Patient Education of Osteopathic Manipulative Medicine as a Gateway to Treatment: A Pilot Study

Simone A. Majetich, DO; Michael W. Majetich, DO; James M. Clegg, OMS IV; and Susan M. Ratay, DO

ORIGINAL RESEARCH

Abstract

Context

The use of osteopathic manipulative medicine (OMM) continues to decline in medical practice, despite an increasing number of osteopathic physicians.

Objective

This pilot study was designed to determine if a brochure created to increase knowledge about osteopathic medicine and OMM was read by patients, reviewed as being helpful, needed modifications and increased patient understanding of and willingness to receive OMM in preparation for a large scale trial that will assess this in both the hospital and ambulatory settings.

Methods

The study was performed using an educational brochure and 2 closed questionnaires. Twenty-seven patients of either inpatient or observation status aged 18 and above with English literacy were enrolled. Participants first completed a pre-questionnaire with questions regarding understanding of OMM and willingness to receive treatment. They then read the provided educational brochure, which contained a checkbox to verify the material was read in its entirety. Participants completed a post-questionnaire with similar questions. The results were analyzed with Wilcoxon signed rank test with 95% confidence to observe any changes in pre- and post-questionnaire responses.

Results

Of the participants, 48.1% provided verification that they read the brochure. A significant increase in patient willingness to receive OMM as part of their treatment regimen was observed for those who read the brochure (P=.008). No significant change was seen for those who didn't read the brochure (P=.26). Additionally, 100% of participants indicated that the brochure was helpful, and 100% of participants indicated a better understanding of OMM. Cost remained a significant barrier to accepting or pursuing OMM treatment.

Conclusion

This pilot study demonstrated a statistically significant improvement in willingness to receive treatment after reviewing the designed brochure. It also identified a need to convey information regarding cost of OMM treatment to patients and a need to better emphasize the checkbox located within the brochure for verification purposes. The brochure and study design proved feasible and will provide the foundation for a larger scale trial looking to assess if a patient educational handout improves understanding of OMM and willingness to receive treatment in the hospital and ambulatory settings.

From University Hospitals Regional Hospitals in Cleveland, Ohio (S Majetich, M Majetich, Ratay), and the Lake Erie College of Osteopathic Medicine in Bradenton, Florida (Clegg).

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Correspondence address:
Simone A. Majetich, DO
5105 SOM Center Road, Suite 106
Willoughby, OH 44094
(440) 313-2734
dr.s.majetich@lakehealth.org

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Introduction

Many patients in the hospital and ambulatory settings do not appear to have prior knowledge of osteopathic manipulative medicine (OMM) and, therefore, can be hesitant to receive treatment when it is offered. Other perceived barriers such as cost or fear of treatment or pain may create a hindrance to treatment as well.

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There is a need to identify barriers to treatment, resolve patient concerns, and educate patients in an effort to promote OMM application in medical practice. Research has shown that there is a diminished use of OMM in the osteopathic profession in the United States,[1,2] despite the number of osteopathic physicians increasing nearly 250% from the years 1990 to 2017.[3] Encouraging patient-physician discussion of, and patient interest in, OMM may help to increase the effective use of this crucial, noninvasive treatment modality. Currently, there are no studies that identify the impact that patient educational handouts can have on patient understanding of and willingness to receive OMM.

While no research has explored patient educational handouts specifically regarding osteopathic medicine and OMM, several studies have demonstrated the impact of such educational tools. A meta-analysis conducted by Stacy et al found that patients felt more knowledgeable, confident, better informed, had a more accurate perception of risk, and took a more active role in their decision-making process with the use of decision aids and decision contexts.[4] Schulman et al performed a study that showed an increase in the ability of patients to: define osteoporosis, identify female gender as a risk factor, and demonstrate increased understanding that calcium intake should be started at an early age.[5] Additionally, participants significantly increased their daily calcium intake in response to reading a patient educational handout.[5] Similarly, use of an educational handout in randomized controlled trials increased patient recall of information and risks when being prescribed prednisone[6] and increased clarity of benefits versus risks with improved general treatment understanding when considering radiotherapy following lumpectomy for stage I breast cancer.[7] Whether in the medical or surgical fields, educational handouts have helped to improve patient knowledge and understanding of treatment, serving as an effective informational tool.

