

## Comparison of Medical Students Evaluation by Serious Games and Clinical Case-Multiple Choice Questions

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**Abstract :** Background: Evaluation has a prominent role in medical education and graduation. This evaluation has usually done in face-to-face, by written or oral questions. Simulation is increasingly taking a part as a method of evaluation. Due to the Covid-19 pandemic, which disrupted face-to-face evaluation, simulation using serious games (SG) is emerging in the field of training and assessment of medical students. The aim of our study is to compare the results of the evaluation of medical students by virtual simulation by online serious games versus clinical case-multiple choice questions (MCQ) and to assess the degree of satisfaction from these two evaluation methods. Methods: Medical students from the same study level were voluntarily participated in this study. Groupe 1 had an evaluation by SG dealing with "diagnosis and management of ST-segment elevation myocardial infarction (STEMI) already prepared on the website www.Mediactiv.com. Groupe 2 were evaluated by clinical case-MCQ having the same topic as SG. Results of the two groups were compared. Satisfaction questionnaire was filled by the two groups. Satisfaction degree was compared between the two groups. Results. In this study, 64 medical students (G1:31 and G2: 33) were enrolled. Obtaining complete notes in the "questioning" and "clinical examination" parts is significantly more important in-group 1 compared to group 2. No significant difference detected between the two groups in terms of "ECG interpretation" and "diagnosis of STEMI" parts. A greater number of students of group 1 obtained the full note compared to group 2 in "the initial treatment part" (54.8% vs. 39.4%;  $p = 0.04$ ). Thirty learners (96.8%) in-group 1 obtained a total score  $\geq 50\%$  versus 69.7% in-group 2 ( $p = 0.004$ ). The full score of 100% was obtained in three learners in-group 1, while no student scored 100% in-group 2 ( $p = 0.027$ ). Medical evaluation using SG was reported as more innovative, fun, and realistic compared to evaluation by clinical case-MCQ. No significant difference detected between the two methods in terms of stress. Conclusion: Simulation by SG can be considered as an innovative and effective method in evaluating medical students with a higher degree of satisfaction.

**Keywords :** evaluation, serious games, medical students, satisfaction

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