The experience, perceptions and attitudes of healthcare students undertaking an inter-professional ward simulation. A pilot study

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Abstract: Interprofessional working is essential for all health professions and training programmes must address this to ensure graduates are fit for practice. Current evidence relating to the use of simulation to facilitate interprofessional learning is limited and fails to recognise the range of professionals involved. The aim of this project was to investigate the experiences, attitudes and perceptions of different pre-registration health professions students undertaking an inter-professional ward simulation. **Design:** Mixed method pilot study with Diagnostic Radiography, Dietetics, Nursing, Occupational Therapy and Physiotherapy students from the Robert Gordon University, Aberdeen, UK. **Outcomes:** The Readiness for Interprofessional Learning Scale (RIPLS), focus groups. **Results:** Qualitative data indicates that a significant amount of learning occurred through the simulations. This related to learning about self, professional ability and skills and requirements for future practice. Further simulations are planned for October 2013.

1 Introduction

The Health Professions Council Standards of Education and Training (HPC 2009) dictate that all courses must ensure their graduates meet the standards of proficiency (SOPs) for their profession (HPC 2007). In line with this the SOPS direct that ‘...professionals should be able to work, where appropriate, in partnership with other professionals, support staff, service users and their relatives and carers’ (HPC 2007). This is mirrored by the Nursing and Midwifery Council who are responsible for regulating nursing and midwifery education in the UK (NMC 2008).

To facilitate this, inter-professional learning (IPL) has become central to all health professions training (Diack et al 2008). The Robert Gordon University has an established IPL programme with a variety of activities which includes group work around scenarios before progressing to activities in practice. D'eon (2005) indicates that students need to be challenged with progressively more complex tasks that reflect the reality of clinical practice and advocates creating ‘real' case studies to make the IPL more valuable for the students.

Within health care education simulation provides the ideal opportunity to create ‘real' case studies. The use of simulated activities is well documented in medical education (McGaghie et al 2009, Issenberg et al 2005) and is currently being used widely in nurse education (McCaughey and Traynor 2010, Ricketts 2011). This use focuses on uni-professional skills based tasks and activities. To date there is little documented evidence for the use of simulation in the allied health professions with the paucity that exists focusing on aspects such as communication skills between physiotherapist and patient (Lewis, Bell and Asghar 2008), practical skill development (Hassam and Williams 2003, Jones and Sheppard 2011), understanding of conditions (Merryman 2010) and general learning (Velde, Land and Clay 2009) but not on wider team activities.

Ker et al (2003) implement an inter-professional ward simulation aimed to help students develop their communication skills and expose them to working with other health care team members. However, they investigated whether specific skills were completed with less focus
on the team working aspects and ongoing learning needs identification. In addition only nursing and medical students were involved which does not reflect the real environment of a ward. McKimm et al (2010) piloted an inter-professional ward simulation for qualified nurses, doctors, speech and language therapists, pharmacists and dieticians. Although the students achieved their profession specific objectives the facilitators felt that there could have been greater collaborative working during the simulation. There is, however, little specific detail of this activity so it is unclear how this collaborative working could have been developed.

Simulation is a labour intensive activity which is used extensively across the Faculty of Health and Social Care at the Robert Gordon University, Aberdeen, Scotland. Anecdotally we hear that students find simulated activities to be useful but there is a very limited evidence base to support its use out with medicine and nursing and even less evidence for inter-disciplinary activities. This paper provides an interim report on a pilot study of an inter-disciplinary ward simulation activity involving Diagnostic Radiography (DR), Dietetics, Nursing, Occupational Therapy(OT), Pharmacy and Physiotherapy(PT) students across a range of environments which would be commonly encountered in day to day practice within a hospital environment (ward, X-Ray department, gymnasium, kitchen).

The aims of the project were:
- To investigate the experiences, attitudes and perceptions of different pre-registration health professions students participating in an inter-professional ward simulation
- To investigate the impact of an inter-professional ward simulation on students’ attitude towards inter-professional learning and skills development?

Objectives:
- To explore the experiences, attitudes and perceptions of different pre-registration health professions’ students undertaking an inter-professional ward simulation.
- To explore if the students from the different professions value aspects of the simulation differently.
- To explore the students perception of the role of the simulation in directing their learning in preparation for practice placement/ work experience.
- To investigate the impact of the inter-professional ward simulation on students attitude towards IPL and skills development.
- To identify the impact of the simulated activity on the student’s next practice placement(s)/ work experience.

