

MCKINLEY, M., ARNOLD, A., BURNS, I., GEDDES, H., MCDONALD, L. and O'CARROLL, V. 2022. Simulated patients' experiences and perspectives of an interprofessional ward simulation: an exploratory qualitative analysis. *Journal of interprofessional education and practice* [online], In Press. Available from: <https://doi.org/10.1016/j.xjep.2022.100522>

# Simulated patients' experiences and perspectives of an interprofessional ward simulation: an exploratory qualitative analysis.

MCKINLEY, M., ARNOLD, A., BURNS, I., GEDDES, H., MCDONALD, L. and O'CARROLL, V.

2022

© 2022 Published by Elsevier Inc.

# Journal Pre-proof

Simulated patients' experiences and perspectives of an interprofessional ward simulation: An exploratory qualitative analysis

M. McKinley, A. Arnold, I. Burns, H. Geddes, L. McDonald, V. O'Carroll

PII: S2405-4526(22)00029-5

DOI: <https://doi.org/10.1016/j.xjep.2022.100522>

Reference: XJEP 100522

To appear in: *Journal of Interprofessional Education & Practice*

Received Date: 12 July 2021

Revised Date: 24 March 2022

Accepted Date: 21 April 2022

Please cite this article as: McKinley M, Arnold A, Burns I, Geddes H, McDonald L, O'Carroll V, Simulated patients' experiences and perspectives of an interprofessional ward simulation: An exploratory qualitative analysis, *Journal of Interprofessional Education & Practice* (2022), doi: <https://doi.org/10.1016/j.xjep.2022.100522>.

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2022 Published by Elsevier Inc.



**Author Statement:**

**Mairi McKinley:** conceptualization, funding acquisition, methodology, investigation, resources, writing original draft and revisions, project administration.

**Amy Arnold:** investigation, writing: reviewing and editing.

**Iain Burns:** investigation, writing: reviewing and editing.

**Heather Geddes:** investigation, writing: reviewing and editing.

**Lyn McDonald:** investigation, writing: reviewing and editing.

**Veronica O'Carroll:** conceptualization, funding acquisition, methodology, investigation, resources, writing original draft and revisions, project administration.

Simulated patients' experiences and perspectives of an interprofessional ward simulation: an exploratory qualitative analysis.

McKinley M<sup>a,b</sup>, Arnold A<sup>c</sup>, Burns I<sup>d</sup>, Geddes H<sup>d</sup>, McDonald L<sup>a,b</sup>, O'Carroll V<sup>b</sup>.

<sup>a</sup>Department of Medical Education, Victoria Hospital, NHS Fife, Kirkcaldy, UK.

<sup>b</sup>School of Medicine, University of St Andrews, St Andrews, UK.

<sup>c</sup>School of Pharmacy and Life Sciences, Robert Gordon University, Aberdeen, UK.

<sup>d</sup>School of Nursing and Health Sciences, University of Dundee, Kirkcaldy, UK.

Corresponding author: Mairi McKinley, Hayfield House, Victoria Hospital, Hayfield Road, Kirkcaldy, KY2 5AH. Tel: 01592 643355.

email: [mairi.mckinley@nhs.scot](mailto:mairi.mckinley@nhs.scot)

<https://orcid.org/0000-0002-3044-8223>

Funding: Small grant awarded by The Association for Study of Medical Education (ASME).

Word count (text): 3389

Tables: 2

**Abstract****Background**

Interprofessional simulation-based education (IPSE) prepares healthcare students for future collaborative practice. Whilst experiences of IPSE have previously been reported by students and faculty, there is a limited understanding of simulated patients' (SPs) experience.

**Purpose**

This study explored SPs' perceptions of the quality of an interprofessional ward simulation (IPWS); experiences of the interprofessional care (IPC) they received, and their perceptions of effective IPC.

**Method**

Undergraduate nursing, medical and pharmacy students participated in an IPWS. Focus groups were used to collect data from 27 SPs following their participation in the IPWS.

