Abstract:

CONTEXT Diagnostic imaging is under-represented in medical curricula globally. Adaptive tutorials, which provide a personalised learning experience, have the potential to bridge this gap. However, there is limited evidence of their effectiveness for learning about diagnostic imaging.

METHODS We performed a randomised crossover trial to determine the impact of adaptive tutorials on understanding of the appropriate use and interpretation of common diagnostic imaging investigations. Ninety-nine volunteer medical students were randomly allocated to one of two groups. In the first study block, one group received access to an adaptive tutorial on chest X-rays while the other received links to a relevant existing peer-reviewed web resource. In the second study block on CT scans, the groups crossed over. At the end of each study block, both groups completed an examination-style assessment, comprising of questions both related and unrelated to the topics covered by the relevant adaptive tutorial. Online questionnaires were used to evaluate student perceptions of both learning resources.

RESULTS In both study blocks, the group exposed to the adaptive tutorial obtained a significantly higher mean assessment score than the control group, accounted for by a significantly higher mean assessment score obtained by senior students, for questions related to topics covered by the adaptive tutorials. Students also indicated significantly better engagement with the adaptive tutorials than the web resource, and rated the former as significantly more valuable tools for learning.

CONCLUSIONS Medical students overwhelmingly accept adaptive tutorials for diagnostic imaging, which significantly improve the understanding of diagnostic imaging by senior students.