

# Feedback practices by simulated participants as educators in communication skills training: A BEME Scoping Review

## Review Group

### Group Members & Expertise

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Dr Andrea Doyle is a medical physicist, and a postdoctoral researcher at the SIM Centre for Simulation Education and Research at RCSI University of Medicine and Health Sciences, Dublin. She served as a member of the BEME board in 2020, and contributed to two BEME reviews examining the health professions education response to the C-19 pandemic. She has also supported staff involved in systematic reviews and educational research, and in raising awareness of the evidence base for best educational practice among faculty, as a member of the RCSI BICC in 2020. Her research and training in medical physics and healthcare technology uniquely equipped her to work collaboratively with health professionals in multi-disciplinary teams to develop training pathways informed by specific clinical critical competencies and underpinned through the development of anthropomorphic physical simulation devices. Andrea's research interests are in the areas of medical education and simulation, and the development of best evidence medical education training tools and training programs for continued education and professional development.

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Clare Sullivan is a Researcher in Simulation at the SIM Centre for Simulation Education and Research at RCSI University of Medicine and Health Sciences, Dublin. She has expertise in healthcare simulation and medical technology. As a chartered engineer with a qualification also in occupational therapy, her background has given her the skills to understand technology and how technology supports and facilitates how people live and learn. She has been working in healthcare simulation for seven years during which time she was instrumental in establishing a bank of in-house trained simulated patients at RCSI. She has coordinated the running of many simulated patient training events and most recently coordinated the training of the RCSI simulated patients for online teaching during COVID. She played a large role in planning for and managing the transition of simulation-based education in RCSI to the new National Surgical and Clinical Skills Centre which opened in July 2017. Clare has led simulation-based research projects in RCSI and has presented at national and international conferences including SimGhosts, AMEE and ICCH.

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Michelle O'Toole is a Researcher at the RCSI SIM, Centre for Simulation Education and Research in the Royal College of Surgeons (RCSI), Dublin. She is experienced and accredited as a Paramedic Tutor, with specific expertise in teaching communication skills to Firefighters and Paramedics. She is an experienced peer supporter and mentor, gaining accreditation in Critical Incident Stress Management (CISM) with the International Critical Incident Stress Foundation (ICISF). During her Masters in Psychological Trauma, she studied qualitative methodology, particularly interpretative phenomenological analysis. Her research interests include wellbeing, peer support, post-traumatic growth following adversity and the use of simulation to prepare learners for real world experiences.

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Dr Naoise Collins is an educational design expert and a postdoctoral researcher at the SIM Centre for Simulation Education and Research at RCSI University of Medicine and Health Sciences, Dublin. He has extensive experience developing educational tools to improve the educational environment of learners. He is specifically interested in underpinning educational design into theoretical frameworks to account for the learning that takes place. He is a mixed methodologist with a keen interest in medical education and simulation with a PhD in situated learning through virtual reality.

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Mr Paul J Murphy, is an information specialist with the Library, Royal College of Surgeons in Ireland, and he was previously medical librarian of University College Dublin. He is a member of the European Association for Health Information and Libraries. Paul has extensive expertise in literature searching for clinical systematic reviews, clinical guidelines, Best Evidence Medical Education (BEME) reviews, and evidence summaries.

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Dr Claire Mulhall is the Research Programme Manager at the RCSI SIM Centre for Simulation Education and Research at RCSI University of Medicine and Health Sciences, Dublin. With over 20 years' experience as a programme manager, Dr Mulhall builds strategic partnerships and manages relationships with both internal and external stakeholders including research collaborators and funding agencies. She supports staff involved in qualitative research, systematic reviews and other simulation-based research projects. She is currently finalising a systematic review of her own which looks at the barriers and facilitators to interdisciplinary collaboration on surgical ward rounds.

## Principle Investigator

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With a clinical background as an emergency paediatrician, Prof. Eppich's research uses qualitative methodologies to study synergies between simulation and workplace learning in the areas of team reflection, healthcare debriefing, and team adaptation. He earned a PhD in Medical Education from Maastricht University with a thesis focused on conversational learning. He has co-authored over 80 peer-reviewed articles and book chapters. He collaborates with team and organizational psychologists to study team processes both in and outside healthcare. In 2018, he travelled to Antarctica to perform ethnographic field observations and in-depth qualitative interviews to investigate how Antarctic research teams adapt to ever-changing conditions in extreme environments. His research program seeks to delineate the contribution of workplace talk and team interactions to learning and performance.

## Expert Stakeholders

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Dr Claire Condron is the Director of Simulation Education at SIM Centre for Simulation Education and Research at RCSI University of Medicine and Health Sciences, Dublin. Her role involves working with faculty across the areas of medicine, physiotherapy, pharmacy, PA, paramedic training and postgraduate surgery on curriculum and assessment design; standard setting; scenario testing and debrief training. She was a founding Senior Lecturer in simulation-based education (SBE) at RCSI, and has over 25 years' experience in designing, delivering and evaluating teaching and learning across the healthcare professions. She was instrumental in establishing the simulated patient programme at RCSI and is an experienced researcher with expertise in both qualitative and quantitative methods. Her research interest is understanding the social architecture and scaffolding required to learn collaboratively in groups through simulation.