**Discussion**

IPC was perceived to vary between groups of students. Recognition of roles, responsibilities and boundaries to prevent overlap of workload and improve efficiency of teamwork were perceived as important for making IPC effective. Findings suggested that SPs may not be fully aware of the changing scope of practice in healthcare. SPs reported that they would have liked more involvement in the creation of their role and how this played out in the simulation.

**Conclusion**

SPs' play an important role in IPSE in healthcare education and recognise that understanding roles and responsibilities contributes to effective IPC. An additional finding of this study was that the public may not be aware of the changing scope of professional practice.

**Keywords**

simulation; patients; interprofessional; undergraduate.

## Introduction

With evidence demonstrating that interprofessional education (IPE) has a positive impact on healthcare delivery, there is increased momentum for IPE in healthcare education.<sup>1</sup> Interprofessional simulation-based education (IPSE) is an effective way of preparing healthcare students for future collaborative working. Involving standardized/simulated patients (SPs) in IPE encourages public participation in healthcare education and reinforces to learners that patients remain at the centre of the interprofessional team.<sup>2</sup> Existing literature also demonstrates that SPs make an important contribution to the clinical competence of healthcare students by enabling students to practice technical and non-technical skills in simulated scenarios and in providing feedback on students' performance.<sup>3</sup>

Despite the important part that SPs play in simulation-based education, there is a limited amount of research which considers SPs experiences of IPSE. Existing research has either focused on the student and tutor experiences of IPSE<sup>4</sup> or has reported SPs experiences of uniprofessional simulation-based education (SBE).<sup>5,6</sup> Reports of SP involvement in uniprofessional SBE have indicated that the participants enjoy the experience and value their contribution to health care education.<sup>5</sup> Specific areas valued by the SPs include the provision of feedback on student performance, having the ability to role play and adjust their interaction based on students' interpretation of the situation and being adequately briefed prior to the simulation.<sup>6</sup>

The scarcity of research related to SPs experiences of IPSE highlights the need to explore their perspectives of this education approach. Therefore, the aim of this study was to research SPs' experiences and perspectives of an interprofessional ward simulation (IPWS). The questions associated with this study were:

- What are SPs perceptions of the quality of the IPWS for undergraduate healthcare students?
- What are SPs experiences of the care they received from the interprofessional teams of students?
- What are their perceptions of what makes effective interprofessional care?

## Method

### *Methodology*

This study adopted an exploratory phenomenological and qualitative approach, to investigate "the lived experience" of SPs and their perspectives of the IPWS.<sup>7</sup> Exploratory research enables the acquisition of new insight, particularly where the

previous knowledge and theory base is limited.<sup>8</sup> In view of the limited research related to SPs experiences of IPSE, this was felt to be an appropriate methodology to guide this study.

#### *Study setting and recruitment*

Three Scottish Universities collectively organise an annual IPWS for undergraduate nursing (n~80), medical (n~160) and pharmacy (n~40) students. The SPs, who are not trained actors, contribute to the IPWS by playing the role of a patient, relative, or carer. For the purposes of this simulation, the SPs were expected to follow a script rather than bring in their own experiences of healthcare. In this study, the SPs were simulated patients rather than fully standardized patients, due to the intended learning outcomes of this not-for-assessment activity. A standardized patient, often used during summative assessments of healthcare students, is defined as “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”.<sup>9(p49)</sup> However, in this IPWS, the SPs were not fully standardized but were asked to follow a script. Ethical approval was granted by the University Teaching and Research Ethics Committee (ethical approval code MD15041). Participants were recruited following their involvement in the IPWS in March 2019.

During this simulation, students were allocated to a medical and/or surgical admissions unit, to work in interprofessional teams. An outline of the IPWS learning outcomes, activities and overall structure is provided at Table 1. To enable all students to participate in the IPWS, it was repeated 8 times. As the IPWS requires the involvement of 12 SPs per iteration of the simulation, approximately 50 SPs took part in the IPWS with some SPs undertaking different roles on different days. Within the scope of this study, the researchers aimed to recruit at least 25 study participants to participate in the focus groups, and where possible, to maximise sample diversity. A criterion-i purposeful sampling strategy<sup>10</sup> was used to identify participants who fitted with the main, pre-determined inclusion criteria of having participated in the IPWS within the previous three weeks. This strategy ensured that participants would more easily recall the IPWS and their experiences of the interprofessional care they received. In keeping with the research methodology, the research team endeavoured to gain rich insights into SPs experiences and perspectives.<sup>7</sup>

