

Healthcare students' perceptions of a simulated interprofessional consultation in an outpatient clinic

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Newly graduated healthcare workers should appreciate the importance of teamwork and each profession's unique role in a multi-disciplinary team. At Medunsa, an institution for higher education of healthcare professionals, each profession's teaching occurs independently. This study explores the perceptions of healthcare students and their facilitators of a simulated interprofessional consultation. Eighty-two senior medical, occupational therapy and physiotherapy students participated in a simulated event over three separate sessions. A multi-disciplinary team comprising one representative per profession conducted the consultation, while the other students observed. Facilitators initiated reflection at the end of each session. Participants gained an understanding of the multi-disciplinary team's functioning, the importance of professional skills and behaviour. The facilitators learnt how to improve on the simulation scenario and their facilitation skills. The introduction of interprofessional education events, where important skills and role clarification can be experienced in a non-threatening way, can benefit students and facilitators alike.

Keywords: interprofessional education; multi-disciplinary teamwork; healthcare students; simulation

Introduction

Simulation-based learning provides students of the healthcare professions with the opportunity to experience interprofessional activities that may be relevant to them as practitioners. Thistlethwaite (2012) highlights the importance of simulation in the teaching and learning of healthcare professionals within a safe, structured and supportive environment. It contributes to their training for the 'real world of work' and to be confident and efficient practitioners (Blackstock & Jull, 2007). Panzarella and Manyon (2008) believe that competence does not develop in isolation, but in clinical situations that require an integration of knowledge and skills. The focus of inter professional education (IPE) simulation should, therefore, be on patient-centred care, in addition to the educational goal of providing the required knowledge, skills and attitudes (Buring et al., 2009).

Advances in IPE may be restricted by the current culture, which leads to students being educated in professional silos, as well as by specialisation which leads to fragmentation of academic knowledge, making it difficult for students to interact

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with other professionals (Curran, Sharpe, Flynn, & Button, 2010; Hall, 2005). It is widely acknowledged that the positive effects of a multi-professional team are far greater than the sum of the individual team members' contributions (Hammick, Olckers, & Campion-Smith, 2009). Although not all IPE studies report a positive impact on professional practice or patient care, the majority report positive outcomes related to collaborative team behaviour and reduction of clinical errors (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013).

Simulation, a key adult learning principle (D'Eon, 2005), is one strategy for experiential authentic learning (Bligh & Bleakley, 2006). Experiential learning seems to have a beneficial effect on the acquisition of technical skills, the development of higher cognitive skills such as clinical reasoning and decision-making, analysis, communication skills and teamwork (Blackstock & Jull, 2007). By participating in IPE activities, students are challenged to interpret what happens and to construct meaning through their personal experience. This new construct of meaning is then incorporated into a student's existing body of personal knowledge through reflection and feedback (Teunissen et al., 2007).

Simulated or standardised patients (SPs are persons that have been trained to simulate a medical condition in a standardised way) have been found to be reliable teaching and assessment 'tools' in the education of health professionals and are widely used to enhance the authenticity of simulation scenarios (Panzarella & Manyon, 2008). 'Real life' can be enhanced further using real patient data; mimic real practice contexts and responses and placing it in specially constructed locations resembling clinical environments (Gobbi & Monger, 2004).

For the purposes of the present study, facilitators from the Medunsa Skills Centre created a simulation for medical, occupational therapy (OT) and physiotherapy (PT) students. Facilitators from the OT and PT professions assisted in the preparation of a simulation and the facilitation of the reflection.

This study explored perceptions of healthcare students and IPE facilitators of a simulated interprofessional consultation in an outpatient clinic with a post-trauma patient, as well as their opinions on the feasibility of offering similar learning experiences in future.

Methods

Study design, setting and sample

An evaluation research design was used to assess the interprofessional education event, presented as three identical sessions. A qualitative inquiry technique was used to explore students' and facilitators' reflections on a simulated interprofessional consultation. A qualitative inquiry is most appropriate for studying process evaluation as participants' reflections are considered key processes (De Vos, Strydom, Fouche, & Delport, 2011).

