TEACHING REPORT

Utilizing simulated patient videos to develop student empathy and readiness for interprofessional working

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Abstract

Healthcare degrees routinely provide interprofessional learning (IPL) opportunities for trainees to prepare them for practice. This study explored the use of simulated patient videos within IPL to develop student empathy and interprofessional readiness. A series of simulated patient videos were created for the clinical topics: diabetes, dementia, asthma, and falls. The videos followed each patient's disease trajectory over a six-to-18-month period. Pharmacy, nursing, occupational therapy, paramedic, and physiotherapy students, who attended the IPL teaching sessions, were asked to complete the Jefferson Empathy Scale for Health Professional Students (JSE-HPS) and the Readiness for Interprofessional Learning Scale (RIPLS) at the beginning and end of each IPL session. Students were also invited to attend a focus group. Mean total JSE-HPS and RIPLS scores significantly increased. Students described the patient videos as reflective of real-life, engaging, and memorable. The IPL facilitated student learning and developed positive perceptions of each profession.

Keywords

Interprofessional, simulation, pharmacy, nursing, allied health professionals, pedagogy, empathy

With an ever-evolving healthcare provision where professional roles are overlapping and expanding, it is essential for future health care professionals (HCPs) to fully understand the roles of healthcare team members and to develop the skills to work cohesively. One way of doing this is by preparing students pre-qualification via the use of interprofessional learning (IPL) within the classroom setting to develop key knowledge and skills which are desirable within health and social care settings (Lachini et al., 2019; Shakhman et al., 2020). The reality of delivering high quality patient care requires a range of HCPs to collaborate, share decision making and appreciate each other's knowledge and expertise (Merriman et al., 2020). Multi-disciplinary teams (MDT) can provide a significantly higher quality of care compared to that delivered from a single discipline (Maharajan et al., 2017).

Interprofessional learning (IPL) at an undergraduate level plays a major role in preparing health professional students for future collaborative healthcare practice. IPL is defined as occasions "when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (CAIPE, 1997). Pirrie and colleagues (1998) suggested that, through the sharing of knowledge, IPL can be beneficial in preventing barriers arising between different HCPs. Clark (2009) also highlighted the importance of IPL in

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enabling students to gain an insight into their own self, profession and their abilities to work as a team, whilst also supporting students in shaping their professional attitudes and developing their own professional identity. Whilst there is some knowledge in the topic area, little has been written with regards to the use of IPL and its effectiveness when adapted for remote use and engagement.

Multiple health regulatory bodies recognize the importance of integrating interprofessional learning within undergraduate curriculums. The Universities of Reading and West London have been co-delivering interprofessional learning between pharmacy and nursing students since 2014. These IPL teaching sessions typically follow paper-based patient scenarios where students work in mixed professional groups to discuss the patient case. Student feedback has been collected at the end of each IPL and has consistently been positive in relation to students relishing the opportunity to learn with and from other healthcare students. However, students have fed back that they wished for the cases to be more realistic and reflective of real life. Therefore, this study presents the collaborative creation, incorporation, and evaluation of simulated patient videos within IPL sessions. The aim of these patient videos was to make the students' IPL experience more engaging and representative of clinical practice.

Methods

Ethics

Ethical approval was granted by the lead author's higher education institute (HEI), protocol number 09/2020. Written information about the study supported with an animated video was provided to students before the IPL. This included details on anonymity, confidentiality, publication, recording of the focus groups, the right to choose whether to participate and the students' right to withdraw from the study at any time without consequences. Students were informed that their participation or lack thereof would not impact on their academic results. All students provided written consent prior to entering the study.

Study design

The study was underpinned by a constructivist, social learning theoretical approach which proposes that people actively learn from each other through observing, modelling, and imitating behaviors and attitudes of others (Mertens, 2019). This theoretical approach fits with the use of simulated patient videos in IPL and supports the theory that multidisciplinary discussion allows learning to occur by direct engagement in an authentic situation and through interactions among participants in social practice (Rocca, 2010). A mixed method, pre- and post-intervention design was used to elicit insights and a greater understanding of the phenomena in question (Tariq & Woodman, 2013).

