Professional Impact of the DMU predoctoral OMM Fellowship

Gabriel Berenbeim, OMS-IV; Megan Ellis, OMS-IV; Kaitlyn Finneran, OMS-IV; Isaac Metzler, OMS-IV; Drew D. Lewis, D.O., FAAO; Chunfa Jie, Ph. D.
Des Moines University, Des Moines, IA

OBJECTIVE

To investigate the impact of the Des Moines University (DMU) pre-doctoral Osteopathic Manipulative Medicine Fellowship (pOMMF) on the medical and professional careers of graduates.

INTRODUCTION

Physicians who complete post-doctoral fellowship programs have been found to acquire the skills necessary to be physician-faculty including educating residents and medical students, providing clinical primary care, and conducting research[1]. Medical education fellowship programs designed to provide enhanced training for teaching adult learners, such as medical students and residents, have increased in number over the last 20 years as medical standards and practice have changed. Medical education fellowships have been shown to impact a graduate's confidence, personal identity, and self-efficacy while teaching—ultimately allowing them to better meet the needs of junior learners[2]. The presence of educational fellowships benefits medical education and institutions because graduates become innovative leaders in teaching excellence[3].

Unlike the effects of post-doctoral and medical education fellowships, little research has been done on the outcome of pre-doctoral fellowships. In the United States, pOMMFs are offered in 24 of the 34 colleges of osteopathic medicine[4]. pOMMFs are an additional year of medical training that frequently involves direct patient care and educating medical students on the utilization of Osteopathic Manipulative medicine (OMM)[4].

Based on the research surrounding post-doctoral and educational fellowships, we hypothesized that completing the DMU pOMMF positively impacts the medical careers of graduates by enhancing teaching skills, leadership skills, research skills and the use of osteopathic manipulative treatment (OMT).

METHODS

This was a cross-sectional, descriptive study conducted among DMU pOMMF graduates from 1979 – 2020. An alumni contact list was referenced to send DMU pOMMF graduates (N = 88) a 26-question survey to be completed online. Graduates were invited to participate in the study through an email explaining the study protocol with an attached survey link.

The survey contained a combination of Likert scale, yes-no, and free-text response questions. Responses were anonymous with all personal identifiers removed upon collection of survey results.

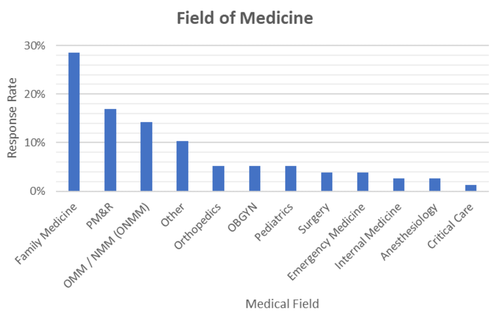
Descriptive statistics, including frequency, were used to detail results. The Chi-square test of goodness-of-fit was used to assess the equal distributions of different response categories. Simultaneous 95% confidence intervals (CI) for multinomial proportions were created using the R function MultinomCI of package DescTools. Free-text was qualitatively analyzed for recurrent themes. Participation was voluntary, and no incentive was provided.

IRB Approval #2020-30 was obtained from the DMU Research Dept. on September 28, 2020.

RESULTS

- Out of 88, 61 (69.32%) of the past DMU pOMMF graduates responded to the survey.

DEMOGRAPHICS



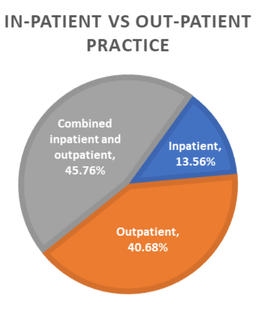


Figure 1 and Figure 2. Survey Demographics (n=61): *Bar graph on left indicate graduates' field of medicine and pie chart on right indicates the setting (in-patient vs out-patient) of the participants' medical practice.*