<b>Table 1: Outline of IPWS</b>	
<b>Learning Outcomes:</b>	
<ul style="list-style-type: none"> <li>• Apply prior knowledge and skills in order to prioritise care for patients within a simulated ward setting.</li> <li>• Understand some of the roles and responsibilities of the health care team within a ward environment.</li> <li>• Demonstrate effective communication with patients and other members of the healthcare team.</li> </ul>	
<b>Student Participants:</b>	
<ul style="list-style-type: none"> <li>• 3<sup>rd</sup> year medical students</li> <li>• 2<sup>nd</sup>/3<sup>rd</sup> year nursing students</li> <li>• 4<sup>th</sup> year pharmacy students</li> </ul>	
<b>Simulation Set-up:</b>	
<ul style="list-style-type: none"> <li>• 1 hour participation time</li> <li>• 30 minutes debrief</li> <li>• Medical students participate in medical or surgical scenario</li> <li>• Nursing and pharmacy students participate in both scenarios</li> <li>• Each team consists of 4-5 medical students, 3-4 nursing students, 2-3 pharmacy students</li> </ul>	
<b>Medical Admissions Unit</b>	<b>Surgical Admissions Unit</b>
6 SPs with various medical presentations (including 1 x deteriorating patient) + 1 SP as a relative/carer.  Scenarios develop over the hour. Various tasks required for effective patient care delivery including admitting a patient, physical assessment and clinical decision making, prescribing/administration of medication, discharge planning.	6 SPs with various surgical presentations (including 1 x deteriorating patient) + 1 SP as a relative/carer.  Scenarios develop over the hour. Various tasks required for effective patient care delivery including admitting a patient, physical assessment and clinical decision making, prescribing/administration of medication, discharge planning.
<b>Pre-participation information provided (Students)</b>	
<ul style="list-style-type: none"> <li>• Scenario setting</li> </ul>	



<ul style="list-style-type: none"> <li>• Participation of other student groups</li> <li>• Examples of types of tasks involved in simulation</li> </ul>
<p><b>Pre-participation information provided (Simulated patients)</b></p> <ul style="list-style-type: none"> <li>• Scenario setting</li> <li>• Participation of student groups</li> <li>• Patient stories/scripts x 6 – symptoms, timeline, medication as relevant, expected tasks/interventions that will be performed by students</li> </ul>
<p><b>Staff Information</b></p> <ul style="list-style-type: none"> <li>• Information for different faculty roles</li> <li>• Scenarios/Scripts – Medical and Surgical</li> <li>• Timelines of events – phone calls/referrals/deteriorating patient</li> </ul>

SPs were informed of the study by email after their participation in the IPWS. The email correspondence included a participant information sheet and contact details of the research team for participants to indicate their interest in taking part and to request any further information. Written consent was obtained prior to their participation in the study.

#### *Data collection*

Focus groups were used to collect qualitative data. This method enabled an in-depth exploration of individual experiences and perspectives within a group setting with the advantage of the group dynamic to stimulate discussion.<sup>11</sup> The focus groups were facilitated by two external healthcare community engagement colleagues within the University where the IPWS had taken place. It was felt that familiarity with this setting would ensure that participants felt comfortable sharing their experiences. Furthermore, as members of the research team were also involved in the IPWS, this impartial facilitation by external colleagues experienced in leading focus groups, was important to enable participants to speak freely. Three focus groups involving between six and ten participants, lasting 90 minutes each were undertaken. A topic guide (Table 2) was used to ensure alignment between the research questions and topics discussed.<sup>12</sup>

<b>Table 2: Topic Guide</b>	
Q1  What do you think about the quality of (simulated) care you received during the	Follow up:  Why do you think this?

ward sim?	Can you give an example?  Is there anything that you expected to happen that didn't?
Q2  If you had any questions/concerns, were they answered/addressed?	Follow up:  Can you give me an example?  Which member of the healthcare team did you ask/receive a response from?  Was your question/concern handled in an appropriate manner?
Q3 Did you feel that the medical, nursing and pharmacy students worked as a team?	Follow up:  Why do you think this?  Can you give an example?
Q4 Do you have any other general comments regarding the students' performance that we haven't discussed already?	

