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Comparing the Borderline Regression Standard Setting Method to a Traditional Method in an Objective Structured Clinical Examination

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Abstract

The Objective Structured Clinical Examination (OSCE) is regarded as an effective assessment method for evaluating the clinical skills and competencies of healthcare professionals. In recent years, there has been a growing interest in employing more data-driven approaches to standard setting in the OSCE; one such method is the borderline regression method (BRM). This study aims to compare the BRM with the traditional method to determine the passing score of the OSCE. This study, conducted at the University of Cyberjaya, analysed data from 131 medical students who took the OSCE in the Final Professional Examination. Two methods were employed to determine the passing score for each OSCE station: the traditional method, which utilised a 50% passing score, and the BRM method, which employed simple linear regression. In the BRM method, checklist scores

were regressed onto global ratings, and the borderline global rating of two was used to determine the passing score. A margin of error was applied to assess the accuracy of the passing scores. For the traditional method, this was calculated as $1.96 \times \text{standard error}$. Of 131 candidates, the pass mark for BRM was 1.93 points higher than the traditional method (mean = 11.93 vs mean = 10.00) for all 20 stations. The margin of error was smaller for the passing mark using BRM compared to the traditional method, with a difference of 0.09 (0.39 vs 0.48), $t = 1.96$, $p < 0.05$. The BRM resulted in a higher pass mark with a smaller margin of error, while the traditional method had the opposite effect with a broader margin of error. The study suggests considering the adoption of BRM in OSCE in medical school, but the optimal method for high-stakes clinical examinations is still inconclusive. © Malaysian Association of Education in Medicine and Health Sciences and Penerbit Universiti Sains Malaysia. 2025. This work is licensed under the terms of the Creative Commons Attribution (CC BY) (<http://creativecommons.org/licenses/by/4.0/>).

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Borderline regression method; Comparison; OSCE; Standard setting; Traditional method

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