



SIMULATION-BASED TRAINING FOR SOCIAL WORKERS: EVIDENCE SUMMARY REPORT



ACKNOWLEDGEMENT OF COUNTRY

Monash University recognises that its Australian campuses are located on the unceded lands of the people of the Kulin Nations, and pays its respects to their Elders, past and present.

MONASH UNIVERSITY

Monash Social Work delivers education and research that promotes social justice, human rights and better outcomes for people and communities.

Situated within a leading Australian university recognised for excellence in research and education, and ranking within the top 50 universities globally, our research has influenced and informed policies, services and practices across the fields of child, family and social welfare, health and mental health, criminal justice, domestic and family violence, alcohol and other drugs, and more, for almost fifty years.

Through our Australian Association of Social Workers (AASW) accredited program, we prepare qualified social workers capable of working effectively with individuals, families, groups and communities locally and globally. Our graduates are evidence-informed critical thinkers equipped with the professionalism, knowledge, skills, ethics and understanding of context to make a powerful impact throughout their social work careers.

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SUSAN MCKINNON FOUNDATION

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EXECUTIVE SUMMARY AND OPPORTUNITIES

Traditional approaches to teaching clinical skills, such as didactic teaching methods and peer-to-peer roleplay inadequately prepare social work students for real world practice. Simulation-based learning is emerging as a promising innovative method for teaching social work practice in the classroom, gaining recognition, particularly in the United States, for facilitating the development of core social worker competencies to better prepare students for practice. Other healthcare professions have established a robust body of literature that provides educators with best practices in using simulation effectively for learning and training, but simulation is less developed in social work. There is a widespread acknowledgement that more needs to be done to better prepare students using research-supported educational frameworks that include best practices in simulation-based learning. While social work education can draw from simulation research and approaches in other health-care professions, it is important that approaches are tailored to the specific skillset required of social workers in order for beginning practitioners to be effective and competent.

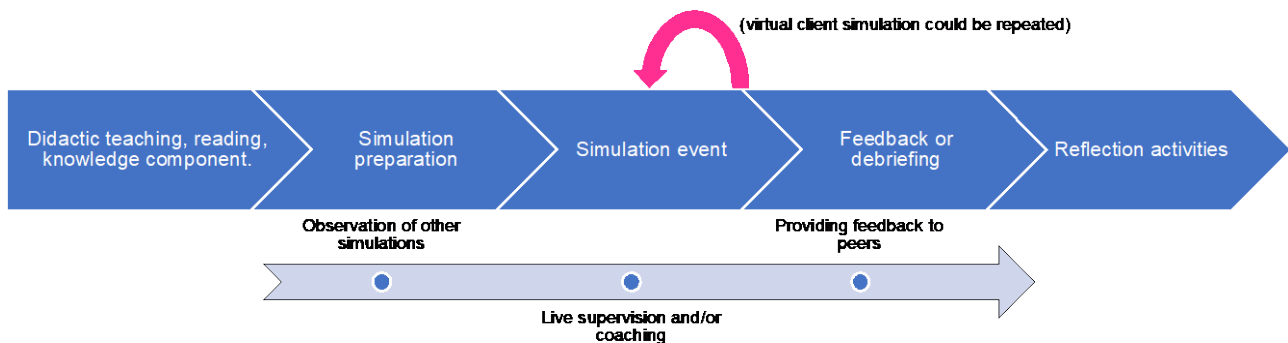
This report presents:

- A systematic scoping review of evidence summarising findings from published evaluations of simulation-based training for social workers.
- Results from a survey exploring Australia's current approach to training social workers using simulation-based training.

EVIDENCE FOR SIMULATION-BASED TRAINING IN SOCIAL WORK

What does effective simulation-based learning look like?

Simulation events are supported by a knowledge component, preparation activities, feedback or debriefing and reflection exercises. For simulations using virtual clients and/or environments, participants in studies consistently noted that embedded information, prompts, supervision/coaching, feedback and reflection was a strength of this approach, alongside the ability to practice the simulation repeatedly.



What are the benefits of simulation-based training using actors or virtual clients/environments?

Simulation-based training is effective for improving social work students' skills and competencies, self-efficacy and knowledge. Participants report positive experiences with simulation, and believe that the training prepares them for future work with real-world clients, consistently describing a sense of immersion and authenticity when participating in simulation. Participating in simulations provides students with a safe space to practice their skills without the risk of causing harm and is most beneficial to students before their first practice placement.

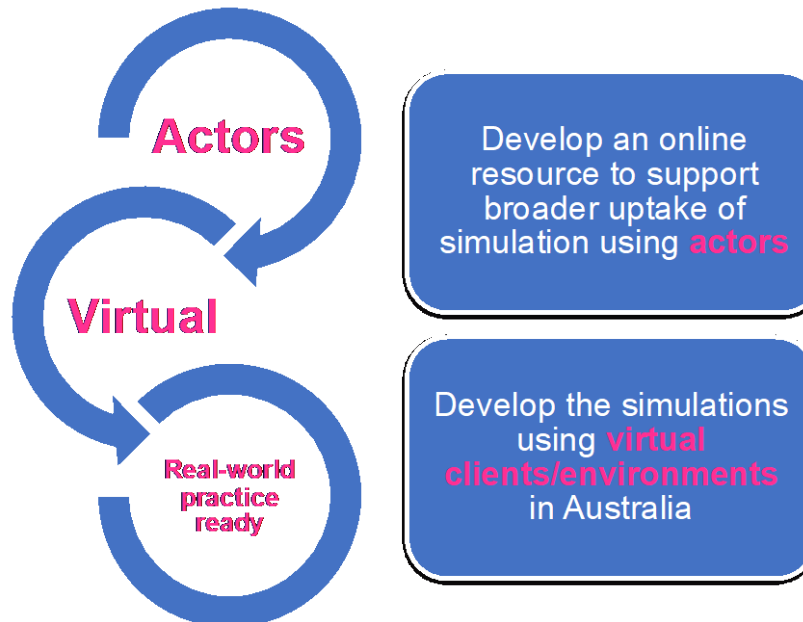
USE OF SIMULATION-BASED TRAINING IN AUSTRALIA

Simulation using actors is used as an essential teaching and learning strategy in most university delivered social work education courses – with some emerging evidence suggesting that simulation improves student performance in real work practice settings. The main barrier to increased uptake and utilisation is a lack of resources for scenario development, delivery options and facilities, and cost of actors. Virtual reality and other online approaches to simulation are not widespread but are beginning to be used. Where simulation is being used, it is more often implemented with actors.

OPPORTUNITIES FOR IMPROVING SOCIAL WORKER TRAINING IN AUSTRALIA

Two overarching opportunities to improve social worker training in Australia have emerged from the learnings outlined in this report.

- 1) **Opportunity to develop an online resource to support broader uptake of simulation using actors:** The authenticity of simulation using trained actors cannot be achieved (yet) with virtual simulation – this will take time, content knowledge and technology advancement. Training, knowledge and resources are the greatest barriers to implementing effective, gold standard, simulation-based training using actors. The development of an online resource that presents accessible simulation-based training materials for social work educators would support wider uptake of simulation in social work. This resource could also be an important, content-rich source of current information for the continued development of virtual simulation.
- 2) **Opportunity to develop the capacity for virtual simulation in Australia:** Training using virtual clients and/or environments is effective and has the greatest potential for wider distribution and scale up across social worker training institutions, however this approach is not well developed in the Australian context. There is huge potential for partnerships to be developed with virtual simulation providers to tailor a product for social work education.



PART 1

EVIDENCE FOR SIMULATION-BASED TRAINING

THIS SECTION

This section of the report summarises the findings of a scoping review of existing evidence related to the implementation and effectiveness of simulation-based training in social work internationally. Appendix A1 provides technical information about how we searched for, screened and identified the evidence reviewed here (this appendix has been supplied as a separate document).

Objectives and approach

We used a scoping review methodology to identify and synthesise evidence to meet the stated objectives following the JBI scoping review guidelines (Peters et al. 2020) and PRISMA reporting guidelines for scoping reviews (Tricco et al. 2018). A scoping review approach allows for a broader sweep of the existing literature than a more narrowly defined systematic review, but enables us to systematically identify relevant studies to report on findings that address the key evidence summary objectives.

Evidence summary objectives:

- To synthesise evidence that describes and evaluates the implementation and effectiveness of simulation-based training for social work students, educators and service users.
- To identify the core components and implementation strategies of effective simulation-based training for social work students, educators and service users.

What was included in this evidence summary?

To be included in the evidence summary, the studies needed to use quantitative methods to evaluate the effectiveness of social work simulation-based training, defined as: a practice situation utilised in social work education that simulates, portrays and replicates a practice experience similar to those encountered by social workers in the field. This training could involve a simulated client (e.g. trained actor, virtual patient, Avatar) and/or an environment (e.g., a staged apartment or service setting, virtual counselling room, or other virtual environment). The studies also needed to assess the effectiveness of the training on any short-term (e.g. confidence, skill mastery) or longer-term (e.g. employment, role competence) outcomes for participants. Any further implementation or cost outcomes reported by the studies was also of interest to this review.

The systematic approach to searching for literature, outlined in Appendix A1, yielded 5901 reports of studies, with 1645 duplicates identified and removed. Following title and abstract screening of 5854 reports of studies, 136 were identified for full text review. Of these, we identified 24 studies that evaluated simulation-based training approaches for social work students, educators and service users that met our inclusion criteria and were synthesised in the review. Figure A1 outlines the search and screening process. Table A4 provides a summary of the key characteristics of each study.

What was the quality of the evidence reviewed here?

While a formal quality appraisal of the studies was not undertaken, the overall quality of the evidence could be deemed as low. Most of the studies used a single group, pre-post or repeated measures design (17 studies), which cannot control for other factors that may influence a change in the outcomes over time. Seven studies used quasi-experimental or randomised controlled study designs, comparing a group that undertook the simulation-based training to a group that undertook an alternate intervention or no intervention. We can generally have more confidence in the findings from studies that use these types of study designs. In addition to this, a majority of the outcome measures used to evaluate the simulation-based training were by self-report, which tend to be more vulnerable to biases.

Where were the studies undertaken and who were the participants?

The vast majority of evaluations of simulation-based training were undertaken in the United States (21 studies), with a single study each from Australia, Canada and the United Kingdom. The studies were all based within university settings, with Bachelor of Social Work or Master of Social Work students as their primary participants.

