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Redesigning the Research Line in the MD Curriculum in order to Strengthen the Relevant Skills Among Future Doctors

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Background

Exposing students to the principles of evidence-based medicine and further elaborating their research skills is part of the MD curriculum at TSMU USMD program and KWIU MD program, designed with the collaboration of Emory University School of Medicine. It starts from the first year with the understanding of the basic concepts for lasts through the 6th year when students implement their own research and write up manuscripts. Gathering the feedback from last year's students at the end of the research project revealed the necessity to redesign the research line at earlier stages to provide them with practical skills in biostatistics.

Summary of Work

The classical way of teaching biostatistics during the third year was restructured, dividing each class into theoretical and practical sessions. The first session closely reflects the discussion of the theoretical aspects of the topic in a classical way. In contrast, during the practical sessions, students split into teams to fulfill specific practical assignments. During the first class, students formulated the hypothesis and defined the variables for it. Further assignments included determining data types, study design, inclusion/exclusion criteria, sampling method, considering the biases, and sample size for their hypothesis. At the end of the course, student teams were

able to pick up the proper statistical method for testing the research hypothesis and apply basic calculations for its validity.

Summary of Results

The anonymous survey was conducted to assess the effectiveness of the process: 94.3% of the students felt more confident in planning their own research, and 96.1% rated the changes as positive.

Discussion and Conclusions

Redesigning the course with more practical elements facilitates the translation of theoretical knowledge into practical task-solving abilities in younger students. It gradually matures them to the conception of their research ideas with relatively accurate formulation of research hypotheses, e.g., during clinical clerkships. Decreased anxiety about numbers and, generally, reduced fear of biostatistics among MD students makes them ready to conduct their research projects effectively.

Take Home Messages

Early and step-by-step provision of the ability to translate the biostatistics theory into its analytical practice stimulates students' scientific curiosity. It sets them with confidence to implement their research projects in the future.