Lecturers from one university undertook a pilot study to ascertain the effectiveness of adding clinical background noise to students’ simulation exercises.

Using recorded sounds in the clinical skills lab

In this article...

- Key considerations when recording the clinical audio
- How audio improved the students’ experiences
- Next steps for the project

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Abstract Watkinson D, Collins G (2016) Using recorded sounds in the clinical skills lab. Nursing Times; 12: 29/30/31, 12-13. Clinical simulation is embedded in undergraduate nursing education, but does not always reflect real-life situations. As clinical environments are rarely silent, a team of lecturers decided to find out whether background clinical noise could increase authenticity. This article describes how audio recordings were obtained from a variety of settings. Feedback was gathered on the benefits and barriers to widespread implementation.

The use of clinical simulation has become embedded across undergraduate nursing programmes in the UK, and students are increasingly exposed to realistic, interactive strategies and technical resources (Solnick and Weiss, 2007). Immersive simulation is often associated with high-fidelity simulation, which includes the use of interactive manikins and virtual reality experiences, such as simulation domes and user headsets. The use of specialist equipment is normally associated with high costs (Alinier et al, 2014), but immersive simulation learning opportunities are strong motivators to learn and apply this learning to clinical practice (Botma, 2014). We conducted a pilot project using background clinical audio in an existing simulated ward area. Results showed that effective immersive simulation does not necessarily need specialist equipment or a high level of investment.

The Department of Health (2011) recommended that clinical skills be learned in a simulated environment before being undertaken in supervised clinical practice. Simulated activities are preceded by theoretical preparation that encourages further investigation in a safe, simulated environment (Brown and Collins, 2015) and allows students to be exposed to real-life scenarios in a controlled environment where they can make mistakes without fear of harming patients (Al-Elq, 2010). Despite increasingly sophisticated equipment, simulation suites often feel somewhat removed from the realities of a clinical area. This pilot aimed to create a more realistic environment that students would find more engaging. Hospital wards are usually busy and stressful, with many distractions (Dean, 2014; Richardson et al, 2009), so a team of lecturers from the University of Derby decided to add a background audio soundtrack to make scenarios more authentic.

Developing the audio recordings

A review of existing commercial and free resources found a lack of either cost-effective or high-quality sound recordings, so the team developed its own for playback on a loop system when students were undertaking simulation exercises.

Following initial discussions and sound piloting in the skills laboratories, we decided that to enhance the clinical realism of the recordings, they should be captured from diverse clinical settings that aligned to different simulation settings and scenarios. We approached local hospital educational and governance departments, and clarified the purpose and application of the proposed recordings. Representatives from two hospitals expressed an interest in participating after...
gaining the necessary permission from their organisations. To obtain the recordings, we briefed clinical staff, and set up and positioned equipment, ensuring it would not impede clinical care, but would capture the sounds associated with the environment. Recordings were completed in two general wards, an emergency care department and an intensive therapy unit.

We edited the recordings using Adobe Audition software. Although new to this, we quickly learnt enough to be able to remove material that was either deemed sensitive or might breach confidentiality. The recordings were then shared with the organisation concerned for review; one requested all voices – regardless of whether they were audible or identifiable – be deleted from recordings carried out at its hospital. This was disappointing, as a detailed briefing had been given and initial approval to participate had been received.

We determined that removing the background clinical chatter would result in these recordings no longer being fit for purpose, so they were destroyed. The other hospital had a different interpretation and valued the realism that voice audio provided, recognising that careful editing had enabled us to produce a resource that maintained the anonymity of clinical staff and patients, and credibly replicated the noises found within a clinical environment.

**Outcomes**

Student action significantly altered when the audio recordings were introduced in specific simulation sessions. They appeared to become more engaged with scenarios and displayed greater awareness of not only the background activity, but also other risks and distractions in the simulated environment, such as staged clinical hazards and changes in manikin/patient conditions. This potentially demonstrates heightened levels of situational awareness.

**Feedback**

**Student feedback**

Following the pilot, six third-year pre-registration nursing students volunteered to be interviewed individually on their views about the use of background clinical audio as part of their simulation scenarios. These interviews followed a structured schedule of open-ended questions that were video-recorded and transcribed before thematic analysis was conducted. All students agreed that background audio had added realism to the learning experience; they all highlighted that, although noise levels can vary, most clinical environments are rarely as audibly sterile and quiet as a typical simulation laboratory. One pointed out that the background audio had effectively created a ward-like environment, which had helped him engage with the simulation, as he usually felt “uncomfortable and silly” when asked to participate in other simulated learning activities.

One student reported that it helped to focus her mind on the care to be delivered - the distractions around her made effective concentration even more imperative. She felt that in learning to filter these external distractions, she was developing a key skill that would be transferable to any clinical setting. Another student said that the sound helped make the experience more “rounded and holistic”, as personal engagement in simulation had moved away from simply performing specific tasks to ensuring their “full range” of nursing competences were used.

All the students interviewed agreed on a set of benefits that resulted from using the audio (Box 1). Their responses demonstrated that they felt the use of clinical background sound increased their immersion in a total learning experience. They showed awareness of the importance of effectively carrying out a simulation that closely mirrored clinical practice. The clinical audio helped them commit to the environment.

**Tutor feedback**

In meetings of the simulation focus group, which informs simulation curriculum development, all four tutors who have used the audio backgrounds to date have commented on the enhanced realism of the learning experience. They felt that students visibly engaged more, not only with the simulation manikins and wider laboratory environment, but were also clearly immersed in the activities they were performing. The audio helped to create a holistic patient-focused scenario, rather than a task-orientated learning experience.

**Conference delegates’ feedback**

The pilot was presented at the Association for Simulated Practice in Healthcare’s conference (2015). Audience members were asked for their comments after viewing a short video of the skills laboratory in silence and filtering the audio soundtrack in halfway through. Their reactions were overwhelmingly positive. They felt the resource’s value lay in its simplicity, noting:

- It does not require a high level of technical ability to implement;
- It is portable and can be used wherever audio equipment is present;
- It is cost-effective as it uses, primarily, existing and accessible equipment.

**Pilot limitations**

Few limitations of the pilot project were identified. From a hospital perspective, it was important the team were mindful of confidentiality breaches, removing possible identifiers during the edit. At present, a limited number of recordings have been produced, so repetition is inevitable, but plans are in place to produce more.

Arguably, some clinical areas are generally quiet, so it is important to be mindful not to oversaturate simulations with audio and lose the clinical realism.

**Next steps**

Following the success of the pilot, a proposal is being developed to formally assess the student experience by conducting a mixed-methodology evaluation to ascertain whether the recordings do add value to students’ learning. There are plans to further develop the recordings to represent other clinical areas, such as patients’ own homes and community settings.

It is anticipated that the use of background noise will be rolled out across all curriculum-simulated activity within the University of Derby and made available to external organisations. The recordings could be used in purpose-built, immersive environments, but the strength of this resource is that it enables flexibility – it can be used in a large simulation laboratory or a standard classroom equipped with audio speakers.

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**References**


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