The convenience sample comprised senior students at the University of Limpopo, Medunsa Campus: Fifth-year medical students ($n = 66$) who attended the simulation as part of scheduled multiple trauma practical, as well as third-year OT students ($n = 9$) and fourth-year PT students ($n = 7$) who were doing clinical training. This sample, representing 33–35% of each respective profession's students, consented to participate in the study. Due to the large number of students and only three afternoons available, the sample was proportionately divided into three groups.

Simulation

The management of a multiple-trauma patient was selected for the scenario of the simulation, since it forms part of undergraduate medical (fifth year), OT (third and fourth year) and PT (fourth year) curricula.

The scenario was tailored to the professions represented and clinical skills that the students have already mastered. The scenario aimed at the facilitation of team interaction for which the multi-disciplinary nature of trauma care is especially suitable (Miller, Crandall, Washington, & McLaughlin, 2012). The scenario involved an SP portraying a 25-year-old technician who had sustained a stab wound to his right arm as well as lung trauma two weeks prior to his consultation at the outpatient clinic. He complained of an inability to extend his right wrist and fingers, clumsiness of his hand and breathlessness, when walking upstairs to his flat. He also expressed concerns about a possible dismissal when returning to work.

The scenario was presented in a simulated outpatient clinic, which is a common location for members of the multi-disciplinary team to work together, with different professionals offering their own unique contribution. To ensure ecological validity, input from clinicians regarding the diagnosis and treatment was gained prior to presenting this specific scenario. Staff from the Anatomy department were consulted to ensure that the clinical pathology and presentation were aligned with the injury at the specific anatomical location of the upper arm. Medical students were expected to examine the SP and then refer him for OT and PT services for further management. OT and PT students were expected to examine his arm and hand for aspects such as range of motion, muscle strength and sensation, test his endurance and respiratory function and then to plan, provide and explain their intervention, including exercises, a splint and overall management of the condition. They were also expected to address the SP's concerns about returning to work.

Each session lasted for two hours. The first hour was dedicated to a discussion by the groups on the roles of each team member and his/her unique contribution in the team regarding the treatment of the patient described in the scenario. During the second hour, representatives from each profession conducted the consultation while the rest of the students observed. At the end of the session, all students and facilitators reflected and gave feedback on the effectiveness of the intervention.

In preparation for the simulation, students were briefed about the scenario. They watched a DVD showing the simulated pre-hospital and initial emergency room management of the SP.

Data collection

In a focus group at the end of each session, the active participants and the SP were given an opportunity to reflect on their performance followed by the rest of the participants (the observers). Prompts used to elicit reflections from the students included the following: 'What was done that worked well?', 'What should not be done in the same way in future?' and 'What would be the ideal patient management?' The SP indicated how the intervention of the team members affected him and also highlighted the students' strengths as well as areas that needed improvement. Lastly, all facilitators reflected on the session and gave specific guidelines on how the active participants could have improved their performance. At the end of the sessions, all participants also submitted written reflections. The researchers

attempted to keep the sessions as similar as possible in terms of portraying the situation, facilitation of the reflections and preparation of the active participants.

Data analysis

The research team analysed the data. Verbal reflections were transcribed and added to written reflections. Each profession's data were captured separately. Immersion in the data was achieved by each of the researchers first independently transcribing, reading and reflecting on the data. Researcher 1 divided data into positive and negative comments and identified six possible themes further subdivided into categories. The themes and categories were discussed with researchers 2 and 3 who then independently coded the data. The necessity for defining the themes and categories became apparent in the differences in coding that occurred. Refining the themes was repeated until consensus was reached. Data saturation was achieved when no new codes were identifiable (Bruce, 2007). The final three themes with seven categories were identified, using the constant comparative method (Corbin & Strauss, 2008). The fourth researcher with experience in qualitative analysis checked the data analysis as part of a peer review (De Vos et al., 2011). Even though an evaluation research was done, the researchers did not attempt to assess the different phases of the event e.g. planning, implementation and proposed direction, yet the data revealed needs for future events.