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Prof. Nestel is program lead for Graduate Certificate in Clinical Simulation (Monash University) and the Graduate Programs in Surgical Education (University of Melbourne). She leads a national faculty development program for simulation practitioners – [NHET-Sim](#) and a simulated patient network - [SPN](#). Prof. Nestel is Editor-in-Chief, the International Journal of Healthcare Simulation (IJoHS), the journal of the Association for Simulation Practice in Healthcare (ASPiH). She was Founding Editor-in-Chief of Advances in Simulation. She has received national awards for her work in healthcare simulation and a Presidential Citation from the Society for Simulation in Healthcare. Prof. Nestel has published over 200 peer-reviewed papers in health professions education, edited books on simulated patient methodology (2015), healthcare

simulation (2017), surgical education (2019) and research methods for healthcare simulation (2019) and is currently co-editing a major reference work on clinical education.

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Dr Nancy McNaughton is a Health Professional educator with over thirty years' experience in the field of simulation-based education primarily working with Simulated Participants. She is an Assistant Professor with the Dalla Lana School of Public Health at the University of Toronto and a Scientist with the Wilson Centre for Research in Education at the University Health Network. Actively engaged as a researcher and educator, Dr McNaughton works with a broad range of professional groups both inside and outside healthcare. She engages in research locally, nationally, and internationally, and designs and delivers curriculum, evaluation programs, and remediation activities. She is a critical qualitative researcher with special interest in the role of emotion and affect in communication training and professional development.

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Prof Frank Coffey is a Consultant in Emergency Medicine and Head of Service at the Emergency Department, Queen's Medical Centre Nottingham. Amongst his many educational and research interests, he has a long-time interest in the training and quality assurance of simulated patients (SPs). He is simulation lead for the East Midlands School of Emergency Medicine, where his current focus is the use of simulation in leadership training. In 2014, as the inaugural 'Educator in Residence' at the Royal College of Surgeons in Ireland, Frank oversaw the implementation of an SP programme in the undergraduate medical curriculum. In 2016 he was made a Fellow of ASPiH (Association of Simulated Practice in Healthcare) 'for services to the SP methodology'. Frank's other interests include health improvement / prevention and advanced practice roles. He is Clinical Director for the MSc in Advanced Clinical Practice at the University of Nottingham.

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Robert MacAulay is a Canadian-American citizen living in San Diego, California where he has worked for the past 17 years at the University of California San Diego, School of Medicine as a standardized patient, a standardized patient educator and now as the Director of Simulation Education. He has been active in simulation education at the local level with the California Consortium for the Assessment of Clinical Competency (CCACC) as a member and former Chair of the Trainers' Committee and on the national/international level as a member of the Association of Standardized Patient Educators (ASPE), the global network for human simulation education in healthcare, where he serves as President.

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Dr Michael Anderson is a lecturer in research methodology, a Government of Ireland Scholar with qualifications in Law, Taxation and Classics. He specialises in qualitative research and in particular working with hard to reach communities. Previous to his doctoral research, Michael Anderson worked abroad as a market research consultant and he has a keen interest in law and the workings of juries. He has been involved as a simulated patient with teaching and exams in RCSI since 2016. From his experience as an SP he has learned that willingness to participate and commit in simulation are the result of a wide range of motivations that become clearer over time. He has an interest in further research in SP methodology and its application to practice because it provides a unique learning experience for students whose interpersonal skills are still in formation.

## Glossary of Terms

**Simulation** – A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions (Lioce *et al.*, 2020). It is also an educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner (Gaba, 2004).

**Association of Standardized Patient Educators (ASPE), Standards of Best Practice (SOBP)** - ASPE is a global organization with a mission to share advances in SP methodology, assessment and research through scholarship and professional development. Published in 2017, the ASPE SOBP are standards developed for those working with human role players who interact with learners in a wide range of experiential learning and assessment contexts (Lewis *et al.*, 2017).

**Simulated Patient** – A person who has been carefully coached to simulate an actual patient. In performing the simulation, the SP presents the gestalt of the patient being simulated; not just the history, but the body language, the physical findings, and the emotional and personality characteristics as well (Barrows, 1987). Often used interchangeably with standardized patients in the USA and Canada, but in other countries simulated patient is considered a broader term than standardized patient, because the simulated patient scenario can be designed to vary the SP role to meet the needs of the learner.

**Standardized Patient** – An individual trained to portray a patient with a specific condition in a realistic, standardized, and repeatable way and where portrayal/presentation varies based only on learner performance; this strict standardization of performance in a simulated session is what can distinguish standardized patients from simulated patients (Lioce *et al.*, 2020).

**Simulated Participant (SP)** – (Simulated Person) A person who portrays a patient (simulated patient), family member, or health care provider in order to meet the objectives of the simulation. Simulated persons often engage in assessment by providing feedback to the learner (Palaganas *et al.*, 2014).

**Embedded Participant** – An individual who is trained or scripted to play a role in a simulation encounter to guide the scenario, and may be known or unknown to the participants; guidance may be positive or negative, or a distractor based on the learning objectives, level of the participants, and the needs of the scenario (Lioce *et al.*, 2020).

**Confederate** – An individual other than the patient, who is scripted in a simulation to provide realism, additional challenges, or additional information for the learner, e.g., paramedic, receptionist, family member, laboratory technician (Lioce *et al.*, 2020).

**Role Player** – One who assumes the attitudes, actions, and discourse of (another), especially in a make-believe situation, in an effort to understand a differing point of view or social interaction. For example: nursing students were given a chance to role play a patient or a surgeon. This term is sometimes used interchangeably with the terms 'simulated' and 'standardized patient' and may include medical, nursing, or other health professionals (Lioce *et al.*, 2020).

