


RESEARCH ARTICLE

Open Access



Anatomy Education Environment Measurement Inventory (AEEMI): a cross-validation study in Malaysian medical schools

Siti Nurma Hanim Hadie^{1*} , Muhamad Saiful Bahri Yusoff², Wan Nor Arifin³, Fazlina Kasim¹, Zul Izhar Mohd Ismail¹, Mohd Anizam Asari¹, Husnaida Abdul Manan @ Sulong⁴, Asma' Hassan⁵, Tg Fatimah Murniwati Tg Muda⁵, Yasrul Izad Abu Bakar⁵, Rasheeda Mohd Zamin⁶, Elvy Suhana Mohd Ramli⁷, Rafidah Hod⁸, Saiful Bahri Talip⁹, Ku Mastura Ku Mohd Noor¹⁰, Yusoff Sharizal Yusoff Azmi Merican¹¹, Muhammad Fairuz Azmi¹², Atikah Abdul Latiff¹³ and Madihah Rushaidhi¹⁴

Abstract

Background: The Anatomy Education Environment Measurement Inventory (AEEMI) evaluates the perception of medical students of educational climates with regard to teaching and learning anatomy. The study aimed to cross-validate the AEEMI, which was previously studied in a public medical school, and proposed a valid universal model of AEEMI across public and private medical schools in Malaysia.

Methods: The initial 11-factor and 132-item AEEMI was distributed to 1930 pre-clinical and clinical year medical students from 11 medical schools in Malaysia. The study examined the construct validity of the AEEMI using exploratory and confirmatory factor analyses.

Results: The best-fit model of AEEMI was achieved using 5 factors and 26 items ($\chi^2 = 3300.71$ (df = 1680), $P < 0.001$, $\chi^2/df = 1.965$, Root Mean Square of Error Approximation (RMSEA) = 0.018, Goodness-of-fit Index (GFI) = 0.929, Comparative Fit Index (CFI) = 0.962, Normed Fit Index (NFI) = 0.927, Tucker–Lewis Index (TLI) = 0.956) with Cronbach's alpha values ranging from 0.621 to 0.927. Findings of the cross-validation across institutions and phases of medical training indicated that the AEEMI measures nearly the same constructs as the previously validated version with several modifications to the item placement within each factor.

Conclusions: These results confirmed that variability exists within factors of the anatomy education environment among institutions. Hence, with modifications to the internal structure, the proposed model of the AEEMI can be considered universally applicable in the Malaysian context and thus can be used as one of the tools for auditing and benchmarking the anatomy curriculum.

Keywords: Anatomy education environment, Learning environment, Educational climate, Validity, Reliability

* Correspondence: snurma@usm.my

¹Department of Anatomy, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kubang Kerian, 16150 Kota Bharu, Kelantan, Malaysia
Full list of author information is available at the end of the article



© The Author(s). 2021 **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.