### *Data analysis*

The focus group audio recordings were transcribed by a research assistant. Thematic analysis using the framework method was used to systematically analyse the data.<sup>13,14</sup> This analysis was undertaken by the research group in sub-teams. Following the systematic approach of the framework method, each sub-team reviewed the data to initially gain familiarity with the transcriptions. The study questions were used as a thematic framework which assisted in the indexing and charting process where themes and sub themes were identified. In addition, other themes unrelated to the study questions were also inducted from the data and considered as additional findings. These themes were verified and confirmed through discussion with the whole research team together.

### **Results**

A total of 27 SPs took part in the study - almost 50/50 split male/female and most were aged 56 years old and over which is representative of the SP bank in the university where this IPWS took place. Guided by the study objectives to investigate:

(I) the SPs experiences of the IPWS activity;

- (II) their experiences of interprofessional care;
- (III) their perceptions of what makes effective interprofessional care,

the following themes were deduced:

- (I.A) awareness of student competencies.
- (I.B) involvement in debrief and feedback.
- (II.A) varying levels of interprofessional collaboration.
- (II.B) perceived roles and scope of practice.
- (III.A) recognising roles, responsibilities, and boundaries.

An additional theme (IV) of SPs perceived role in the simulation was inducted from the analysis.

## **I. SPs experiences of the IPWS activity**

### ***(I.A) Awareness of student competencies***

When asked about the quality of the IPWS itself, some SPs suggested that that pre-briefing/preparatory material for their patient role was lacking in detail or missing important information. This included awareness of what was expected from students:

“If we were given a little bit more information from the tutors about what competencies you would expect students to have coming into that session then that would help us both in playing our roles and allow us to understand any deficiencies or any particular good points” (SP23 Male).

“...felt I didn't have enough information about the character before I went in.... and I said, 'should I not know what medication I'm on'. Then one of the students asked me 'were there carers coming in?' and I said 'yes', because I didn't know the answer, and when I looked at my file there are no carers [who] come in. You know that would be quite useful to know beforehand” (SP3 Female).

### ***(I.B) SP role within the debrief and feedback***

Some of the SPs also felt they could contribute more to the IPWS, particularly by being more actively involved in the debrief during which they would provide more immediate and direct verbal feedback to the students, as opposed to in written form. In their discussions around their involvement in feedback and debrief, SPs highlighted that they were aware that this feedback needed to be constructive and carefully delivered to students:

“Even though there were [feedback] sheets there, I didn’t have time to fill them in. So, I did my bit and then I was off and left with my thoughts. Well, one of the thoughts was, I could have spent ten minutes with somebody just going through both groups when it was fresh in my mind” (SP4 Male).

“I think this is maybe where instant feedback could come in because at the end of the session you could say. ‘Well actually, I know you were nervous but...’ and bring it to their attention. And that is instant at the end of that session. If you leave it, it’s gone” (SP8 Female).

“They should be getting feedback from us, from the patients, if you like, because it is our experience but done in a manner that is actually going to be constructive and be beneficial to them. So that we can give certain pointers with our life skills as opposed to possibly what they are being taught here ... I think we should be able to give general feedback, but I think we have to be very wary of the feedback that we give to individuals” (SP15 Male).

## **II. Experience of Interprofessional Care**

When analysing the focus group data in relation to experiences of interprofessional care, two main sub themes were identified: varying levels of interprofessional collaboration and perceived roles and scope of practice.

### ***(II.A) Varying levels of interprofessional collaboration***

When considering the varying levels of interprofessional collaboration, there was a strongly held view that some groups were better than others in forming a team, and that individual group dynamics influenced their effectiveness:

“We had one group who had not introduced themselves [to each other]...other groups [who] were already down the line of having made some relationships, but I would certainly agree there is huge variability between the groups and the biggest difference between the groups is how quickly they gel and start to function as a group” (SP21 Female).