## Abstract

Feedback practices are a key aspect of the simulated participants' role which allow them to take on an educator role and help shape the development of learners' communication skills. Feedback, however, is a skill that simulated participants find difficult to master (Nestel *et al.*, 2010) and in the past these feedback processes did not align with recommendations (Bokken *et al.*, 2009). Suboptimal feedback practices may therefore be denying learners of the valuable feedback they need, to learn and improve.

To date literature reviews about the simulated participants' role have typically focussed on their effectiveness in a certain discipline or for certain communication competencies. Bokken *et al.*'s 2009 review of feedback by simulated patients recommended further research to identify the domains in which simulated participants could most effectively provide feedback to students. This scoping review aims to systematically map the evidence related to simulated participants' role as educators and identify how simulated participant feedback practices are part of training.

We will examine the role of simulated participants as educators in communication skills training through a scoping review guided by the Levac *et al.* (2010) six-step framework and informed by JBI guidelines (Peters *et al.*, 2020). We will adapt the ACTIVE framework to describe stakeholder involvement (Pollock *et al.*, 2019) to ensure the research is impactful. Data extraction will be guided by the Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP) (Lewis *et al.*, 2017) for those working with human simulated participants, specifically Domain 3 about simulated participant training for role portrayal and feedback.

Through identification and summary of available evidence, our findings will help guide education and further research to delineate features of simulated participant methodology and provide a more fine-grained understanding of simulated participants' unique contribution to communication skills training.

## Background

Feedback practices comprise a key aspect of a simulated participant's role, however simulated participants report that they find the delivery of precise and inspiring feedback difficult (Nestel *et al.*, 2010). In the past, simulated participant approaches to feedback failed to align with recommendations (Bokken *et al.*, 2009). Best practice standards for feedback exist for simulated participant training, published by ASPE. However, we do not know the degree to which these standards are implemented in practice. This raises the question, if simulated participants engage in in suboptimal feedback practices, does this deny learners valuable feedback? We have the potential to transform the experience of learners if we improve our knowledge and understanding of how best to prepare simulated participants to provide feedback and how to optimally implement these feedback practices.

Despite these concerns, the global expansion of simulated participant methodology continues in order to meet educational needs. Learners across health professional domains require effective communication skills with patients and other clinicians. This growth has occurred even though aspects of its application in practice remain insufficiently described and lack empirical grounding. For example, recent literature reviews highlight gaps in our understanding about context or domains of simulation scenarios used in communication skills training. Moreover, little empiric evidence shapes our understanding of how to best prepare simulated participants in specific feedback practices, both 'in role' during and 'out of role' following simulated scenarios (Kaploniyi *et al.*, 2017, Bokken *et al.*, 2009 & Cleland *et al.*, 2009).

Quality assurance should inform ongoing training programs, especially if the scope of simulated participant practice continues to expand beyond role portrayal and to include educator roles (Nestel *et al.*, 2010). Only studies from the United States 2011-2016 and included in the synthesis of methods for evaluating the quality of simulated participants' performance, including feedback (Zhang *et al.*, 2018). This narrow geographical focus omitted key tools designed to assess simulated participants' performance and feedback practices such as the Nijmegen Evaluation of the Simulated Patient (Bouter *et al.*, 2013).

Traditionally, simulated participants have mainly taken on patient roles. Therefore, simulated patient and standardized patient are well established terms. Simulated participants can however take on other roles such as family members or healthcare staff often referred to as embedded participants or confederates (Nestel *et al.*, 2014). Previous systematic reviews about simulated or standardized patients have omitted embedded participants suggesting they potentially missed capturing valuable shared learnings from a closely related practice. For the purpose of this review, the term simulated participant will be defined broadly, as a person who portrays a patient (simulated patient), family member, or health care provider in order to meet the objectives of the simulation. A recent BEME review addressed the role of real patients in medical education, where authors reported that patients can enrich medical education by allowing learners to explore patient-centred perspectives (Gordon *et al.*, 2020). Our review differs as it proposes to address the simulated participant's role in healthcare education.

Prior systematic reviews focussing on simulated participants have been valuable to gain an understanding of their role. This prior work has focused on discrete healthcare disciplines such as medicine (Wilbur *et al.*, 2018), nursing (MacLean *et al.*, 2017), physiotherapy (Pritchard *et al.*, 2016), pharmacy (Björnsdottir *et al.*, 2020) and dietetics (O'Shea *et al.*, 2019). However, no reviews have synthesised communication competencies across disciplines. Other reviews examined use of simulation and other teaching interventions to train individual communication competencies such as empathy (Batt-Rawden *et al.*, 2013, Kelm *et al.*, 2014), shared decision-making (Ospina *et al.*, 2020), end-of-life communication (Chung *et al.*, 2016) and handoffs (Davis *et al.*, 2017). Reviews also sought to identify theoretical frameworks for simulation-based learning, highlighting a need to move from teaching theories to learning theories to underpin simulation interventions (Kaakinen *et al.*, 2009). In these reviews, simulation is typically addressed as one of several educational interventions, giving simulation insufficient specific focus.

Bokken *et al.*'s 2009 review of feedback practices by simulated patients recommended further research to identify the domains in which simulated participants could most effectively provide feedback to students. We aim to begin filling this gap and provide an update and broader review of feedback practices in the 13 years since Bokken *et al.*'s study. Zhang's recent 2018 study also addressed feedback practices from a quality assurance perspective, although it's narrow US focus leaves plenty of scope for additional cross continental learnings.