Setting and participants

The study was undertaken in collaboration with the University of Reading Pharmacy department, and the University of West London College of Nursing, Midwifery and Healthcare. A purposive sample of pharmacy, nursing (adult, child, and mental health), occupational therapy (OT), physiotherapy, and paramedic students were invited by the authors to take part in the study, totaling 1428 potential participants. In the UK, the MPharm degree is a four-year undergraduate program, the Nursing, Occupational Therapy, Physiotherapy programs are three-year undergraduate programs and Paramedic Science is a two-year postgraduate program. For each IPL session the students were matched by year of program, i.e., first- and second-year students, third and fourth and MSc students. Pharmacy and Nursing students attended all the IPL sessions. Paramedic students joined the falls and diabetes IPL, and Occupational therapy and Physiotherapy students attended the Falls IPL (Appendix 1). As detailed in the Ethics section, students were emailed before the IPL event to notify them of this study, and they could choose at the beginning of the IPL whether they wished to complete the consent form and complete quantitative and/or qualitative data collection. All students attended the IPL session regardless of whether they were involved in this study.

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The intervention

A family of five characters was created, whom students would follow within IPL teaching sessions throughout their course (Table 1). Throughout the design process there was strong collaboration between the universities to ensure disciplines were fully represented within the cases. The authors were experienced practicing pharmacists and nurses and drew upon their own personal experiences of managing patients to build the cases. By doing so, they aimed to give life and personal meaning to the patient's cases.

Table 1

The family of characters

Patient name	Age	Relations	Medical issues
Bob	80 years	Married to Freda	Dementia
Freda	74 years	Married to Bob	Falls
Sarah	44 years	Freda and Bob's daughter	Bob's carer
Hussain	50 years	Married to Sarah	Diabetes
Lottie	12 years	Sarah and Hussain's daughter	Asthma

Three to five short videos (one to five minutes) were created each for Bob, Freda, Hussain, and Lottie, demonstrating their biopsychosocial and pharmacological health needs and their own personal disease trajectory over a 6-to-18-month period. Four IPL teaching sessions were scheduled, focusing on dementia, falls, diabetes, and asthma respectively. Two videos of Sarah were also created to describe her experience as a carer and shown within the dementia IPL teaching session. These IPL teaching sessions were all attended by pharmacy and nursing students, and when available other health care students also attended, such as paramedic, occupational therapist, and physiotherapy students. Students were allocated to multi-disciplinary groups where they could get to know each other, discuss the simulated patient scenario, and make a plan for assessment, treatment, and management from each discipline's perspective. The authors and other clinical lecturers acted as facilitators to stimulate individual and group discussions, provide feedback, and respond to answers and queries from students.

In February 2020, the Falls IPL session and Freda's videos were delivered face to face at the University of Reading. Following Covid-19 lockdown restrictions, all subsequent IPL sessions were delivered as live online sessions through the virtual learning environment (VLE) with the use of breakout rooms for smaller group work; Hussain/Diabetes in October 2020, Bob/Dementia in February 2021, Freda/Falls in February 2021, and Lottie/Asthma in March 2021.

Procedure

For students who consented, they were asked to complete the Jefferson Empathy Scale for Health Professional Students (JSE-HPS) and the Readiness for Interprofessional Learning Scale (RIPLS) at the beginning and end of each IPL session (Parsell & Bligh, 1999, Hojat, 2016). The Jefferson Empathy Scale for Health Professional Students is a widely used instrument developed to measure empathy in the context of health professions education and patient care. Evidence has been reported in support of the reliability and validity of the Jefferson Empathy Scale for Health Professional Students (JSP-HPS) when used with nursing, physiotherapy, occupational therapy, and pharmacy students (Petrucci et al., 2016, Walker et al., 2022, Ward et al., 2009). The RIPLS is designed to measure the perceptions of health care students towards interprofessional learning. RIPLS incorporates the interprofessional collaborative practice four core domains (values, knowledge of roles, communication, and teamwork) set out by the Interprofessional Education Collaborative (IPEC 2016). Both JSP-HSE and RIPLS have been previously validated, are designed to be self-administered and are appropriate to collect pre- and post- intervention data (Hayyer et al., 2016; Sulzer et al., 2016). JSE-HPS and RIPLS data was collated, and only paired data retained.