“Some seemed to get their act together and co-ordinate their activities quite well ... It really involved somebody taking charge and allocating different tasks to each one. Others just didn’t do that. They didn’t gel together at all” (SP10 Female).

“One thing I was very impressed with, [was that] the doctor looked to the nurse, and they discussed.... they obviously knew each other, and they worked, I thought, extremely well together. They were continually questioning” (SP3 Female).

Where cohesion and effective teamwork was witnessed, the SPs attributed this to the team being ‘led’ by a nursing student. This was perceived to be due to nursing students’ greater exposure to practice environments:

“But the nurses have all experienced something like that on the ward, and so they are starting halfway up the hill” (SP3 Female).

“Depending on the vibes in the scenario I have seen it go where the nurse has made some really constructive suggestions [for others to do in the team] ‘well maybe you could’...” (SP26 Female).

“If you do have a particularly strong leader in that group and they know what they are doing. Invariably, overall, it is a better process. And what helps is very much having the nursing [students] there because they are acting in a real-life scenario all the time. They tend to take a lead and the medical [students] will watch and listen to what they say” (SP13 Male).

## **II.B Roles and scope of practice**

When considering roles and scope of practice, the SPs reported experiences in their interactions with individual professions. Comparisons were drawn between the different professions with emphasis placed on role, identity, hierarchy, and perceived scope of practice:

“The doctor, in my view, is the person that is signing everything off so he or she is making the last decision, either giving this or giving that. They obviously sign off on a bit of paper but the nurses, I found, were quite comforting and they’re there, you know, ‘you’ll be fine’ which I found often is 90% of what the person wants” (SP7 Male).

“I think the empathy that came from the nurses was very good and they responded, and even some of them responded with a bit of hand on your shoulder kind of thing. Pharmacists wouldn’t be expected to do that anyway and the junior doctors it was very evasive answers as you might expect” (SP26 Female).

“The pharmacists again, quite rightly they stand back and go to their books immediately...and the doctors have that range of responses to the issues they are being presented with” (SP1 Male).

“I don’t know if they need all these interpersonal skills as a pharmacist. They are the professional almost behind the scenes. You know you don’t need to actually see them. If all the data is provided, they will then know the medication and the dose, that’s what happens” (SP23 Male).

### **III. Perceptions of what makes effective interprofessional care**

#### ***III.A Recognizing roles, responsibilities boundaries***

In the main, SPs discussed the technical skills demonstrated by individual professional groups of students as opposed to the non-technical skills such as communication and teamwork. However, where interprofessional care was discussed, some SPs considered the recognition of roles, responsibilities, and boundaries as important, particularly to prevent overlap of workload and improve efficiency of teamwork:

“One of the indicators that they are not operating as a team is repetition...you kind of think ‘well if you got your heads together you wouldn’t have to ask that again’...and from a patient’s point of view I think that can be quite irritating and worrying” (SP13 Male).

“Part of teamwork is knowing where your individual boundaries are. You need to know the overlap areas and you need to organise together, but you don’t want to do somebody else’s job” (SP3 Female).

### **IV. SPs’ perceived role in the simulation**

In addition to the above themes which were deducted from the questions guiding this thematic analysis, another theme that arose was the SPs perceived role in the simulation. There was a sense that their role was to create a challenging environment for the students. Several SPs identified that part of their role was to create chaos and ‘real-world’ pressure:

"The purpose of the exercise was deliberately showing them how bad it could be" (SP4 Male).

“...but the idea is to create the fog of war in the chaos” (SP1 Male).

“...the remit was to basically cause mayhem” (SP2 Female).

“You are there to introduce a level of chaos, and sometimes I felt I introduced too much chaos” (SP 4 Male).

## Discussion

When considering what constitutes effective interprofessional care, the factors perceived by the SPs align closely to the existing literature and in particular the key competency of knowledge of roles and responsibilities as identified by The Interprofessional Education Collaborative (IPEC).<sup>15</sup> IPEC identify key competencies including knowledge of roles and responsibilities; teamwork and communication; in conjunction with ethics and values for interprofessional practice.