The global perspective of simulated participant training and feedback practices is important for a number of reasons. Differences in the application of simulated participant methodology in different countries means that there is great scope for learning and there is a need to facilitate closer collaboration between centres in the development of SPs (Cantillon *et al.*, 2010). Cultural differences in communication skills exist globally. Different cultures place value on different elements of communication (Verma *et al.*, 2016). It is therefore important to gain an understanding of how these nuances are managed in simulated participant training and feedback practices. Shared learnings across the globe can help expedite the transformation of improvements and good practices globally.

Effective communication skills training positively impacts team effectiveness and patient safety (McHugh *et al.*, 2020). To be effective, communication skills training needs to include practice-oriented strategies with feedback (Berkhof *et al.*, 2011). However, we know little about the extent to which feedback practices are integrated into simulated participants training and how simulated participants implement these feedback practices on a day-to-day basis. Given its vital role, we must clarify how best to prepare simulated participants to integrate feedback practices into communication skills training. Therefore, we aim to systematically map the evidence related to simulated participants' role as educators and identify how simulated participants' feedback practices are part of training. This approach will greatly expand our understanding of simulated participants' unique contribution to communication skills training. Through identification and summary of available evidence, our findings will help guide education and further research to delineate features of simulated participant methodology and provide a more granular understanding of simulated participants' unique contribution to communication skills training (Nestel *et al.*, 2010). There are a number of anticipated outcomes from this research which will have the potential to improve education and research developments in the area of simulated participant methodology:

1. Develop a summary of feedback approaches and tools currently used by simulated participants in health professions education
2. Construct an overview highlighting common features of simulated participant feedback practice
3. Provide a summary of training methods to prepare simulated participants for feedback practices
4. Develop better understandings of approaches to preparation and implementation of simulated participant methodologies
5. Highlighting the current gaps in best practice in the implementation of simulated patient methodology related to feedback practices will help close the gap and improve the standard of simulated participant research in the future.

### Rationale for scoping review methodology

Scoping reviews are routinely used in Health Professions Education (HPE) to synthesize the evidence base and map the depth and breadth of literature in a particular area. A six-step framework described and utilized in the HPE literature guides the conduct of scoping reviews. Arksey and O'Malley (2005) initially described the framework, which was subsequently revised and updated (Levac *et al.*, 2010). Levac *et al.* enhanced the methodological approach and provided clear guidance on how to implement the six-step approach: 1) identifying the research question; 2) searching for relevant studies; 3) selecting studies; 4) charting the data; 5) collating, summarizing, & reporting the results; 6) consulting with stakeholders. The Joanna Briggs Institute (JBI) reviewer's manual (Aromataris & Munn, 2020) based on this framework provides broad methodological guide on evidence synthesis in HPE, whereas Peters *et al.* (2020) describe specific best practices for conducting scoping reviews. Both the updated six-step framework by Levac *et al.* (2010) and JBI guidelines will guide our scoping review to examine the role of simulated participants as educators in communication skills training. We will identify and synthesize the available evidence to guide education and identify areas for further research to clarify our understanding of the specific contributions of simulated participants to communication skills training.

### Stakeholder Involvement

In a recent scoping review examining scoping reviews in medical education, Maggio *et al.* (2020) identified the potential impact of the methodological approach but highlighted also limitations of published scoping reviews. Recommendations were made to strengthen the impact of subsequent reviews in medical

education, including (a) linking the research question to the rationale of the review, and (b) considering the valuable but routinely ill-defined role of external stakeholder involvement. The inclusion of stakeholders in research has been associated with high impact, high quality research. An important step forward for scoping review methodology in medical education would be to produce best practice guidelines for stakeholder involvement (Maggio *et al.*, 2020). For this scoping review, we plan to adapt the ACTIVE framework to describe stakeholder involvement in systematic reviews (Pollock *et al.*, 2019). We will describe our process for engaging stakeholders, including their level of involvement and the impact of their involvement on the review. See Appendix 1 for a proposed framework for stakeholder engagement as it aligns with the stages of the scoping review process. We understand this process will evolve during the review process and we anticipate iterative refinement. We plan to describe explicitly the stakeholder involvement process upon completion of this scoping review. We propose to include stakeholder perspectives from (a) experts in simulated participant methodology, (b) simulated participants, and (c) learners.

## Review Question, Aims and Objectives

The **CAPS** mnemonic, described in the AMEE guide 94 by Sharma *et al.* (2015) formed the basis for the review questions in our protocol. Specifically:

- Our review will examine the **C**urrent state of the knowledge of simulated participant feedback training and practices;
- The **A**rea of interest pertains to the role of simulated participants as educators in simulation-based communication skills training;
- This review has the **P**otential to impact simulated participant training and help curriculum designers make informed choices when incorporating simulated participants in communication skills training and education;
- By engaging stakeholders, we can frame the research questions with opinions and **S**uggestions from experts in the field.

### Aim

We aim to conduct a scoping review of healthcare communication skills interventions involving explicit simulated participant feedback practices. Our findings will help guide education and further research to delineate features of simulated participant methodology and provide a more fine-grained understanding of simulated participants training requirements and their unique contributions to communication skills interventions.

### Objectives

1. To review simulated participant involvement in feedback practices for communication skills training in health professions education
2. To identify the extent to which training simulated participants for both role portrayal and feedback is reported in the health professions education literature.
3. To synthesis and present current practice in light of the findings of the review and highlight gaps in the literature that would benefit from future research.

