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ABSTRACT

A SELF-DIRECTED LEARNING PROGRAM FOR TEACHING DIRECT OPHTHALMOSCOPY TO NON-OPHTHALMOLOGISTS. Virginia A. Miraldi, B.A., David S. Bardenstein, M.D. *Case Western Reserve University and University Hospitals of Cleveland.*

STATEMENT OF THE PROBLEM: Direct ophthalmoscopy (DO) is an essential clinical skill for many medical specialties to allow for accurate and timely diagnosis of a variety of systemic and ocular conditions. Despite its importance, multiple studies have shown that most medical students lack confidence and competence in performing DO using existing resources. We sought to determine whether increased competence in DO could result from an optimally designed model and curriculum.

OBJECTIVES OF THE PROJECT:

- To determine whether a novel, uniquely structured and quantitative-based curriculum to teach DO to medical students was more effective than the traditional method of learning DO.
- To determine whether the method of learning DO affected the ultimate competency or rate of skill acquisition.
- To determine quantitative curricular guidelines for the resources necessary for learning DO effectively
- To determine whether DO can be taught effectively using a self-directed study program with an effective curriculum.

DESCRIPTION OF THE PROJECT:

Development of Eye Model:

Characteristics of the model included: size similar to the human eye, variability of pupil size, simplicity of construction and compact size, the ability to use an upright examining position, need to vary the focus of the ophthalmoscope, a curved anterior surface, and the use of "real" fundus images for training that displayed a broad range of pathologies. High resolution fundus images were constructed using digitally synthesized pathological findings to create quantifiable fundus images for learner study and assessment of progress.

Development of the Curriculum:

A structured curriculum was developed using the model. Two methods of learning are being compared. The first involves verbal enumeration of the items identified, and the other involves spatially identifying the lesions. Both were compared to the standard method of learning.

Students received an introductory lecture regarding basic eye anatomy, selected pathological fundus findings, and components and use of the ophthalmoscope, followed by a hands-on skills transfer practice session with the models. The students then received a pretest followed by practice. Practice time was self-quantified in a log book. During the pilot study practice sessions were supervised. Serial testing with previously unexamined fundi was conducted and the progress measured as percent of findings identified.

FINDINGS TO DATE / EVALUATION RESULTS TO DATE: In preliminary studies, the model appeared to meet all expectations. Data regarding skill acquisition is being collected currently for analysis. Further study will provide data on the time required for skill acquisition, compare the efficacy of the two learning methods, and allow refinement of the curriculum structure.

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