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EDUCATION

A21

THE USE OF SIMULATED LEARNING IN PREQUALIFYING PHYSIOTHERAPY EDUCATION: A SCOPING REVIEW

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Background and aim: Simulation-based learning is an increasingly popular pedagogical approach. In some areas of physiotherapy, it is better been documented, for example, cardiorespiratory physiotherapy [1]. However, its use in other physiotherapy-related settings is less clear. Therefore, the aim of this project was to review the literature on simulation-based learning in prequalifying physiotherapy education, in order to explore where studies have taken place, which physiotherapy settings it is used in and indication of its effectiveness in teaching.

Methods: This study was carried out based on the scoping review methodology outlined by Arksey and O'Malley [2]. The following databases were searched: AMED, BNI, CINAHL, Embase, Emcare, HMIC, Medline and PsychInfo, using specific search terms, to find studies involving the use of simulation in a prequalifying physiotherapy setting. Returned papers were screened using inclusion and exclusion criteria by two reviewers. The database search results were recorded and managed using Rayyan™ [3].

Results: The database search retrieved 280 papers. Following the removal of duplicates, screening titles and abstracts and then screening full-text papers, 39 papers were included. The included studies were conducted in USA ($n = 23$), Australia ($n = 10$), Canada ($n = 1$), Finland ($n = 1$), Germany (1), Spain (1), Taiwan (1), UK (1). Simulation-based learning activities took place in a variety of physiotherapy settings. Most took place in an acute care or cardiorespiratory setting. There was a high level of variation in the reporting of the described simulation activity. This made it difficult to establish whether simulations were of high or low fidelity. Where reporting was well described, simulation activities tended to follow a framework of pre-brief, simulation and then debriefing. The majority of studies reported some measure of the effectiveness or feasibility of simulation-based learning.

Conclusion: This scoping review identified a growing body of evidence supporting simulation-based learning in prequalifying physiotherapy education. However, to date, its use in pedagogical research has tended to focus on the cardiorespiratory setting, and it has often been researched as a tool to explore or enhance interprofessional collaboration. Whilst both of these areas are of value to the profession, there is scope to explore the use of simulation-based learning

in settings such as musculoskeletal teaching. Further work on its use and value in the teaching of discrete complex tasks, in addition to collaborative practice, such as team working, de-escalation and communication is also needed.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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CONTENT

A22

THE USE OF SIMULATION IN PAEDIATRIC EMERGENCY MEDICINE: A SCOPING REVIEW

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Background and aim: The use of simulation in healthcare has increased in recent years. It is frequently used for replicating clinical scenarios and allows for the acquisition of skills in a safe environment. Whilst enabling candidates to make mistakes and learn from them without fear of harming patients is used across many specialities including paediatric emergency medicine for a range of teaching across all professional groups, Lateef [1] identifies that in order for it to reach its maximum potential, it needs to be integrated in traditional training programmes. This is becoming more commonplace. In order to know how to fully integrate it into practice, an understanding of how it is currently being used is essential. This scoping view aims to explore how simulation training is being used and what it is used for within paediatric emergency medicine (PEM), as reported by the literature.

Methods: This review followed a five-step scoping review framework outlined by Arksey and O'Malley [2]. Literature searches were conducted in Medline and CINAHL with no limitation applied. Sixty-six studies were screened. Reference lists were also screened. Of the screened studies, 25 were subject to full test review and 19 were included in the final review. Articles were screened at all levels by one reviewer. Data extraction was also carried out by one reviewer.

Results: No papers focused on the delivery of simulation within paediatric emergency medicine in the UK, with the majority of papers originating from the USA. There was also no paper that outlined the varied uses of simulation in PEM. Many of the papers described and evaluated single scenarios that were used in varying settings or simulation courses that were not specific to PEM. Both high and low fidelity simulations were reported with much of the focus on high-fidelity simulation. Delivered through either simulation suite-based learning or *in situ* simulation. There is little discussion about the use of simulation for interpersonal

and communication skills with only one paper mentioning this. Frequently simulation focuses on the acquisition of individual procedures and skill acquisition. Alongside this simulation is also reported to be used to test responses to rare or complicated cases or high-pressured scenarios such as resuscitation.

Conclusion: This scoping review reveals that the extent to which simulation is used within PEM is largely unknown and requires further investigation.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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IN PRACTICE

QUALITY

A23

WRAPPING A GASTROSCHISIS BABY: AN MDT SIMULATION PROGRAMME

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Background and aim: Gastroschisis is a congenital defect of the anterior abdominal wall characterized by the herniation of abdominal contents through a defect usually located to the right-side of the umbilical cord [1]. Team-working, collaboration and clear communication between the obstetric, neonatal, and paediatric surgical teams are critical to achieving optimal outcomes in gastrochisis [2]. A national cohort study of all surgical units in the UK and Ireland identified primary closure as the optimal surgical management for antenatally detected cases of simple gastroschisis [3].

A local retrospective audit in RBHSC identified a higher rate of staged gastroschisis repair in the last 10 years with 66% of patients requiring initial silo placement, when compared to 45% national average. Data also demonstrated that patient with silo placement took longer to achieve full feeds, prolonged TPN, delayed discharge, and increased complications rates.

Aims: To create an interprofessional simulation programme for the preparation and management of a gastroschisis delivery, resuscitation, and initial stabilization. Aims of this project are to improve awareness of optimal stabilization management, efficiency of bowel wrapping and clear communication amongst the MDT with the overall goal of improving the rate of primary closure and outcomes in our unit.

Methods: A gastroschisis simulation model was created using vegan-sausage casings, jelly, and food colouring to create the bowel. The simulation programme focused on; team education of optimal gastroschisis management,

team and delivery room preparation, primary resuscitation and bowel wrapping with clingfilm. Following a lecture of gastroschisis management and demonstration of delivery room stabilization participants were divided into teams of five, given a scenario, asked to prepare equipment, allocate roles and work in sync to achieve effective resuscitation and stabilization of the new-born. Pre and Post simulation feedback was collected and course adapted using a PDSA cycle. For continued learning a post-course video for delivery room management of gastroschisis was created and available for everyone to reference at any time in any location.

Results: Pre-simulation: 56% of participants had no previous training or clinical experience of the management of gastroschisis and 78% didn't feel confident in providing delivery suite management and stabilization. 100% of attendees felt the simulation training improved their confidence of initial management and stabilization of gastroschisis and all would recommend this course to their peers.

Conclusion: Simulation-based interdisciplinary team training can serve as a channel for the acquisition and maintenance of clinical skills. It is crucial to improving the management of complex neonatal conditions.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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SYSTEM

A24

CALCULATING THE COST OF SIMULATION BASED EDUCATION. WHAT TO INCLUDE?

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Background and aim: The cost of developing simulation-based education (SBE) facilities is high. However, the cost of sustaining SBE activities is often not considered in the initial outlay and facilities and centres can find themselves in financial difficulty early on. In addition to the cost of the initial capital and technology costs, there are many other costs incurred when running and sustaining SBE programmes. These are often not apparent or considered by simulationists when establishing new programmes. Research to date has focused on cost effectiveness and a return on investment [1]. However, the sustainability of a SBE programme is related to the ability to meet these costs. The aim of this work is to develop a simulation cost calculator that considered all costs incurred in skills programme development.

Methods: Following consultation with experienced simulation faculty, the finance office, human resources and