. Models design was created via, de novo design, from pre-existing electronic 3D renders or from cross sectional imaging and then using a computer processing to extract a 3D render which is then optimised before being printed. These cross-sectional images came from either patient specific datasets or from open-source image libraries. Of the papers reviewed the majority were regarding designs for front of neck airway trainers with other uses being for bronchoscopy as well as one paper that was looking at recreating patient specific pathology both for preoperative simulation but also helps in discussions with patients.

Conclusion: These methods provide an interesting opportunity for training. The ease of creating one off components with 3D printing, allowing for the creation of a variety of pathology, seems to be poorly exploited. Instead, most of the work so far has been on 3D printing 'normal' airways. There is a significant technical skill required to convert patient anatomy into specific models, which slows adoption of such techniques. Work will also need to be done to assess if these models have greater educational value compared to more traditional models, especially when considering patient specific models for use for pre-procedure practice.

REFERENCES

1. Aimar A, Palermo A, Innocenti B. The Role of 3D Printing in Medical Applications: A State of the Art. *J Healthc Eng*. 2019;2019:5340616.
2. Ormandy D, Kolb B, Jayaram S, Burley O, Kyzas P, Vallance H, Vassiliou L. Difficult airways: a 3D printing study with virtual fiberoptic endoscopy. *Br J Oral Maxillofac Surg*. 2021;59(2):e65-e71.
3. Garcia J, Yang Z, Mongrain R, Leask RL, Lachapelle K. 3D printing materials and their use in medical education: a review of current technology and trends for the future. *BMJ Simul Technol Enhanc Learn*. 2018;4(1):27–40.

PREPARATION FOR ST4 (SKILLS AND DRILLS IN EMERGENCY MEDICINE)

Saad Azher¹, James Keitley¹, Annemarie Brown¹, Timothy Parr¹; ¹Liverpool University Hospitals NHS Foundation Trust, Liverpool, United Kingdom

10.54531/UJJP4198

Background: A hybrid course was designed utilising areas of the Specific Learning Objectives (SLOs) within the new Royal College of Emergency Medicine (RCEM) curriculum launched in August 2021 [1]. Emergency Medicine (EM) trainees must develop a wide range of clinical knowledge, practical skills, as well as critical thinking and rapid decision-making ability to assess, resuscitate, and manage critically ill and injured patients. The low occurrence of these situations within the clinical arena results in significant challenges with regards to providing experience and training.

Methods: The new RCEM curriculum was reviewed with a focus on SLO 6 (Proficiently deliver key procedural skills in Emergency Medicine) and SLO 7 (Deal with complex or challenging situations in the workplace), and a one-day ST4 course was developed. Half of the course featured interactive presentations and hands-on procedural workshops with