TEACHING

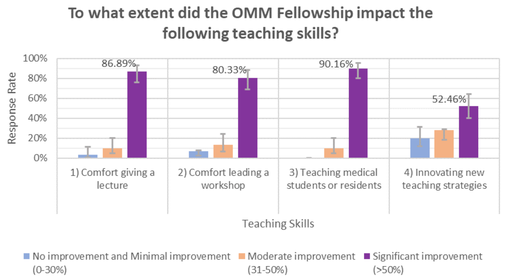


Figure 3. pOMMF impact on teaching skills (n=61): *Likert scale questions with confidence intervals. Goodness of fit chi-square for equal distribution $p < 0.001$ for teaching skills 1-4.*

How has the OMM Fellowship been used as a springboard for success in your medical career?	
Major themes	**Frequency (%)**
Teaching	28 (58.33)
Leadership	23 (47.92)
Patient care and related skills	20 (41.67)
Confidence	19 (39.58)
Use and incorporation of OMT	17 (35.42)

Table 1. Free-text analysis of responses (n=48) to the above question: *Responses were categorized into a theme if it contained a comment regarding one of the five major themes. Graduate responses can contain multiple themes.*

"The fellowship helped me realize my love for teaching. It also gave me leadership experience. These led to becoming Chief Resident. It motivated me to pursue clinical teaching roles of preceptor, adjunct faculty, and now full-time residency faculty and associate professor. It gave me the confidence to accept speaking opportunities at local and state levels. I am pursuing publications of case studies and prospective research studies in OMT. I have lifelong friendships and professional relationships with the OMM faculty who continue to mentor me in my professional goals. The OMM Fellowship was a life changing experience for which I will always be grateful."

Excerpt 1. Free text response: *Above is an example of a free text response received and categorized in table 1.*

LEADERSHIP

Leadership Roles	Chief Resident	Clinical Preceptor	Department Chair	Medical Director
Frequency of participants (%)	25 (52.08)	26 (54.17)	11 (22.92)	14 (29.17)
	Held at least one role: 38, (79.17)			
	Held at least two roles: 26, (54.17)			

Table 2. Leadership positions held: *The table represents eligible alumni (n=48) that held the following leadership positions: chief resident, clinical preceptor, department chair, medical director. Responses to leadership roles were filtered based on participant eligibility to be at least a chief resident in a residency program by 2020.*

Figure 4. Seeking leadership roles (n=61): *Yes-maybe-no responses to survey question with confidence intervals. Goodness of fit chi-square for equal distribution $p < 0.001$*

RESIDENCY

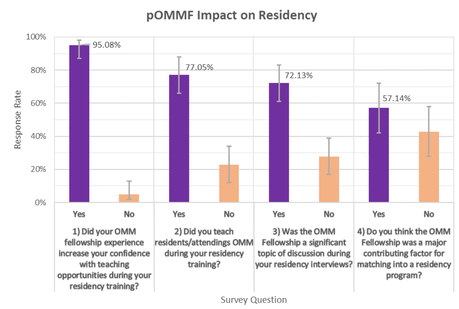


Figure 5. Teaching in Residency (n=61), except 4 (n=42): *Four distinct yes-no questions with confidence intervals. Goodness of fit chi-square for equal distribution $p < 0.001$ for questions 1-4.*

RESEARCH

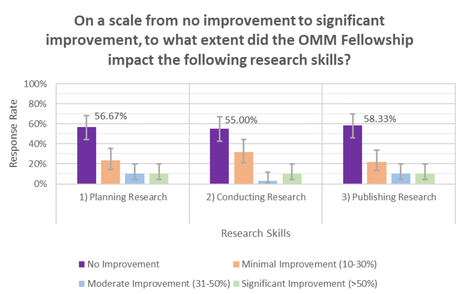


Figure 6. pOMMF impact on research skills (n=60): *Likert scale questions with confidence intervals. Goodness of fit chi-square for equal distribution $p < 0.001$ for research skills 1-3.*

UTILIZATION OF OMT

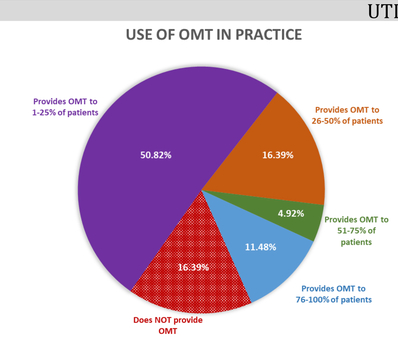


Figure 7. Extent of using OMT (n=61): *Likert-scale question with a goodness of fit chi-square of equal distribution $p < 0.001$. Starting at "Does NOT provide OMT" and going clockwise 95% CI is [9.2-27.6%], [38.6-62.9%], [9.2-27.6%], [1.7-13.5%], [5.7-21.8%]. Overall, 16.39% do not provide OMT, while 83.61% do provide OMT.*