What did the simulation-based training look like?

Fourteen studies delivered simulation-based training with standardised client/patient actors, with one of these studies using past service users as actors (Skoura-Kirk 2021). All but two studies, one which explored group work (Shreiber 2018) and another using a parent-child dyad (Tyler 2021), were one-to-one student-client interactions ranging from 10 to 50 minutes. Ten studies used virtual clients and/or environments to produce a simulated client interaction. Virtual client interactions were all one-to-one student-client interactions, and tended to be longer when compared to simulation-based training using actors, ranging from 5 to 45 minutes. For six of the 10 studies, students were also able to revisit the virtual client interactions multiple times to practice their skills (Casey 2022, Mastroleao 2020, Putney 2019, Putney 2021, Smith 2021, Washburn 2016), which was largely not the case for simulation-based training using actors. Notably, a majority of the studies, 18 of 24, assessed simulation-based training that was delivered alongside other content, either embedded into a longer course or unit of study (range: 3-16 weeks; 9 studies), or shorter and generally more focussed training (3 hours to three days; 9 studies). Six studies, five of which used virtual approaches, assessed simulation-based training as the core intervention being evaluated (Casey 2022, Lanzieri 2023, Lanzieri 2021, Skoura-Kirk 2021, Tyler 2021, Washburn 2016). The common components of the simulation-based training evaluated by these studies are further outlined in a separate section below.

Was simulation-based training found to be effective?

All except one (Philips 2018) of the studies reported at least one outcome that improved following simulation-based training, and/or the simulation-based training being evaluated was at least as effective as an alternate training approach. Table 1 provides an overview of the effects of simulation on outcomes evaluated by the studies.

Table 1 Outlines the number of studies that report negative, no effect or a positive effect on the evaluated outcomes.

Outcome type	Number of studies		
	Negative effect	No effect	Positive effect
Clinical skills			11 studies
Self-efficacy		1 study	7 studies
Knowledge and attitudes			7 studies
Empathy			1 study
Diagnostic accuracy			1 study
Feelings towards client			1 study
End-of-life care educational needs		1 study	

What types of outcomes were assessed to determine whether the simulation-based training ‘worked’?

Clinical Skills

Eleven of the studies assessed the effect of simulation-based training on clinical skills. All of these studies demonstrated an improvement in the student participants’ clinical skills following simulation-based training, with only two of these studies presenting mixed findings. The types of clinical skills that were assessed varied across studies and social work contexts. Three studies evaluated Screening, Brief Intervention, and Referral to Treatment (SBIRT) for substance use disorders (SUDs) and those at risk (Putney 2019; Putney 2021; Sacco 2017), and one further study evaluated therapist skills in Cognitive-Behaviour Therapy (CBT) for SUDs (Mastroleao 2020). Two studies specifically focussed on Motivational Interviewing (MI) skills in the child welfare context specifically (Pekukonis 2016) or across a range of simulated scenarios (Hodorowicz 2018). Also within the context of child welfare, two studies evaluated engagement skills

and competence (Rawlings 2021), and the use of open-ended questioning skills (Casey 2020). Badger (2002) focussed on assessment skills and treatment planning for mental health challenges, and one further study evaluated clinical skills in a military context, which included engagement skills, military cultural competence and assessment skills relating to post-traumatic stress symptomology and suicide (Atuel 2021). One study included multiple contexts in the simulated scenarios to assess procedural skills and reflection development (Skoura-Kirk 2021).

Self-efficacy

Nine of the included studies evaluated self-efficacy to capture participants' perceived ability to demonstrate or undertake the skills or competencies that were the focus of the simulation-based training. Seven of these studies demonstrated that participants' self-efficacy scores improved following simulation-based training (Atuel 2021, Bragg 2020, Kratz 2022, Levine 2013, Osborne 2016, Pecukonis 2016, Smith 2021), with two of these studies also showing that a virtual client-trainer (Atuel 2021) and live supervision with standardised client interactions (Pecukonis 2016) were as effective as an alternate training approach. One study that evaluated a structured clinical examination adapted for social work (OSCE-SW) reported no change in self-efficacy (Tyler 2021), and one study implementing a computer-based simulation training system did not report the findings for this outcome (Mastroleo 2020). These studies covered a range of practice contexts, scenarios and skills. Five studies presented scenarios related to substance use and examined counselling self-efficacy (Mastroleo 2020), SBIRT (Osborne 2016), and MI (Bragg 2020, Pecukonis 2016, Smith 2021) and/or CBT (Smith 2021). Two further studies examined counselling self-efficacy, one related to suicide intervention skills using the Collaborative Assessment and Management of Suicidality (CAMS) framework (Kratz 2022), and one focussed on working with a parent–bisexual child dyad (Tyler 2021). Two studies evaluated simulated scenarios relating to a military context, evaluating self-efficacy in clinical skills (Atuel 2021) and case management intake (Levine 2013).

Knowledge and attitudes

Seven studies reported an increase in knowledge and/or attitudes following simulation-based training, with one of these reporting that live supervision with standardised actors was equally effective when compared to a coded learning approach (Hodorowicz 2018). These studies evaluated SBIRT knowledge and behaviour (Sacco 2017), substance abuse knowledge (Baez 2005), knowledge and/or attitudes related to MI (Bragg 2020, Hodorowicz 2018), knowledge, perceptions and attitudes in relation to the VR technology (Lanzieri 2021), knowledge of CAMS (Kratz 2022), and knowledge about poverty and oppression (Schreiber 2018).

Other outcomes

The following outcomes were reported by a single study each and were also found to improve following simulation-based training: empathy (Pecukonis 2016); diagnostic accuracy (Washburn 2016); and feelings towards working with a client (Lanzieri 2023). One study assessed end-of-life care specific educational needs and found no effect of the training on this outcome (Philips 2018).

What implementation outcomes were evaluated by the studies?

Broadly speaking, implementation outcomes can include any process outcomes that capture how an intervention was developed, delivered, or scaled, and can also include participants' perceptions of interventions. Implementation outcomes may capture, for example, participant satisfaction or acceptability of an intervention, they may measure how well an intervention was delivered (fidelity), or evaluate adoption, costs and sustainability as an intervention is scaled up. Ten of the 24 studies formally evaluated implementation outcomes. Of these, six assessed simulation using virtual clients and/or environments (Casey 2002, Lanzieri 2021, Lanzieri 2023, Mastroleo 2020, Smith 2021, Washburn 2016) and three evaluated simulations with standardised clients using actors (Baez 2005, Osborne 2016, Schreiber 2018, Skoura-Kirk 2021). For the most part, implementation outcomes related to the acceptability or useability of the simulation-based training, and were assessed using both qualitative and quantitative measures. Two studies evaluated participant satisfaction of virtual simulations, reporting that participants found the simulated learning somewhat to very acceptable (Smith 2021) or better than an alternative training approach (Mastroleo 2020). Five further studies, all of which evaluated virtual simulations, measured student experiences and perceptions of the learning experience using questionnaires (Baez 2005, Casey 2002, Lanzieri 2021, Lanzieri 2023, Washburn 2016). These studies reported that a majority of students found the learning experience highly favourable (OSCE; Baez 2005), easy to use and would recommend it (eSimulation; Casey 2022), believed that the interaction with a virtual client would transfer effectively to a real live client in the future (virtual client simulation; Lanzieri 2023), rated the learning experience, technology experience and their

general attitudes positively (virtual environment simulation; Lanzieri 2021), reported moderately high scores for ease of use, intention to use and confidence in using the training method, and also believed that the simulations would help them to work with actual clients and had a positive impact on their clinical skills (virtual patient simulation; Washburn 2016). One study indicated that participants felt there was a high inconsistency within the virtual client simulations and reported a high need for technical assistance (virtual patient simulation; Washburn 2016).

Eight studies also qualitatively explored participants' perceptions around acceptability, useability, and the learning experience using focus groups or open-ended questions embedded in surveys/questionnaires. Themes that commonly arose across the studies are outlined below.

Benefits described by participants:

- **Skills development:** Social work students perceived simulation-based learning as providing a solid foundation that prepares beginners for social work practice – presenting an opportunity to build on and practice skills and competencies.
- **A safe space to practice:** Participants highlighted that simulation-based training creates a safe space for them to attempt new skills, make mistakes and build confidence, and also appreciated that real-life clients would not be put at risk.
- **Sense of immersion and authenticity:** For simulation-based training using actors, virtual clients and/or environments, social work students consistently described a sense of immersion and reality that sufficiently resembled real-life work with clients.
- **Ability to practice:** It was noted that simulation-based training using virtual clients and/or environments provided additional opportunities for practicing, i.e. students were able to log on and repeat interactions with virtual clients more than once. In these cases, students were given multiple opportunities to engage in practice related exercises repeatedly without a concern about client safety or wellbeing.
- **Additional embedded resources/feedback:** For participants of simulation-based training using virtual clients and/or environments, participants consistently praised the additional support embedded in the virtual experience. This could include contextual or other information, case summaries/notes, automated prompts or guidance, live supervision/coaching during the student-client interaction, feedback, and/or guided reflection.

Challenges described by participants:

- **Logistical and resource challenges:** Across the studies, logistical challenges and barriers associated with resourcing and scheduling were consistently raised in association with simulation-based training using actors. For instance, students may be limited in the number of times they could engage with or practice with standardised clients, or the simulation event may have been delivered sometime after the relevant course material was covered. In some cases, educator feedback was provided some days after a single simulation event, with no further opportunities to practice any competencies that had not been demonstrated.
- **Optimal placement of simulation:** Participants noted that the placement of simulation-based training is important. For instance, they suggested that relevant course practice and theory should be taught reasonably close to any simulation event, and that students may benefit most earlier in their course and prior to going out on their first practice placement. For simulation-based training using actors, this could be challenging – for instance, a simulation event may be scheduled separately from when the relevant course material is delivered due to restrictions around the availability of resources, personnel or facilities. It was also noted that virtual simulations may be most beneficial before a student experiences real world clients. This was largely because the current technology does not yet allow for a natural flow of conversation, which may decrease the acceptability of virtual simulation for students who have experienced real world practice.
- **User technical issues:** Social work students raised a number of technical challenges that diminished their simulated experience with virtual clients or environments. These included: limited response options, issues with voice recognition, VR headsets causing discomfort and/or lacking visual clarity, and minor technical glitches

which impeded the natural flow of the simulated conversation.

