Adaptation and use of media in an innovative simulation-based clinician training programme

Eka Melson ,[1,2] Wentin Chen,[3] Dengyi Zhou,[3] Emma Ooi,[4] Nia Evans,[5] Dwi Delson,[6] Meri Davitadze,[7] Punith Kempegowda[2]

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[1]Ninewells Hospital, Dundee, UK
[2]Institute of Metabolism and Systems Research, University of Birmingham, Birmingham, UK
[3]College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK
[4]RCSI & UCD Malaysia Campus, Georgetown, Pulau Pinang, Malaysia
[5]Royal Glamorgan Hospital, Llantrisant, UK
[6]University of Dundee, Dundee, UK
[7]Georgian-American Family Medicine Clinic "Medical House", Tbilisi, Georgia

Correspondence to
Dr Punith Kempegowda, University of Birmingham Institute of Metabolism and Systems Research, Birmingham B15 2TT, UK; p.kempegowda@bham.ac.uk

EM and WC are joint first authors.

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INTRODUCTION

The COVID-19 pandemic has disrupted medical education internationally. As a result, medical students and doctors in training have missed out on months of essential training and career progression. Thus, the use of media has evolved and expanded exponentially to deliver medical education remotely.[1]

Hargis and Wilcox discussed the potential use of media in medical education to enhance the learning environment.[2] Different types of media possess unique characteristics and are feasible educational tools to promote learning. These include text documents, infographics, podcasts, videos, webinars and social media platforms.

In this letter, we share our experience of designing a teaching intervention incorporating different media. We also highlight the potential uses of other media based on our non-systematic review of the use of media in medical education.

Simulation via Instant Messaging—Birmingham Advance (SIMBA)

SIMBA is an innovative simulation-based learning intervention initially conceptualised for postgraduate medical education. SIMBA uses WhatsApp to facilitate real-time interaction between learners and moderators. Real-life clinical cases are selected and approved by specialist consultants. Anonymised patient data are used to create transcripts (online supplemental material 1), used by moderators to provide standardised responses and progress participants through case simulation. Moderators adopt the roles of a patient, senior clinician and individuals in the multidisciplinary team at different points during the simulation, which is initiated by prompting learners with the presenting issues of patients. Participants then elicit the patient history, physical examinations, investigations, propose diagnoses and appropriate management/follow-up plans. This is followed by a debrief session chaired by an expert in the specialty who highlights the key clinical aspects of each case and clarifies questions from participants. Figure 1 summarises the SIMBA model and workflow. We have previously showed that SIMBA is effective in improving clinician confidence in managing various endocrine conditions evaluated using Kirkpatrick's model of training evaluation.[3]

TYPES OF MEDIA

Text

Text is effective when generalisation can increase analysis, critical thinking and content evaluation.[4] PDF documents of current clinical guidelines have proved useful to summarise large amounts of information about diseases in SIMBA during the debrief sessions. This has helped to increase participant knowledge and confidence in managing cases.

Infographics and images

Infographics visually present information to greatly aid abstraction.[5] In SIMBA, approaches to diagnostic and management pathways of pathologies were presented to learners as flowcharts to provide learners with a visual summary of this information. PowerPoint presentations were used to compile radiological images into slide shows that mimic real-life cross-sectional imaging views of MRI/CT scans. Additionally, PowerPoint presentations were also used during debrief sessions to boost learner engagement with experts in the field. To complement knowledge gained through SIMBA, we have developed an accompanying medical educational initiative, Concise Medical Information Cines (CoMICs), to provide an overview of various medical topics using illustrations and infographics compiled into bite-size videos. In addition to trainee doctors, some of these videos are also aimed at medical students, patients and the general public. These are uploaded weekly to our YouTube channel bit.ly/youtube_comics and openly accessible to the public.

Audio

Owing to the low cost, ease of production and general appeal, podcasting has become increasingly popular in recent times, with many medical organisations and societies now producing podcasts to deliver medical education.[6] Although we have not implemented podcasts or audio files in SIMBA to date, we have identified their potential use in the future, such as cardiac or pulmonary recordings. This may help to make our simulation sessions more realistic and applicable to real-life clinical practice.

Video

Videos possess unique characteristics over other media and are a richer medium compared with text, infographics and audio as they offer moving visual pictures.[4] Videos uploaded to video-sharing platforms, such as YouTube, have demonstrated rapid and international reach, thus vastly expanding their impact within medical education.[7] As SIMBA is a novel medical education training programme, we commence each session by showing an animated video example of participant–moderator interaction