## Research Questions

1. How are simulated participants trained for their role portrayal and in feedback practices for communication skills training in health professions education?
2. How and from what perspectives (i.e., their own, within role, as an educator) do simulated participants shape feedback practices for communication skills training?

## Keywords

Simulated participant, simulated patient, standardized patient, role-player, actor, embedded patient, confederate, communication skills, feedback, methodology, training, quality

## Search Sources, Strategies and Pilot Search

The search strategy was developed with the expert guidance from of an information specialist (PM), and following the methodological recommendations from the Joanna Briggs Institute (JBI) guidelines (Peters *et al.*, 2020).

## Databases searching

The search terms for the review were identified from the keywords of representative literature sources and refined with the help of the information technologist to produce search index terms (Appendix 2). The search has not been time-limited as the initial search identified a sample which is feasible to review without time restrictions. Expert stakeholders will be consulted to refine both the search terms and search strategy, and will advise on the scope of literature included to ensure we do not miss key articles.

Using these terms, the following databases will be searched:

- Medline
- Embase
- CINAHL
- Web of Science
- PsychINFO
- Scopus

## Hand searching

We will hand search reference lists of studies we deem relevant to the review question to identify other pertinent studies.

## Grey Literature

We plan to search grey literature including the databases MedEdPortal and MedEdPublish, and the training resources from organisations such as the European Association for Communication in Healthcare (EACH) and Association of Standardised Patient Educators (ASPE), Association for Simulated Practice in Healthcare (ASPiH).

## Personal communication with experts

We acknowledge that potentially significant data may be described outside published literature and we plan to consult with expert stakeholders throughout the review process to help identify this data. We also plan to contact additional authors of primary studies or reviews for any publications which we deem relevant. This may include publications where full-texts cannot be accessed, or grey literature such as those

describing local simulated participant training and instructional guides on simulated participant feedback practices. A sample of training materials used in different countries will be sourced. It will not be possible to carry out an exhaustive review of grey literature but relevant samples will suffice to give an understanding of current practice.

### Pilot search

A preliminary pilot review undertaken using Pubmed, EMBASE, Web of Science, CINAHL and Psychinfo identified 12196 potential articles (Appendix 2). After deduplication the number of included articles is 7122 articles. Expert stakeholders were consulted about our search strategy and provided insight on relevant terminology and studies to include. A number of iterations of our search strategy were tested against key articles to ensure the search strategy was capturing articles relevant to our study. This allowed us to identify the main terminology used in the literature and refine our search terms to ensure alignment with the research questions and objectives for the scoping review.

A random selection of 100 articles were screened by title and abstract by two team members (AD and CS) according to the inclusion and exclusion criteria. This was an iterative process whereby the researchers met after the first 25 to refine the inclusion / exclusion criteria and to ensure interpretation was aligned and consensus achieved (Arksey & O'Malley, 2005, Levac *et al.*, 2010). Those selected for full text screening were retrieved and screened for full text again according to the inclusion / exclusion criteria. This process was then repeated for the remaining articles, and 4 articles (4%) were found to be relevant to our review question. If this inclusion rate is consistent across the rest of the articles, 285 articles will be included. However, the pilot search was carried out in PubMed which is expected to be the most relevant database, so we expect the success rate to be much lower in other databases. This indicates that there is sufficient literature in this area to perform this review and that the review will be feasible.

The four articles that were found to be relevant after full text screening satisfied the inclusion criteria. All of the studies that are included incorporate interventions involving simulated participants, and detail descriptions of both simulated participant training and feedback practices. The feedback described in the interventions was verbal, non-verbal and incorporated various checklists and rating scales. All of the included articles were published in English and the full text manuscripts were available. Included studies were published in the timeframe 2007-2019 and crossed many disciplines ranging from medicine and pharmacy, to physiotherapy and dentistry.

Wagner et al., 2007, reported a cross cultural communication skills training intervention for dental students involving lay trained simulated participants from the community. Philips et al., 2017, developed an intervention comparing standardised patients to peer role play in preparing students for clinical placement. Valentine et al., 2019, developed a teaching intervention for non-epileptic seizure diagnosis, incorporating trained simulated participants from an established simulation centre. Sherman et al., 2019, studied the use of simulated scenarios to develop pharmacy students' patient care skills and involved actors from the surrounding community.

### Study Selection Criteria

Stakeholders will be consulted to review the inclusion/exclusion criteria to aid in the refinement of this process. Our search contains three concepts:

1. Population: Health care professionals

2. Interventions: Scenarios where simulated participants are engaged in feedback practices
3. Focus: Communication skills training

Studies will not be excluded based on date of publication as there exists valuable research into the application of simulated participant methodology which has been present since simulated participants were first involved in healthcare education.

Studies which involve remote consultations with simulated participants using video conferencing platforms will be included. Virtual simulations where the patient is a computerized avatar will be excluded from the study. The feedback process for automated computer responses is different from interactions with real people and is out of the scope of this study.

This review has a specific focus on simulated participant feedback for learning not simulated participant involvement in assessment of learning. While simulated participants often play a large role in assessment of learning during OSCEs, this assessment is often summative and students frequently do not see detailed feedback of their performance. We feel it is most relevant to look at feedback for learning in the context of the feedback presented to the students during or shortly after the simulated encounter.