Patient-physician conversations also have improved with the use of patient educational handouts. A randomized-controlled trial found that a low-literacy handout provided to patients in the waiting room prior to an appointment resulted in a significantly increased discussion about prostate cancer with their physician.[8] Likewise, patients who received an educational handout were 4 times more likely to discuss the pneumococcal vaccine with their provider, and they were 5 times more likely to receive the vaccine.[8] Improved patient acceptance of these tools has further been demonstrated in the setting of using generic drugs in several primary health care clinics after reading a handout.[10] Utilizing a resource like this may help not only promote discussion about OMM, but increase patient willingness to receive such treatment. We believe that by enhancing patient knowledge of OMM with educational materials, they will be more likely to request and accept OMM as an integral part of their prescribed treatment.

This IRB-approved pilot study (UHCMC IRB number: 12-17-32) was designed to compare a patient's understanding of and willingness to receive OMM before and after reading an educational handout about osteopathic medicine and OMM. Additionally, this pilot study helped to assess how to revise our informational brochure about osteopathic medicine and OMM and how to revise questionnaire items based on patient responses. It also served to assess if our brochure was read by patients and reviewed as being helpful in preparation for a larger scale trial that will assess these in both the hospital and ambulatory settings.

Methods

Data was collected from patients aged 18 years and above under inpatient admission or observation status on the general medical floors at University Hospitals (UH) Richmond Medical Center and Bedford Medical Center, community hospitals that are osteopathically recognized residency training sites in Cleveland, Ohio. Data were collected using 2 closed questionnaires and a brochure explaining the philosophy of osteopathic medicine and OMM *(Appendix 1)*. Participants were English literate. Exclusion criteria included unresponsive or intoxicated patients, those with altered mental status (not alert and oriented to person, place and time), patients on contact precautions, and those that did not meet the inclusion criteria of appropriate literacy level and age.

A letter of support was signed by 9 hospitalists at both UH sites, providing consent for their patients to participate in this study *(Appendix 2)*. Verbal consent from each participant was obtained at bedside following the reading of a participant research consent script *(Appendix 3)*, after which time the educational material was provided to the participant. No patient identifiers beyond an age range was collected.

The pre-questionnaire *(Appendix 4)* was completed prior to reading the educational brochure to obtain baseline knowledge of the osteopathic philosophy and OMM. The post-questionnaire *(Appendix 5)* was completed after reading the brochure. Pre- and post-questionnaire items included similar questions such as knowledge of osteopathic medicine and OMM, willingness to receive OMM as part of treatment, and perceived barriers to receiving OMM treatment. The questionnaires and corresponding brochures were marked with the same numbers to allow for review of answers and verification that the brochure was read by the participant. A checkbox was placed at the end of the brochure asking the patient to ver-

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Figure 1. *Comparison of pre- and post-questionnaire willingness to receive OMM between those who read the brochure and those who did not.*