Only the results relating to student learning will be reported here. Other findings will be reported in a subsequent paper.

2 Method

A mixed methods approach was adopted to investigate the experiences of students undertaking an inter-professional ward simulation to ensure that such labour intensive activities are of perceived value.

The Readiness for Interprofessional Learning Scale (RIPLS) questionnaire (Reid et al 2006) was used before and after the simulation to identify if participation in a ward simulation activity changes the students perception of the importance of IPL. In addition focus groups were conducted with the students 2 weeks after they had undertaken the simulation to explore their experiences, attitudes and perceptions of the ward simulation activity.

Students in their fourth year of study on the diagnostic radiography, dietetics, occupational therapy, pharmacy and physiotherapy BSc(Hons) courses and year three of the BNursing course were invited to volunteer to participate once ethical approval from the university had
been gained. Those who volunteered were asked to identify which of the planned simulations they could attend. For each simulation we required five nurses, four PT, two OT and two DR, one pharmacist and one dietician.

Immediately prior to taking part in the simulation student volunteers were asked to give their signed consent to taking part in the project and to complete the RIPLS questionnaire. Each profession was then given a hand over from a lecturer from their own profession who was acting as the ‘team leader’. No further help was provided by the ‘team leaders’ during the simulation.

The ward simulation involved nine volunteer patients who acted as a specific patient each of whom had a different problem and required intervention from one or more of the professions involved in the activity. The ‘patients’ were carefully developed to ensure that the situations were as realistic as possible and reflected practice. Outlines of the scenario were provided for the volunteers and full sets of nursing, physiotherapy and occupational therapy notes were provided as appropriate along with referrals for patients who required diagnostic radiography or dietician involvement. The clinical skills centre at RGU has two six bedded bays, a nurses station, sluice etc similar to any ward. In addition it also has an OT kitchen and a diagnostic radiography suite. All of these were to be used in the simulation. Each simulation ran for 45 minutes with the students being responsible for running the ward. Staff from each profession monitored the activity via a digital camera system which is throughout the practical environment.

One week after taking part in the simulation students were emailed the RIPLs questionnaire and requested to complete it again. It was thought that this may give insight into whether the ward simulation had altered the student’s readiness to participate in IPL. Through interacting with the inter-professional team student’s views may change as they may not have prior experience of what inter-professional working is like in the real environment.

Two weeks after the simulation focus groups were be undertaken. To ensure that students had the opportunity to voice their opinions focus groups of between four to eight students were used. Standardised headings of topics to be addressed within the focus group were used and covered their experiences of the simulation and the learning that occurred. The focus groups were digitally recorded then transcribed and analysed.

2. 1 Data Analysis

The framework method of analysis, developed in the field of applied social policy research (Ritchie and Spencer, 1994) was used to analyse the focus group data. Framework analysis facilitates rigour and transparency during the data management stages; aspects of qualitative research that are often criticised (Tobin and Begley, 2004). It also leaves a clear audit trail of the analysis process, which is desirable in qualitative research. All three main stages of framework analysis were employed:

1. **Data management**: familiarisation with the data, noting of recurrent themes, construction of an index, labelling the data with the index, sorting the data by theme and summarising it in matrix based charts. NVivo qualitative data analysis software was used to facilitate labelling the data and Microsoft Excel used to construct the matrix based charts.

2. **Descriptive analysis**: identifying, categorising and classifying the data.

3. **Explanatory analysis**: exploration of links and subgroups within the data.

After transcribing the focus groups, the principal investigator developed the initial coding index, which facilitated familiarisation with the data. The transcripts and initial coding index were then be reviewed by the rest of the research team in order to develop the coding index by consensus. The final coding index was then applied to the entire data set. Inter-rater reliability was evaluated and any disagreements were resolved by discussion and consensus
to minimise bias and enhance the trustworthiness of the data (Barbour, 2001; Richards, 2005). For the same reasons, both the principal investigator and research team were involved in the data analysis.

Descriptive data for pre and post simulation readiness for IPE is provided by the RIPLs questionnaire which covers many different aspects of readiness for IPL. Additionally extensive qualitative data was gathered therefore only data relating directly to learning is reported here.

