

Does mock exercise improve students' oral examination skills?

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What problem was addressed? The viva voce examination, traditionally a non-structured, non-patient-based oral examination conducted by one or more examiners, has a deep-rooted place in medical education for assessment of critical thinking and reasoning skills. The reliability of this resource-intensive and time-consuming examination can be affected by several factors, including the anxiety of the candidate.¹ The traditional, discipline-based viva is a requirement of the national regulatory body and contributes 20% to the overall score of must-pass certifying examinations at the end of Years 1 and 2 of the 5-year undergraduate medical programme offered at the Aga Khan University Medical College in Karachi, Pakistan. Students are admitted into the programme after higher secondary education and usually have no prior exposure to oral examinations. Although the students are generally knowledgeable, feedback from examiners revealed that the anxiety of first-time examinees may be affecting the outcome of the examination as it often leads to use of incorrect terminology, slang and other non-verbal cues.

What was tried? To address first-time viva voce examinee anxiety, students of Year 1 were provided with a formative assessment opportunity 6 weeks before the end-of-year certifying examination. The objectives of the mock examination were to (i) orient students to the viva voce process, (ii) provide an opportunity for students to practise oral examination skills, and (iii) provide feedback on performance. Participation in the mock examination was voluntary through advance sign-up to ensure appropriate logistics. Of a total of 100 Year 1 students, 82 signed up to participate and accordingly, 22 examiners were arranged. The process of the mock examination closely mimicked the real situation, with use of an appropriate scenario and two examiners per station. Rather than focusing on content, examiners were asked to provide constructive feedback using a structured checklist that included a binary scale for items such as adherence to professional dress code, body language, confidence and communication skills.

Students were provided with the same checklist before the mock examination and the checklist completed by the examiners was given to students for reflection while viewing video-recording of their performance. Video-recording was facilitated by an in-house facility and did not require substantial additional resources.

What lessons were learned? Feedback from students and examiners immediately after the mock examination about the usefulness of the exercise was extremely positive. Most examiners suggested that there should also be a focus on content knowledge and application in the mock examination. When this cohort was examined in the end-of-year certifying examination, their overall performance was found to be markedly improved as compared with previous cohorts who did not have a mock viva opportunity. In addition to content, examiners appreciated the students' confidence and body language, which were aspects specifically addressed in the mock examination checklist. The mock examination was a human resource-intensive event. However, the formative opportunity with focused feedback was beneficial for overall student performance in viva voce examination and is recommended, even at the cost of faculty members' additional time and effort.

REFERENCE

- 1 Davis MH, Karunathilake I. The place of the oral examination in today's assessment systems. *Med Teach* 2005;27 (4):294–7.

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Training medical students how to extract, assess and communicate evidence from an article

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What problem was addressed? The ability to extract, assess and communicate evidence from

research articles is listed in most frameworks of learning outcomes in medical education. Yet, ample research has shown that physicians often have difficulties in interpreting and communicating statistics correctly, potentially jeopardising evidence-based medicine (EBM).¹

What was tried? We developed a 1.5-hour intervention to train medical students how to extract, assess and communicate evidence from research articles by integrating two conceptually compatible but so far unrelated EBM concepts: (i) the PICO principle, a heuristic for searching for and extracting information from articles, related to **P**opulations studied, **I**nterventions tested, **C**omparator groups included and **O**utcomes reported (see <http://www.cebm.net/category/ebmresources/tools/>), and (ii) the Fact Box format, a 2 × 2 matrix used to communicate harms and benefits for populations studied in intervention versus control groups (see <https://www.harding-center.mpg.de/en/health-information/fact-boxes>).

The intervention consists of four steps: (i) a 10-minute lecture on challenges of risk communication for medical decision making and public health;¹ (ii) a 5-minute lecture introducing PICO and Fact Box; (iii) a 45-minute exercise where students use PICO to identify and extract data from an original article and create a Fact Box based on these data using frequency counts; and (iv) a 30-minute classroom interaction where one group presents their Fact Box and results of all groups are compared to assess student learning and stimulate joint discussions of study and data quality and (ethical) implications for risk communication.

Participants were recruited from two cohorts in their fifth year (ninth semester) of undergraduate training. Whereas participation in the training was compulsory, participation in our study was voluntary. Of 453 students, 436 (96.2%) took part in the study and 401 (88.5%) provided valid answers (61.7% female; mean age = 22, range = 22–42, standard deviation [SD] = 2.6). Seven instructors trained between one and seven groups, each with 6–17 students (mean = 11.5, SD = 2.6). Students self-assessed their competence before and after the training to (i) transparently communicate trial results to patients and (ii) assess the ethical implications of evidence for patient treatment on 10-point scales, with higher numbers indicating higher perceived competence. Instructors provided feedback on the training intervention and teaching materials. The study was approved by data protection authorities and an ethics committee (EA/067/15) and registered with the German Clinical Trial Registry (DRKS00008723).

What lessons were learned? After training, perceived confidence increased in the ability both to communicate evidence (mean_{before} = 4.6, mean_{after} = 5.5, $t(400) = 7.8$, $p = 0.0001$, $r^2 = 0.13$) and to assess ethical implications of evidence (mean_{before} = 4.6, mean_{after} = 5.5, $t(400) = 7.4$, $p < 0.0001$, $r^2 = 0.12$). Instructors reported that teaching materials were easy to use and that PICO data in Fact Boxes stimulated informed discussions about data and study quality and appropriate risk communication strategies. This suggests that the 1.5-hour training suffices to convey and reflect the basics of risk communication.

PICO and Fact Boxes are useful not only for finding and communicating answers to clinical questions but also as educational tools. All materials can be obtained from the authors and can be easily adapted to different specialisations (change of article) and to emphasise data extraction (PICO), risk communication (Fact Box), or both. Applied widely, this training may increase physicians' confidence in translating (more) evidence from bench to bedside, which may ultimately improve quality of care.

REFERENCE

- 1 Gigerenzer G, Gaissmaier W, Kurz-Milcke E, Schwartz LM, Woloshin S. Helping doctors and patients to make sense of health statistics. *Psychol Sci Public Interest* 2007;8:53–96.

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Reprioritising transfusion medicine education for graduating medical students

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What problem was addressed? Transfusion medicine (TM) knowledge varies widely among resident physicians, leading to inappropriate blood product utilisation and increasing both adverse event risks and cost. Fewer than 20% of medical schools offer formal TM education during the clinical years when medical students (MS) could learn fundamentals of this highly interdisciplinary field while seeing real patients.¹ Thus, newly minted interns often learn TM principles piecemeal on the