

The Impact of Varied Educational Models on Student Learning: Utilizing Simulation in Dermatology



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INTRODUCTION

Background

Traditionally taught using didactic lectures and static images, principles of microbiology related to dermatologic disorders are subjects in medical education integral to student learning. Studies have shown that simulated learning improves both the degree of initial knowledge gained and long-term retention of information and are being increasingly integrated into medical education. The transition to a more interactive teaching method may serve to improve learning and interest in dermatology in medical students.

Aims

The purpose of this study was to assess the impact of an interactive dermatologic simulation on learning, in this case defined as retention of knowledge and perception of dermatology as a potential career field, in the medical student population as compared to the use of a traditional didactic lecture.

METHODS

Control (Traditional Lecture) Group



Experimental (Simulation) Group



Sample Dermatologic Lesion 1

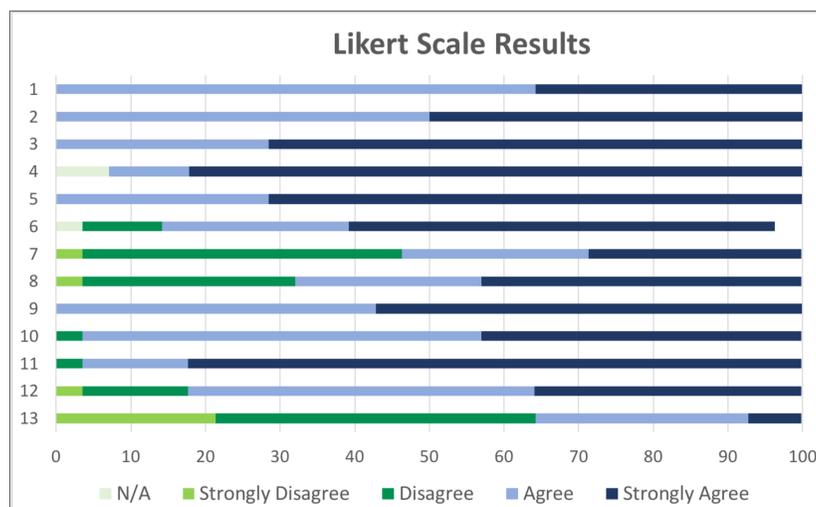
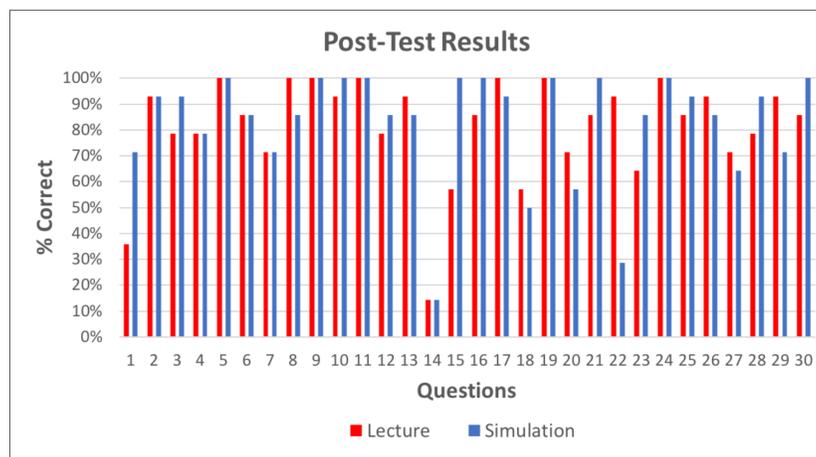


Sample Dermatologic Lesion 2



Sample Dermatologic Lesion 3

RESULTS



Results

- Study population (n=28) was equally randomized into two groups. No significant difference was found between pre-test scores, however, when analyzed using two-factor analysis (Bloom's taxonomy levels "understand" and "analysis"), some test items did display a significant difference in favor of simulation activity.
- 15 questions were identified as Factor 1: Analysis; 14 questions were identified as Factor 2: Understanding. One question was excluded as an outlier.
- Likert Scale data showed strong preference for simulation activity across both experimental and control groups.

* Results analyzed via Two Factor Analysis, Negative Binomial Regression, Descriptive Statistics & Likert Scale Testimonials

DISCUSSION

Conclusions

- Adding simulation learning to the medical school curriculum may be an effective means of enhancing pre-clinical student proficiency and efficacy in the field of dermatology. Longitudinal studies are needed to assess its full impact on dermatology clerkship and residency matriculation.
- Likert scale data demonstrated a strong preference for the simulation activity as compared to traditional lecture. The simulation group also demonstrated greater performance than control in both levels of Bloom's taxonomy assessed.

Limitations

- This study's dependence on voluntary student participation resulted in a small sample size, which limited our ability to draw a definitive conclusion.
- Use of anatomical models vs. live standardized patients may impact the overall effectiveness of simulation.



Experimental Group Participants



FUTURE DIRECTIONS

Future initiatives for this study are directed towards minimizing present limitations. Expansion to additional institutions and adoption of standardized patients over anatomical models will serve to increase the reliability and validity of data collected and allow for greater confidence in drawing conclusions from accumulated data.

CITATIONS

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