3 Results

Two ward simulations have now been undertaken and in total 20 students have taken part. The target and actual student volunteers from each profession are shown in Table 1.

Table 1: target and actual student involvement in simulations

<table>
<thead>
<tr>
<th>DR</th>
<th>Dietetics</th>
<th>Nursing</th>
<th>OT</th>
<th>PT</th>
<th>Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target number</td>
<td>4</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Actual</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

All students completed the RIPLs questionnaire prior to undertaking the simulation and took part in the focus groups. One nurse, one DR, one dietetic and 2 PT students failed to complete the questionnaire post simulation and their pre simulation results are not reported. Results for the RIPLs questionnaire are shown below in Table 2 as frequency of responses pre and post simulation.

From analysis of the qualitative data students reported that they had learnt about themselves and their own learning needs for the immediate future but also for the longer term future once they were qualified. They had also learnt from managing new and unfamiliar situations and about their own ongoing learning needs.

3.1 Simulation as a Learning experience

In the focus groups the students reported frequently on the learning they had gained from the simulated experience. Comments related to learning about themselves and traits that they need to alter to make themselves a more effective practitioner (Quote 1 and 2 Bx 1) to developing skills that will be required of them as graduates and future professionals (Quote 2 Box 1).

Table 2: RIPLs results

<table>
<thead>
<tr>
<th>statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>Shared learning will help me think positively about other health and social care professionals</td>
<td>9</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>1*</td>
</tr>
<tr>
<td>For small group learning to word students need to respect</td>
<td>7</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>1*</td>
</tr>
</tbody>
</table>
and trust each other

I would welcome the opportunity to work on small group projects with other health and social care students

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>5</th>
<th>10</th>
<th>7</th>
<th>2*</th>
<th>1</th>
<th>1*</th>
</tr>
</thead>
</table>

I don’t want to waste time learning with other health and social care students

|   | 4 | 7 | 11 | 8 |

It is not necessary for undergraduate health and social care students to learn together

|   | 1 | 1 | 8 | 7 | 6 | 7 |

Shared learning will help me clarify the nature of patients or clients problems

|   | 3 | 4 | 9 | 10 | 3* | 1 |

Shared learning with other health and social care students will increase my ability to understand clinical problems

|   | 9 | 8 | 5 | 7 | 1* |

Clinical problem solving can only be learnt effectively with students from my own school.

|   | 1* | 2* | 9 | 10 | 4 | 4 |

Communication skills should be learned with other health and social care students.

|   | 6 | 7 | 8 | 6 | 1 | 2~ |

I would welcome the opportunity to share some generic lectures and tutorials with other health and social care students

|   | 2 | 5 | 10 | 7 | 2* | 1 | 1* |

*indicates a positive change in view about IPL

~indicates a negative change in view about IPL.

Box 1: Personal traits

**Quote 1:** “I actually learned about myself ... Just things about like, you know, self awareness, knowing when to talk, know when to butt in, knowing when to, to hold back. Um, and just kind of little basic things as well, like, forgetting basic health and safety issues or, you know, um, you know, manual handling equipment, just, it was just a really good experience to get thinking...”

**Quote 2:** “I need to be a bit more assertive and that has been brought up in placement before and I thought it might be different if I was on my own and wasn't being assessed, but apparently not.”
Quote 3 “... yeah, I think it’s just being confident, forcing myself to be more confident in the decision that I’m making and that I need to practice sort of that kind of side of things.

Quote 4: ”...Like, being able to have the confidence to say who you want to see and why you want to see them, and when you want to see them.

Box 2: Professional Skill Development

Quote 1: (talking about what has been learnt)...How to prioritise your tasks because I’d never kind of thought about it before but when I went in I kind of realised, right, neuro-obs needs done first, then it’s pain assessment and the other person, ...you kind of realise what’s important, what’s jumping at you and what’s not because on placements sometimes you pick the most rubbish thing that needs to be done last and you do that first ... so it’s quite nice to, right, you’re by yourself, this is how you manage it and it – although it’s chucking you in at the deep end a little bit it’s still good because then you realise, okay, I can do this.”

Quote 2: DF  Um, yeah, it’s, clinical reasoning with patients; you’re thinking about timing your treatments, um, thinking right, what can I get done in this time and then get on and see the next patient. And you’re prioritising your patients as well when you’re on the ward so you’re looking at a patient and thinking, right, he’s going to take priority... I’ve had to do that briefly before but I’ve never really taken a role in it and prioritised patients whereas the clinical educator’s always been doing that.”

