

Evaluating the feasibility of using simulation to teach junior doctors diabetic emergency management

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Background

Up to 30% of inpatients at our busy district general hospital in east London have diabetes. Most of the out of hours management of diabetic emergencies is provided by junior doctors. When junior doctors' understanding and knowledge of diabetes management was assessed by questionnaire, it was found to be consistently poor (Gouveia *et al* 2011). Historically, this has been addressed by providing small group teaching sessions, case-base discussions and grand round lectures to improve the junior doctors' diabetes management training. However, with the growing popularity for simulation training, we wanted to evaluate whether this teaching method would be effective and preferred by junior doctors.

Methods

The previous knowledge questionnaire covering the management of diabetic emergencies was distributed amongst trainees at the hospital in 2014. It was completed by 30 junior doctors, comprising Foundation Year doctors, SHOs and SpRs.

After reviewing the questionnaire results, we decided to design simulation sessions each for three hours, covering the management of a common diabetic emergency: diabetic ketoacidosis (DKA), hyperosmolar hyperglycaemia syndrome (HHS) and hypoglycaemia. Nine junior doctors agreed to participate in the simulation sessions, during which they were divided into groups of 2-3, with each group tackling one simulation scenario.

We evaluated their experience of the simulation training by anonymous feedback forms utilising Likert scales and free-text response boxes.

Simulation training session in progress



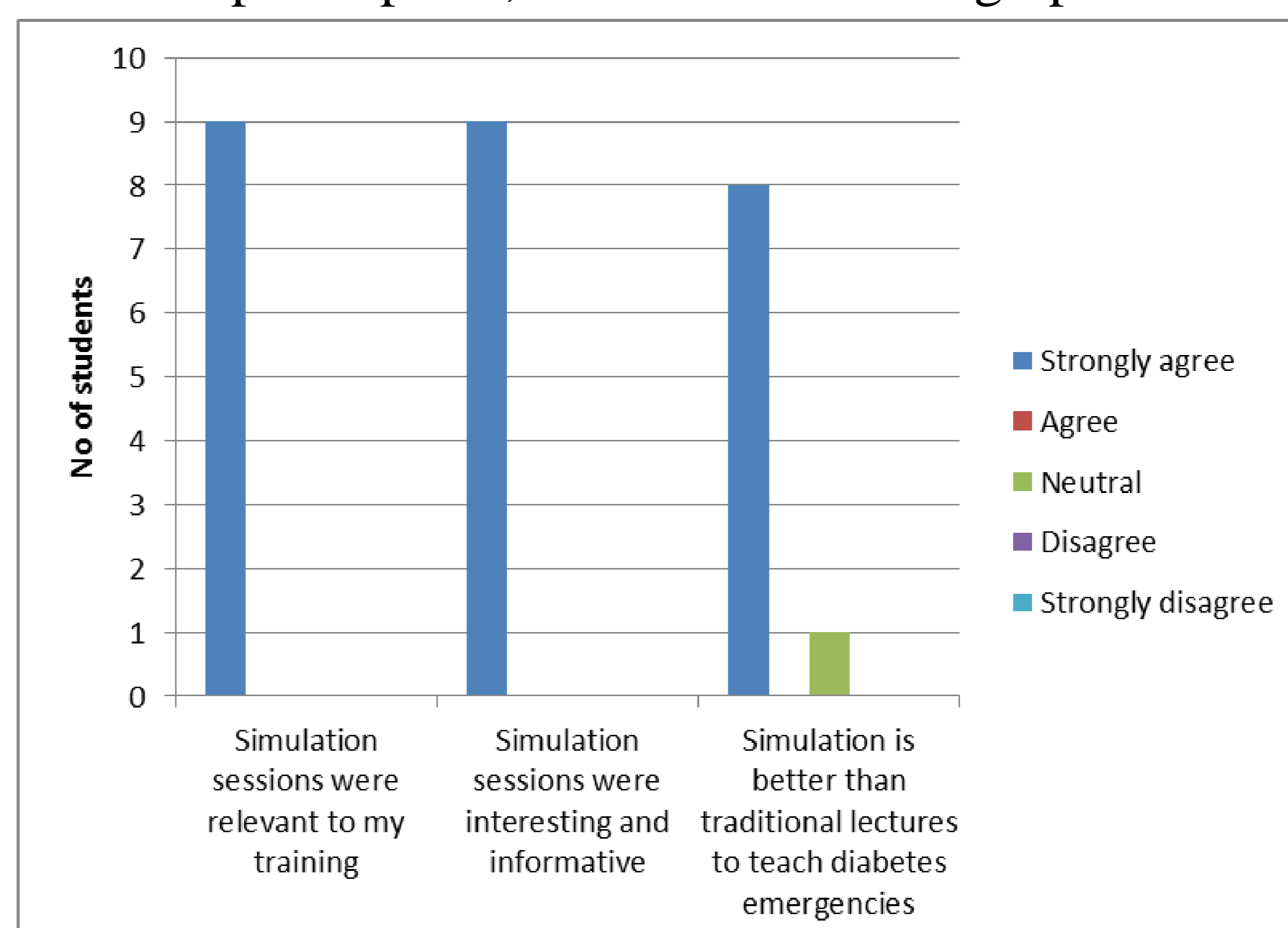
Results

The results of our knowledge questionnaire revealed:

- only 14/30 junior doctors correctly identified the main biochemical features of DKA,
- 8/30 junior doctors stated they would administer IV 50% dextrose to an unconscious patient with a capillary blood glucose =3mmol/l
- just 8/30 junior doctors were able to correctly calculate the serum osmolality.

These results were similar to those of a previous junior doctor knowledge evaluation carried out in 2010, confirming a strong need to provide more post-graduate training in diabetes emergency management.

After completion of the Diabetic Emergency Simulation sessions, we retrieved anonymous feedback from all nine participants, summarised in the graph below.



Comments included; “better to learn by example”, “discussions were useful”, “I’ll remember this session more than any lecture”, “simulation allows the trainee to become more immersed in practical problems” and “more fun and sticks in mind better”.

Conclusions

Simulation training was shown to be a feasible and popular teaching method amongst junior doctors for teaching the management of diabetic emergencies. Future challenges are to increase the junior doctor participation in simulation training and perhaps adapt the session to coincide with trainees' mandatory teaching.

References

1. A diabetes knowledge questionnaire completed by junior doctors reveals a vital need for further postgraduate education and training to safely manage inpatient diabetics. C.F. Gouveia, A. Claydon and S.V. Gelding. *Diabetic Medicine* (2011) 28 (Supplement 1)