Assessing the value of entrustment during high fidelity simulation – an innovation pilot

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Abstract

Medical training is currently moving towards entrustment, in essence determining when a learner can be entrusted to perform an aspect of competency unsupervised. We are also seeing reliance on the use of high fidelity simulation during training which allows for the undertaking of medical or surgical scenarios in a safe learning environment. Here we describe a novel innovation merging both platforms in an undergraduate setting and the potential limitations.

Keywords: Undergraduate; Entrustment

Overview

Entrustable Professional Activities (EPAs) have taken a strong hold currently in terms of competency based medical education. The literature highlights the importance of assessing when a learner can be entrusted to perform a particular curricula element unsupervised encompassing the domains of knowledge, skills and attitudes (1). Whilst the EPA discussion is currently focused on residency entry and the appropriate EPA choice, there has been interest about its potential in an undergraduate setting with the argument of assessing developmental progression and in enhancing the integration of classroom and workplace learning (2).

High fidelity simulation is regularly used as a platform to assess a learner’s ability to take part in a medical or surgical scenario with the added benefits of a safe learning environment and feedback.

As the study authors we felt it would be of interest to assess the added value of entrustment during high fidelity simulation in an undergraduate setting. Medical education in our view suffers from significant overcrowding with many platforms in terms of pedagogy and assessment functioning as standalone. Hence we were keen to merge
avenues of current interest to see what the potential outcomes would be.

This pilot event centred on two medical emergencies – diabetic ketoacidosis (DKA) and thyroid storm (TS). Learners were in their 2nd year and had received a pre simulation teaching session on these conditions by 4th year medical students who were in their final year of clinical rotations. The simulation scenarios had been constructed by the 4th year students and were focused on the learners’ ability to take a focused history, perform an appropriate physical examination, suggest possible differentials and request appropriate lab based investigations/instigate management. The scenario details are highlighted below. Both the pre teaching session and simulation scenarios had been reviewed by emergency physician doctors and simulation experts to ensure clinical accuracy.

**DKA**

*Comprehensive history with reference to case (polyuria/polydipsia/nausea/vomiting)*

*Comprehensive physical (vital signs/evidence of dehydration/volume depletion/fruity odor to breath/tachypnoea/alertness/orientation level)*

*Labs: glucose/BMP (potassium), serum ketones, CBC, UA + ketones by dipstick, plasma osmolality/EKG and interpretation*

*Management: fluid resuscitation*

**TS**

*Comprehensive history with reference to case (fever, anxiety, sweating, palpitations, agitation, confusion etc)*

*Comprehensive physical (vital signs)*

*Labs: CBC, LFTS, glucose, UA, TFTS, EKG and interpretation*

*Management: propranolol, iodine, PTU/Methimazole*

Each objective was assigned a modified entrustment scale based on previous literature recommendations (3).

*Level 1: Direct active – Full supervision at bedside. After the supervisor’s initial assessment, the learner assesses the patient with regular prompting and feedback from the supervisor.*

*Level 2: Indirect active – Partial supervision within line of sight. Supervisor pre-prompts learner to assess the patient. The learner reports back his or her assessment of the patient to the supervisor.*

*Level 3: Passive – Full entrustment with the supervisor present. The supervisor entrusts the learner to initiate assessment of the patient and report back his or her findings with minimal prompting and feedback.*
We recognize the use of different scales within the literature and chose to avoid over complex descriptors and whether learners could then be entrusted to supervise others with the focus predominantly on the supervisor’s perspective (2). We were also assessing the learners as a group as opposed to individually in view of the simulation setting.

Our entrustment element aimed to target where feasible the aspects of knowledge/ skills/ attitudes. The knowledge aspect was drawn out from being aware of the condition in question with skills based on a relevant history/ physical examination, requesting and interpreting investigations and initiating management where applicable. Unless the learners demonstrated unprofessional behavior during the scenario with limited respect for other team members we assumed their attitudes were optimal.

Three faculty separate to the pilot development and with no prior involvement in the entrustment concept were asked to then rate the learners as a whole.

Initial findings demonstrated group entrustment in the domain of level 1 or 2. No level 3 score was awarded. Faculty feedback highlighted either that the use of entrustment at an undergraduate level would not be relevant in view of their level of experience or overall neutrality with the concept. With regards to the scale itself faculty highlighted its ease of understanding.

Our pilot highlights limitations currently for the use of entrustment in an undergraduate setting. Reservation was based on level of experience despite the inclusion of a pre simulation teaching session on these areas. The literature has emphasized that entrustment at an undergraduate level serves to set the ball rolling early on in terms of learner progression monitoring. As a result there may still be added value in highlighting this to faculty in order to gain widespread adoption. This simulation redesign was an initial step but serves to demonstrate possible faculty reluctance in undergraduate EPA adoption.

**Take Home Messages**

**Notes On Contributors**

Neel Sharma, Merona Hollingsworth, Lynette Martin and Andrew Restivo were equally involved in the design, implementation and analysis of this pilot study.

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In view of the pilot nature of this session, full ethics approval was not required.

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Appendices

Declarations

The author has declared that there are no conflicts of interest.

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