

# An Intervention to Improve Awareness and Perception of Osteopathic Medicine Among Students in Other Health Professions

Ryan Dyches, OMS V<sup>1</sup>; Luisa Ruck, DO<sup>2</sup>; Gary Gailius, DO<sup>1</sup>

<sup>1</sup>Midwestern University, Arizona College of Osteopathic Medicine <sup>2</sup>University at Buffalo, The State University of New York

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## ABSTRACT

This study aimed to identify and measure the impact of an osteopathic intervention for graduate students in multiple non-osteopathic programs. The goal was to increase awareness and understanding of osteopathic manipulative medicine (OMM) as well as to promote interprofessional collaboration. Students from various health professional colleges at Midwestern University in Glendale, AZ were recruited. Following an initial survey, an osteopathic intervention was provided which was composed of a brief educational presentation and a personalized demonstration of five commonly performed osteopathic techniques. At the conclusion, the students were administered the same survey. The survey results demonstrated that awareness and understanding of the osteopathic profession increased to a statistically significant degree in all post graduate programs. These results suggest that a low-cost intervention may be performed on similar colleges of osteopathic medicine with a comparable response. By increasing awareness and understanding of osteopathy in healthcare professionals, greater collaboration in the interprofessional community can provide a higher quality healthcare experience for all patients.

Corresponding Author: Ryan Dyches, OMS V, Midwestern University, Arizona College of Osteopathic Medicine; [rdyches65@midwestern.edu](mailto:rdyches65@midwestern.edu)  
Acknowledgements: The authors acknowledge the assistance of the Research department of Midwestern University

## BACKGROUND

This study seeks to identify the impact of an osteopathic educational intervention designed to increase awareness and understanding of osteopathic medicine and promote interprofessional collaboration and practice. The intervention was designed for graduate students in the health professions, and demonstrated on students in biomedical sciences, speech and language pathology, optometry, clinical psychology, dental, physician assistant, and pharmacy programs. We believe that this understanding would, in turn, lead to higher levels of healthcare collaboration in the future.

## LITERATURE REVIEW

Interprofessional models have better health outcomes for patients but training in the health professions often occurs in isolation, which causes healthcare professionals in training to remain uncertain about their responsibilities and value of their related peers<sup>1,2</sup>. Patient centered care requires that we be at the forefront of a collaborative model, and that misconceptions about D.O.'s scope of practice be addressed<sup>3-6</sup>. An ideal place to approach other health professionals is during their training, as many student D.O.s share their campuses with other health professionals. This collaboration may facilitate communication and allow for better patient care in the future<sup>7</sup>.

## INTRODUCTION

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## RESEARCH METHODS

Subjects were recruited from the dental, podiatry, optometry, nurse anesthesia, speech/language pathology, physician assistant, occupational therapy, physical therapy, biomedical sciences, cardiovascular science, pharmacy, clinical psychology, and veterinary medical programs at Midwestern University in Glendale, AZ. Subjects were required to be OMM naïve. Students were recruited via a campus-wide email.

The intervention was conducted on October 31st 2018 over four one-hour blocks. The intervention consisted of the following:

1. Participants were administered an initial survey to evaluate their baseline understanding and perception of osteopathic medicine.
2. Participants were then given a brief presentation regarding the background, history, training, and scope of practice of osteopathic physicians.
3. Subjects received an OMT demonstration consisting of five different techniques performed by an OMM scholar/fellow or a member of the OMM department at the Arizona College of Osteopathic Medicine. The techniques were suboccipital release, muscle energy of an anterior innominate rotation, high-velocity low-amplitude of a posterior radial head, strain-counterstrain of the trapezius, and myofascial release of the thoracic inlet.
4. Following the demonstration, subjects were re-administered the same survey to assess for a change in their understanding and perception of osteopathic medicine.