Inclusion criteria	Exclusion criteria (any can apply)
<b>Focus of study</b>	
<p>Studies that utilise &amp; or describe simulated participant training and feedback practices for communication skills training or formative assessment (i.e., during a course, or continuous assessment)</p> <p>Containing information/description of the training for the simulated participants in role portrayal and feedback.</p>	<p>Articles about communication education interventions which do not involve simulated participants</p> <p>Articles that state training was provided, but do not describe the training in any detail</p> <p>Articles which use simulation exclusively for purposes other than training and assessment <b>AS</b> or <b>FOR</b> learning (e.g., High stakes assessments Examinations and Objective structured clinical examination (OSCEs) OR Assessment for evaluation of professionals in practice (e.g., Mystery Shoppers), or evaluation of non-simulation interventions or assessment tools.)</p>
<b>Characteristics of the Intervention</b>	
<p>Interventions involving simulation with Simulated participant (simulated patients, standardized patients, actors, role players)</p>	<p>Interventions involving simulation without simulated participants (e.g., mannequin-based simulation without simulated participants)</p> <p>Articles describing the development of theoretical framework, curriculum, or tool without a description of a simulation using this tool for communication skills training with a simulated participant</p> <p>Articles that describe virtual simulations or virtual reality or virtual patients</p> <p>Articles that focus on experiences and perceptions of simulation without describing an actual intervention</p>

Population	
Any health Professional (including, but not limited to physician, nurse, nurse practitioner, physician assistant, pharmacist, respiratory therapist, midwife, clinical officer)	Non healthcare professionals
Study Characteristics	
All qualitative and quantitative methodologies Primary research, book chapters, grey literature including: simulated participant training manuals.	*Review articles (Review articles will be used to identify additional articles but will be excluded from data extraction) Opinion pieces, book reviews, letters, editorials, perspective pieces
Publication characteristics	
All countries, English language only, Full text available, not restricted by publication date	Non-English Studies, no full text available
*Review articles will be used to identify additional literature but will be excluded from data extraction.	

### Data Screening Procedure

Once criteria are outlined, data will be screened in two teams (AD and MT, and CS and NC) with each team screening 50% of the articles. Each person will independently screen 50% of abstracts and a kappa statistic will be used to calculate inter-rater reliability within teams. A fifth reviewer (CM) will resolve conflict and help to reach final inclusion/exclusion decision.

### Testing inclusion/exclusion criteria

At the beginning of the study selection process a subset of papers (n=15) will be chosen and the review team will independently review abstracts for inclusion using the criteria. This subset of data will be deliberately broad to robustly test the inclusion/exclusion criteria. All screening team members (AD, CS, MT and NC) will screen these abstracts and titles using the inclusion/exclusion criteria. The screening team and fifth reviewer (CM) will meet and discuss the decisions and to ensure there is group consensus, clarity and understanding regarding the inclusion/exclusion criteria. Stakeholders will be consulted to review the inclusion exclusion criteria with a subset of papers and the team's decision to advise on the efficacy of the inclusion exclusion criteria.

### Abstract screening

The screening teams will screen 50% of abstract and titles each, with a fifth reviewer (CM) to resolve disagreements between reviewers and help to reach a consensus.

## Full Text Screening

Once abstract screening is complete, each screening team will screen 50% of full text articles each, with fifth reviewer to resolve conflict and determine final inclusion/exclusion decisions. Throughout the review process regular meetings will occur to discuss progress and challenges and uncertainties related to study selection. These meetings will include screening team members and the fifth reviewer (CM). In the event of disagreements between review pairs the fifth reviewer (CM) will review the full text to reach consensus.

## Data Extraction

Once full text screening is complete, data will be extracted using a data extracting template modified from the BEME data charting sheet to include main author; year of publication; study title; journal; study location; study type, intervention; study population; study aims; feedback methodology; theoretical framework; feedback domain; feedback dynamics; outputs/outcome measures; Limitations/recommendations, etc. Also included in the data extraction template will be categories relating to the ASPE SOBP for those working with human simulated participants who interact with learners in a wide range of experiential learning and assessment context (Lewis *et al.*, 2017). The SOBP includes five domains informed by underlying values that support Simulated Participant-based educational practices: safety, quality, professionalism, accountability, and collaboration. Domain three focuses on simulated participant training and provides guidance for training and preparation for role portrayal and feedback. Integrating categories into the data extraction template informed by the ASPE SOBP will in turn aid in the information synthesis and guide structure of reporting findings. Stakeholders will be consulted to review the data extraction template to evaluate the robustness of the tool. Data extraction is expected to be an iterative process, similar to the data screening procedure and the template will be updated to reflect the iterative refinement.

## Testing data extraction

A pilot process with a subset of papers will be chosen and the coders (AD, CS, MT, NC) will independently extract data. The broader this subset of data is, the more robust the extraction template will be. The team will then meet with a sixth reviewer (WE) to discuss the process. This pilot process will permit adjustments to the extraction template that might be necessary.

Data extraction will be carried out in teams (AD and MT, and CS and NC) with each team extracting data from 50% of the articles. Throughout the data extraction process regular meetings will occur between coders to discuss progress and challenges and uncertainties related to extraction, this can help to refine the template. Conventions for abbreviations and language will be defined and discussed to ensure consistency throughout data extraction. The extraction template can therefore be shared as an appendix to accompany the review. In the event of disagreements between coding pairs the sixth reviewer (WE) will review data extracted in an effort to reach consensus.