What are the specialist resources, skills and facilities required to incorporate simulation-based training into a Social Work curriculum?

There was no formal assessment of the specialist resources, skills and facilities required to incorporate simulation-based training reported in the studies, however the development and implementation of the simulations was narratively described. These descriptions often included the development of the training, and outlined the resources, skills and facilities that were required to implement the training. We have outlined below some of the recurring implementation processes and resources that were described within the included studies, focussing on those that would not usually be required for social worker training that uses peer-to-peer roleplay.

Simulation-based training using actors:

- Development of case studies/vignettes, which often required input from professional staff or collaborators with expertise in specific practice areas.
- Availability of resources to support the recruitment, training and payment for actors playing standardised clients/patients.
- Availability of trained staff to undertake student assessments, generally sourced from existing staff in the same department, but sometimes professional social workers employed in the field.
- Coordination of social work students, actors, and assessors – particularly important/challenging for simulations held over a set/limited period of time.
- Facilities for conducting simulations, i.e. simulation lab, room with video equipment.

Across the studies, logistical, economic and resource challenges and barriers associated with the requirements for implementation of were consistently raised in association with simulation-based training using actors.

Computer-simulated clients and/or environments:

- Availability of an appropriate virtual tool/product that is designed to train/assess relevant competencies.
- Availability of resources to develop and/or purchase an appropriate tool/product.

Several studies noted that while there were notable benefits to implementing virtual simulation, the current implementation challenges were largely driven by the available technology, as well as the costs associated with purchasing and/or developing the tools. For instance, the available technologies are limited and cannot currently replicate the nuanced and complex relational dynamics that comprise social worker and client interactions (Asakura 2020; Lanzieri 2023). Features such as user voice recognition, and open-ended questions and/or responses, are not yet stable or developed to the point that they could be deployed to train social workers. Therefore, virtual interactions may be less authentic or limited – such as choosing text-based responses from a list (e.g. *SiMmersion*) or selecting objects in an environment in order to engage with a client. More recent advances in generative AI are likely to provide technological solutions to some of the challenges raised within the studies. For instance, the Australian-based product *SimConverse*, driven by generative AI, allows for a more natural conversation using a standard pattern of verbal question/response between the virtual client and the learner. We provide a description of *SimConverse* at the end of this report.

What are the components of effective simulation-based training?

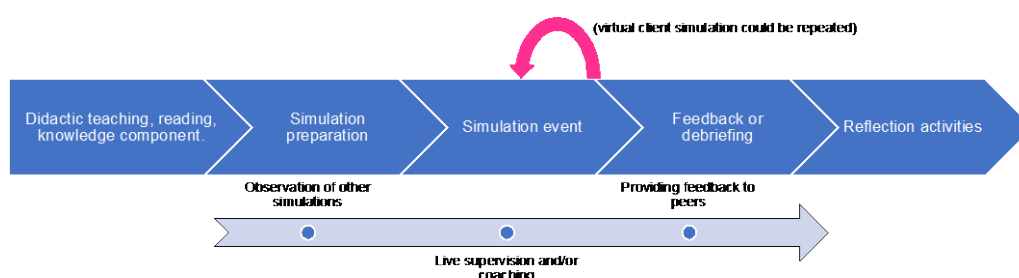


Figure 1 Diagrammatic overview of the core components of effective simulation-based training

Table 2 outlines the main components of effective simulation-based training evaluated across the studies included in this review. Five of the 24 studies used manualised training, i.e. the training followed a set protocol. The duration of a simulation event varied across the studies, from 5 minutes to 50 minutes, and social work student participants had the opportunity to take part in a simulation event from once only to an unlimited number of times. Nine of the studies did not report on the number of simulation attempts that were possible or completed. When looking at additional components that were included alongside the simulation event; 13 included didactic teaching approaches (such as lectures or tutorials), eight included additional readings, 16 included preparation, orientation or training for the simulation event, and 10 included observation of other similar simulation events - either observing other students in the group or via video. A reflection activity was included as part of seven of the trainings, and 16 included feedback or debriefing during or following the simulation event.

Table 2 Components included in the evaluated simulation-based training.

Study, Year, Country	Actor/Computer	Manualised training	Duration – each simulation	Number of simulation attempts	Didactic teaching	Readings	Simulation preparation	Reflection activity	Observation of other simulations	Feedback/debrief
Asakura, 2022; Canada	Actor	no	10min	1	no	no	no	yes	yes	yes
Atuel, 2021; United States	Computer	no	5-8min	5 to 7	no	no	yes	no	no	yes
Badger, 2002; United States	Actor	no	30min; 1.5 hr classes	?	yes	no	no	no	yes	no
Baez, 2005; United States	Actor	no	10min	2	yes	no	no	no	no	yes
Bragg, 2020; United States	Actor	no	15min	?	yes	yes	yes	yes	yes	yes
Casey, 2022; Australia	Computer	no	30min	Unlimited; 3-hr window	no	no	yes	no	no	no
Hodorowicz, 2018; United States	Actor	no	?	?	yes	?	no	no	yes	yes
Kratz, 2022; United States	Actor	no	50min	?	yes	yes	no	no	no	no
Lanzieri, 2023; United States	Computer	no	15min	?	no	no	yes	no	no	no
Lanzieri, 2021; United States	Computer	no	12min	1	no	no	yes	no	no	no
Levine, 2013; United States	Computer	no	?	?	?	yes	yes	no	no	no
Mastroleo, 2020; United States	Computer	yes	20m	10	yes	yes	yes	no	no	yes
Osborne, 2016; United States	Actor	yes	10min	1	yes	no	yes	yes	yes	yes
Pecukonis, 2016; United States	Actor	no	30min	?	yes	no	no	no	no	yes
Phillips, 2018; United States	Actors	no	8min	?	no	no	yes	?	yes	yes
Putney, 2021; United States	Computer	yes	?	Unlimited	yes	no	yes	yes	yes	yes
Putney, 2019; United States	Computer	yes	?	Unlimited	yes	yes	yes	no	yes	yes
Rawlings, 2021; United States	Actor	no	15min	2-8	?	yes	yes	yes	no	yes
Sacco, 2017; United States	Actor	yes	20min	2	yes	no	no	no	no	no
Schreiber, 2018; United States	Actor	no	20min	?	no	no	yes	yes	yes	yes
Skoura-Kirk, 2021; United Kingdom	Actor (service-users)	no	15min	1	no	no	yes	yes	no	no
Smith, 2021; United States	Computer	no	45min	Unlimited	yes	yes	no	no	no	yes
Tyler, 2021; United States	Actor	no	15min	1	yes	yes	yes	no	no	yes
Washburn, 2016; United States	Computer	no	45min	Multiple	no	no	yes	no	yes	yes

Table 3 describes the common features of the virtual simulation tools/programs evaluated across the studies. In relation to the development of the virtual tool/program, four evaluated different modules developed by *SiMmersion* (Mastroleo, 2020; Putney 2019; Putney 2021; Smith 2021), three tools/programs were developed by the university undertaking the evaluation (Lanzieri 2021; Lanzieri 2023; Washburn 2016), Linden Lab developed *Second Life* which was repurposed for simulation by one study (Levine 2013), and two studies did not report on the development of the tool/program (Atual 2021; Casey 2022). Three of the virtual simulations were immersive, using a headset device to experience the virtual environment (Lanzieri 2021; Lanzieri 2023; Levine 2013), but the remainder of the tools/programs were non-immersive and generally computer-based. Most of the tools/programs included information about the virtual client and/or environment, including case notes/history, and most provided information that supported a learner's orientation to the tool/program and guidance on the tasks or objectives of the simulation. Some included more comprehensive information, such as didactic training guides or chapters (*SiMmersion*; Lanzieri 2023) or recorded informational sessions (Washburn 2016). The aim of most of the tools/programs was to support interactive dialogue between a learner and a virtual client. In most cases, with the exception of *Second Life*, this interaction was largely text-based, with learners selecting from a range of text-based responses or objects which would prompt a response from the virtual client and/or environment. Responses from clients depended on the options selected by the learner and ranged from text-based responses to audio and/or video responses. For example, *SiMmersion* modules present a recorded video of an actor representing the client who responds to the learner's selection. The tools also included a number of interactive features aimed to support student learning, including live coaching/supervision, text-based guidance and prompts during the simulation event, and integrated feedback or reflection prompts following a simulation.

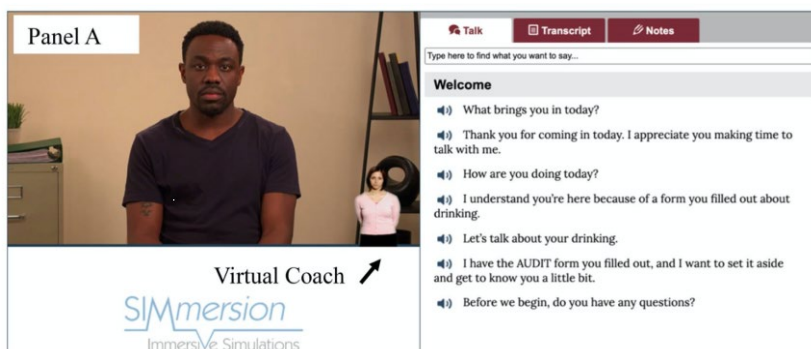


Figure 2 An example of the interface of *SiMmersion* (Smith 2021), showing one of the virtual client modules available.

