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Simulated learning activities as part replacement of clinical placements in osteopathy: A case study

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ABSTRACT

Simulation has played an important role in health professional education for over 50 years but is relatively new to osteopathy. Simulation provides an opportunity to control some of the variables in clinical education such as adequate patient numbers and case mix exposure and provide a meaningful contribution to the students' clinical education. Simulation learning (SL) is a process where the learner practices a procedure or routine in a simulated learning environment. SL has recently been investigated as a valid part replacement of traditional clinical placements in physiotherapy. This case study endeavours to provide osteopathy educators with a framework to develop, implement and evaluate simulated learning in osteopathic education.

This case study outlines simulated learning activities that part replaced clinical placements in osteopathy education and provides an overview of costs and resources required. Student feedback obtained throughout the project suggests structured simulated learning activities may build critical practice skills and be used as an acceptable clinical learning tool.

Introduction

Simulated learning has played a role in health professional education for over 50 years and recently as a part replacement of traditional clinical placements [1]. Simulation is a technique "to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner" ([2], p. i2). Simulation provides an opportunity to control some of the variables in clinical education and provide a meaningful contribution to the students' clinical education [3]. Simulation learning (SL) is the process where the learner practices a procedure or routine in a simulated learning environments (SLE). SLE's can utilise mannequins or simulated patients (SPs) in environments of varying fidelity and complexity. Simulated patients are well people trained to portray unhealthy or ill patients and to interact with and provide feedback to learners and educators.

Simulated learning (SL) is commonly utilised in health professional education but relatively new in osteopathy. Simulated learning has been reported by students' and supervisors' as educationally, professionally and clinically relevant [4]. In addition, SL has been found to increase student engagement, psychomotor and clinical reasoning skills, self-confidence, self-efficacy, ability to manage unfamiliar situations, and satisfaction with learning [5].

Studying osteopathy includes a mixture of traditional classroom-based teaching and clinical placement activities where students are able to apply the skills, knowledge and attributes developed in the classroom to a real world setting. Osteopathy students usually commence their clinical placement learning activities in second or third year through being an observer in patient consultations. Students then progress to leading the consultation in their senior years by treating patients under the supervision of registered practitioners [6].

Hours spent in the clinical environment forms a substantial portion of most health profession students' course requirements. Competition for clinical placements, costs of clinical education [7], increasing student numbers in health professions programs, and the desire to implement interprofessional education and practice, have all required teaching institutions to conceptualise innovative ways of delivering meaningful clinical education for their students. Simulated learning may provide an avenue to address some of these issues.

This case study describes the implementation of simulation as

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part of the clinical education of students in the osteopathy program at Victoria University (Melbourne, Australia). The rationale, development, implementation and evaluation of this approach will be described as an example of how simulated learning can be embedded in osteopathy clinical education. The framework used to design junior student simulated clinical placement activities is proposed as a starting point for discussions within the osteopathy education community regarding the use of simulation in conjunction with, or as part replacement of clinical placements. Part replacement of clinical placements with simulated learning has been successfully implemented in physiotherapy education without adverse effects on the student's clinical assessment performance [1,8].

A simulated learning case study

The osteopathy program at Victoria University (VU, Melbourne, Australia) is a five-year Bachelor-Masters model, with a new 4.5 year program format being implemented in 2016. In both programs the number of clinical placement hour's increase as student's progress through their course. In their third year osteopathy students observe the senior students and are required to undertake 40 h of clinical placements each semester. Fourth year students complete 75 h and fifth year students complete 120 h of clinical placement per semester.

In 2014, VU significantly increased the first year intake in osteopathy and enrolled 140 students (approximately double the previous year). The larger cohorts have continued with a drastic increase in student numbers from 300 students in 2014 to over 500 students in 2017. The increase in osteopathy student numbers is also occurring at other universities in Australia. These increasing cohorts have placed significant pressures on the delivery of clinical placements at VU and academic staff have been forced to consider alternatives to traditional clinical placements to ensure students continue to receive high quality clinical education.

In order to deliver sustainable clinical education in low resource environment and address some of these pressures, academics from the program obtained an internal university grant of AUD$20,000 to develop, implement and evaluate simulated learning (SL) activities as part replacement of the traditional observer and 'hands-on' clinical placement hours described previously. Research from physiotherapy [1,8] demonstrated that physiotherapy students undertaking 25% of their clinical placement as SL were as clinically competent at the end of the study as the students undertaking traditional clinical placements. Due to the paucity of published research on the use of simulation in osteopathy education, our project utilised methods from these two research projects from physiotherapy [1,8]. The benefits of simulated learning have been researched in physiotherapy education and are outlined above. How these benefits translate to osteopathy clinical education is yet to be established.

The simulated learning project

Ethics approval for the project was obtained from the Victoria University Human Research Ethics Committee (HRE16-011).

Case scenario creation

The project team identified the key learning outcomes in subjects undertaken by third year students in semester 1 2016. From these key outcomes three clinical scenarios were created. Scenario 1 was the most basic, with the second being more challenging and the third being most complex. All three scenarios were aligned with the graduate outcomes of year 3 of the bachelor degree and expected improvement of a participant's communication and clinical reasoning skills as they progressed through semester 1. Each scenario took 5 h to write and an experienced case writer (sessional staff member) was paid approximately AUD$300 per scenario. The scenario details can be found in Table 2. Case 2 (Diane) has been provided in appendix 1 as an example of the back end documentation for the SL activity.

Recruitment

Student participant recruitment

Students enrolled in the third year of the osteopathy program were offered the opportunity to volunteer to participate in the SL project, and were able to withdraw at any time. All participants were informed if they believed they had been disadvantaged by replacing clinic shifts with simulated learning, they would be able to undertake additional clinical shifts after the project ended. No participants utilised this option. Students who did not participate completed their clinical placement hours as normal.

Recruitment: simulated patient recruitment

Professional actors were recruited from a specialist simulation acting agency. Each scenario involved one simulated patient undertaking 2 h of home preparation and 2 h of work at the VU campus which included preparation (e.g. organisation of make-up, props such as crutches), training for the scenario with an experienced SP trainer (TD) and filming for the scenario. The total cost for each SP per scenario was AUD$360.

Recruitment: osteopath participant recruitment

Experienced osteopaths were recruited from the pool of osteopathy clinical educators working at VU to play the role of the osteopath. Osteopaths were given a detailed overview of the project and their role in the scenario. Osteopaths were given a snapshot of the case but were not privy to any case details until they were revealed by the simulated patient in the simulated consultation. Osteopaths were paid the usual clinical supervisor rate (~AUD$60 per hour) for their time at a cost of approximately AUD$150 per filmed case scenario.

Filming

All simulated consultations were filmed using two video cameras purchased through the project grant. One of the researchers (BV) was responsible for all the video recording, while another acted as the director giving instructions to the osteopath, simulated patient and assisting with scene changes (TD). Case histories and management were filmed at a typical clinical desk set up. Examination was filmed in a simulated clinical room with an electric plinth, linen, examination equipment and a light box. All parts of the simulated consultation were filmed in the usual sequence of a consultation – history, examination and management. An additional element was the inclusion of the recording of both the osteopath and patient reflections of each of these components. These were recorded so the students undertaking the SL would hear the osteopath and patient perspective of the clinical scenario – something that is not common in traditional clinical placements.

Each scenario took approximately 2 h to film and 4 h to edit. Project team staffing costs for filming, directing and editing are estimated to be approximately AUD$500 per scenario.

Learning management system (LMS)

All student participants in the project (n = 10) were added to a secure, closed online learning management system created or this

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