Quote 3: “being given a group of patients to manage and, yeah, just practicing how to deal with things as they come up and stuff... I think it’s highlighted weaknesses in what you know and you get a bit just sort of used to there being lots of other nurses to ask, you know, because you’re the student.”

Quote 4: “It just gives you a really good exercise to look at your skills, look what you have to work on, what you have to reflect on.”

Quote 5: You learn that you’re still very much in the novice stage of developing your skills. So it kind of gives you the idea of what, when you go on placement, you need to, you know, like it addresses your learner needs on placement.”

3.2 Learning for Future Practice

An important issue which came from the focus groups related to how the students had the opportunity to further develop their skills in the ‘real environment’ but in a safe way where patients were not put at risk:
Quote A “There was a mistake, I was mobilising a patient on the ward, I had the wheelchair footplates and, um,...another member of staff walked down and tripped on the footplates. (facilitator)It wasn't the footplates. It was the walking stick that you had lying across the floor. So things like that, I’d rather do that in a clinical practice setting as opposed to an actual hospital... It’s wee things like that that you’re going to learn from in a setting like that...”

Another student reported:
Quote B “When you’re just thrown in you’re obviously going to make mistakes but you learn from those mistakes from dealing with that and you’re not going to make it again. You might make another mistake the next time and again you learn so it’s just experience which will be good because when we do graduate we'll have made those mistakes here instead of out there.”

Several students reported that the simulation provided them with practice so that they would be better able to achieve in clinical practice:
Quote C “...doing this is like a little step forward ...and gets you on the bridge a bit quicker than just straight up on placement, here you go, type thing so... it’s good in that way.”

One student reported “Uh, it was a little bit nerve-wracking I think at the start before we went in because we just didn’t know what to expect. Again, you learn best when you’re out of your comfort zone so that’s kind of a good way there.” clearly identifying the need to challenge a student to facilitate their learning.

3.3 Learning from New Experiences

Several students reported that they had experienced new situations that were highly relevant to their practice and the demands of their next clinical placement. In reporting on these situations they all mentioned the benefits of experiencing the situation before going on placement so that they were better prepared and could perform more effectively when it really mattered and real patients were at risk:

Quote E “I think it was a good learning experience because obviously there were some things that happened that we hadn’t experienced on our clinical placements to date...”

Of interest was that students could see how this activity was preparing them for graduation: Quote F “I quite enjoyed it; I think it’s a good, like, reflection of what practice will actually be like because we were all, kind of, working independently....like even if you're working on your own and in practice placement, there’s always someone higher up that you can, kind of, rely on and ask. Whereas because we’re all students it was like an equal balance.”

3.4 Possible Future Developments

Possible developments for the simulated activity were also identified by students who reported it may be beneficial to be exposed to the activity in earlier years but to have more senior students acting as clinical supervisors, Box 3.

Box 3: Future Developments

Quote 1”... That could be quite a good thing to target at first years before they go out in their first one, but they will at some point. (facilitator- Do you think first years have enough underpinning to be able to cope with an activity like that?)... But then again you’ve been sent out to a ward in first year regardless. And you have to encounter some of these situations. Maybe not Respiratory or Neuro, because they wouldn’t have covered that, but if it was community or Orthopaedics based.”

Quote 2”… (relating to a comment from a clinical educator) I had that fed back to me from my last…. Not about me, it was, she’d just had somebody who was on their very first placement and...he just was so overwhelmed by the, being in a ward that he was, kind of, wanting… he knew what he wanted to do, but it was he didn’t know how to go about it in that sort of situation.”

Quote 3 “…It would be beneficial for every year. Because you have to go out on placement every year, so I think it would be very beneficial… “

Quote 4 “…You’re getting an idea of how a ward is run. You’re getting an idea of interdisciplinary team working... And then when you’re a fourth year the whole idea of priorities like, um, prioritisation as well, and that level of responsibility you’ll have when you actually are qualified.”
4 Discussion

The data collected to date indicates a very positive response to the simulated ward experience. The students could clearly see benefits from learning and working together and how the simulation could help them progress to the qualified professional that they would, hopefully, become in the near future.