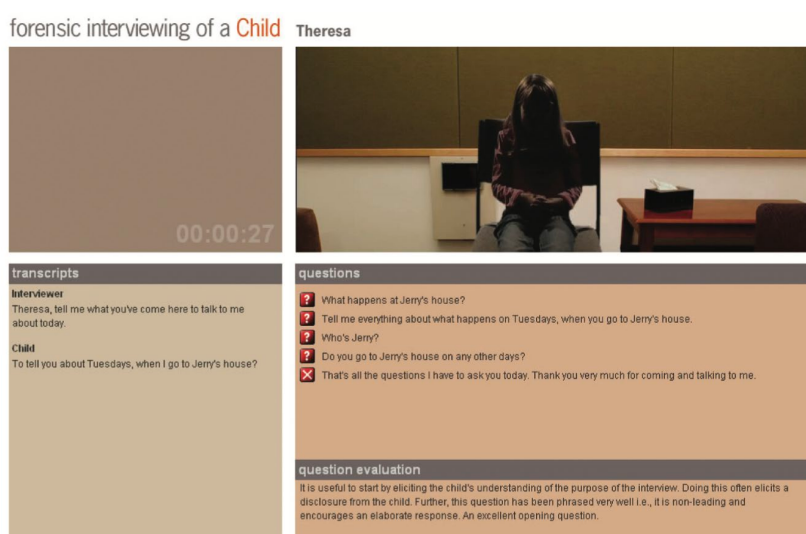


Figure 3 A straightforward text-based virtual client simulation designed to practice forensic interviewing skills with a child who is potentially experiencing abuse (Case7 & Powell 2022).

Table 3 Information and features included in simulation using virtual clients and/or environments.

Study, Year, Country	Virtual client and/or environment	Development	Immersion	Mode	Duration – each simulation	Background/case information provided?	Interaction with client and/or environment	Support/ interactive features
Atuel, 2021; United States	Not reported	Not reported	Non-immersive; low-tech	Not reported	5-8min	Not reported	Not reported	Not reported
Casey, 2022; Australia	<i>Unreal Interviewing</i> ; child client	Not reported	Non-immersive; low-tech	Computer-based; pre-loaded on a CD-ROM	30min	Yes – provided before interview	Participant selects from a list of questions. Choosing more open-ended questions results in more information gathered from the virtual client.	'Question evaluation' providing information support about forensic interviewing
Lanzieri, 2023; United States	Head mounted display virtual reality client simulation (HMD-VRCS); elderly female client in home environment	Custom designed by authors	Immersive; high-tech	VR program loaded on one Oculus Quest headset using a researcher's generic Meta account.	15min	Yes – patient information and health record; learning objectives; task chapters; introduction.	Interactive dialogue between the student and virtual client; clickable objects in the client's home that when selected support further dialogue between the two. Preferred options elicit positive verbal client responses.	Yes – feedback and text-based guidance prompts with branching multiple-choice options.
Lanzieri, 2021; United States	Head mounted display 360 virtual reality simulation to immerse students in a New York city neighbourhood.	University-based media design and development team; scenes videotaped with 360 video using a Nikon KeyMissionTM 360 camera; stitched together using Adobe Premiere software, and an actor-driven recorded voice-over audio. Edited using Wonda VRTM video-editing software.	Immersive; high-tech	Mobile device; Google Daydream headset	12min	Yes - instructional guide, learning objectives, content chapters, an introduction.	Not applicable	Yes - 17 navigable and interactive panoramic scenes (environments). Each panoramic scene contains audio and textual dialogues, such as question prompts, and a situational map.
Levine, 2013; United States	'Second Life' - an online multimedia platform that allows people to create an avatar for themselves and then interact with other users and user-created content within a multi-user online virtual world.	https://secondlife.com	Immersive; high-tech	Computer-based	?	Yes – orientation to Second Life, including access, avatar creation, and avatar navigation.	Role-plays between students within the virtual environment, a virtual department of human services. Three possible case scenarios.	Yes – information to conduct a case intake is provided on virtual posters in the environment.
Mastroleo, 2020; Putney, 2019 & 2021; Smith, 2021; United States	Computer-based interactive training module on Motivational Interviewing (MI) and/or Cognitive Behavioral Therapy (CBT) and/or referral to treatment (SBIRT); online patient simulation	SIMMersion - uses its artificial intelligence driven proprietary PeopleSim conversation technology to combine video, voice recognition, and flexible user control to create interactive environments in which learners conduct face-to-face conversations with fictional characters. https://www.simmersion.com	Non-immersive; high-tech	Computer-based	45min	Yes - a brief didactic training guide, including client background and clinical skills training; access to scripts that allow them to choose what they want to say and when. Students then choose the direction of the clinical engagement using the script.	Face-to-face conversation with a fictional virtual character; three possible versions of each character available..	Yes - a brief didactic training guide; on-screen coach providing visual cues (e.g., thumbs-up) and written guidance to help participants identify and adjust to mistakes; integrated feedback and scoring.
Washburn, 2016; United States	Computer-based online patient simulation	University-based development; technical information not reported.	Non-immersive; low-tech	Computer-based	45min	Yes - 20-minute informational session; each virtual patient reports a specific set of background events and symptoms, some of which were related to common mental health disorders, such as anxiety, depression, posttraumatic stress, and/or substance abuse.	Face-to-face interaction with virtual client via wireless mouse and headset set up for voice recognition; features six VPs of various ages, genders, and ethnicities.	Yes - live concurrent and terminal feedback from a mental health care professional.

What are the costs of simulation-based training?

None of the evaluations of simulation-based training formally undertook an economic evaluation of the costs associated with implementing the training. However, a small number of studies alluded to the potential costs of training social work students in this way. Two general points were made with regards to the costs of social worker training using simulation:

1. Simulation-based training using actors is resource intensive due to the investment in teaching/assessment, scenario design and development, employing and training actors, preparation and training of assessors, as well as the coordination of the simulation components and facilities required to implement effective simulation.
2. The initial costs related to technology and content development are substantial in relation to developing and delivering effective simulation-based training using virtual clients and/or environments – however, these costs are likely to diminish over time as the tools/products are further developed and become more widely available.

PART 2

USE OF SIMULATION-BASED TRAINING IN AUSTRALIA

THIS SECTION

This section describes the 'state of play' of simulation in social work in Australia, assessed using a representative, cross-sectional survey of educational providers.

The survey explored:

- the extent to which simulation is used;
- for what purpose;
- where simulation is used in the curriculum;
- what types are used (e.g., standardised actors; virtual clients);
- barriers to simulation use; and
- general views about simulation in social work education

Ethics was sought and obtained through the Monash University Human Research Ethics Committee (Project ID: 40544) and data collection commenced in November 2023 and ended in December 2023.

Recruitment and sample

We recruited members of the Australian Council of Heads of Social Work (ACHSW) through email solicitations (initial and follow-up requests), which were sent to all of its members (N=38) by the ACHSW executive. Members were asked to participate in a short, confidential, online survey about the use of simulation in social work practice.

Survey tool

After consulting the literature, the Monash team developed an initial set of survey questions and then consulted with representatives from top US and Canadian Universities, as well as a leader in the field in Australia. These included University of Toronto, University of California at Berkeley, University of California at Los Angeles and Smith College in Massachusetts. The survey (available upon request) was designed to take about 10 minutes to complete and was mostly comprised of pre-constructed response sets (i.e., choose all that apply). Open-ended 'other' categories were almost always included but tended to be used infrequently.

Data collection and analysis

The survey was administered using a Monash administered instance of QUALTRICS. Non-respondents were sent three follow-up emails to increase the response rate. Given the small sample size, no statistical tests were conducted.

Results

Summary

- Simulation is widely used by universities in Australia.
- Simulation is often used in more than one unit within a course.
- Use of trained actors in individual scenarios is the most common approach.
- Scenarios include different modalities and a wide range of service settings and populations.
- Feedback is always provided.
- Reliable and valid outcome measures for student performance are not widely used.
- Anecdotal reports from field providers indicate students are better prepared when first trained using simulations.
- Barriers to initial and increased use of simulation are driven by resource and time constraints.



Of the 38 member institutions, twenty survey responses were received (N=20) – a 53 per cent response rate. Among the 38 members, five (n=5) were non-university, private educational providers – none of which completed the survey. It is unclear whether private provider non-responses were related to simulation use, but they tend to be more resource constrained than universities so a lower rate of utilisation is likely. Most respondents were spread across the Eastern Seaboard and universities in all but one state (Tasmania) and one territory (NT) participated in the survey.

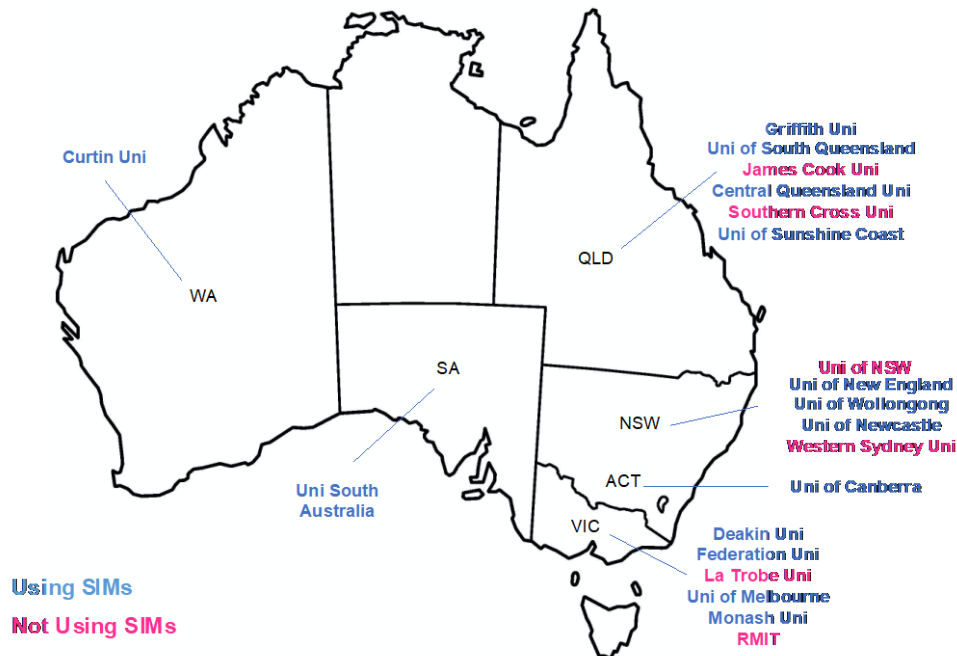


Figure 4 This map outlines the survey respondents who reported using simulation or do not currently use simulation.

Utilisation

Simulation is widely used in Australian Social Work courses. Among the 20 institutions that responded, 75 per cent reported using simulation in at least one unit in their course(s). Among these, the vast majority (86%) used it across multiple years. Of the five universities that did not use simulation, 60 per cent reported that they intend to begin using simulation in the near future.

