Moving beyond the classroom: simulation training on diabetes-related hypoglycaemia

Carry Beecroft, Helen Else and Tom Woollard

Context:

The snapshot audit from the NaDIA (National Diabetes Inpatient Audit, 2017) showed West Suffolk NHS Foundation Trust (WSFT) had 56 patients with diabetes who had been in hospital longer than 24 hours. They accounted for over 12% of the total West Suffolk Hospital inpatient beds. This is not just a local issue. Diabetes prevalence is on the increase locally, nationally and internationally (Diabetes UK, 2018).

Research has shown that some staff groups in acute hospitals lack understanding of diabetes (Hayes and Cardwell, 2017).

To keep inpatients safe and prevent harm, it is essential that staff remain informed and up-to-date on diabetes protocols and guidance. Staff education on all aspects of diabetes care raises staff confidence and increases competence when assessing and managing diabetes patients, both day-to-day and during diabetes emergencies.

What did you do?

Classroom teaching has historically been the method used to educate WSFT multidisciplinary staff; medical, nursing and allied health professionals, on diabetes related hypoglycaemia. We decided to move beyond traditional classroom teaching and incorporate 'simulations' to re-enact scenarios and consolidate the knowledge and skills required to treat hypoglycaemia efficiently and effectively.

A brief literature search revealed that there are many examples of simulation being used in practice with a high degree of effectiveness. Morell-Scott (2018) used simulation within pre-registration nurse training and concluded that it is clear that simulation has its merits and should be used as an add-on tool to ensure the development of a well-rounded professional who is ready to enter the workforce.

This initiative aimed to increase multi-disciplinary team (MDT) confidence and competence when managing hypoglycaemia incidents by using ' high fidelity' simulation. High fidelity simulation can involve the use of computerised technology to simulate real life situations. Whereas low fidelity simulation uses simple inanimate manikins or actors. The most important goal is to create a positive non-threatening environment where learning is the focus.

The staff groups to receive training at West Suffolk NHS Foundation Trust were: nurses, nursing assistants, assistant practitioners, allied health professionals, clerical assistants, consultants, registrars and students. The diverse mix within training groups enabled the debrief sessions to be enlightening and engaging with many members of staff learning from their peers' abilities and potential responsibilities.

As we were focusing on a specific aspect of care and looking to include a very broad selection of staff, we aimed to to create a uniquely inclusive way of teaching that fit both the requirements of our local hypoglycaemia guideline and the national algorithm (JBDS-IP, 2018). High fidelity simulation fitted this brief as the scenario and equipment could allow members of the MDT to work together in a familiar situation around a patient but was adaptable to encompass any eventuality.

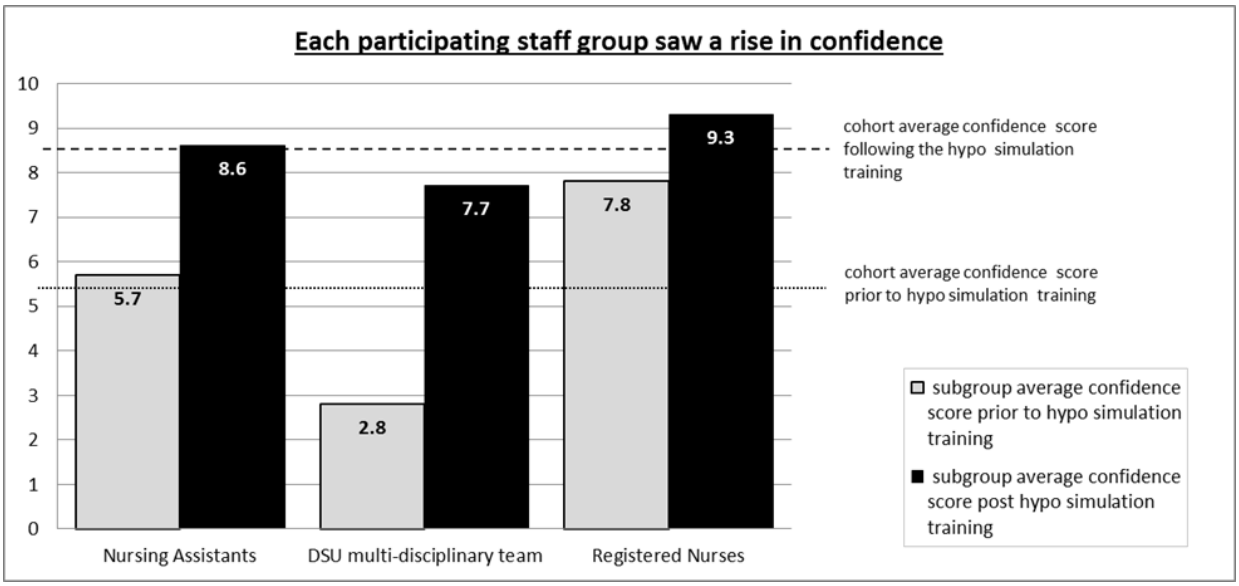
A charity registered in England and Wales (215199) and in Scotland (SC039136). © Diabetes UK 2018