Students were also invited to attend a focus group after each IPL session to further explore their perceptions on the use of patient videos in IPL. Different cohorts of students attended each IPL session; therefore, students only completed the JSE-HPS and RIPLS questionnaire once and participated in the focus group only once. A total of ten focus groups were undertaken, each with between three to nine students (see Appendix 2 for focus group topics and participants). Students from each degree were represented across the focus groups. The total

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number of students participating in the focus groups was 57. The length of each focus group ranged from 24 minutes to 57 minutes, with the average length being 34 mins. Each focus group was facilitated by one of the four authors, who had not been involved in facilitating that IPL session. For consistency between focus groups, a semi-structured approach was utilised with eleven pre-agreed focus group questions (Appendix 3).

Results

Data coding

Data from the focus groups were thematically analyzed using Braun and Clarke's (2006) six-step approach (familiarization with the data, coding, generating themes, reviewing themes, defining, and naming themes, and writing up) to derive key themes shaping the phenomenon of interest. The researchers individually familiarized themselves with the data and used the prompts from the focus groups to provide a broad framework for coding the transcripts. Following this, the data were analyzed line-by-line by the authors to identify the themes and the connections between them. The analysis was carried out via a recursive and iterative process, comparing, and connecting the coding, nodes, and themes. The research team followed multiple steps to assure the trustworthiness of the analysis (Nowell et al., 2017). The authors met regularly to discuss and refine these themes, thus ensuring the reliability of the analysis.

The results will be presented as the quantitative results from the JSE-HPS and RIPLS, followed by the three qualitive themes: student perceptions of the simulated patient videos, interprofessional learning experience, and preparation for future practice.

Empathy and readiness for interprofessional learning

A total of 1428 students attended over the five IPL sessions from February 2020 to March 2021. This was distributed as 617 pharmacy students (43%), 535 nursing students (37%), 124 Physiotherapy students (9%), 101 Occupational therapy (OT) students (7%), and 51 paramedics (4%),

The response rate for the pre and post JSE-HPS and RIPLS and paired responses are shown in Table 2.

Table 2: Student completion of JSE and RIPLS pre and post IPL

	No. completed Pre-IPL	No. completed post IPL	Total paired responses	Distribution of paired student responses
JSE-HPS	477	265	230	Pharmacy n=121 (53%)) Nursing n=60 (26%) Physiotherapy n=24 (10%)) OT n=19 (8%) Paramedic n=6 (3%)
RIPLS	484	250	210	Pharmacy n=117 (56%) Nursing n=53 (25% Physiotherapy n=25 (12% OT n=9 (4% Paramedics n=6 (3%

Each JSE-HPS and RIPLS response was converted to a numerical score, with reverse scoring for negatively worded items. Total JSE-HS scores range from 20 to 140, with a higher score reflecting greater patient empathy. Total RIPLS scores range from 19-95, with higher scores indicating a greater readiness for interprofessional education. The responses were found to be non-normally distributed, and a Wilcoxon signed rank test was undertaken to test significance between pre and post-IPL scores. For both JSE-HPS and RIPLS, there was a significant difference ($p<0.001$) between scores given pre and post IPL (Table 3).

Within JSE-HPS, ten questions relate to 'perspective taking', eight questions relate to 'compassionate care' and two questions relate to 'walking in patient's shoes' (Table 4).

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Table 3: Mean JSE-HS and RIPLS pre and post IPL.

