

**THE EFFECT OF TRAINING WITH AN  
ABDOMINAL SIMULATOR UPON  
FAMILY MEDICINE CLERKSHIP  
STUDENTS' CALIBRATION,  
THOROUGHNESS, AND CONFIDENCE**

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## GENERAL GOAL

1. Does the Abdominal simulator help prepare medical students to perform better abdominal examinations?



## SPECIFIC GOALS

1. To assess the effect of simulator training in the physical examination of the abdomen for third year medical students in a clinical clerkship.
2. This study will focus on
  1. the calibration and thoroughness of the students' physical exam and on students' confidence in their ability to do an exam.
  2. the relative preference (ranking) for different modalities of instruction about the physical exam of the abdomen.



# STUDY DESIGN

## ○ Within-student Comparative Study-

Comparative research is the act of comparing two or more things with a view to discovering something about one or all of the things being compared.



# METHODS

- We are going to do the procedure each clerkship cycle.
  - Each lasts 4 weeks
  - 10 to 12 students per cycle.
- The evaluation and training sessions will be run with clerkship students individually.
  - Each student is evaluated and trained in one ½ hour session
- The study is introduced in a group meeting; informed consent is obtained.
- Students fill out an initial survey reporting on their confidence regarding physically examining the abdomen.
- Students' individual sessions are scheduled.



# PROCEDURE WITH ABDOMINAL SIMULATOR

- Pre-instruction. Each student will do two “blind” examinations of the simulated abdomen, which will be recorded by the simulator.
  - First, they will be instructed to demonstrate how they would use a light touch, looking for localized pain or gross abnormalities
  - Second, they will be instructed to demonstrate how they would use a deep palpation, assessing the size and feel of each organ, as appropriate, and looking for localized painful spots.
- Instruction. Then the student will do two of the AbSim training modules, which give visual feedback on the appropriate depth of palpation and coverage of various organs.
  - After this, students will inspect a comparison of their pre- and post-instruction palpation exams.
- Post-instruction. Then the student will repeat the blind light and deep examinations.



## METHODS (CON'T)

- As late as possible in the clerkship month, the students will complete a questionnaire asking their confidence evaluating the abdomen, their assessment of the use of the abdominal simulator, and how many patients' abdomens they had the opportunity to examine during the past month.



# HOW MANY PARTICIPANTS?

- There were twelve students in July. All participated in the initial confidence survey.
- Nine students arranged to participate in the abdominal simulation study.
  - (Only eight recordings were useable for analyzing data).