On reflecting on their experiences of the quality of the IPWS activity, the SPs in this study highlighted the importance of feeling prepared in their role, being aware of what to expect from students, and desire to be more involved in feedback to students. Preparation in a simulation role has previously been discussed by Edwards and McCormack<sup>16</sup> where SPs identified that their own preparation was important, with requests for more development to improve confidence, engagement, and clarification on their role in providing feedback.

From the focus group discussions, it was apparent that some SPs would have liked more involvement in the creation of their role and how this played out in the simulation. Patient and public involvement in the co-design of simulation and interprofessional education is important for reinforcing participative relationships.<sup>17,18</sup>

Involving SPs in the design of this IPWS may help redress the perception that an integral part of their role was the creation of chaos or provision of challenges for the students, referring to the challenges they perceived for both staff and patients in a busy healthcare environment. The learning objectives of the IPWS were associated with learning with, from and about other professions and considering the importance of effective teamworking and other non-technical skills in the safe and effective management of routine patient care. The simulation was not designed to test the students' ability to deal with an emergency situation or conflict and, given that psychological safety is a key component of high-quality simulation-based education,<sup>19</sup> SPs were not requested to demonstrate challenging behaviours in this IPWS. AI-

Ghareeb and Cooper<sup>20</sup> also identify that when designing simulations, consideration should be given to creating authentic learning experiences within realistic but non-threatening environments.

This finding identified that, as an organisation, we may need to consider some myth busting with our SPs as to the nature of SBE and the intended learning outcomes to create a realistic healthcare environment (as opposed to how healthcare may be portrayed in the media), however given that these people are also potentially accessing health and social care services, their beliefs are also likely to apply to the 'real world'. As mentioned previously, most SPs held what would be considered 'stereotypical' views of the different professions. This may suggest that changes or extensions to and/or advancements within our health and care services, particularly changes or extensions to scope of practice, do not necessarily translate appropriately to the public. The portrayal of stereotypical roles in healthcare by the media is often considered as a contributory and influencing factor of public perceptions of healthcare professional roles.<sup>21</sup> Further work is required to raise awareness of the changes in scope of practice in healthcare and to address the stereotypical perceptions of the healthcare team.<sup>22</sup>

The findings also suggest that the SPs focussed more on the students' individual technical skills as opposed to the non-technical skills associated with effective teamwork and interprofessional care. Over the last decade, research has identified that many adverse/sentinel events are associated with non-technical skills or issues associated with human factors and that ineffective teamwork creates vulnerability in relation to the safety and quality of healthcare.<sup>23</sup> However, this study suggests that people accessing services may be unaware of the importance of these elements of professional practice.

### ***Limitations***

This study was undertaken within a single institution in Scotland and involved a sample of the Medical School's simulated patient bank. The participants were a self-selecting group who are not representative of the wider population accessing healthcare services. Transferability of these findings may be impacted due to the sample and setting of this study, however many of the findings are important to consider but are context specific.

### **Conclusion**



This study has generated valuable insight into SPs' experiences and perspectives of an IPWS. These findings will assist in developing future IPSE in healthcare education programmes. It has also provided important insights into perceptions that the public may have of a profession's scope of practice. This may highlight the need for some awareness raising amongst members of the public.

**Declaration of interest**

The authors declare no conflicts of interest.