As a simulation is in progress with participating MDT members , it is live streamed to a separate classroom where non-participating candidates watch the scenario unfold as it happens . The distance between the participating candidates and the observers promotes a more realistic situation. When the simulation has reached its natural conclusion, the candidates who have taken part re-join their observing colleagues for a facilitated debrief. Vast amount of learning can be acquired from watching a video of the simulation during the debrief session. During the debriefing session, the observers have opportunities to offer their observations and insight. Usually, the debrief lasts twice as long as the actual simulation with input and observations discussed between the entire team. The debrief aimed to flatten the hierarchy thought to exist in healthcare and allowed all members from pre-registration nurses to consultant to contribute equally.

A charity registered in England and Wales (215199) and in Scotland (SC039136). © Diabetes UK 2018

What were the outcomes/findings?

93% of participants who gave pre and post hypoglycaemia simulation training confidence scores felt that their confidence level increased as a result of hypoglycaemia simulation training.



On average, overall staff confidence increased by 51% as a result of the training. Nursing assistant (NA) scores went up on average 51%. The multi-disciplinary staff in the day surgery unit (DSU) showed the most dramatic rise in confidence when their average score increased by 175%. The registered nurses (RN) were the most confident group on entry to training and following a 19% increase in the group's average confidence score, every single registered nurse identified confidence levels of ≥8/10. Overall, 88% of the hypoglycaemia simulation training cohort rated their confidence following the training as ≥8/10.

NA confidence levels ≥ 8/10 following hypo simulation training	DSU confidence levels ≥ 8/10 following hypo simulation training	RN confidence levels ≥ 8/10 following hypo simulation training	Overall confidence levels ≥ 8/10 following hypo simulation training
88%	75%	100%	88%

Staff who received this new method of simulation training reported a marked improvement in their confidence

The NaDiA 2018/2019 results are expected to demonstrate improved hypoglycaemia data, ideally showing fewer incidences of moderate and severe hypoglycaemia. If mild hypoglycaemia is identified and treated appropriately, deterioration into moderate/severe hypoglycaemia will be prevented. This would reflect increased staff competence.

If the NaDiA 2018/2019 results show the expected improvements in hypoglycaemia management, a case can be made to roll out this teaching to all staff members across the Trust.

A charity registered in England and Wales (215199) and in Scotland (SC039136). © Diabetes UK 2018

References

Diabetes UK (2018) *What is hypo?* Available at: https://bit.ly/2K5r8xw (Accessed: 25 June 2018).

Hayes, N. and Cardwell, J. (2017) 'Assessment of diabetes knowledge among healthcare assistants in a district general hospital inpatient setting', *Journal of Diabetes Nursing,* 21(7), pp. 236-240.

Joint British Diabetes Societies for inpatient care (JBDS-IP) (Revised 2018) *The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus.* (3rd Ed) Available at: https://diabetes-resources-production.s3.eu-west-1.amazonaws.com/resources-s3/2018-05/JBDS_HypoGuidelineRevised2.pdf%2008.05.18.pdf (Accessed: 10 September 2018)

Morell-Scott, N. (2018) 'Confidence and deeper learning: simulated practice within pre-registration nurse education', *British Journal of Nursing,* 27(14), p. 827-830.

NHS Digital (2017) *National Diabetes Inpatient Audit (NaDIA) 2017*. Available at: https://digital.nhs.uk/catalogue/PUB030248 (Accessed: 25 June 2018).

Sperl-Hillen, J. et al. (2014) 'Using simulation technology to teach diabetes care management skills to resident physicians', *Journal of Diabetes Science and Technology,* 7(5), p. 1243-1254.

A charity registered in England and Wales (215199) and in Scotland (SC039136). © Diabetes UK 2018