

Factors Influencing ABFM-ITE Performance among Family Medicine Residents in Qatar: The Role of Learning Styles, Academic Stress, and Undergraduate GPA

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Abstract

Background: The association between learning styles and examination performance has been explored in various medical education settings. However, research focusing on Family Medicine residents, particularly in Qatar and the broader Arabian Gulf region, remains limited. Additionally, few studies have accounted for confounding factors when assessing this relationship. This study aims to determine the effect of learning styles on the American Board of Family Medicine In-Training Examination (ABFM-ITE) scores among Family Medicine residents in Qatar while exploring other influential factors that may confound the effect.

Methods : A cross-sectional study was conducted among Family Medicine residents in Qatar across postgraduate years 1 to 4. A self-administered online questionnaire was distributed to all 52 residents, with 21 responding. The questionnaire included the VARK learning styles assessment, motivation factors, stress levels, mentorship, and other relevant variables. Learning styles were analyzed as individual scores for visual, auditory, read/write, and kinesthetic preferences. Linear regression analysis was performed to examine associations with ABFM-ITE performance, with stepwise removal of non-significant variables. A p-value of <0.05 was considered statistically significant.

Results: Among the 21 participants, 9 (42.9%) were categorized as bimodal, 7 (33.3%) as multimodal, and 5 (23.8%) as unimodal. The kinesthetic (K) style was the most prevalent, appearing in nearly all dominant style combinations. The most common dominant learning styles were (A, K) in 5 participants, (K, V) and (A, K, R) in 4 participants each, and (K) alone in 3 participants. Regression analysis identified academic stress as a significant negative predictor of ABFM-ITE performance ($\beta = -0.513$ to -0.664 , $p < 0.05$). Undergraduate GPA emerged as a strong positive predictor ($\beta = 0.492$ to 0.496 , $p < 0.05$), while kinesthetic scores had a moderate positive effect ($\beta = 0.354$, $p = 0.032$).

Conclusions: Findings emphasize the importance of addressing academic stress and providing targeted academic support for lower-GPA residents. Implementing active learning strategies, including case-based discussions, simulations, and problem-based learning, may enhance performance for kinesthetic learners and improve engagement across all learning styles.

Trial registration

Not applicable.

Keywords:

Learning styles, VARK, Family Medicine, In-Training Exam, medical education, academic stress, performance predictors