Ethics

Students were given an opportunity to participate voluntarily. Written informed consent was obtained and participants were provided the opportunity to withdraw from the study at any given time without any consequences pertaining to their assessments, marks or academic progress. The study was approved by the Medunsa Research and Ethics Committee.

Results

Themes

The data analysis revealed three main themes of students' perceptions of the advantages of the IPE event, as an addition to their syllabus (Table 1): *multi-disciplinary team approach, professional behaviour and skills development* as well as *recommendations for future IPE events*. Quotations are used to illustrate some of the respondents' views in their own words, adding to the credibility of the results. The abbreviation (M) for medical student, (OT) for occupational therapy students and (PT) for physiotherapy students are used to enrich the quotes.

Advantages of the multi-disciplinary team approach

This theme includes knowledge and experience gained from the event, role clarification of own and each other's roles, and working collaboratively as a team.

Knowledge and experience of teamwork gained: The notion that one profession would be unable to meet all the patients' needs highlighted the advantages of using a multi-disciplinary team and supporting a holistic approach to patient treatment. Many participants actually indicated that more teamwork with other professionals is

Table 1. Themes and categories.

Themes	Categories
1 Advantages of multi-disciplinary team approach	Knowledge and experience of teamwork Role clarification Working collaboratively
2 Professional behaviour and skills development	Social skills Profession specific knowledge and skills
3 Recommendations for future IPE events	Knowledge and skill consolidation. Feasibility

required as part of their training. Although medical students do a neuromuscular examination and are aware of its importance, they acknowledged that other professionals (PT and OT) are better trained to do it. Students remarked: 'We cannot make the patient feel better alone' (M).

Valuable mutual understanding and knowledge was gained; for instance, although all healthcare students learned how to assess sensation, some were more skilled than others when assessing the SP.

Role clarification: Students from each profession were sensitised to identify the similarities and differences in their roles. Medical students, for example, were not aware that OTs make splints and that PTs also deal with respiratory problems/complications. 'Most people do not know a lot about the role of occupational therapy and it affects intervention and their perception about the profession' (OT).

Working collaboratively: Furthermore, students identified both the immediate value of working as a team as well as the positive long-term effects: '... working together can help us learn more from each other' (PT); '... we need to be all around each other and assist one another', as well as 'working together as a team is important for the client's benefit' (OT). 'Doctors should develop the habit of working closely with other healthcare professionals' (M). 'It is just very progressive to participate with others because you learn more' (OT).

Professional behaviour and skills

The second theme identified the importance of social skills, e.g. empathy, reassurance, communication skills and self-confidence as well as profession-specific knowledge and skills.

Social skills: A positive attitude towards the patient was regarded as particularly important. Students emphasised the importance of 'communication' and 'proper assessment'. A simulated situation created a 'safe situation' where students not only had the opportunity to demonstrate professional behaviour and skills without causing harm to a patient, but also received feedback from peers and facilitators. Students remarked that the social skills of clear communication and confidence were important during patient education: 'The team members need to reassure the patient and make sure that when the patient leaves he understands the further intervention from the team members' (PT).

Profession specific skills: Students recognised that ‘examinations were not done properly’ (M) and ‘Interviewing skills need major improvement’ (M), ‘students need to learn to convince patients to follow a home programme after discharge’ (PT). ‘It is important to know what to assess in each condition so that you can give the relevant treatment and it is also important to know more about the patient’s home and work circumstances’ (OT). ‘My skills needs a bit of brushing up and I can only do that through constant practise where I can be corrected’ (M). Students also complimented each other on their performance; ‘they know what they are doing’ (M).

Recommendations for future IPE sessions

This last theme included the need for consolidation of knowledge and skill through repetition, and feasibility of future IPE events. Both students and facilitators emphasised that these needs should be addressed.

Knowledge and skill consolidation: Students and facilitators identified some of the students’ educational needs. Students requested increased frequency and opportunities for IPE events to practise their skills and to develop clinical reasoning: ‘I would like to learn with other health students and I think that will grow me [*sic*] as a health professional’ (M). ‘Students should be given the opportunity to explore with other students from our institution to learn other things that they were not aware of’ (OT).