	Mean total score pre-IPL	Range pre-IPL	Mean total score post-IPL	Range post-IPL	Paired changes	Wilcoxon signed rank test*
JSE-HPS	108.9 (SD 11.52)	80-137	112.9 (SD 13.99)	78-140	163 pairs increased 55 pairs decreased 12 pairs stayed the same	P<0.001*
RIPLS	81 (SD 7.75)	62-95	84.6 (SD 8.13)	60-95	126 pairs increased 28 pairs decreased 16 pairs stayed the same	P<0.001*

Note. *Significance level is 0.05

Table 4: Scores for the three components of JSE-HE pre and post IPL

JSE-HPS component	Mean Pre-IPL	Range	Mean Post-IPL	Range	Paired changes	Wilcoxon signed rank test*
Perspective taking	57.9 (SD 6.6)	22-70	60.2 (SD 6.65)	39-70	143 pairs increased 59 pairs decreased 28 pairs stayed the same	P<0.001*
Compassionate Care	42.4 (SD 6.25)	20-56	43.7 (SD 8.2)	14-56	133 pairs increased 71 pairs decreased 26 pairs stayed the same	P<0.001*
Walking in patient's shoes	8.5 (SD 2.83)	2-14	9 SD (2.99)	2-14	103 pairs increased 80 pairs decreased 47 pairs stayed the same	P=0.16

Note. *Significance level is 0.05

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For RIPLS, nine questions relate to 'teamwork and collaboration', six questions relate to 'professional identity' and three questions relate to 'roles and responsibilities' (Table 5).

Table 5: Scores for the three components of RIPLS pre and post IPL

RIPLS	Mean Pre-IPL	Range	Mean Post-IPL	Range	Paired changes	Wilcoxon signed rank test*
Teamwork and collaboration	40.3 (SD 3.8)	28-45	42.1 (SD 4.21)	29-45	126 pairs increased 30 pairs decreased 54 pairs stayed the same	P<0.001*
Professional Identity	29.1 (SD 3.58)	22-35	30.5 (SD 3.92)	19-35	117 pairs increased 46 pairs decreased 47 pairs stayed the same	P<0.001*
Roles and responsibilities	11.6 (SD 1.78)	6-15	12 (SD 1.88)	7-15	88 pairs increased 54 pairs decreased 68 pairs stayed the same	P <0.001*

*Significance level is 0.05

For the "perspective taking" and "compassionate care" components of JSE-HPS and all components of RIPLS the pre and post responses were significantly improved after the IPL. For 'walking in patient shoes' there was an increase in scores post IPL compared to pre-IPL, however this was not statistically significant.

Qualitative results

The following sections present the key findings and quotes from the focus groups. These have been grouped into three themes: student perceptions of the simulated patient videos, interprofessional experience, and preparation for future practice.

Student perceptions of the simulated patient videos.

Students expressed that the patient videos caused a strong emotional engagement and in particular empathy for the characters and their situation. The videos created an extra dimension of reality which was closer to real-life situations. The students described that this evoked a strong sense of compassion and desire to help the patients professionally within the scope of their practice.

> I just wanted to be able to help him…as a nursing student that's one of the key things is being able to get to know people and kind of journey with them for a bit and get to know them more than just their condition or more than one particular thing, it's like the holistic view and I felt like we really got that with him. [Hussain FG2]

> I feel really sad ... 'cause that could have been my father or someone that I knew. I wish I was there to help them. [Bob FG2]

The students described how videos provided a rich insight into people's personal circumstances and the actual patient journey. This provided a greater awareness into the complexities of managing patient care and patients own perspectives.

> I've only ever met fallers, when they have fallen. It just made me think a bit more about the actual

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> sliding journey from someone fully independent to someone who has these new dependencies, and what the emotional impact on them going through that process would be. [Freda FG2]

> I learnt how she feels about her condition and how peers may make her feel regarding her medications. Applying a scenario to a specific patient and her story helps to show how different people have different needs and wants. [Lottie FG2]

Several students expressed how they preferred the patient videos to traditional paper-based teaching tools. The students felt that they were able to holistically assess the patients not just what they were saying but also from body language, facial expressions and from the environmental factors which were more relatable to practice.

> It just gives a little bit more at perspective on a person and being able to look at their body language and how it affects them. [Hussain FG2]

> I think if for me if it had been without the videos and it would have been just paper and group discussion I would have struggled a lot more with that, but I think having the videos and being able to apply something that was more like the real world, which is more like how it's actually going to experience it, it makes more sense, and it's much more useful than just having a theoretical basis for something for me. [Hussain FG1]

Many students commented that the authenticity of the videos contributed to the learning experience. Some students believed the actors were real patients, whilst others realized these were actors in the videos but it didn't distract from their engagement or learning.