METHODS

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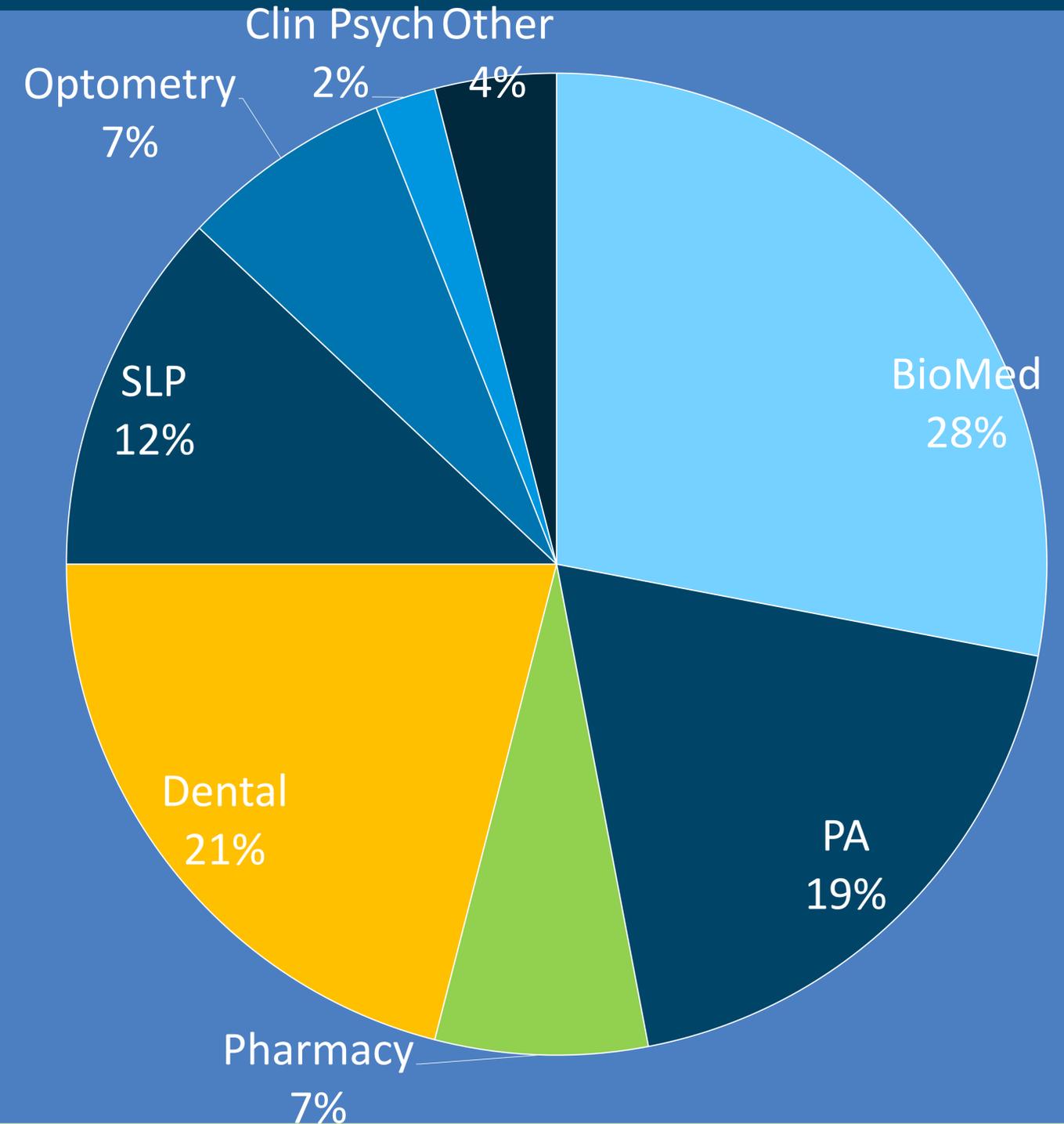
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## DATA ANALYSIS

43 subjects (53% female, 47% male) met the inclusion criteria, attended the session and completed the surveys. Subjects included students from Biomedical Sciences (28%), Dental (21%), Physician's Assistant (PA) (19%), Speech/Language Pathology (12%), Pharmacy (7%), Optometry (7%), and Clinical Psychology (2%) programs. Two students did not identify which program they attended. A paired t-test was performed on each survey question to determine changes in subjects' knowledge and perceptions of osteopathic medicine before and after the educational intervention. An independent-samples t-test was also used to compare responses between male and female subjects before and after the intervention. Subgroup analysis was performed, using ANOVA, on three subgroups to assess differences between professions. The three subgroups were: Biomedical Sciences students (many of whom will apply to osteopathic medical school); the Physician Assistant and Pharmacy students (both of whom frequently work with osteopathic physicians in hospitals and other practice settings); and all other health professions students. The two survey responses which did not identify programs were not included. Tukey's all pairwise comparisons test was conducted on the groups post hoc.