The facilitators also made some specific suggestions to students to further enhance their performance, for example, firstly, the need for collaboration: ‘You each came up with your own management but you need to discuss it with one another at a later stage’; secondly, to provide feedback to the patient: ‘You need to indicate the results of the assessment to inform the patient what was impaired and what was not’; and thirdly, the need for a methodical approach towards assessment: ‘Remember that a systematic way of conducting an evaluation is required to avoid missing important aspects’.

Feasibility of implementing IPE: In addition to the feedback from students expressing a need for more IPE sessions, reflections from the facilitators revealed their perceptions of the advantages and feasibility of the IPE events. Facilitators realised that exposure to IPE events could result in facilitators’ own improved skills in facilitation of learning not only in the simulation situation, but also in their respective classrooms.

Discussion and recommendations

The discussion is divided into planning of the event, execution of the event and the way forward.

Planning the event

Although IPE, through collaboration between healthcare team members, has been recognised for over 40 years as a means of facilitating more effective teamwork in healthcare (Simin, Milutinović, Brestovacki, Andrijević, & Cigić, 2010), widespread implementation in education in the health professions is not yet a reality (Buring et al., 2009). At Medunsa, no formal IPE events are presented. During planning of this event, the researchers wanted to establish what students learn, how it influences their attitudes and how to improve the IPE sessions in future.

The researchers envisaged that students would learn to work with one another and about each other's roles during a simulated consultation. Bringing students together was based on the theory of contact hypothesis, i.e. students learn from one another if they are in the same venue (Hean, Craddock, & Hammick, 2012).

Developing the scenario challenged the facilitators' own knowledge and skills and they realised that treating a patient's complaints is easier than 'creating' the clinical signs with which the patient would present. The preparation of the scenario requires careful consideration and the training of the SP should include input from all team members. If more than one event is conducted, revisions must be made with the SP of crucial factors in the scenario. In the scenario, inadequate training of the SP on the possible complications and implications of the injury resulted in his portrayal of the situation being less authentic than desired.

Execution of the event

During implementation of the event, adult learning principles, e.g. experiential learning, were used. Some students were exposed to reflection for the first time. Students' and facilitators' lack of knowledge on reflection may have hampered the depth and robustness of the reflections that were elicited during the focus groups and written reflections. The limited time available as well as the fact that it was the last half an hour at the end of the week may have further impacted negatively on the reflections. Students did, however, appreciate and benefit from other students' and the facilitators' verbal reflections. It helped students to become more reflective and critical as well as more open to the perspectives of others, less defensive and more accepting of new ideas (Hean et al., 2012). Being exposed to a simulated consultation, helped students in bridging the theory-practice gap and lead to deeper learning. The benefits of the experience in terms of applying the knowledge in clinical work was not evaluated; however, D'Eon (2005) found that transfer of learning from one context to new contexts usually occurs.

The success and value of the IPE event is to a large extent dependent on the abilities of the facilitators. Some of the facilitators for the event have a postgraduate certificate in higher education. However, as Hean et al. (2012) indicated '... nothing can prepare you for the complexity of IPE ... it is a matter of continuing to learn in a different way for everyone involved' (p. 91). IPE through simulation places learning in the context of an active and dynamic process that involves experiential and meta-learning (reflection) (Bligh & Bleakley, 2006). Facilitation during a simulated event is important to provide students with clear guidelines on what should have happened during the intervention.

The benefits derived exceeded researchers' expectations including the acquisition of social and communication skills highlighted by the students. Professional behaviour and skills and the practice of various 'soft skills' are valuable aspects practised and refined within a 'safe' environment, as was found in this study. Students were able to identify the adverse effects of lack of communication on patient care during the simulation. Garbee et al. (2013) found that effective communication amongst healthcare professionals is crucial to ensure high-quality patient care and safety during an interprofessional patient simulation. IPE improves trust and enhances communication, leading to changes in the attitudes and perceptions that professionals have towards each other (Illingworth & Cheivanayagam, 2007). The reaction of the SP in this study to students' communication and physical handling added valuable insights

for students from the 'patient's' perspective. Students valued the comments from the SP as some of them became aware of how their communication skills impacted on the 'patient' in front of them, e.g. their lack of confidence.