Demographics

Participating universities included both undergraduate (BSW) and graduate (MSW) courses, often including both courses within a single university. Simulations were used in about 80 per cent of both undergraduate and graduate courses, suggesting that universities with both BSW and MSW courses used the similar educational approaches in both. Most universities (65 per cent) indicated that 10 per cent or more of their students were international.

Modalities used

Post-pandemic, the majority of universities appear to be able to deliver their curricula, including simulations, online (79%). The most common form of simulation-based learning involved the use of trained actors (50%), including virtual reality and/or computer-based simulations. One university uses AI technology (SimConverse) and video-based (Go-react) as part of their approach. Simulations were delivered as part of an individual session only (29%) or a combination of individual and group (e.g., family, case conference) were delivered across a course. Most universities (79%) also used simulations to model interactions in front of the class, giving students an opportunity to observe others and overcome performance anxiety by taking a turn in front of their peers. Individual and group-based simulations ranged in duration with the lower end simulations lasting ten minutes and the longer ones lasting up to two hours. Across the institutions, 85% implemented simulation in multiple years of a degree.

Settings and scenarios

Scenarios involved wide variety of practice settings, which include a range of problems and a diversity of clients. The most frequently used setting / scenario involved domestic and family violence (79%) followed closely by child protection, community health, and hospitals (64%). Aged care (57%) and mental health (57%) settings were also frequently used. Within these settings, students were generally asked to engage with the actors / VR and conduct assessments that included the development of communication skills (i.e., communication strategies such as using open-ended questions, following, and empathic response), information gathering and, in some cases, the application of theory to understand and/or engage with the actor(s). Most of what was described would be considered introductory and appeared to be delivered as a pre-cursor to working with real clients in upcoming field placements.

Learning Strategies

Beyond the simple use of scenario-based simulations and in line with best practice in simulation-based learning, educational providers paired simulations with reflective tasks and feedback. All providers used 'critical reflection' in their approach. This generally involves assignments where students consider and appraise their own work, identifying both where they did well and where they could improve. As well, all provided some form of feedback to their students, and substantial proportions provided feedback from peers (50%) or from the actors themselves (43%). Many used a rubric to structure feedback, and some used specific approaches such as diamond or debrief models. All providers offered a second attempt for students who failed their first simulation session.

Outcomes

Outcome measures were mentioned by three providers that cited using: 1) a validated rubric, 2) a Student Satisfaction of Simulation Survey adapted from Nursing (Harris & Newcomb 2023), and the Student Experience Simulation Scale. The majority (78%) do not use any validated measures. That said, anecdotal reports from field education providers were mentioned in the narrative portion of the survey. These described placement agency representatives informing the educational provider that student readiness for placement had improved since the introduction of simulations into their curricula.

Student Challenges

Although the use of simulations is widespread, and students appear to benefit from its use as a teaching tool, there are student-related challenges to its use. The greatest challenge appears to be initial anxiety related to the performative aspect of the process. *There is no hiding when you are observed.* Educational providers expressed that this initial anxiety was often present and substantial efforts to normalise anxiety and provide a safe space to learn were necessary for everybody. Interacting with common performance-related anxiety were other challenges. Providers expressed that students without prior practice experience (46%) performed less well than students with prior experience. As well, students who speak English as an additional language were identified by 29% of providers as having greater struggles than English as first language students. Culturally and Linguistically Different (CALD) students and students with 'lived experience' of challenges such as neurodiversity, mental health, or other concerns were also identified as having greater struggles with simulation.

Reasons Simulation Was Not Used

Of the five (25%) universities that stated they did not use simulations in their curricula, most indicated this was due to resource constraints (60%) – they simply could not afford to develop and deploy such a resource intensive teaching approach. Similarly, some providers indicated that their staff did not have sufficient training to develop and deliver high-quality simulations (40%). A small minority of providers (1 in 20 overall; 1 out of 5 who did not use simulations) indicated that students could do well without simulation and did not believe in their use.

Summary and Conclusion

Simulation is widely used as a teaching aid by social work educational providers, providing a platform for students to begin developing and practicing their skills before interacting with real clients in their field education placements. Although high-quality evaluations of its use are not regularly completed, this is beginning to occur and anecdotal evidence of improved performance is beginning to emerge. However, given the responses to this survey, it is safe to say that the use of simulation is quickly becoming the norm but that the extent to which it is used across the curriculum is limited. The main barrier to a greater reliance on this effective form of learning, both in terms of the initial decision to adopt simulation-based learning strategies and to expand its use, is the resources required to develop (staff time and training) and deliver simulations in a resource challenged environment. Efforts to decrease this constraint will likely be met with increased uptake and utilisation, leading to improved performance of students.

APPENDIX A1: EVIDENCE IDENTIFICATION AND SYNTHESIS

Technical Appendix - Evidence Identification and Synthesis

Evidence summary objectives:

- To synthesise evidence that describes and evaluates the implementation and effectiveness of simulation-based training for social work students, educators and service users.
- To identify the core components and implementation strategies of effective simulation-based training for social work students, educators and service users.

We used a scoping review methodology to identify and synthesise evidence to meet the stated objectives following the JBI scoping review guidelines (Peters et al. 2020) and PRISMA reporting guidelines for scoping reviews (Tricco et al. 2018). A scoping review approach allows for a broader sweep of the existing literature than a more narrowly defined systematic review, but enables us to systematically identify relevant studies to report on findings that address the key evidence summary objectives.

Inclusion criteria

Table A1 outlines the types of studies that were included in the scoping review.

Table A1 Inclusion criteria

Criteria	Scope
Intervention	• Social work simulation-based training. This was defined as a practice situation, utilised in social work education, that simulates, portrays and replicates a practice experience similar to those encountered by social workers in the field. Social work simulation-based training involves a simulated client (e.g., trained actor, virtual patient, Avatar) and/or an environment (e.g., a staged apartment or service setting, virtual counselling room, or other virtual environment). • Did not include peer role play.
Study design/methods	• Quantitative studies that evaluate the effectiveness of simulation-based training (with or without implementation), including randomised controlled trials (RCTs), quasi-experimental designs, and non-experimental studies, e.g. pre-post test designs, cross-sectional, cohort/longitudinal.
Participants	• Social work students (individual or as part of a group/team) • Social work educators, field instructors or supervisors If available: • Service users, where they are part of an evaluation of the intervention.
Outcomes	Effectiveness: • Any short-term outcomes for participants, e.g. confidence, skill mastery, etc. • Any medium to long-term outcomes for participants, e.g. employment, role satisfaction, role competence or mastery, turnover and burnout rates, etc. Implementation: • Any reported implementation measures, e.g. participants' satisfaction, intervention fidelity, acceptability, etc. If available: • Any service user outcomes, e.g. engagement, satisfaction, where they are part of an evaluation of the intervention.



Search strategy

To identify studies that met the inclusion criteria for this review, we undertook searches of the following eight databases: PsycINFO via Ovid; MEDLINE via Ovid; Social Work Abstracts via Ovid; CINAHL via EbscoHost; Social Services Abstracts via Proquest; ERIC via ProQuest; ASSIA via Proquest; and Proquest Dissertations & Theses. Table 2 outlines the example search terms for PsychInfo via Ovid which were adapted from Kourgiantakis et al. (2020). We also hand searched related systematic reviews for studies that met our inclusion criteria.

Table A2 Electronic database search for PsycInfo via Ovid

Search terms
1. social workers/
2. psychiatric social workers/
3. social casework/
4. social group work/
5. social work education/
6. MSW.mp
7. BSW.mp
8. (social adj2 (work* or casework* or case-work*)).mp
9. case work*.mp
10. socialwork*.mp
11. social-work*.mp
12. casework*.mp
13. case-work*.mp
14. or/1-13 [Social work concept]
15. simulation/
16. role playing/
17. vignette measure/
18. experiential learning/
19. computer simulation/
20. virtual reality/
21. simulat*.mp
22. virtual reality.mp
23. VR.mp
24. computer* simulat*.mp
25. role play*.mp
26. roleplay*.mp
27. vignette*.mp
28. ((simulat* or standard* or virtual* or computer*) adj2 (patient* or client* or case*)).mp
29. patient instructor*.mp



30. SPI.mp [Standardi*ed Patient Instructor]
31. SP.mp [Standardi*ed Patient]
32. objective structur* clinical examination.mp
33. OSCE.mp [Objective Structured Clinical Examination]
34. objective structur* teaching.mp
35. OSTE.mp [Objective Structured Teaching Exercise or Examination]
36. human patient simulat*.mp
37. HPS.mp [Human Patient Simulation]
38. SBL.mp [Simulation-based learning]
39. or/15-38 [Simulation concept]
40. 14 and 38

Screening and study selection

All studies identified through the database searches were transferred to Covidence, a systematic review software, where duplicates were removed. In Covidence, two reviewers working independently screened the titles and abstracts of each of the studies against the inclusion criteria. The full text of each of the studies that potentially met the review's criteria were then screened by a further two reviewers working independently to determine their suitability for inclusion in the evidence summary.

Data extraction

Two reviewers extracted data from each of the studies into a data extraction form that was developed a priori (see Table 3). Extracted data included publication data, such as: year of publication; country; title; authors; and type of publication (e.g. peer-review journal, report, dissertation). We then extracted data about the study itself, including: the aims and research question/s; location; participants (e.g. number, description); study design; description of the intervention (e.g. description, aim, modality, timing, dose, components, resources and facilities required; description of the comparator (if included); description of the outcomes and outcome measures (e.g. implementation, effectiveness, costs); a brief summary of the findings for each outcome; and brief notes of other outcomes not in scope of this review.

Evidence synthesis

The key characteristics and findings of interest to McKinnon have been narratively synthesised and presented without jargon or exaggeration, with the aim of responding to the key objectives of this review: 1) To synthesise evidence that describes and evaluates the implementation and effectiveness of simulation-based training for social work students, educators and service users; 2) To identify the core components and implementation strategies of effective simulation-based training for social work students, educators and service users.

The publication and study data that were collected have been synthesised and presented both narratively and with the use of tables and figures, to provide an overview of what evidence is available. To meet the second objective, each of the simulations evaluated have also been described in relation to their core components. That is, the 'active ingredients' of an effective, immersive simulation-based learning approach to training social work students have been identified, described and (where possible) quantified.

