Predictors of Perceived Educational Value in Emergency Medicine Residency Simulation Cases

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**Objectives**: This study was designed to identify characteristics associated with the perceived educational value of simulation cases in an emergency medicine residency curriculum.

**Methods**: Data was collected at a three-year emergency medicine residency program with twelve residents per year. Following each simulation case, a standard questionnaire was completed by the emergency medicine residents, before any discussion of the case. The questionnaire is part of the residency's educational quality improvement effort to improve the simulation curriculum. Responses were voluntary, anonymous and completed without faculty present. The research question was created from this initial existing data set after data had been collected. The protocol was approved by the institutional review board.

Survey responses were either categorical, or obtained using a visual analog scale (VAS). For each VAS, the resident responded by marking a spot on the line. The distance to the spot was converted to a 0 to 100 scale as a percentage of the overall line length. For any VAS score that was anchored with a 0 in the middle, the distance was measured from the midpoint and converted to a negative number from 0 to -100 for measurements to the left, and a positive measurement from 0 to +100 on the right. Measurements and data entry were made by a research assistant who was not involved in the simulation curriculum and blinded to the study hypothesis.

Multiple linear regression was performed to identify significant variables predicting perceived educational value. Independent variables considered include: post graduate year (PGY), team role, and the perceived difficulty, usefulness or familiarity of the scenarios.

**Results**: Participation rate in the feedback process was 100%. Although not all data had yet been entered into the database, any data that had been entered at the time of data analysis was analyzed. A total of 374 feedback responses were obtained from 60 residents in 17 unique cases over 2 years. Complete data for inclusion in a regression analysis was available for 288 responses (77% of total responses).

Multiple linear regression analysis has an $R^2$ value of 0.979 and $p < 0.001$. The regression analysis results are displayed in Table 1. Notably, PGY year is a significant predictor of perceived educational value. The perceived stressfulness and usefulness of the case were also positively associated with educational value. Being team leader, and the perceived familiarity or difficulty of the case did not predict the perceived educational value of a simulation case.