## Data Synthesis

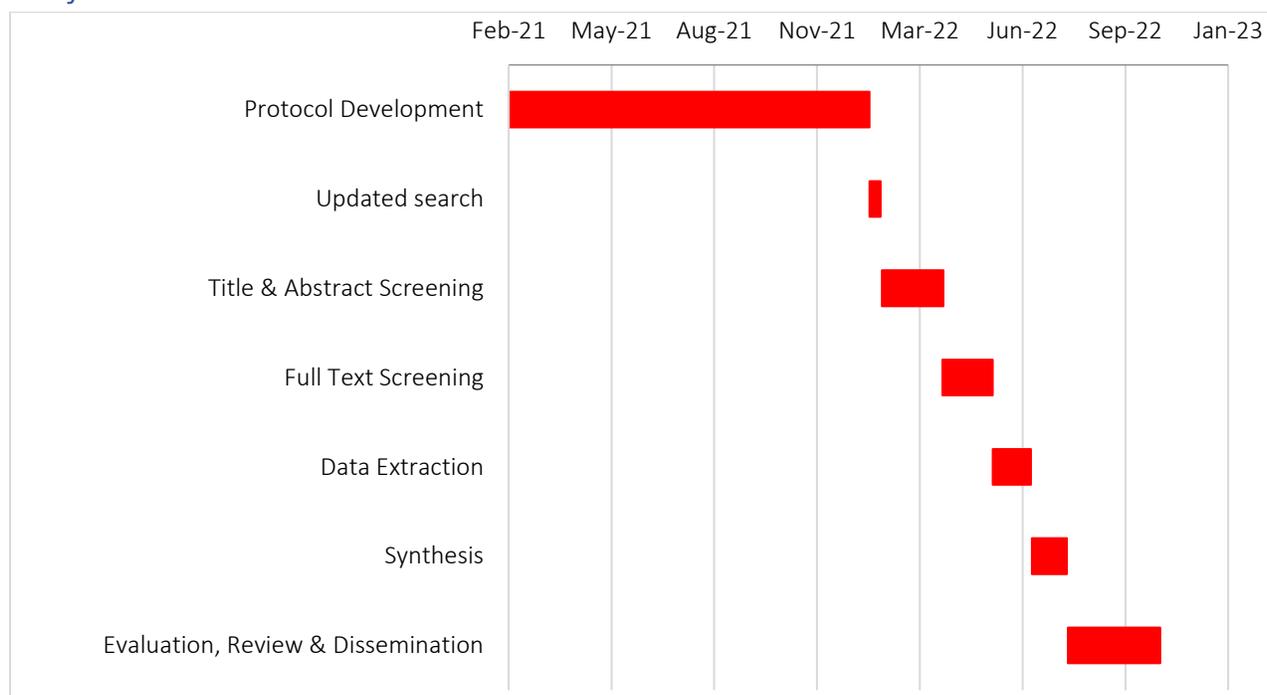
The extracted data will be analysed to answer the review questions. A descriptive analytical method described by Cook *et al.* (2008) will be used to describe the characteristics of the included studies. Thematic narrative analysis and synthesis will be undertaken, to highlight specific findings relating to simulated participant training and feedback methodology. As this is a scoping review, we do not plan aggregation and synthesis of data, which aligns with published frameworks and guidelines for scoping reviews (Levac *et al.*,

2010, Peters *et al.*, 2020). Based on the pilot search, we anticipate a lack of homogeneity in the characteristics and reporting of simulated participant feedback practices which would potentially make a meta-analysis challenging. We will present study characteristics in diagrammatic format including: geographic location, types and numbers of participants. For data extracted categorized by the ASPE SOBP simulated participant training domain, we will provide a separate table highlighting characteristics of the simulated participant training and feedback practices described in the data. This plan will be refined when there is a greater insight to the nature of our results. Any amendments to the approach will be recorded temporally, with a rationale for these changes. Stakeholders will be consulted to advise reviewers on which categories to prioritize for analysis. Stakeholders will help contextualize findings in practice and contribute to best practice recommendations based on our findings.

## Implications for Educational Research and Practice

A clear picture of existing evidence-based practice in simulated participant methodology for communication skills training will allow us to better prepare simulated participants for educator roles, including their role as valuable sources of feedback for learners. Our findings will also inform future educational developments related to communication skills teaching using simulated participant methodology. By comparing current application with the best practice standards, we seek to identify gaps in the implementation of simulated participant methodology which may be fundamental to its effectiveness. By completing this work through the BEME collaboration, the review will be widely disseminated and broadly inform future research and training in simulated participant methodologies. This knowledge will help curriculum designers make informed decisions when embarking on communication skills training with simulated participants as educational partners. Through synthesis of simulated participant practices across the breadth of health professions education, we see two additional potential benefits (a) cross disciplinary learning, and (b) identifying and refining relevant theory based on context-specific educational practices.

## Project Timeline



## Conflict of Interest Statement

The review team members declare that they have no conflict of interest.

## Plans for Updating the Review

The review team would be happy to update this review in future if it is deemed appropriate.

## Changes to the Protocol

Minor amendments to review topic and protocol will be recorded with a rationale for the changes. Any significant proposed changes will be submitted to BEME for approval.