Where available, following the Susan McKinnon project brief, this synthesis has synthesised and presented essential implementation considerations drawn from the studies, with a particular focus on the Australian studies, including:

- What constitutes 'best practice' immersive simulation-based learning (e.g. activity – what does it 'look and feel' like, timing, dose, core components taught, progression and integration with field education training).

- The specialist resources, skills and facilities required to incorporate simulation-based learning into a Masters of Social Work curriculum
- Estimated additional costs to run a Masters of Social Work course with best practice simulation-based learning embedded in it
- Other implementation/execution factors that are important to consider (e.g. how to incorporate into existing degree programs; what would you need to stop doing in order to make way for this type of learning; how to best build on this for actual work with clients)

Table A3 Data extraction form

Extracted Data
Publication year
Country
Authors
Title
Publication type: peer-reviewed journal; report; dissertation/thesis.
Aim/s and/or research question/s
Location and setting of study
Participants: number total; number in each treatment group; types of participants (i.e. social work students, social work educators, service users); brief description of demographic information if provided.
Study design: randomised controlled trial; quasi-experimental; pre-post test; cross-sectional; cohort/longitudinal, other.
Intervention aim/goals, e.g assessment, information gathering, core skills training, other (describe)
Intervention aim/goals, e.g. for the purpose of teaching, for the purpose of assessment, both, other (describe)
Intervention modality: Individual; group; other
Intervention description: actors; computer simulation; AI; VR
Intervention description: key components (if described)
Intervention description: timing, dose
Comparator description: Description; modality; timing; dose.



Outcomes and outcome measures, effectiveness: - Participant type per outcome (if more than one type) - Any/all effectiveness outcome/s & outcome measure/s. - May include, but not limited to: core skills competence; mastery; employment outcomes; other.
Narrative findings, effectiveness, per outcome.
Outcomes and outcome measures, implementation: - Participant type per outcome (if more than one type) - Any/all implementation outcome/s & outcome measure/s. - May include, but not limited to: intervention fidelity; attrition; satisfaction; acceptability; resources and facilities required, other.
Narrative findings, implementation, per outcome.
Outcomes and outcome measures, costs: - Participant type per outcome (if more than one type) - Any/all cost related outcome/s & outcome measure/s. - May include, but not limited to: amount per participant; total amounts, other costs.
Narrative findings, costs, per outcome.
Further notes: Where not formally measured, any additional commentary relating to the following: - The specialist resources, skills and facilities required to incorporate simulation-based learning into a Social Work curriculum. - Estimated additional costs to run a Social Work course with best practice simulation-based learning embedded in it. - Other implementation/execution factors that are important to consider (e.g. how to incorporate into existing degree programs or training; what would you need to stop doing in order to make way for this type of learning; how to best build on this for actual work with clients).

Study identification

The search strategy yielded 5901 reports of studies, with 1645 duplicates identified and removed. Following title and abstract screening of 5854 reports of studies, 136 were identified for full text review. Of these, 24 met the inclusion criteria and were synthesised in the review. Figure A1 outlines the search and screening process.



Identification

Records identified from
databases (n = 5901)

Duplicate records removed
before screening (n = 1645)

Screening

Records screened
(n = 5854)

Records excluded
(n = 5718)

Reports sought for retrieval
(n = 136)

Reports not retrieved
(n = 0)

Reports assessed for eligibility
(n = 136)

Reports excluded:
Wrong study design (n = 43)
Wrong participants (n = 46)
Wrong intervention (n = 21)
Wrong outcomes (n = 2)

Included

Studies included in review
(n = 24)

Figure A1 outlines the search and screening process for the identification of studies included in the evidence review.

Table A4 outlines a summary of the key characteristics of each of the studies included in the evidence review.

Study, Year, Country	Aim/s	Simulation component of intervention	Were other components delivered alongside simulation? Y/N	Participants	Study design	Effectiveness outcomes and measures	Findings summary
Asakura, 2022; Canada	To examine observational learning in simulation-based social work education. Research questions were (1) Are there differences in the students' perceived learning benefits of simulation between interviewers and observers? and (2) What are the learning processes of observation in simulation-based social work education?	One-to-one 10-minute simulation with a standardised client (SC) in a class setting to demonstrate specific interviewing skills that were linked to the learning for that day. Three case scenarios were included in this assessment.	Y – Simulation was included in practice courses running over 13-24 week academic terms.	n = 66 BSW/MSW students (n = 53 observer responses; n = 54 interviewer responses)	Mixed methods; QED. Observer responses were compared to interviewer responses.	Perceived learning benefits: survey; 5 or 6 Likert-scale questions for interviewers and observers. Participants were asked about: (1) authenticity of the simulated client, (2) authenticity of the simulated client-worker interaction, (3) benefits of receiving or observing feedback for clinical learning, (4) benefits of interviewing a SC or observing simulated practice for clinical learning, and (5) benefits of interviewing a SC or observing simulated practice for self-reflection. Interviewers were also asked to respond to the benefits of engaging in simulated practice compared to role plays. An additional three open-ended questions asked about the students' perception about how simulation had (or had not) facilitated their learning of direct practice.	Being an observer was comparable to (1) being an interviewer on each of the survey items.
Atuel, 2021; United States	To compare the effectiveness of a standardised peer-to-peer role play (RP) and a virtual client-trainer (VC-T) in training graduate-level students in the development of interviewing and clinical skills related to working with a military population. The study examines each training modality in six areas: (a) self-efficacy, (b) initial engagement, (c) recognizing and responding to symptoms of post-traumatic stress disorder, (d) recognising and responding to symptoms of suicide, (e) military cultural	One-to-one 5-8 minute clinical interactions with a VC-T to interviewing and clinical skills related to working with a military population. Followed by a facilitator-led discussion of the clinical interaction, including what went well, identifying missed opportunities, what could have been done better/differently, and examples of useful clinical skills relevant to the training topic.	Y – Simulation was included as part of a 5.5 hour training on clinical engagement with military clients.	n = 161 MSW students (n = 61 RP group; n = 75 VC-T group)	QED; RP group compared to VC-T group	Self-efficacy: Military Self-Efficacy Scale Clinical skills: Clinical Skill Examination; Participants took part in a 20-min mock clinical skill interview before and after participation in the training. Clinical skill examinations were rated by skilled clinicians using the Military Objective Structured Clinical Examination scale (MOSCE).	The standardised peer-to-peer role play (RP) and the virtual client-trainer (VC-T) were found to improve self-efficacy and clinical skills equally.

competence, and (f) overall competence.

Badger, 2002; United States	To test the effectiveness and acceptability of using standardised clients (SCs) to provide social work students with opportunities to practice assessment skills prior to contact with real clients.	Students were exposed to standardised clients (SCs), presenting with mental health challenges, for 1.5 hours per class over the semester to practice mental health assessment skills.	Y – Simulation was included as part of a unit focusing on the assessment and treatment of mental health problems.	n = 80 MSW students (n = 18 Year 1 control group; n = 19 Year 2 group; n = 28 Year 3 group)	QED; Year 1 students (control group) were compared to Year 2 and Year 3 students.	Assessment skills: A 30-minute videotaped assessment and treatment planning interview with a simulated client, undertaken on the first day of class and at the end of term, was coded using the Assessment Interview Measurement Schedule (AIMS), a 66-item competency-based behavioural checklist.	Students exposed to standardised clients scored significantly better than students without such exposure.
Baez, 2005; United States	To teach medical, nursing, and social work students screening and brief intervention skills, provide a practice opportunity and feedback to students on their ability to demonstrate substance abuse skills, and to expose students to interdisciplinary collaboration. A social work specific goal was to explore the potential applicability of the Objective Structured Clinical Examination (OSCE) as a performance-based competency assessment tool for social work education.	2 x 10-minute OSCE to demonstrate competency in the areas of (1) interactive skills (2) screening and assessment (3) brief intervention, and (4) session closure, followed by a group debriefing.	Y – 3 hours of lectures focussing on substance abuse knowledge, screening and assessment.	n = 16 BSW/MSW students	Single group; pre-post; participants completed measures before lectures and following the OSCE.	Substance abuse knowledge: substance abuse knowledge questionnaire Interaction, screening and assessment skills competencies: post-test only	Mean score on the substance abuse knowledge questionnaire increased following the students' participation in the pre-lecture and OSCE.
Bragg, 2020; United States	To evaluate a three-day course module and simulation integrated in an introductory course on motivation interviewing (MI) designed to bridge the gap between undergraduate and graduate clinical education for advanced standing MSW students.	One-to-one 15-minute encounter with a SC depicting a client struggling with the fallout from a positive urine analysis that was requested by an employer, to demonstrate MI skills covered in the training.	Y – MI content was delivered over three phases: (1) an introductory workshop, (2) a simulation, and (3) an extensive debriefing.	n = 17 MSW students	Single group; repeated measures; participants completed measures at (T1), prior to the start of the simulation (T2), (DCBS), cultural competence, and awareness and again upon completion (T3).	Knowledge of MI: 20 item multiple choice test. Self-efficacy: Counselor self-estimate inventory (CSEI), 37-item inventory measuring counselors' self-efficacy, including five subscales measuring micro-skills, process skills, difficult client behaviour skills (DCBS), cultural competence, and awareness of values.	Increase in knowledge regarding MI from pre-course to pre-simulation; increases in overall CSEI and DCBS from pre-course to post-simulation; increases in overall CSEI, micro-skills, process skills, and DCBS from pre-simulation to post-simulation.