> She sounded just like my grandma when we were trying to convince her to have a stick. "I'm not having that. I'm not an old lady." It's just like what their response is. They just don't want to be perceived as being old, and they take a lot of persuading to get her to change her habits. [Freda FG3]

The students enjoyed that fact that this was a whole family and that they benefited from seeing the different relationships within the family.

> I can see the benefit of that in terms of seeing how relationships interact and how that affects somebody's ability to deal with their own health. [Hussain FG2]

Students felt that the videos made the patient cases more memorable, that that characters would stay with them and influence how they thought about other patients with asthma, dementia, diabetes, and falls.

> The videos definitely make it real, put it into real life scenarios. And it definitely helps you to remember it more as well. I'd remember a video more so than just reading it off a sheet of paper, definitely. [Lottie FG1]

> It will remain in my brain forever because it is real ... it gave me better understanding on how to handle dementia. [Bob FG2]

Student perception of the Interprofessional learning experience.

Students explained the most significant outcome of working in interprofessional groups was gaining a better understanding of each other's roles, training, and expertise. Students recognised the specialised knowledge gained from other students and felt valued as they shared their knowledge with the group.

> They [pharmacy students] had a lot of knowledge about medication and I [nursing student] was able to add some of my own knowledge about pain or stool assessments which they didn't consider. [Bob FG1]

> I think it's a good idea how healthcare students from different disciplines were discussing the same topic and that we need to work in the in a team. It's like a holistic approach to the patient. [Hussain FG2]

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Students enjoyed the opportunity to interact and talk to other students, particularly during Covid-19 where they had limited social interactions. The IPL sessions developed students' positive perceptions of other healthcare professions and increased their own confidence working in an MDT though sharing knowledge.

> I really liked the fact that we were mixed groups because it was really nice to see it from different angles that really did bring everything together. It really highlighted the fact that you do need to be multidisciplinary. [Freda FG1]

> I really like the fact that it does bring us from different aspects of healthcare together and we don't get that opportunity very often. So, to be able to learn from other professionals is really, really helpful and I like the variety. [Hussain FG2]

> Watching and discussing the videos as an interprofessional group, allowed students to discuss, compare, interlink, and gain an appreciation of the different roles of each healthcare professional in patient care.

> I just found it fascinating, listening to everyone else, and how they would treat, and then how that would impact on how I would treat, and how my treatment would impact on how they do it. The importance of understanding the other people's roles that you're working alongside, that collaborative approach, and how important that is getting your patient back on their feet. [Freda FG3]

Students felt at the end of the IPL they had a better understanding of the importance of all healthcare professionals in patient care and that no single profession was more important than another.

> I got a lot of the value from the session, with people from different professions look at the situation differently. [Freda FG2]

The visual impact of the videos further highlighted the multidisciplinary roles. For example, students described how seeing Freda's living room allowed them to identify the interventions needed by occupational therapists to prevent falls, or they could see the Lottie's inhaler technique to choose the most appropriate inhaler device for her. Thus, the videos gave students an opportunity to see the management of a patient case through multiple interprofessional perspectives.

> With the video I think it made people discuss more cause people picked up on different things throughout the video. So, then you could all share the different things you'd picked up so then you're looking at it from each perspective from each person in the group, which was really good. [Freda FG1]

Impact of the IPL on students' preparation for future practice.

Students felt establishing good working relationships with other healthcare professional students now, would benefit them in their future working practice. For example, breaking down barriers talking to other professions and encouraging better multidisciplinary working to support patients with their needs.