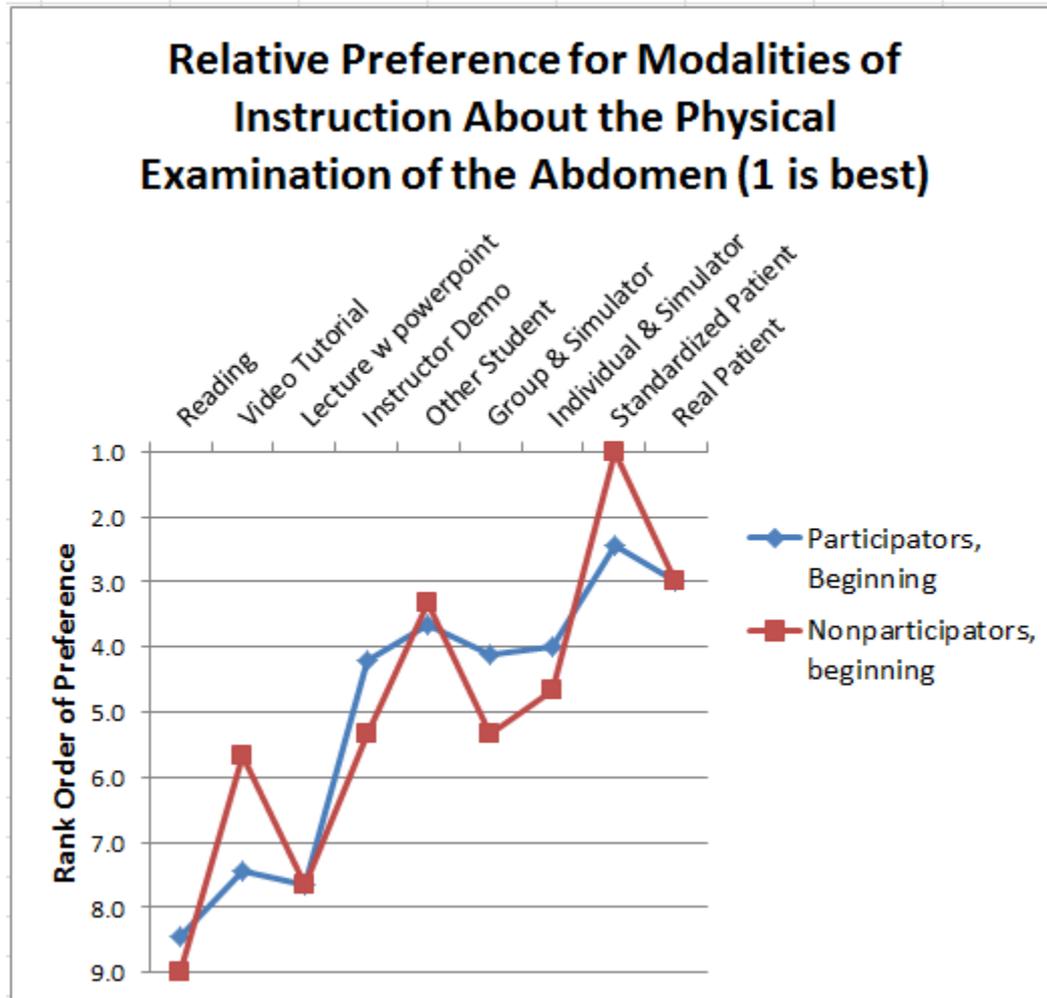


# PROGRESS

- Initial confidence & preference survey – 12 respondents.
- Individual session with abdominal simulator – 9 participants.
- The final survey has not yet been performed.



# PARTICIPATORS VS NONPARTICIPATORS



# DATA AND ANALYSIS

The correlations between confidence in one's ability to perform an abdominal exam, on the initial survey, and student performance before instruction, were:

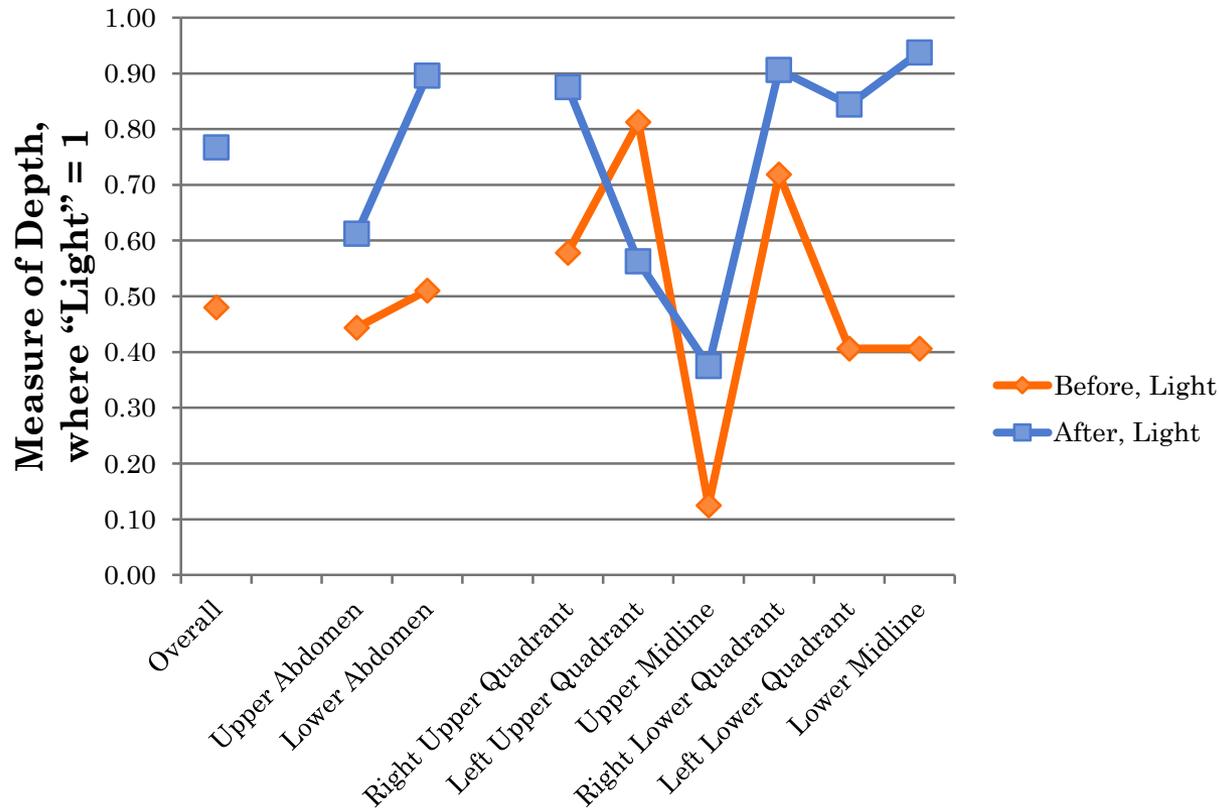
		Initial Confidence Total average confidence, six questions, Initial survey	Initial Confidence Abd light, deep Initial confidence about your ability to use light and deep palpation
Overall Depth Before Overall depth of light and deep palpation, before training	Pearson Correlation	.208	-.028
	Sig. (2-tailed )	.621	.948
	N	8	8
Overall calibration Before Overall calibration accuracy, light or deep when instructed before	Pearson Correlation	.702	.200
	Sig. (2-tailed )	.052	.636
	N	8	8