Casey, 2022; Australia	To examine whether knowledge acquisition can increase following participation in a brief (3-hour) computer simulated training session. Four research questions addressed: the proportion of open-ended versus specific questions used by social work participants; knowledge acquisition; perceived value of the training and perceived learning barriers; and, whether the computer simulated training assisted participants to understand the utility and benefit of child investigative interviewing.	One-to-one self-paced 30-minute computer simulated interview with a child client, to demonstrate the use of open-ended questions. Students could repeat the training over a three-hour period. Brief background information about a child avatar was given before commencement of the interview.	N – Eligible students were recruited from particular units of study.	n = 42 BSW/MSW students	Mixed methods; single group; pre-post	Use of open-ended questions: Five exemplars of initial comments made by children regarding potential abuse were presented to participants (baseline; post-training). Participants were asked to provide a follow-up question. Each question was coded into one of the following categories: open-ended (depth, breadth, open-ended invitation), specific (cued recall, yes/no, forced choice), and minimal encourager.	There was an increase in the number of open-ended depth questions participants used from baseline to post-training.
Hodorowicz, 2018; United States	The study aim was to empirically evaluate two innovative motivational interviewing (MI) teaching methods via a pilot randomised controlled trial within a population of social work students.	One-to-one interaction with SC actor in a classroom setting to demonstrate MI skills, with live feedback provided by a supervisor via an earpiece. Feedback provided by the supervisor and students in a small group.	Y – Delivered as part of a two-day live supervision training, with the second day focussing on simulation-based learning.	n = 17 BSW/MSW students (n = 9 LS group; n = 8 CL group)	RCT; LS group compared to CL group; week 1 (pre-test); week 2 (post-test); week 3 (follow up).	MI Knowledge and attitudes: MI Knowledge and Attitudes Test (MIKAT measured MI knowledge gain and belief/attitude at T1, T2, and T3. Higher scores indicate higher MI knowledge and MI adherent (MIA) attitude/beliefs. MI Skills: MITI coding system, which uses behaviour counts, tallied for the duration of a 20-min randomly selected portion of a 30-min audio recording, and globals, scores given based on an overall impression of the selected interaction.	There was no difference between the two training methods for MI knowledge and attitudes and MI skills – there was an increase over time for both groups (with some mixed results for MI skills due to baseline differences).
Kratz, 2022; United States	To explore educational outcomes of an educational pilot study integrating didactic instruction, readings, role-plays, and simulation for teaching suicide intervention skills.	One-to-one 50-minute interaction with a SC presenting with moderate to severe suicide risk, to practice assessment and treatment planning following the Collaborative Assessment and Management of Suicidality (CAMS) framework.	Y – 16-week MSW course, including pre-reading, suicidality lecture, role-plays and debriefing and assessment of the recorded simulated interactions.	n = 29 social work students	Single group; repeated measures; prior to the start of the course, before starting the simulation, and upon completion of the training.	Collaborative Assessment and Management of Suicidality (CAMS) framework - Knowledge: Survey; 11 true/false questions relating to CAMS specific content. Self-efficacy: Counselor Self Estimate Inventory (CSEI); 37 items, measuring counselors' self-efficacy regarding skills.	Increased CAMS knowledge and self-efficacy scores over time, from pre-course to post-simulation and from pre-simulation to post-simulation.

Lanzieri, 2023; United States	To explore how students perceive the learning effectiveness of a VRCS to prepare them to work confidently and competently with a real client in practicum.	One-to-one 15-minute interaction with an elderly female client in a virtual home environment. The simulation included the virtual client, patient information and health record, learning objectives, task chapters, an introduction, feedback and guidance prompts.	N	n = 54 MSW students	Single group; pre-post	Feelings towards working with a real client: Pre-post survey; three Likert and two short answer questions. Attitudes, perceptions and feelings: Survey; a mix of Likert, short answer and binary questions. Descriptive findings only.	Improved feelings towards working with a real client, including decreased perceived anxiety, stress and frustration to communicate and interact with a client, increased perceived competency, confidence and excitement, and increased interest in working with older clients.
Lanzieri, 2021; United States	To investigate learning outcomes and student perceptions of a 360 VR simulation that immerses the student in a physical setting to connect the micro and macro concepts within social communities and contexts.	One-to-one 12-minute interaction with virtual reality (VR) simulation of an environment (East-side, New York), including 17 navigable and interactive panoramic scenes (environments). Each panoramic scene contained audio narration, textual information, and a situational map. It included supportive material in the form of an instructional guide, learning objectives, content chapters, and an introduction.	N	n = 30 MSW students	Single group; pre-post	Knowledge, perceptions and attitudes: Pre-post survey; 28 questions divided into three parts (Learning Experience, Technology Experience, General Attitudes).	Increased survey scores on knowledge and perceived experiences of learning, technology and attitudes from pre to post.
Levine, 2013; United States	To explore whether participation in a virtual roleplay could increase learners' feelings of self-efficacy for tasks needed to conduct a case management intake.	"Second Life": Students enter a virtual human services organisation and engage one-to-one with a virtual client, played by a second participating student, to conduct a case management intake.	Y – 8-week online case management course covering the basics of client assessment, collaborative problem solving, treatment planning, referrals, treatment team participation, record keeping,	n = 9 social work students	Single group; pre-post; measured during the first module of the course and again following the roleplay.	Self-efficacy: Pre-post survey; 25-item self-efficacy scale.	More participants reported higher scores on the self-efficacy scale items at post-test.

and outcome
evaluation.

Mastroleo, 2020; United States	To evaluate whether a computer-based simulation training system, aimed to support the development of skills for student trainees, improves trainee skills for the treatment of clients with SUDs.	Participants accessed a computer-based interactive training module, and completed 10 role-plays, 20 min each, using the simulation. The computer randomly selected one of three versions of the client. At the end of each simulated session, participants were provided with scores that rated their effectiveness in introducing the basic tenants of CBT – creating a collaborative environment, maintaining a conversational tone, displaying empathy, individualising CBT for the simulated patient, ensuring patient understanding, setting an agenda for the session, and assigning homework in a clear and collaborative manner.	Y - CBT: Introducing Cognitive Behavioral Therapy included a brief didactic training guide; a simulated conversation with patient; and integrated feedback and scoring.	n = 65 MSW and Clinical Psychology PhD students (n = 40 SP + CB simulation group; n = 25 SP + Manual group)	RCT; SP + CB simulation group was compared to the SP + Manual group	Self-efficacy: Survey; Counselor Activity Self-Efficacy Scales (CASES), a 15-item self-administered questionnaire that assesses task self-efficacy, or capability to perform counselling tasks under normative conditions. Therapist skills (CBT adherence and competence): Survey; an abbreviated version of the Yale Adherence and Competence Scale (YACS), including five items: two core skills (assessment of primary drug use, agenda setting), two CBT skills (explain CBT concepts, understood CBT concepts), and one motivational item (MI style).	Mixed findings. Self-efficacy not reported. Participants of SP + CB simulation training showed greater improvement in “extensiveness” and “skilfulness” ratings across three skill categories: general agenda setting, explaining CBT concepts, and understanding of CBT concepts. SP + Manual participants showed greater improvement in “assessing primary drug use”. There were no changes observed in extensiveness or skilfulness of motivational interviewing (MI) style.
Osborne, 2016; United States	To present the quantitative outcomes as well as qualitative process findings, a class setting, to practice or lessons learned, when adapting the use of SCs in a social work curriculum. It was hypothesised that including the use of SCs would improve students’ attitudes, knowledge, and self-perceived skills (AKS) in addressing substance misuse, and that students would have favourable experiences with the first-	One-to-one 10-minute simulated interviews with SC in a class setting, to practice Screening, brief intervention, and referral to treatment (SBIRT) skills. Students and the SC completed the self-evaluation or peer evaluation of the student who was observed. Followed by a debriefing session where students received constructive feedback from the SCs and instructors. The self- and peer evaluations	Y – Didactic introduction to SBIRT; four core training modules; and, debriefing session.	n = 76 BSW and MSW students	Single group; pre-post	Attitudes, knowledge, and self-perceived skills: Pre-post survey; students’ attitudes, knowledge, and self-perceived skills (AKS), measured with a 13-question survey using a five-point response scale (1 = strongly agree and 5 = strongly disagree).	Eight of 13 items demonstrated improvements from pre to post test, including increased confidence in substance use assessment and intervention ability, and stronger feelings that routine screening is critical to practice.

	time use of SCs in their education.	were discussed during this debriefing for critical and constructive feedback.					
Pecukonis, 2016; United States	To test a brief educational approach for instructing social work students to use motivation interviewing (MI) in a child welfare setting.	One-to-one 30-minute interview with a child welfare SC actor in a professional simulation lab to practice/demonstrate engagement and MI skills.	Y – 6-hour didactic MI training	n = 54 BSW/MSW students enrolled in a child welfare field placement (n = 26 MI LS; n = 28 TAU)	RCT; MI LS group was compared to the TAU group; data were collected at four time points over 7 months: baseline (T1), onset of training (T2), conclusion of training (T3), and 5-month follow-up (T4)	30-minute (random 20-min clip) interviews were coded for: Empathy and MI Skills: Empathy dimension of the global scale of the MITI 3.1.1 coding system; Empathy: Global spirit rating; MI adherent; MI Non-adherent; Closed questions; Open questions; Simple reflections; Complex reflection; Total reflections Self-efficacy: General Self-Efficacy Scale (GSE), a 10-item measure that assesses an individual's general perception of self-efficacy and predicts coping with daily hassles and stressful life events. Modified for a child welfare population. Engaging skills: T1 only Perceptions of Motivational Interviewing: T3 only	The MI LS group demonstrated overall positive change over time and consistent improvement on MI skills. At the 5-month follow-up, a higher percentage of the MI LS group had maintained or improved compared with the TAU group. No differences were found between groups or over time on self-efficacy or empathy, whereas self-reported attitudes towards MI improved in both groups over time.
Phillips, 2018; United States	To determine if there was a difference in end-of-life, care-specific, educational needs as measured by the End-of-Life Professional Caregiver Survey (EPCS) between university social work students who participate in traditional classroom settings compared to high-fidelity end-of-life simulations.	8-minute interactions with SC actor to demonstrate end-of-life care skills; one full day of simulation-based training.	Unclear.	n = 92 (n = 55 traditional group; n = 39 simulation group)	RCT; Traditional group compared to the simulation group	End-of-life, care-specific, educational needs: End-of-Life Professional Caregiver Survey (EPCS), including six domains with 28 care-specific questions, broken down into three categories: patient/family-centered communication, cultural/ethical values, and effective care delivery.	No differences between students who participated in the traditional classroom setting and those who participated in the high-fidelity simulation, but there was a significant main effect of time for both groups between the pre and post-test scores.
Putney, 2021; United States	To evaluate the efficacy of online patient simulation (OPS) training for Screening, and Brief Intervention (SBI).	Computer generated client interaction (SIMmersion). Students could practice SBIRT one-to-one interviewing skills with two case scenarios at any time over the training. An on-	Y - 3-week training in either SBIRT through a didactic presentation of each component,	n = 19 MSW students	Single group; Pre-post; before and after the training.	Substance use SBI skills: Pre-post test simulation scores generated from computer-generated client interaction to assess competencies in three areas, including creating a motivating conversation, utilising motivational interviewing principles, and using	Increase in substance use SBI skills from pre-test to post-test.