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## Appendices

Appendix 1: Proposed framework for stakeholder engagement from (Pollock *et al.*, 2019) as it aligns with the stages of the scoping review process (Levac *et al.*, 2010)

Scoping Study Steps (Levac <i>et al.</i> , 2010)	ACTIVE framework (Pollock <i>et al.</i> , 2019)
Identify Research Question	1. Develop Question
	2. Plan Methods
	3. Write & Publish Protocol
Identify Relevant Studies	4. Develop Search
	5. Run Search
Study Selection	6. Select Studies
Charting the data	7. Collect Data
Collating, summarizing and reporting results	8. Assess risk of bias
	9. Analyse data
	10. Interpret findings
	11. Write & publish review
	12. Knowledge translation & impact
<p><b>Simulated Patient</b> – (Partnership Approach) Recruit through RCSI Sim Patient Bank, Purposeful recruitment, close recruitment, continuous, direct interaction</p> <p><b>Expert Stakeholders</b> – (Multiple-time closed event approach / Partnership Approach) Invitation, closed recruitment, continuous, direct interaction</p>	

## Appendix 2: Initial search undertaken by RCSI Librarian (April 2021)

PubMed		
1	("Simulated patient*" [tiab] OR "Standardized patient*" [tiab] OR "Simulated Participant*" [tiab] OR "Standardized Participant*" [tiab] OR "Simulated Client*" [tiab] OR "Standardized Client*" [tiab] OR actor* [tiab] OR confederate* [tiab] OR "Embedded Participant*" [tiab] OR "Role Player*" [tiab] OR "Patient Instructor*" [tiab] OR Patient Simulation [Mesh])	28061
2	(Simulation Training [Mesh] OR simulation* [tiab] OR education [tiab] OR educational [tiab])	971,567
3	(Communication [Mesh] OR communication [tiab] OR communicating [tiab] OR communicate [tiab] OR interprofessional [tiab] OR feedback [Mesh] OR feedback [tiab] OR briefing [tiab] OR debriefing [tiab] OR "clinical competence" [tiab] OR "clinical decision making" [tiab] OR teamwork [tiab] OR "Team Work" [tiab])	738906
	1 AND 2 AND 3	3407
	1 AND 2 AND 3 AND 4 From 2010-2021	2513

EMBASE		
1	"Simulated patient*":ti,ab,kw OR "Standardized patient*":ti,ab,kw OR "Simulated Participant*":ti,ab,kw OR "Standardized Participant*":ti,ab,kw OR "Simulated Client*":ti,ab,kw OR "Standardized Client*":ti,ab,kw OR actor*:ti,ab,kw OR confederate*:ti,ab,kw OR "Embedded Participant*":ti,ab,kw OR "Role Player*":ti,ab,kw OR "Patient Instructor*":ti,ab,kw OR 'patient simulation'/exp	32012
2	communication:ti,ab,kw OR communicating:ti,ab,kw OR communicate:ti,ab,kw OR interprofessional:ti,ab,kw OR feedback:ti,ab,kw OR briefing:ti,ab,kw OR debriefing:ti,ab,kw OR "Team work":ti,ab,kw OR teamwork:ti,ab,kw OR "clinical competence":ti,ab,kw OR "clinical competence"/exp OR "clinical decision making":ti,ab,kw OR "clinical decision making"/exp	699581
3	'education'/exp OR education:ti,ab,de,kw OR educational:ti,ab,de,kw OR 'simulation training'/exp OR "simulation training":ti,ab,kw	1,856,694
4	1 AND 2 AND 3	4745
5	Limit 4 to EMBASE only records, excluding Medline	2,640

APA PsychInfo on Ebscohost		
1	"Simulated patient*" OR "Standardized patient*" OR "Simulated Participant*" OR "Standardized Participant*" OR "Simulated Client*" OR "Standardized Client*" OR actor* OR confederate* OR "embedded patient*" OR "Embedded Participant*" OR "Role Player*" OR "Patient Instructor" OR "Patient Simulation"	30504
2	Communication OR communicating OR communicate OR feedback OR briefing OR debriefing OR interprofessional OR "Team work" OR teamwork OR "clinical competence" OR "clinical decision making"	498457
3	Education OR educational OR "Simulation Training"	1042383
4	1 AND 2 AND 3	1971
5.	Scholarly articles	1684

CINAHL on Ebscohost		
1	(MM "Patient Simulation") OR "patient simulation" OR "Simulated patient*"OR "Standardized patient*"OR "Simulated Participant*"OR "Standardized Participant*"OR "Simulated Client*"OR "Standardized Client*"OR actor*OR confederate*OR "Embedded Participant*"OR "Role Player*"OR "Patient Instructor*"	6024
2	(MH "Communication+") OR communication* OR (MM "Feedback") OR feedback OR briefing OR debriefing OR interprofessional OR "Team work" OR teamwork OR (MH "Clinical Competence+") OR "clinical competence" OR (MH "Decision Making, Clinical+")	528966
4	education* OR "Simulation training"	766192
5	1 AND 2 AND 3	2389
6	LIMIT 5 TO ACADEMIC JOURNAL ARTICLES	2249

Web of Science – Science and Social Science Citation Indexes		
1	TS=("Simulated patient*" OR "Standardized patient*" OR "Simulated Participant*" OR "Standardized Participant*" OR "Simulated Client*"OR "Standardized Client*" OR actor* OR confederate* OR "Embedded Participant*"OR "Role Player*"OR "Patient Instructor*"OR " Patient Simulation" )	95486
2	TS=(Communication OR feedback OR briefing OR debriefing OR interprofessional OR "Team work" OR teamwork OR "clinical competence" OR "clinical decision making")	1256056
3	TS=(education OR educational OR "Simulation Training")	884865
4	1 AND 2 AND 3, LIMITED TO JOURNAL ARTICLES	2216