> Once we graduate, interprofessional learning and working is going to be a reality for us. So yes, I think it does help in terms of understanding the roles of different of health care professionals and it facilitates us in terms of success in the future in terms of our role as nurses working as part of interdisciplinary teams. [Bob FG2]

> I think at our level, with getting ready to properly go out professionally, and graduate, I feel like it just really highlights - there's so much focus on the importance of understanding the other people's roles that you're working alongside. And that collaborative approach and how important that is getting your patient back on their feet. [Freda FG2]

Students reported the videos made them reflect on their approach with patients, and in the future, they will be more aware of the importance of fully listening to patients, understanding their journey and increased appreciation of the complexity of patient health and social care.

> Even though it was about falls, so there's more than just that aspect with a patient, but there's so

> many different things that you need to consider when you're looking after a patient. [Freda FG1]

The learning experience allowed students to feel empowered that they could apply what they had practiced and learnt through their interaction with the videos into real life, making the learning experience a bridge between theory and clinical practice.

> I learned from watching those scenarios, that if I were to encounter a person, um, in that situation, I would know how to deal with it, and would know what to do and how to take it further. [Bob FG1]

> It really helps to stimulate how one would be pulling information together during MDT meeting. [Bob FG2]

Students also felt the IPL developed their confidence, knowledge, and communication skills, which they could utilise should they encounter similar patient situations in the future.

> With Bob, it's seeing someone sitting on a bench who may appear lost and confused, and I have seen that, but never actually known how to approach it. But after seeing that it gave me kind of, gave me the confidence really to approach someone like that and then know what to do and how to deal with it. [Bob FG1]

> Before the session, I do not know much about diabetics at all. but then in a space of three hours I think I can confidently, you know, give an overview of diabetes, a bit about insulin and you know the few things that we learn about medication. And it actually sticks in your mind. You know what exactly to do. [Hussain FG1]

All students suggested or agreed that they would welcome more of these IPL patient videos sessions.

> I think it's really good, and I would be happy to do more of it, especially the interdisciplinary bit – I think that's been really useful. [Freda FG2]

Discussion

This study has demonstrated both quantitatively and qualitatively the positive and immersive impact of patient videos in interprofessional learning. The pre and post JSE-HPS scores demonstrate a significant improvement in students' empathy, in particular the sub scales for patient compassion and perspective taking. Students' increased scores for RIPLS also demonstrated that students were significantly more prepared for interprofessional working, through awareness of their professional identity, improved understanding of professionals' roles and responsibilities, and the recognition of the importance of teamwork and collaboration. These validated quantitative measures support the effectiveness of this interprofessional learning with simulated patient videos in improving empathy and interprofessional attitudes. Instilling these values at an undergraduate level will positively contribute to future effective teamwork, communication and respect which will ultimately improve patient care.

Case-based learning has long been advocated within healthcare education, to facilitate student application of knowledge to authentic contexts and development of problem-solving skills (Choi & Lee, 2009). The addition of patient videos to case-based learning was found to increase the authenticity and interactivity. The narrative effect of telling the patient's story in our videos was shown to greatly assist student engagement, enjoyment, and rememberability of the clinical cases. The patient videos also helped support the development of soft skills such as active listening and observation skills. A similar study with pharmacy students found that video case-based learning helped them think like professionals, gain a better understanding of their role in patient care, and prepared them for real world clinical practice and problem solving (Rebitch et al., 2019). The use of patient videos was also shown to be an effective prompt to interprofessional discussions, knowledge sharing, teamwork, relationship building and integrated working. Lastly, when engaging with the focus groups, the majority of students across the groups linked their feedback to their experiences of IPL as a concept, despite there being no direct question asking them to do so. Their link to the concept of IPL overall was positive, which further adds to the current body of knowledge around the benefits of IPL.

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The use of videos allowed a standardized and repeatable experience, which is resource–efficient, and mirrors clinical reality. Simulated videos are more affordable and accessible than arranging real patient interactions. A study utilizing simulated patient videos in a US nursing program, found that the "simulation videos brought course content to life without the stress of a real patient or the fear of making a mistake" and students reported an increased confidence in making patient care decisions (Sutherland et al., 2019). The delivery mode of the IPL experiences that students had was via the use of a virtual learning environment. This meant that some of the key challenges traditionally faced by IPL facilitators, such as space and resourcing (Shakhman et al., 2020), was not a significant issue on the education providers facilitating the sessions. However, within the student feedback there were a small number of students who cited that depending on the virtual 'break out' group they were in, some were more talkative and interacting from the start, whilst others took some time to 'warm up' or begin to explore the task at hand as a group.

