

## Introduction

Medical student education requires frequent interaction with real patients. This clinical training is essential to medical education; however, patients may not directly benefit from the involvement of medical students in their care.

Previous studies on patient comfort with medical student involvement have consistently reported positive or neutral results within multiple specialties.<sup>1,2,3</sup> However, few studies have been conducted in the family practice setting; a setting that is the portal of entry to the health care system and that makes significant contribution to patient care and medical education.<sup>4</sup> In addition, prior studies have failed to assess if medical student encounters are altering the pre-exam patient attitude and to consider the use of patient feedback to augment student education.

The objective of this study was to examine patient attitudes toward medical students in a private family practice setting. This study also looked to examine whether recent medical student interaction alters patient attitude and if patient attitude can be improved with the prospect of providing feedback.

## Materials and Methods

**Setting and Subjects.** Investigators conducted the study at Renaissance Medical Group, a small private family practice with one physician provider. Medical students from the University of Arizona at various stages in their education rotate at Renaissance Medical Group. Every patient, over 18, with an appointment during the time a medical student was present in the office was invited to participate.

**Procedure.** Medical assistants enrolled 99 patients as they arrived for routine visits. Patients were given and instructed to complete the first half of the survey in the waiting room, prior to the encounter. Patients then met with a medical student, followed by the attending. Patients were then instructed to complete and submit the survey.

**Measurement.** The survey consisted of 12 questions that explored patients' perceptions toward medical students. The survey included demographic, pre-exam attitude, and post-exam attitude questions. Attitude questions used the five-point Likert scale and were worded in a positive manner.<sup>5,1</sup>

**Analysis.** Data were analyzed with STATA12. Analysis was subdivided into three objectives. Objective 1 was to determine the pre-medical student interaction attitudes. Objective 2 was to determine the overall patient perspective on the medical student experience and determine if patients want to provide feedback. Objective 3 was to determine pre-to-post interaction change in patient attitudes. Paired two-tailed T-tests and ANOVA were used to determine statistical significance, defined as P<0.05.

## Results

Due to exclusion criteria for each research objective, the data from each objective have slightly different demographic characteristics.

Characteristic	Objective 1		Objective 2		Objective 3	
	No.	%	No.	%	No.	%
<b>Total</b>	96		88		89	
<b>Age</b>						
18-34	23	24.0	21	23.9	22	24.7
35-44	23	24.0	19	21.6	21	23.6
45-54	17	17.7	17	19.3	16	18.0
55-64	20	20.8	18	20.5	17	19.1
>65	13	13.5	13	14.8	13	14.6
<b>Gender</b>						
Female	41	42.7	38	43.2	38	42.7
Male	55	57.3	50	56.8	51	57.3
<b>Race</b>						
White or Caucasian	75	78.1	68	77.3	68	76.4
Black or African American	1	1.0	1	1.1	1	1.1
Hispanic or Latino	14	14.6	14	15.9	14	15.7
American Indian or Alaska Native	0	0	0	0	0	0
Asian or Pacific Islander	4	4.2	4	4.6	4	4.5
Other	2	2.1	1	1.1	2	2.3
<b>Prior Medical Student Involvement in Care</b>						
Yes	36	37.5	34	38.6	34	38.2
No	60	62.5	54	61.4	55	61.8
<b>Length of Time at Renaissance Group</b>						
0 - First Visit	2	2.1	2	2.3	2	2.3
< 1 year	11	11.6	11	12.6	11	12.5
1 - 5 years	51	53.7	44	50.6	46	52.3
> 5 years	31	32.6	30	34.5	29	33.0