		screen coach offered non-verbal cues to affirm successes and flag mistakes. A review includes quantitative scoring and detailed qualitative feedback.	including validated screening tools, an introduction to brief intervention skills, and an introduction to the treatment system of care. Observed an in-class skills demonstration, and participated in standardised role plays.		tools effectively. Simulation components could total 100 points.		
Putney, 2019; United States	To detail the integration of online interactive client simulation technology in advanced-level master of social work curricula, and present a preliminary analysis of changes in students' screening and brief intervention skills.	Computer generated client interaction (SIMmersion). Students could practice MI or SBIRT one-to-one interviewing skills with two case scenarios (differed for different classes) at any time over the 3-week training. An on-screen coach offered non-verbal cues to affirm successes and flag mistakes. A review includes quantitative scoring and detailed qualitative feedback.	Y – 3-week training in either SBIRT or MI through a didactic presentation of different components, and participated in standardised role plays.	n = 54 social work students from two separate classes (n = 33 and n = 21)	Single group; repeated measures; measures at baseline, mid-course, and conclusion of course.	Screening and brief intervention skills: Scores generated from computer-generated client interaction. Simulation assessing competencies in three areas, including an overall score. Students in the Alcohol, Drugs, and Social Work Practice class were assessed for: patient management, screening, and brief intervention. Students in Motivation Interviewing course were assessed for: engagement and relational skills, applying motivational interviewing mechanisms, and change planning.	Improvements over time in all screening and brief intervention skills, excepting patient management.
Rawlings, 2021; United States	To report on the development, implementation, and assessment of an inter-university simulation-based learning (SBL) project for social work students.	Students completed two 15-minute one-to-one OSCEs with post interview feedback and reflection. Students were provided an overview of the process and a brief paragraph outlining the scenario. In addition, students were given client face sheet information, similar to what would be provided to a child welfare emergency response worker investigating an allegation.	Y – Delivered as part of the MSW course.	n = 70 MSW students	Single group; Pre-post; first OSCE at start of course and second OSCE at end of the course.	Engagement competence: Pre-post Objective Structured Clinical Exam (OSCE) assessed using the Performance Rating Scale; adolescent and adult scenarios with 12 and 13 items respectively.	Participants performed better on the adolescent scenario, with increases in engagement competence for the adolescent, but not the adult scenario. Performance improved when completing the OSCE twice during an academic year and when specific learning modules were added.

Sacco, 2017; United States	To examine the effectiveness of a 15-hr stand-alone Screening, Brief Intervention, and Referral to Treatment (SBIRT) training for MSW students with the use of standardised patients.	One-to-one 20-minute standardised patient actor interactions to practice/demonstrate SBIRT skills. Students also interacted in a number of role-play and experiential exercises during training.	Y - Screening, Brief Intervention, and Referral to Treatment (SBIRT) training through didactic sessions, role plays, and pre-post videotaped standardised patient (SP) interactions.	n = 83 social work students	Single group; repeated measures; pre-training, 30 days post-training, and 6 months post-training.	SBIRT confidence, knowledge, and behaviours: Self-report questionnaire assessing SBIRT confidence, knowledge, and behaviours SBIRT behaviours and skills: Students' 20-min standardised patient interactions were videotaped and coded using the MD3 SBIRT Coding Scale, which evaluates 14 SBIRT-adherent ("desirable") behaviours, seven SBIRT-nonadherent ("undesirable") behaviours, and two global skills; communication and empathy.	Increases in SBIRT confidence, knowledge and behaviours from pre-training to 30-days post-training, with varied findings 6 months post-training. SBIRT behaviours and skills increased from pre-training to 30 days and 6 months post-training.
Schreiber, 2018; United States	To present a social work group practice class that used racially and ethnically diverse simulated clients and an evaluation of the pedagogy using a mixed methods design.	20-minute group sessions with seven racially and ethnically diverse SC actors and two student facilitators in a simulated client lab class.	Y – Delivered as part of an undergraduate course	n = 36 social work students	Mixed methods; Single group; Pre-post	Student learning about diversity and oppression: Self-report measure; Diversity and Oppression Scale (DOS), including 25-items measuring four factors: cultural diversity, self-confidence, diversity and oppression, social work and client congruence, and social worker responsibilities.	Student learning about diversity and oppression scores increased from pre to post-test.
Skoura-Kirk, 2021; United Kingdom	To explore the development of social work students' procedural skills and reflective development, this evaluation was based on service user-led role-plays with first-year undergraduate social work students..	One-to-one 15-minute role-play between a student and a past service user (acting) to practice procedural skills/competencies. Followed by a group discussion 2-3 days later with 6-10 students and a practice educator.		n = 38 social work students	Mixed methods; Single group; Pre-post;	Procedural skills and reflective development: Student self-rating survey following roleplays and one week later; performance, knowledge of theory, confidence, helpfulness of reflection and need to develop skills; 10 open ended questions followed by a 5-item survey using 10-point semantic differential scales. Service users survey; 15-item questionnaire using a 5-point Likert scale following roleplays; quality of introduction, explanations of meeting purpose and agenda, sticking to time, listening to the service user, allowing for expression of user views, understanding user views, ensuring user comfort, treating user with respect, care for user feelings, asking relevant questions, avoiding jargon, preparedness for meeting, quality of ending the meeting, and student confidence. Practice educators: 3-item questionnaire on a 10-point semantic differential scale	Improvements in overall ratings from each respondent type. Student participants and Practice educators ratings improved, excepting for reflection (high at baseline) and self-rated performance. Service users ratings were mixed.

						and a descriptive overview 2-3 days after reflective discussions; student group cognitive, reflective and affective development.
Smith, 2021; United States	To evaluate the initial feasibility, acceptability, usability, and effectiveness of implementing three computerised simulations with virtual clients within a real-world Master of Social Work (MSW) course.	Computer generated client one-to-one interactions (SIMmersion) to practice CBT Functional analysis and Brief MI. Students engaged with a 45-minute orientation session to complete the following: (1) score 90 or better (out of 100 points) at least once for each virtual client, and (2) complete at least four sessions with each of the three virtual clients. They were also advised to review the eLearning curriculum within each simulation.	Y – 13-week course teaching foundation, application, versatility, and limitations of MI and CBT.	n = 22 MSW students	Mixed methods; Single group; Pre-post; measured first day of class and final day of course.	Self-efficacy: Self-report survey; counsellor activity self-efficacy scales (CASES), consisting of 15 self-reported items (scaled "0 = no confidence" to "9 = complete confidence") evaluating perceived confidence in performing counselling skills; total score And three domains—exploration skills, insight and action skills.
Tyler, 2021; United States	To investigate the feasibility of a formative objective structured clinical examination adapted for social work (OSCE-SW) with a parent–bisexual child dyad and evaluate self-efficacy and performance learning outcomes for undergraduate social work students.	15-minute SC actor interview with a parent–bisexual child dyad and student in an outpatient counselling setting. Included pre-briefing in class one week prior to the OSCE.	N	n = 18 BSW students	Single group; Pre-post; before and after engagement with the OSCE-SW.	Self-efficacy: self-report survey; four-item survey using a 5-point Likert-style response option to measure self-efficacy in the social work role and interactions with LGBTQ individuals and their parents. Competence: Post-test only.
Washburn, 2016; United States	This study presents preliminary feasibility and acceptability data on the use of virtual patient (VP) simulations to develop brief assessment skills within an interdisciplinary care setting.	Five 45-minute one-to-one virtual patient (VP) simulations to develop brief assessment skills within an interdisciplinary care setting. Included a 20-minute information session.	N	n = 6 MSW students	Single group; Pre-post	Diagnostic accuracy: Diagnostic Rating Form (DRF), based on DSM-V criteria. Students' DRF assessments were scored on a scale of 0 (low diagnostic accuracy/inadequate information gathered) to 50 (high diagnostic accuracy/necessary information was gathered). Clinical assessment skills: Post-test only

APPENDIX A2: FURTHER READING LIST

This section compiles a list of studies that are recommended further reading.

Recent systematic reviews on simulation-based training

1. Reith-Hall, E. and Montgomery, P., 2023. Communication skills training for improving the communicative abilities of student social workers: A systematic review. *Campbell Systematic Reviews*, 19(1), p.e1309.
2. Baker, E. and Jenney, A., 2023. Virtual Simulations to Train Social Workers for Competency-Based Learning: A Scoping Review. *Journal of Social Work Education*, 59(1), pp.8-31.
3. Huttar, C.M. and BrintzenhofeSzoc, K., 2020. Virtual reality and computer simulation in social work education: A systematic review. *Journal of Social Work Education*, 56(1), pp.131-141.
4. Jefferies, G., Davis, C. and Mason, J., 2022. Simulation and skills development: Preparing Australian social work education for a post-COVID reality. *Australian Social Work*, 75(4), pp.433-444.
5. Kourgiantakis, T., Sewell, K.M., Hu, R., Logan, J. and Bogo, M., 2020. Simulation in social work education: A scoping review. *Research on Social Work Practice*, 30(4), pp.433-450.

Studies identified as part of the evidence summary

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2. Atuel, H.R., and Kintzle, S., 2021. Comparing the training effectiveness of virtual reality and role play among future mental health providers. *Psychological Trauma: Theory, Research, Practice and Policy*, 13(6), pp.657-664.
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9. Hodorowicz, M.T., Barth, R., Moyers, T. and Strieder, F., 2020. A randomized controlled trial of two methods to improve motivational interviewing training. *Research on Social Work Practice*, 30(4), pp.382-391.
10. Kazmerski, K.J., 1979. *Experiential Exercises in Social Work Education for Administrative Practice*. City University of New York.
11. Kratz, J., Bragg, J.E., Nay, E.D., Miller-Cribbs, J., Munoz, R.T. and Howell, D., 2022. Educational assessment of a social simulation for MSW students using the CAMS framework. *Social Work Education*, 41(2), pp.248-260.

12. Lanzieri, N., McAlpin, E.C. and Asakura, K., 2023. A VR Client Simulation to Prepare MSW Social Work Students for Practicum: A Feasibility Study. *Journal of Technology in Human Services*, 41(3), pp.230-258.
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