## METHODS

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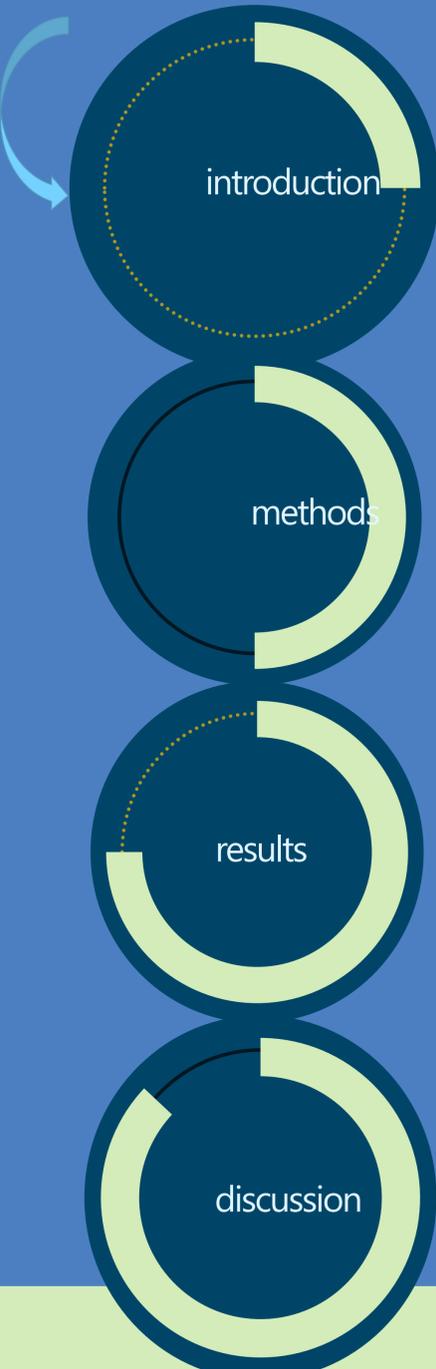
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## OSTEOPATHIC MANIPULATIVE MEDICINE (OMM) SURVEY



Thank you for taking the time to participate in our study. Please complete this survey as honestly as possible and return it to the student at the entrance. Thank you!

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I understand the difference between a D.O., and an M.D.					
I understand the difference between an Osteopathic doctor and a Chiropractor					
I understand the difference between Osteopathic Manipulative Treatment (OMT) and chiropractic treatments					
I feel comfortable explaining Osteopathic medicine to another person					
OMT is based on the anatomy, physiology, structure and function of the human body					
<b>Effectiveness</b>					
OMT is beneficial in relieving muscle tension					
OMT can reduce pain due to trauma, i.e. motor vehicle accidents, falls					
OMT is beneficial in the average person as it helps reduce symptomatic compensations in our bodies from chronic dysfunctions brought on by our daily activities					
<b>OMM future referrals</b>					
I feel comfortable identifying patients that may benefit from OMT?					
I have knowledge regarding OMM that makes me more likely to refer future patients to OMM specialists?					
I have confidence that OMM specialists may be able to help a future patient of mine with musculoskeletal problems?					
<b>Additional Comments:</b>					

## RESULTS

When applied to all of the survey questions, the paired t-test yielded a P-value of <0.0001. There was no statistically significant difference between the pre-post change in mean scores for the responses from male and female subjects. The ANOVA yielded significant differences for five of the 11 survey questions. These questions were “I understand the difference between a D.O. and an M.D.” (p=0.0473), “I understand the difference between an osteopathic physician and a chiropractor” (p=0.0121), “I understand the difference between osteopathic manipulative treatment and chiropractic treatments” (p=0.0214), “I feel comfortable explaining osteopathic medicine to another person” (p=0.0297), and “OMT can reduce pain due to trauma” (p= 0.0136).