Table 1: Overall Patient Demographics

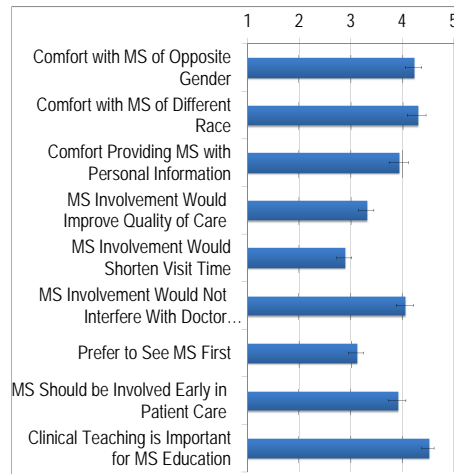


Figure 1: Objective 1 - Patient Pre-Exam Attitudes

\*\*All Bars Indicate 95% Confidence Interval\*\*

## Results

**Objective 1.** At 2.88, the lowest mean score was for the patient attitude that medical student involvement would shorten visit time. The remaining attitude mean scores were 3.10 or above. Compared to the hypothesis that patients would have neutral pre-exam attitudes towards medical students (MS), 7 of 9 mean attitude scores were higher than neutral (3) with statistical significant of P<0.0001 or less.

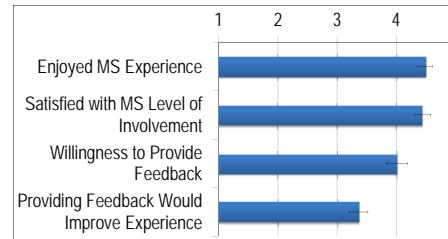


Figure 2: Objective 2 - Patient Attitudes on Feedback

**Objective 2.** The attitude that providing feedback would improve the patient care experience was significantly lower than hypothesized with a mean of 3.36.

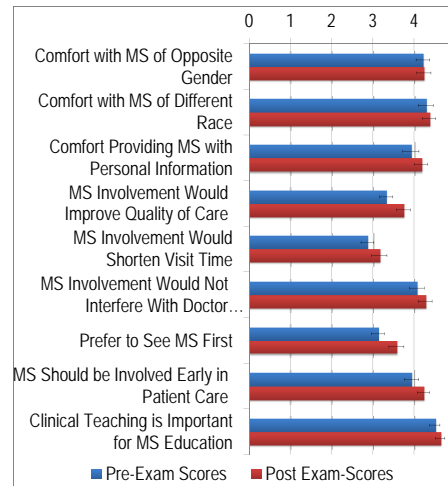


Figure 3: Objective 3 - Pre vs. Post Exam Attitudes

**Objective 3.** All post-exam scores were higher than pre-exam scores. However, the difference in scores for attitudes on comfort with MS of opposite gender and comfort with MS of different race were not statistically significant. The differences in pre-exam and post-exam scores on all other attitudes were significant with p values of 0.0155 or less.

## Conclusions

- When walking in the door, what is the perception of medical students? Favorable. As observed in prior studies and as hypothesized, the patient population had predominately positive attitudes toward medical students. However, somewhat surprisingly, these attitudes were overall positive prior to any medical student intervention. There were statistically significant demographic variation for specific attitudes only.

- What do patients think of their overall medical student experience? Patients agree that they enjoyed their experience with a medical student and are satisfied with the level of medical student involvement in their care. Patients are overwhelmingly willing to provide feedback, but may not believe that providing this feedback would improve their patient care experience.

- Does the medical student interaction change patient perspective? Yes. As hypothesized, all post-exam scores were higher than pre-exam scores. This is profound and reassuring that the patient-student interaction in and of itself is improving patient attitudes toward medical students, even in the private practice setting.

- While patients overall have positive attitudes toward medical students, there are areas for improvement. A pre-constructed patient education plan can further improve attitudes. This plan could target male and older patient populations, who scored lower on some measures. This study also provides direction for future research. Specifically, pre-to-post exam attitude changes need to be further evaluated in particular visit situations.

## References

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## Acknowledgements

This research was conducted with the support of Dr. Andrew Carroll MD and his staff at Renaissance Medical Group. Special thanks to Rachel Langhofer, Senior Research Coordinator at the University of Arizona, Dr. Doug Campos-Outcalt, Department Chair of Family, Community and Preventive Medicine at the University of Arizona College of Medicine, the patient participants, and the University of Arizona medical student participants.