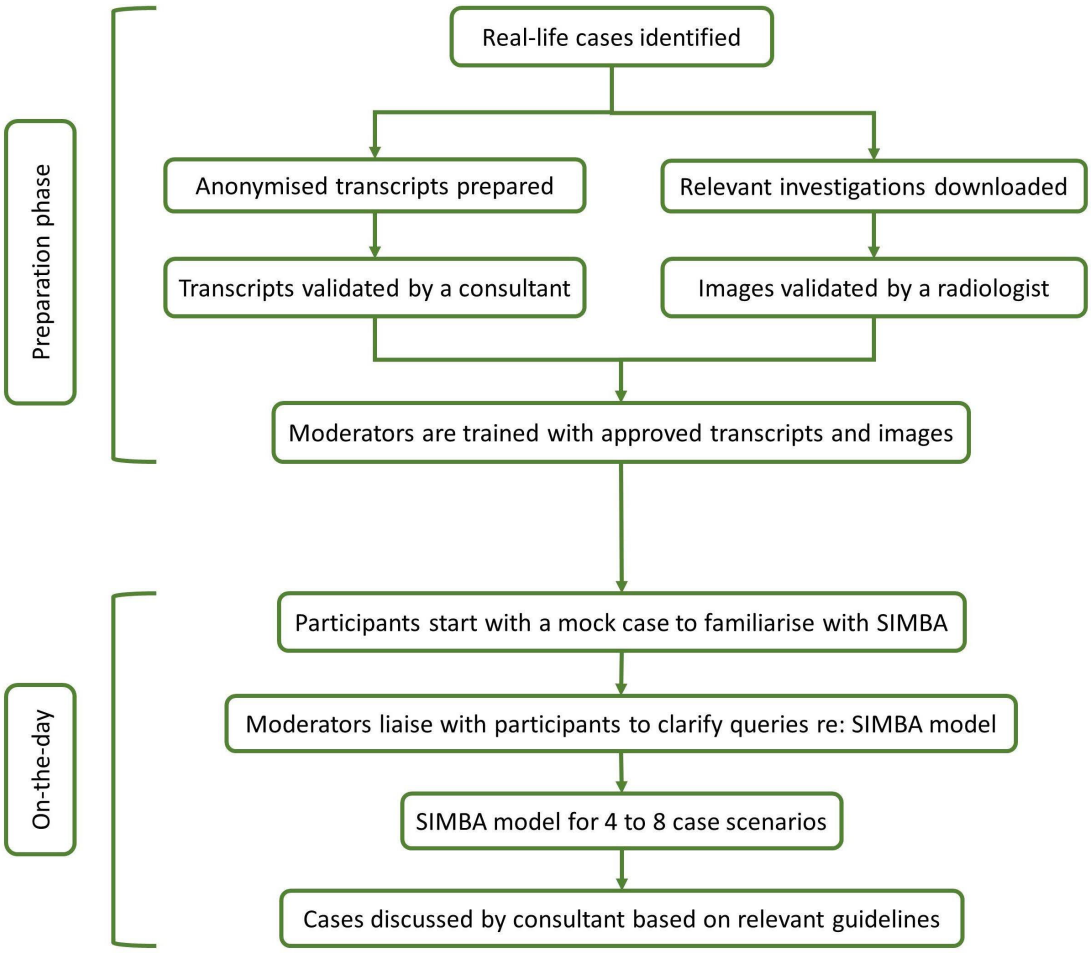

Figure 1 Preparations leading to a Simulation via Instant Messaging—Birmingham Advance (SIMBA) session.

to familiarise participants with the SIMBA model (still images shown in online supplemental material 2). The debrief and expert discussion sessions are also recorded to enable participants to review and further consolidate learning at a later stage.

Social media

Social media facilitates rapid knowledge sharing with the ability to reach an international audience and can be viewed as an extensive open-access resource in medical education.[6] Social media platforms offer an informal learning environment, which fosters engagement and a real-time dialogue that traditional means of communication lack.[8] Facilitating SIMBA simulation via WhatsApp greatly enhances interaction and engagement in comparison to traditional forms of teaching.[3] The ubiquity of WhatsApp has made SIMBA widely accessible, with international interest and participation.[3] Additionally, Twitter (@SIMBAsimulation) and Facebook are used to advertise SIMBA sessions and attract international health professionals to participate.

Video conferencing and webinars

Live and prerecorded webinars are online seminars broadcasted through the internet.[9] As an example of a synchronous tool, live webinars are regarded as the most advanced form of computer-mediated communication, which facilitate live interaction, active participation and instant feedback. This requires more resources but has the potential to provide the richest learning experience and greatly enhance audience engagement.[10] The COVID-19 pandemic has escalated the popularity of video-conferencing platforms to facilitate education, including Microsoft Teams and Zoom. As our response and solution to the global disruption of medical training in the wake of the COVID-19 pandemic, we expanded SIMBA internationally by using Zoom, as opposed to our previous face-to-face sessions in conference halls.

DISCUSSION AND CONCLUSION

The deliberate application of different forms of media has enabled us to adapt SIMBA during the challenging times of COVID-19. Where existing simulation models have proved costly, SIMBA is an effective model on improving learners' confidence in managing endocrine cases. We have since expanded SIMBA to other specialties including gastroenterology, hepatology, acute medicine, nephrology and general surgery. SIMBA has also been applied to undergraduate medical education, which has shown early success. Further evaluations are needed to assess for effectiveness of SIMBA in other specialties and areas of medical education. In the future, SIMBA could supplement in-person training days and promote ease of access to high-quality medical education internationally.

This letter highlights the importance of appropriate use of media in medical education with the aim of creating an optimal learning experience, using SIMBA as an example. Considering the ongoing disruption of the COVID-19 pandemic to medical education, educators should consider implementing various forms of media to enhance teaching and facilitate a more blended learning approach. With further research and thoughtful

application, different types of media will have immense implications for the current and future delivery of medical education.

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ORCID iD
Eka Melson http://orcid.org/0000-0003-0685-4819

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