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You Should Try This!

Gauging reflective practices of paediatric residency candidates through a multiple mini interview station

Évaluation des pratiques réflexives des candidats à la résidence en pédiatrie au moyen d'une station de mini-entrevues multiples

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Implication Statement

Reflective practice is important for learning, accurate self-assessment, and fostering a growth mindset as a resident physician. To help identify candidates with these traits, we designed a multiple mini interview (MMI) station to prompt applicants to demonstrate critical reflection of their performance on an unfamiliar task and provide a self-assessment. The results show us that this station had clear consequences in the eventual rank list of candidates suggesting that it might provide valuable insight for selection committees to identify applicants who lack skills in self-reflection.

Énoncé des implications de la recherche

La pratique réflexive est importante pour l'apprentissage, la précision de l'auto-évaluation et la promotion d'un état d'esprit de développement chez le médecin résident. Pour mieux cibler les candidats présentant ces caractéristiques, nous avons conçu une station de mini-entrevues multiples (MMI) pour inciter les candidats à auto-évaluer leur performance dans une tâche peu familière en faisant preuve de réflexion critique. D'après les résultats, cette station a eu des conséquences claires sur le classement final des candidats, ce qui suggère qu'elle serait utile aux comités de sélection pour repérer les candidats qui manquent de capacité d'autoréflexion.

Introduction

Reflective practice, the theory of knowledge acquisition that frames learning through a series of deliberations during and after a scheme, is important for the successful development of resident physicians.[1] This enables the learner to gain insight into one's weaknesses and oversights, and promotes a growth mindset.[1] Poor insight and cognitive biases are a barrier to learner development and can negatively impact clinical competency via the Dunning-Kruger effect, a cognitive bias that leads learners to greatly overestimate their abilities.[2]

The transition to competency based medical education and the adoption of coaching frameworks require learners to be reflective.[3] In order for learners to be successful in this new paradigm, programs ought to seek ways to assess an applicant's performance in critical reflection and self-assessment.[4] Past research suggests the multiple mini-interview (MMI) score of an applicant correlates with academic performance and non-academic traits.[5] Within this model, we designed an MMI station to prompt applicants to demonstrate their critical reflection and self-assessment skills.

Description of Innovation

For the 2019 CaRMS cycle, we included a novel MMI station that instructed candidates (n = 96) to perform an unfamiliar medically related task. The instructions clearly stated candidates would not be judged on their ability to complete the task and that the purpose of the station was to provoke critical reflection (Figure 1). The interviewers were provided similar instructions and given follow-up prompts designed to elicit self-assessment. Scoring of the station was based solely on the applicant's capacity to be

self-reflective and this score contributed to their final rank position. Specifics of the MMI station are available upon request.

Evaluation

Using Messick's framework of unified validity, we attempted to construct a validity argument for the station.[6] For the internal structure of the assessment, a generalizability study was used to determine sources of variance, with facets being the station, learner, and rater. This resulted in an overall reliability coefficient of 0.79. The main sources of variance were the candidate (43.8%) and the candidate's interaction with the station (46.8%).

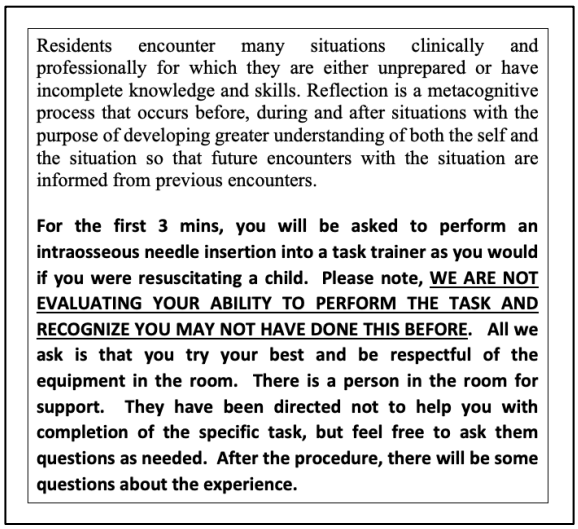
There were consequences in the eventual rank list of candidates which adds to the validity of this station. Of the 8/96 candidates that scored less than 15/30 on the station, three were not ranked and none were in the top half of the rank list.

A preliminary survey was done with the candidates that matched to the McMaster paediatrics residency program after completing this station. The results suggested that this cohort of residents were frequently engaged in reflection and self-identified areas for professional growth. Further investigation into the relationship to other variables will be valuable to further validate this MMI station. This study was exempt from ethics review by the Hamilton Integrated Research Ethics Board.

Next steps

A limitation of this data is that we have not yet shown whether they are generalizable. To further validate our results, we have shared this station with additional residency programs at McMaster University to trial in upcoming application cycles. Going forward, we will continue assessing residency performance measures that develop over time to further validate this station.

An important next priority will include evaluating whether the station promotes equity, diversity, and inclusion within the admissions process.


Residents encounter many situations clinically and professionally for which they are either unprepared or have incomplete knowledge and skills. Reflection is a metacognitive process that occurs before, during and after situations with the purpose of developing greater understanding of both the self and the situation so that future encounters with the situation are informed from previous encounters.

For the first 3 mins, you will be asked to perform an intraosseous needle insertion into a task trainer as you would if you were resuscitating a child. Please note, WE ARE NOT EVALUATING YOUR ABILITY TO PERFORM THE TASK AND RECOGNIZE YOU MAY NOT HAVE DONE THIS BEFORE. All we ask is that you try your best and be respectful of the equipment in the room. There is a person in the room for support. They have been directed not to help you with completion of the specific task, but feel free to ask them questions as needed. After the procedure, there will be some questions about the experience.

Figure 1. Image of the instructions provided to the candidates for the MMI station. It was explicitly stated that the candidates were not being evaluated on their ability to perform the task

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