The results of the Tukey’s all-pairwise comparisons post hoc test was as follows:

For one of the statements in the survey, “I feel comfortable explaining osteopathic medicine to another person,” Biomedical Sciences students had statistically significantly more agreement than the Pharmacy/PA group (adjusted p=0.0231). For the other four statements tested above, Biomedical Sciences students were statistically significantly higher in agreement with the statement compared with the all-other-professions group. Finally, for the statement, “I understand the difference between a D.O. and a Chiropractor,” Pharmacy/PA students had statistically significantly greater agreement than the all-other-professions group.

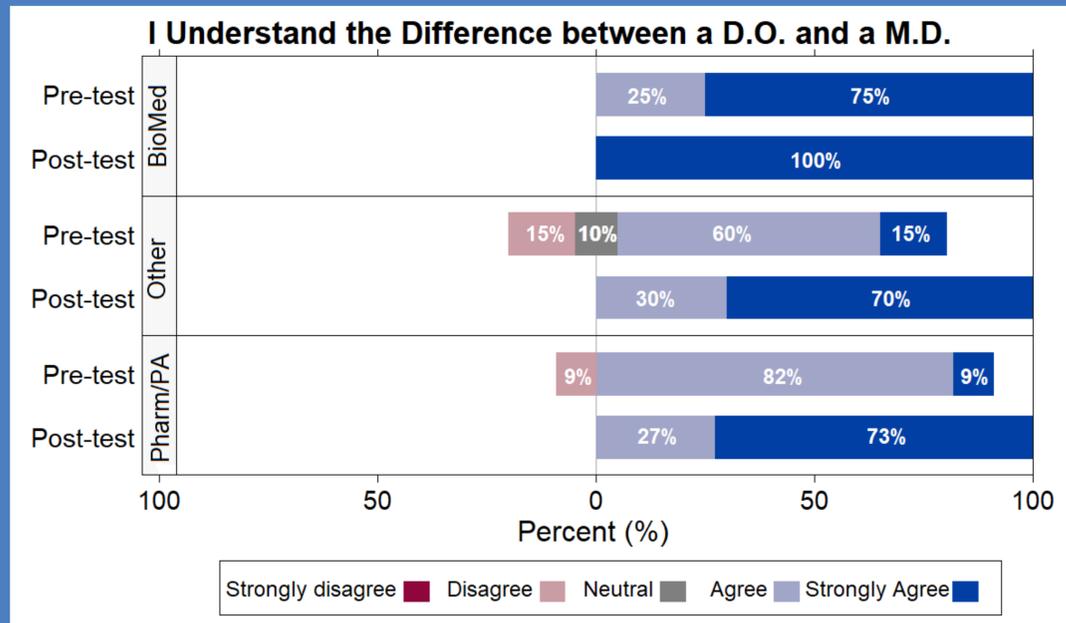
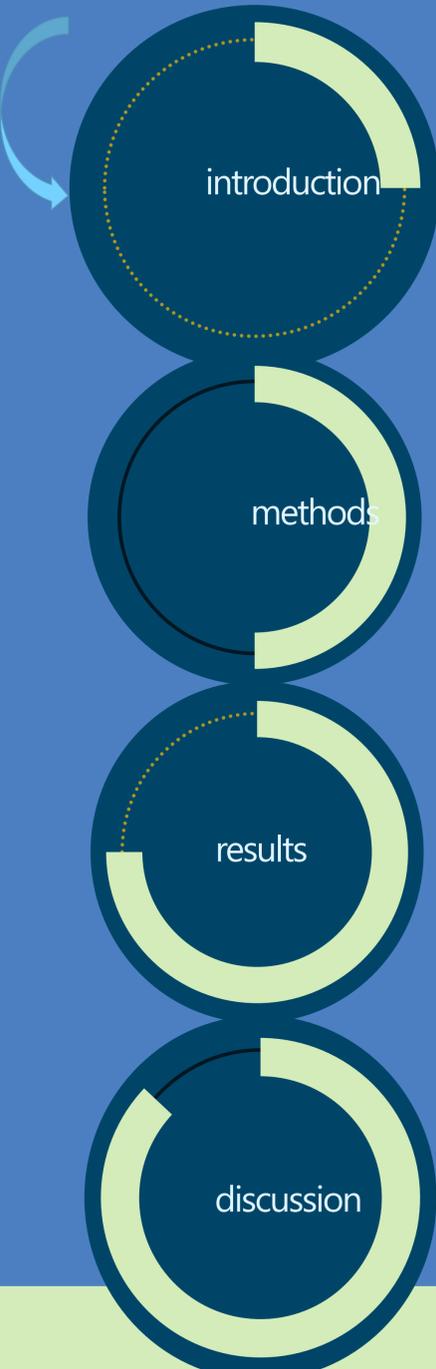
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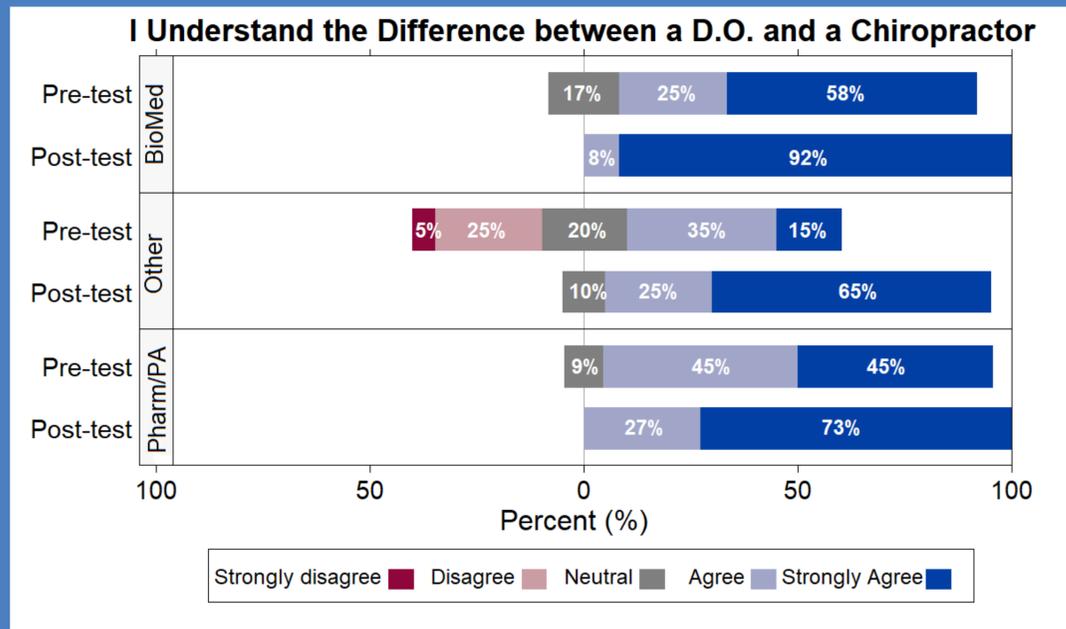
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BioMed is significantly different from the Other Group adjusted p= 0.0398