Journal Pre-proof

## References

1. Reeves S, Fletcher S, Barr H et al. A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. *Med Teach*. 2016;38(7):656-668. doi:10.3109/0142159x.2016.1173663.
2. Barr H, Gray R, Helme M, Low H, Reeves S. Steering the development of interprofessional education. *J Interprof Care*. 2016;30(5):549-552. doi:10.1080/13561820.2016.1217686.
3. Williams B, Song J. Are simulated patients effective in facilitating development of clinical competence for healthcare students? A scoping review. *Adv Simu*. 2016;1(1). doi:10.1186/s41077-016-0006-1.
4. Joyal K, Katz C, Harder N, Dean H. Interprofessional education using simulation of an overnight inpatient ward shift. *J Interprof Care*. 2014;29(3):268-270. doi:10.3109/13561820.2014.944259.
5. Bokken L, Rethans J, Scherpbier A, van der Vleuten C. Strengths and Weaknesses of Simulated and Real Patients in the Teaching of Skills to Medical Students: A Review. *Simul Healthc*. 2008;3(3):161-169. doi:10.1097/sih.0b013e318182fc56.
6. Cleland J, Abe K, Rethans J. The use of simulated patients in medical education: AMEE Guide No 42. *Med Teach*. 2009;31(6):477-486. doi:10.1080/01421590903002821.
7. Matthews B, Ross L. *Research methods. A practical guide for social sciences*. Pearson Education: England; 2010.
8. Creswell JW, Creswell JD. *Research Design. Qualitative, Quantitative and mixed methods approaches*. 5<sup>th</sup> ed. Sage Publications: California; 2018.
9. Lioce L, Lopreiato J, Downing D, et al. *Healthcare Simulation Dictionary*. 2<sup>nd</sup> ed. Rockville, MD: Agency for Healthcare Research and Quality; 2020. doi:10.23970/simulationv2.
10. Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful sampling for qualitative data collection and analysis in mixed 186 methods implementation studies. *Adm Policy Ment Health*. 2013;42(5):533-44. doi:10.1007/s10488-013-0528-y.

11. Doody O, Slevin E, Taggart L. Focus group interviews in nursing research: part 1. *Br J Nurs*. 2013;22(1):16-19. doi:10.12968/bjon.2013.22.1.16.
12. Doody O, Slevin E, Taggart L. Preparing for and conducting focus groups in nursing research: part 2. *Br J Nurs*. 2013;22(3):170-173. doi:10.12968/bjon.2013.22.3.170.
13. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: Bryman A, Burgess R, eds. *Analysing qualitative data*. Routledge: London; 1994:173-194.
14. Gale N, Heath G, Cameron E, Rashid S, Redwood S. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol*. 2013;13(1). doi:10.1186/1471-2288-13-117.
15. Interprofessional Education Collaborative. *Core competencies for interprofessional collaborative practice: 2016 update*. Washington, DC: Interprofessional Education Collaborative. <https://hsc.unm.edu/ipe/resources/ipec-2016-core-competencies.pdf>. Accessed: January 5, 2020.
16. Edwards S, McCormack S. Simulation using 'live' adult service users and moulage in a variety of settings. *Nurs Manage*. 2018;24(9):33-40. doi:10.7748/nm.2018.e1674.
17. Kneebone R, Weldon S, Bello F. Engaging patients and clinicians through simulation: rebalancing the dynamics of care. *Adv Simu*. 2016;1:19. doi:10.1186/s41077-016-0019-9.
18. Romme S, Bosveld MH, Van Bokhoven MA, De Nooijer J, Van den Besselaar H, Van Dongen JJJ. Patient involvement in interprofessional education: A qualitative study yielding recommendations on incorporating the patient's perspective. *Health Expect*. 2020;23(4):943-957. doi:10.1111/hex.13073.
19. Dearmon V, Graves RJ, Hayden S, et al. Effectiveness of simulation-based orientation of baccalaureate nursing students preparing for their first clinical experience. *J Nurs Educ*. 2012;52(1):29-38. doi:10.3928/01484834-20121212-02.
20. Al-Ghareeb A, Cooper SJ. Barriers and enablers to the use of high-fidelity patient simulation manikins in nurse education: An integrative review. *Nurse Educ Today*. 2016;36:281-286. doi:10.1016/j.nedt. 2015.08.005.

21. Hoyle LP, Kyle RG, Mahoney C. Nurses' views on the impact of mass media on the public perception of nursing and nurse–service user interactions. *J Res Nurs*. 2017; 22(8):586–596. doi:10.1177/1744987117736363.
22. Girvin J, Jackson D, Hutchinson M. Contemporary public perceptions of nursing: a systematic review and narrative synthesis of the international research evidence. *J Nurs Manag*. 2016;24:994–1006. doi:10.1111/jonm.1241.
23. Manser T. Teamwork and patient safety in dynamic domains of healthcare: a review of the literature. *Acta Anaesthesiol Scand*. 2009;53:143–51. doi: 10.1111/j.1399-6576.2008.01717.x

Journal Pre-proof