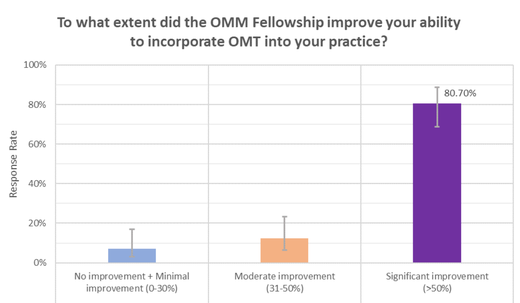


Figure 8. Incorporating OMT into practice (n=61): *Likert scale question with confidence intervals. Goodness of fit chi-square for equal distribution $p < 0.001$.*

DISCUSSION

Teaching

- An emphasis on teaching is central to pOMMFs. Our research supports that the DMU pOMMF significantly improved the graduates' perception of their teaching skills.
- Free-text analysis of responses provides numerous examples of how the abundance of teaching opportunities benefited graduates by providing them the confidence and competence to accept teaching/leadership roles later in their careers.
- The act of teaching and doctoring are interrelated—both endeavors require meeting a learner's/patient's needs, stating an agenda, use of appropriate diagnostic approaches, ongoing feedback or communication, and evaluation of outcomes[4].

Leadership

- The results of this survey provide support for graduates' belief that the pOMMF increased the likelihood of graduates taking on leadership roles in their medical careers, with 57.38% answering "yes" to the associated yes-maybe-no question.
- It is remarkable that 52.08% of those that completed the pOMMF at DMU held the role of Chief Resident, with 79.17% holding at least one of the aforementioned roles. Future research could aim to make a comparison with a different population set.

Residency

- The results suggest that the graduates attribute the DMU pOMMF to having some influence over matching into their desired residency, but it is difficult to assess the magnitude of influence.
- The majority of graduates perceived that the pOMMF was a major contributing factor and topic of discussion during residency interviews and later acceptance to residency programs. The fellowship may have bolstered their success during interviews by providing them multiple examples of teaching and leadership experiences to discuss with program directors.
- A significant percent of graduates report that the pOMMF increased their confidence in teaching during residency, with many graduates teaching OMM to residents and attendings during their residency training.

Research

- Based on the graduates' perceptions, the DMU pOMMF does not appear to have improved their research skills significantly.
- Beginning in 2017, the DMU pOMMF curriculum began emphasizing research. The data suggests that there is room to further strengthen fellow research involvement and skillsets at DMU.
- In the United States, on average only 6% of pOMMF fellows' time was dedicated to research in a 2017 study[5].

Utilization of OMM

- Finding ways to improve OMM skills and preparedness for OMT incorporation into clinical practice is of particular interest to the osteopathic profession.
- A recent study showed that 77.74% of osteopathic physicians reported using OMT on less than 5% of patients, while 56.95% did not provide OMT to their patients[6].
- The majority (83.61%) of pOMMF graduates provide OMT to their patients, and 80.70% of graduates attribute the pOMMF to significantly improving their ability to incorporate OMT into their medical practice. The results suggest that the DMU pOMMF is successfully preparing graduates to utilize OMT.

CONCLUSIONS

- The study supports that the DMU pOMMF may create positive downstream effects in the medical careers of graduates by providing abundant teaching opportunities, encouraging leadership roles, and promoting the utilization of OMT within residency and future practice.
- Through leadership and teaching OMM, the pOMMF graduates are making an impact beyond their individual careers – they are acting as ambassadors to osteopathy for their allopathic and osteopathic colleagues.
- Limitations include potential selection bias and inability to establish causal effect. A confounding factor may exist regarding the relationship between completing the pOMMF and seeking leadership roles; those who complete the pOMMF may be highly motivated individuals independent of the pOMMF's influences.
- Further research could corroborate this study's findings with other pOMMFs and compare responses to non-pOMMF graduates.

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