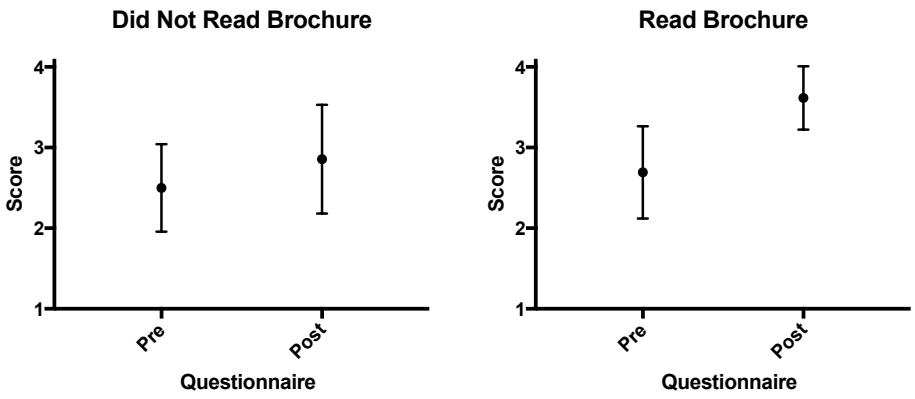


Figure 2. *Willingness to receive OMM before and after reading the handout.*

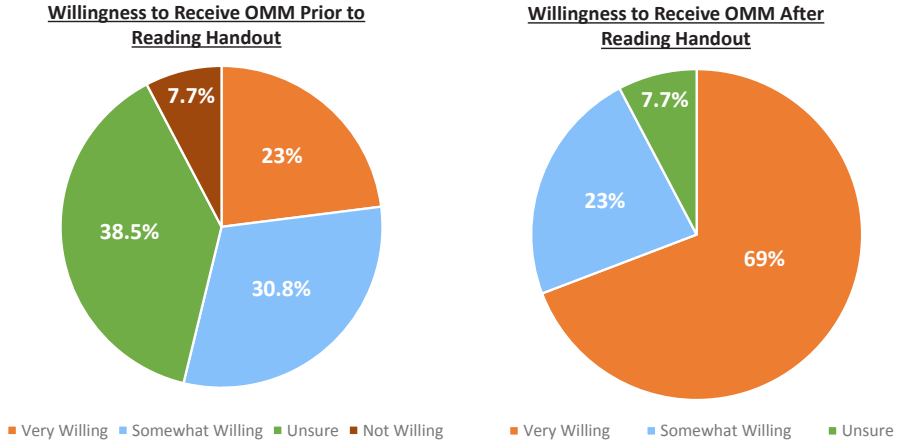
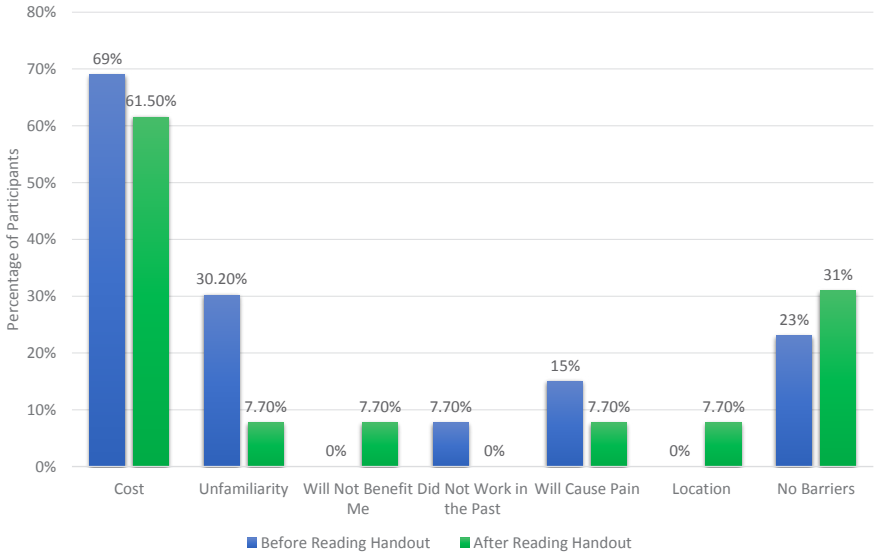


Figure 3. *Perceived barriers to receiving treatment before and after reading the handout.*



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ify that they did indeed read the handout. Outcomes were measured by analyzing pre- and post-brochure questionnaire responses and compared between those that marked that they had read the brochure and those that did not utilizing the Wilcoxon signed rank test with 95% confidence using GraphPad Prism 7. Participation in the study was terminated if the questionnaires were not filled out in their entirety.

Results

Of the 27 participants recruited at both sites during May 2018, 44% of participants were between the ages of 18 and 50, and 56% were above age 51. Thirteen participants (48.1%) checked the box on the brochure, thereby providing verification that they had read the handout. Fourteen participants (51.9%) failed to provide such verification, and their responses were analyzed with the understanding that they did not read the handout.