The concept of the family within each interprofessional learning session was welcomed by students. This allows scaffolding, with improved skill development, empathy, and acknowledgement of the importance of interprofessional working progressing throughout the programs. This patient journey and continued narrative aims to encourage the students' sense of belief, realism, and investment in these characters. The power of drama and film depicting patient stories seems to be in the way that it contributes to lifelong learning and prepares students for the professional role enabling the practice of skills in a safe environment (Cahill, 2013; Oh et al., 2012; Raga-Chardi et al., 2016).

Conclusions and Recommendations

With the ever-growing importance on interprofessional working at all levels within health and social care provision, there is an onus on all HEIs to appropriately train and prepare students. The use of simulated IPL videos could be an important pedagogical tool for healthcare training. The ability to use authentic learning content with a strong emphasis on patient stories appears to engage students providing an opportunity for learning and application of knowledge and skills.

This study was undertaken within two UK HEIs, with only a small number of paired responses. A higher proportion of the paired responses were completed by pharmacy students, with nursing and paramedic, physiotherapy, and occupational therapy students less represented. Therefore, the quantitative data should be used with care and results cannot be generalized across the education sector. In order to gain more insights, future implementation and research could include other parts of healthcare programs, including modules which assist with development of clinical skills, self-confidence and ethical decision making. Additionally, the family could be expanded to include further clinical topics. Further research on the effectiveness of the use of the simulated patient videos in interprofessional health education is necessary to embed this pedagogy in curriculums for the future workforce.

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Utilizing simulated patient videos *continued*

Appendix 1: Student distribution in each IPL session

	Pharmacy students	Nursing	Paramedic	Physiotherapy	Occupational therapy
Freda Falls – Feb 2020	135	55	8	59	31
Hussain Diabetes – October 2020	107	101	12		
Bob-Dementia – February 2021	103	120			
Freda Falls February 2021	104	64	31	65	70
Lottie Respiratory – March 2021	168	195			

Appendix 2: Focus group details

Date	Patient video / IPL topic	Number of participants and program represented	Description in text
February 2020	Freda / Falls	3 Pharmacy & Nursing	Freda FG 1
October 2020	Hussain / Diabetes AM	6 Pharmacy, nursing & paramedic	Hussain FG 1
October 2020	Hussain / Diabetes PM	9 Pharmacy, nursing & paramedic	Hussain FG 2
February 2021	Bob / Dementia AM	6 Pharmacy & Nursing	Bob FG 1
February 2021	Bob / Dementia PM	5 Pharmacy & Nursing	Bob FG2
February 2021	Freda / Falls AM	8 Pharmacy, Nursing, Occupational therapy, Physiotherapy, Paramedic	Freda FG 2
February 2021	Freda / Falls PM	8 Pharmacy, Nursing, Occupational therapy, Physiotherapy, Paramedic	Freda FG 3
March 2021	Lottie / Respiratory AM 1	4 Pharmacy & Nursing	Lottie FG 1
March 2021	Lottie / Respiratory AM 2	5 Pharmacy & Nursing	Lottie FG 2
March 2021	Lottie / Respiratory PM	3 Pharmacy & Nursing	Lottie FG 3

Utilizing simulated patient videos *continued*

Appendix 3: Focus group: semi-structured questions

1. What did you learn from the actor video?
2. How did you feel watching the actor video?
3. How real/authentic did you find watching the actor video?
4. How did the authenticity affect your engagement?
5. How does the activity (watching actor video and group discussion) compare to other teaching methods on your course?
6. What were the advantages/limitations of the video compared to other teaching on your course?
7. Are there any other interactive session on your course that work well?
8. How could the activity (actor video and group discussion) be improved?
9. Was there anything you didn't like about the video?
10. How did the video and the workbook link together – were the questions challenging enough? Too broad/about right?
11. Would you like to repeat this type of activity for teaching in other parts of the course?