Through role clarification, students learned to appreciate each other's expertise in areas that they were not even aware of in each other's professions. They realised that each profession's skills and knowledge is required and also became aware of the values and characteristics of the different professions. They understood the importance of specialisation as well as overlap between professions. The benefits that students gained from interacting and learning with, about and from each other is supported by the Theory of Social Capital (Hean et al., 2012).

During execution of the event, students learned to appreciate the advantages of a multi-disciplinary team approach towards patient care. Thistlethwaite (2012) confirms that understanding each other's role as healthcare professionals and having positive perceptions and experiences makes students confident in team-based care delivery before they graduate. The learning is in line with the complexity adaptive systems theory as described by Rouse (2007), where students develop the ability to adapt to on-going changes that result in improved patterns of behaviour and self-organisation.

The competence of healthcare students rests not only on various skills practised in isolation. Students should be tenable to follow a systematic approach and to integrate, apply and synthesise information. Lack of such preparation may be the reason for nursing and medical students exhibiting low self-confidence and poor skills in the clinical situation (Panzarella & Manyon, 2008).

The way forward

Scenarios for simulation where team members commonly collaborate need to be identified e.g. a patient who presents with a stroke or cerebral palsy. Although it may create an additional challenge in setting the scene, it is important to include students from different year groups and from other professions including speech therapy, human nutrition and nursing (Buring et al., 2009; Lidskog, Löfmark, & Ahlström, 2009).

It is further recommended that future students need to be better prepared for IPE. The facilitators must explain the scenario in detail to the students and, if possible, provide an information leaflet to complement the verbal explanation. A video recording of facilitators/clinicians conducting a consultation would help by providing a visual example, alleviating some of the uncertainty and anxieties among team members (and even facilitators) who participate in the simulation. The video could be shown either prior to the simulation or at the conclusion of each session. Secondly, students need to be taught how to reflect on a learning opportunity before the simulations, preferably already in their junior years of study.

The facilitators learned valuable lessons of how these learning opportunities could be further improved. Despite the advantages of multi-disciplinary teamwork, various obstacles still exist between role players and the process, such as organisational and interprofessional relationships (Hind et al., 2003; Loisel, Durand, Baril, Gervais, & Falardeau, 2005). Facilitators may need additional training in developing scenarios and facilitating reflection (Buring et al., 2009). The facilitators involved in this study gained confidence and skills through their individual and combined reflections on the process and content of the IPE event. Not all facilitators may be willing

to move out of their comfort zone where they know their own profession's role, but may also not be as equipped to answer questions posed by students from other professional groups (Hean et al., 2012). For IPE event to be successful, facilitators from all the professions involved need to invest wholeheartedly in the planning and execution processes.

Creating opportunities such as workshops to discuss first-hand experience of the advantages of IPE to students and facilitators alike may convince more staff members of the importance of IPE. The development of skilled educators is an evolutionary process and should be based on the premise of educating collaborative, reflective practitioners capable of functioning effectively in an interprofessional healthcare team. Simply bringing staff members from different healthcare professions into the same classroom, laboratory, simulation centre, patient care facility or other learning environment should not be assumed to result in a beneficial IPE experience for healthcare students (Buring et al., 2009, p. 60).

After the events, the facilitators invited the rest of the academic staff and management of the University for a workshop to share the lessons learned and to equip more facilitators with the knowledge of formulating a scenario. This resulted in a follow-up IPE event in the following years including more professions and more year groups.

Conclusions

The strengths of the research include that it indicates how perceptions and skills of students and facilitators are positively influenced by an IPE event. Students developed appreciation for the expert as well as general knowledge required for team members to address the varied needs of patients. The evidence that was collected helped to convince management and other facilitators of the value of IPE events. The weaknesses include the involvement of only three professions that make the results not transferable to all professions. The quality and quantity of reflections could be improved by providing adequate training and time. Further research is necessary to monitor the effect of future IPE opportunities on students' readiness for patient treatment, teamwork and clinical application.

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Disclosure statement

The study was undertaken as an independent research project. The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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