BioMed compared to Other adjusted p= 0.0483. Pharmacy/PA compared to Other adjusted p= 0.0223

## RESULTS

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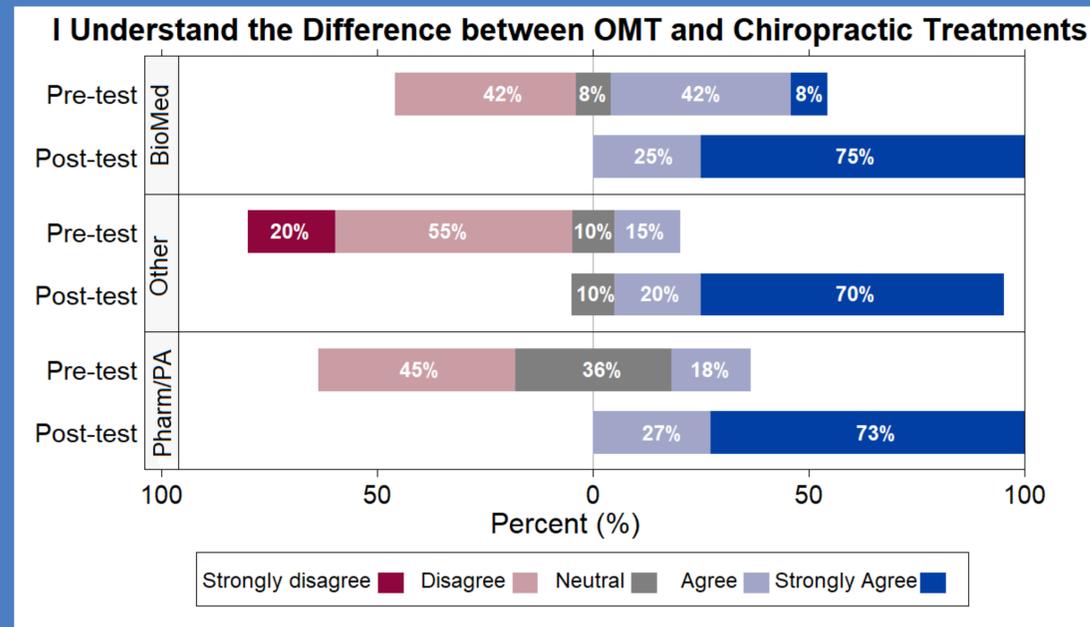
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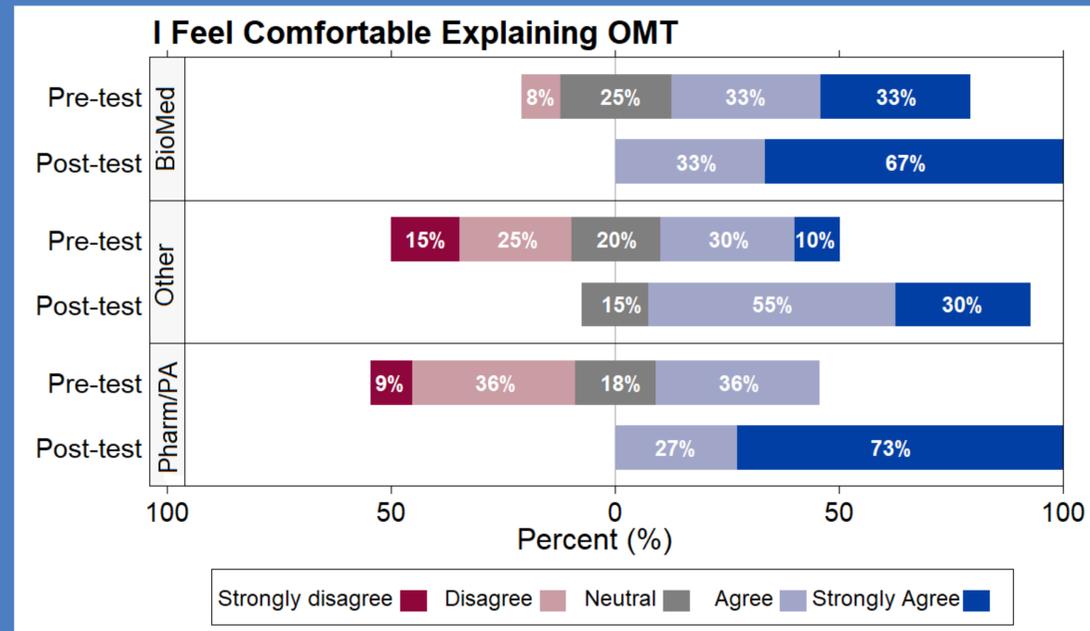
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BioMed is significantly different from the Other Group adjusted  $p=0.0178$



BioMed is significantly different from Pharmacy/PA adjusted  $p=0.0231$

## RESULTS

When applied to all of the survey questions, the paired t-test yielded a P-value of  $<0.0001$ . There was no statistically significant difference between the pre-post change in mean scores for the responses from male and female subjects. The ANOVA yielded significant differences for five of the 11 survey questions. These questions were “I understand the difference between a D.O. and an M.D.” ( $p=0.0473$ ), “I understand the difference between an osteopathic physician and a chiropractor” ( $p=0.0121$ ), “I understand the difference between osteopathic manipulative treatment and chiropractic treatments” ( $p=0.0214$ ), “I feel comfortable explaining osteopathic medicine to another person” ( $p=0.0297$ ), and “OMT can reduce pain due to trauma” ( $p=0.0136$ ).