Responses regarding *willingness to receive OMM* were compared for those that read the brochure to those that did not read it to assess if the brochure was effective *(Figure 1)*.

No significant change in participant response was seen for those that did not read the brochure (P=.26). A significant change was noted for those that did read it (P=.008), with 100% reporting the brochure to be helpful and 100% reporting a better understanding of OMM. Only positive changes in *willingness to receive OMM* was found and is depicted in *Figure 2*.

Barriers to receiving treatment were surveyed in this study as depicted in *Figure 3*, with a reduction in unfamiliarity seen after reading the handout.

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Discussion

This pilot study successfully demonstrated that the brochure designed for the study was reviewed as being helpful by participants and created a significant change in understanding of and willingness to receive OMM. Improved willingness to receive treatment was achieved with a measured reduction in unfamiliarity, showing that the use of an educational tool such as a brochure can help to overcome this perceived barrier to receiving treatment. With nearly 50% of participants having read the brochure (1 in 2 people), utilization of a brochure appears to be an appealing and effective form of patient education and is a simple tool that can be handed out in various medical settings such as waiting rooms and examination rooms. This will, hopefully, lead to increased patient-physician discussion about the usefulness of OMM in each patient's individualized plan. As osteopathic physicians, we are all trained in OMM; however, if a physician is not comfortable performing OMM, it is our hope that referrals may be made to colleagues specializing in neuromusculoskeletal medicine and osteopathic manipulative medicine or to other osteopathic physicians who feel more comfortable performing osteopathic manipulation.

Cost as a perceived barrier to treatment did not improve significantly after reading the brochure (>60%). The handout designed for the study did not provide participants with any details regarding cost of treatment or insurance coverage, something that can be added into the brochure for the larger scale trial. Interestingly, patient perception that OMM would not benefit them increased from 0% to 7.7% after reading the brochure. Without having any additional insight as to why this number increased, accommodations can be made in the large-scale trial to provide information in this regard. The "will not benefit me" question can be followed by a "please explain" section that allows for a write-in answer and additional analysis.

It should be recognized that this study was limited, both in sample size, as well as the population surveyed. Future research will be expanded to survey over 200 participants in both hospital and ambulatory settings. Another issue that should be addressed in the large-scale trial is the checkbox method that was used as a verification for reading the brochure in its entirety. An increased effort to emphasize this checkbox will increase its visibility by those reading the brochure, assuming that some may have read the brochure but simply did not notice the checkbox. The decreased prominence of the checkbox on the current brochure may have contributed to only 48% of patients checking this box. Featuring this checkbox item on the post-brochure questionnaire may increase the likelihood of participants who truly did not read the brochure falsely claiming that they did.

Future research is needed to evaluate if an educational handout such as a brochure leads to any increase of patients being offered OMM, as well as an increase in the practice of OMM. Additionally, research may be conducted to determine if a different form of patient education is more effective at achieving this, such as a video demonstration or email communication. It is recognized that the present study only addresses the patient perspective of OMM. Further studies should address the perspective of osteopathic physicians and how readily they offer OMM as an integral part of their treatment plan for each patient.

Conclusion

Improvement in patient understanding of OMM and willingness to receive treatment was successfully attained using a brochure in the hospital setting. Even with a small sample size, this pilot study demonstrated a statistically significant improvement in willingness to receive treatment with the designed brochure. It also identified a need to convey information regarding cost of OMM treatment to patients, which may contribute to a decrease in patient willingness to receive OMM. Based on the results of this pilot study, the protocol for the large-scale trial will be modified to include: a larger sample size, information regarding cost of treatment, improved design of the questionnaire to allow for write-in answers, and increased emphasis on the checkbox located within the brochure for verification purposes. The brochure and study design proved feasible and will provide the foundation for a large-scale trial to assess if a patient educational handout enhances understanding of OMM and willingness to receive treatment in the hospital and ambulatory settings.

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