The RIPLs data shows very few large shifts in views about the benefits of learning together. This is reassuring since these students have been involved in IPL since commencing their course. It also suggests that the IPL, both formal in university and informal on placement, has shown students the importance of the team. In a minority of instances students did change their views about learning together and except in one instance this was a positive shift where students moved from being undecided or disagreeing about the importance of learning together to realising its importance (Table 2). There was only one instance where a student developed a more negative view (Table 2 response marked ~) and even this was only to undecided. One student remained undecided about the benefits of IPL in the majority of questions. This student may not perceive the benefit until they are actually in practice but the fact that they are undecided is more reassuring than if they disagreed that IPL was of benefit.

The qualitative data clearly shows that students learned from taking part in this experience. All students reported that they had learnt something and many reported learning several things. It is possible that this activity was effective at helping the learning process as it replicated the real environment (Fry, Ketteridge and Marshall 2000) but was entirely safe (Maran and Glavin 2003 and Murray et al 2008). Interventions wrongly applied would not impact on the volunteers as they could on real patients so mistakes could be made and learned from, something noted by two physiotherapy students (quotes A and B above).

Much of the learning achieved was from self-evaluation and reflection, skills that are very desirable as graduate attributes (Hounsell 2011). These skills ensure that on qualification the clinicians will be equipped to ensure ongoing professional development, an essential to ensure they maintain quality patient care but also to maintain ongoing professional registration (NMC 2008 and HCPC 2012). It also enabled them to identify personal traits which would benefit from being developed or adapted to help them become more effective practitioners (Box 1).

In addition to developing these graduate attributes the students also reported that they had the opportunity to develop some of the skills that are essential for them to demonstrate in their final placements as they are core to the independent practice of the qualified professional. Several students commented on how the simulation and lack of supervisor support forced them into autonomous decision making and how this could be quite daunting (Box 2). Prioritisation skills formed part of this autonomous decision making as the students were fully responsible for planning which patient(s) to manage first to ensure that the staff time was effectively used but also ensuring that patient needs were optimally met. They also had to take full responsibility for their treatment choices and other decisions. These are requirements of the Nursing and Midwifery Council and Health Professions Council for entry level practitioners but quote C above shows how one student reported this activity would help them attain this level more effectively on placement as they knew what this
responsibility felt like and had the opportunity to establish that developing their underpinning knowledge would help them gain this confidence.

Students also reported that they experienced situations they had not encountered in practice. While on practice the experiences student get depend on entirely what patients are available either on the ward if working in an acute environment. This means that some really valuable learning opportunities cannot be guaranteed. Simulated learning opportunities such as this can provide this exposure and this has already been reported in literature

Interestingly students identified how the activity could be further developed to facilitate their skills development in aspects of practice that they would only experience once qualified for example mentorship of students and other staff (Box 3). Involving first year students would help prepare them for their first placement experience. It would provide them with the opportunity of experiencing the clinical environment and what is expected of them in a safe environment with less stress as the patients were not real, enabling them to gain some confidence. It would also provide more senior students the opportunity to experience what it is like to mentor a student in the clinical environment, something that they will be expected to profess to once working clinically. An additional advantage is that it would enable the junior students to see what level they will attain as they progress through the course.

4.1 Limitations

To date only 20 students have participated in the simulation. This may in part be due to the challenges of being on two campuses at the present time. Pharmacy students may have been less inclined to participate as they would have to travel to get to the clinical skills centre. Staff also identified that there may be research fatigue in some student groups, particularly nursing and pharmacy. Students who participated this year were keen to help recruit for subsequent simulations so it is planned to ask them to do a little audio recording to reflect their positive experiences and that this will be played when speaking to students about the opportunity next year. It is already planned to undertake another two simulations in October 2013 to achieve the planned recruitment.

5 Conclusions

In recognising the labour intensive nature of such an activity, the data presented in this paper suggests that students view this type of activity as a very valuable learning experience. The benefits highlighted in the focus groups went beyond the immediate learning for placement and were perceived to impact into future working life, as a qualified professional. They also suggest that this could be enhanced by developing the simulated activity across several year groups.

Further simulations for final year students will take place in October 2013 and interviews with students about any potential impact on the clinical performance from participating in the simulation will be gathered over early summer. This will also help inform future decisions on this activity.

References

percussion for pre-term infants. *Hong Kong Physiotherapy Journal*, 21, pp 22-8