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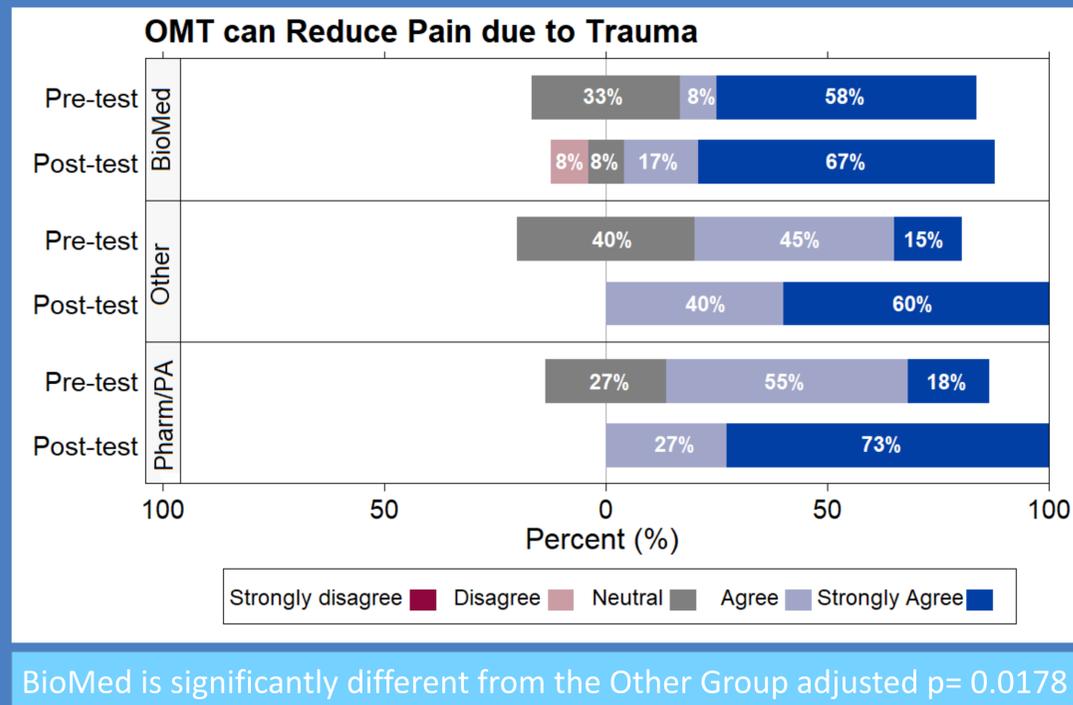
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## DISCUSSION

Our study demonstrates that an intervention in interprofessional education during health professions training can lead to increased understanding of osteopathic medicine among health profession trainees. Compared to pre-intervention, post intervention scores were statistically significantly higher for each statement of understanding. Highest scores were achieved by professions that were more likely to work with osteopathic physicians; however though they did not have the highest mean scores, the all-other professions group had the largest average mean increase in scores.

Limitations included the single-site setting of the study, the relatively small group size (especially for subgroup analyses) and the brevity of the intervention. The lack of a comparison group, and the absence of randomization into the intervention, are also methodological weaknesses. More research is needed to determine if the impact of this type of intervention is generalizable to other settings. Additionally, further study may determine the reason for the subgroup differences described in our study.

## CONCLUSION

This study demonstrates a brief, low-cost intervention is associated with meaningful improvements in the understanding of osteopathic medicine by an interprofessional team. However, the limitations of this study preclude making causal inferences from the results. This training may help clarify the role of osteopathic physicians as members of the health care team, and ultimately benefit their patients.

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## DISCUSSION