The more confident they were at the outset, the deeper they pressed before training (NS), and the better calibrated they were before training ( $p < 0.10$ ).



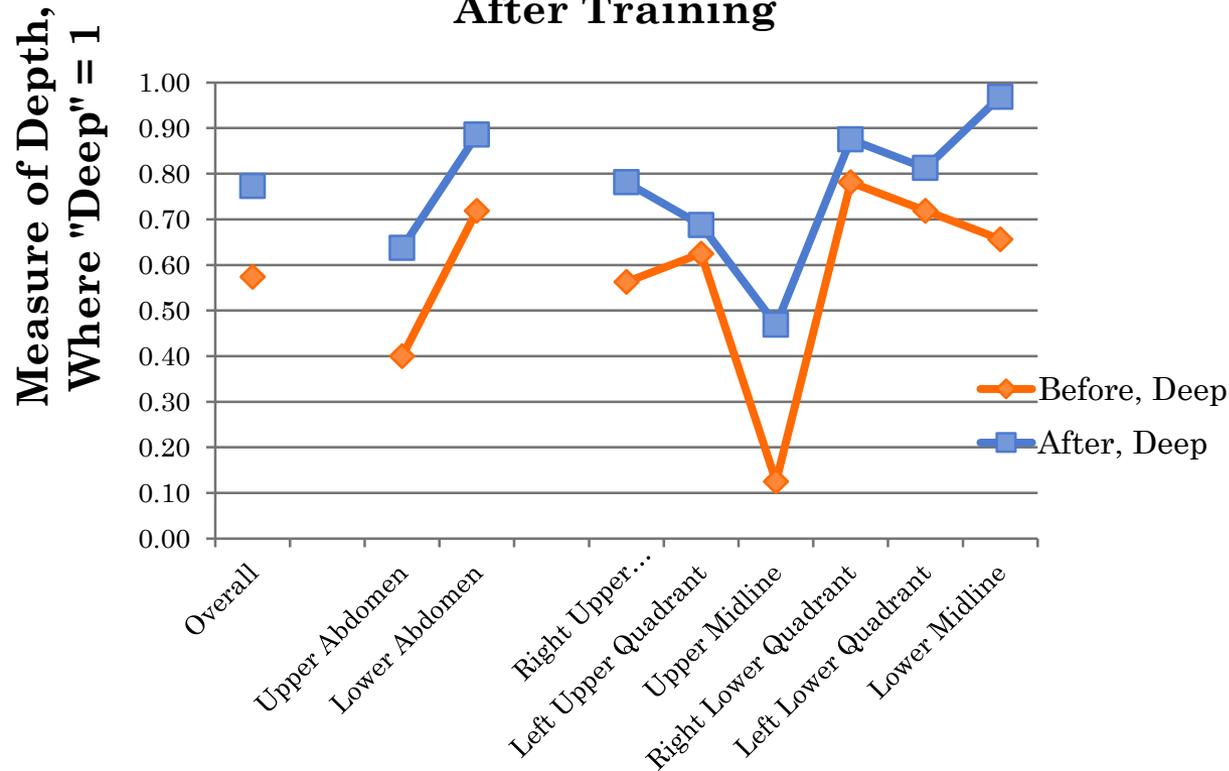
# DATA AND ANALYSIS

## Comparison of Ideal Palpation When Instructed to Use Light Exam, Before versus After Training



# DATA AND ANALYSIS

## Comparison of Ideal Palpation When Instructed to Use Deep Exam, Before versus After Training



After training, students pressed deeper when instructed to do their “deep” and light exam.



# CONCLUSION

- There will be a post clerkship questionnaire
- We hope to continue to gather data on family medicine clerkship students for a year.
- No conclusions of the study can be made yet
- My observations: the students that participated in the study, thought it is beneficial. They enjoyed the abdominal simulator as a source of improving their abdominal palpation skills and found it to be very engaging.

