

Effect of the discipline of formal faculty advisors on medical student experience and career interest

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Abstract

Objective To examine whether the discipline (family medicine vs other specialty) of formally assigned faculty advisors affected medical student experience and career interest.

Design Survey.

Setting University of Calgary in Alberta.

Participants A total of 104 medical students from the graduating class of 2011.

Main outcome measures Number of times medical students met with their advisors, topics of discussions, interest in family medicine, and overall medical school experience. For binary categorical variables, χ^2 tests of significance were computed, and t tests were used for count and Likert-scale variables.

Results Overall, 89 (86%) surveys were returned. Significant differences were noted when the discipline of the faculty advisor (family medicine vs Royal College specialty) was considered. Family medicine faculty advisors met with their students more often ($P = .03$) and were more likely to have a beneficial effect on the medical school experience ($P = .005$). Having a relationship with a family medicine faculty advisor significantly increased family medicine career interest ($P = .01$), although a faculty advisor in any other discipline did not erode family medicine interest. The discipline of the faculty advisor had no statistically significant influence on a student's intended selection of family medicine in the Canadian Resident Matching Service match.

EDITOR'S KEY POINTS

- Formally assigned faculty advisors have been shown to influence medical student career interest. The medical school at the University of Calgary in Alberta randomly pairs each student with a faculty advisor at the beginning of the first year to advise on personal, educational, professional, and career matters. This study examined whether the discipline (family medicine vs other specialty) of the faculty advisor affected medical student experience and career interest.
- Medical student career interest in family medicine can be enhanced by formally assigned family medicine faculty advisors, and the medical school experience appears to be enhanced when matched with formal family medicine faculty advisors regardless of student career track.
- Royal College faculty advisors do not appear to erode family medicine career interest, suggesting that faculty advisors at the University of Calgary provide neutral career advice.

Conclusion Family medicine faculty advisors appear particularly active in their role as mentors and appear beneficial to the medical student experience. Career interest in family medicine was enhanced by being paired with a family medicine advisor and not eroded by an advisor from another specialty.

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Effet de la discipline des conseillers facultairesse sur l'expérience vécue par les étudiants en médecine et sur leur intérêt pour leur carrière

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Résumé

Objectif Déterminer si la discipline (médecine familiale ou autre spécialité) des conseillers facultaires exerce une influence sur l'expérience que vivent les étudiants en médecine et sur l'intérêt qu'ils portent à leur carrière.

Type d'étude Enquête.

Contexte L'université de Calgary en Alberta.

Participants Un total de 104 étudiants en médecine de la promotion de 2011.

Principaux paramètres à l'étude Le nombre de fois où les étudiants ont rencontré leur conseiller, les sujets discutés, leur intérêt pour la médecine familiale et leur opinion générale sur le cours de médecine. Dans le cas des variables catégoriques binaires, on a appliqué des tests de χ^2 ; pour les variables numériques et pour celles de l'échelle de Likert, on a utilisé des tests de t .

Résultats En tout, 89 enquêtes (86 %) ont été complétées. On a observé des différences significatives en fonction de la discipline à laquelle appartenait le conseiller (médecine familiale ou spécialité du Collège royal). Comme conseillers, les médecins de famille rencontraient les étudiants plus souvent ($P = ,03$) et étaient plus susceptibles d'avoir une influence bénéfique sur leur expérience du cours de médecine ($P = ,005$). Le fait d'être en contact avec un médecin de famille augmentait de façon significative l'intérêt pour une carrière en médecine familiale ($P = ,01$); toutefois, le fait d'avoir un conseiller d'une autre discipline ne diminuait pas l'intérêt pour une telle carrière. La discipline du conseiller n'avait pas d'influence statistiquement significative sur l'intention de l'étudiant d'opter pour la médecine familiale au moment de s'inscrire au Service canadien de jumelage des résidents.

Conclusion Les médecins de famille qui agissent comme conseillers facultaires semblent particulièrement actifs dans leur rôle de mentors et ils ont apparemment une influence positive sur l'expérience qu'ont les étudiants de leur cours. Le fait d'avoir un médecin de famille comme conseiller augmente l'intérêt de l'étudiant pour une carrière en médecine familiale; cet intérêt n'est toutefois pas diminué par un conseiller d'une autre spécialité.

POINTS DE REPÈRE DU RÉDACTEUR

- On sait que le conseiller facultaire assigné à un étudiant exerce une influence sur l'intérêt qu'il porte à sa carrière. À la faculté de médecine de l'Université de Calgary, en Alberta, chaque étudiant est assigné à un conseiller facultaire dès le début du cours; ce dernier le conseille sur des questions d'ordre personnel, éducationnel, professionnel ou à propos de sa carrière. Dans cette étude, on voulait savoir si la discipline (médecine familiale ou spécialité) du conseiller avait une influence sur l'expérience de l'étudiant en médecine et sur l'intérêt porté à sa carrière.
- Le fait de lui assigner systématiquement un médecin de famille de la faculté comme conseiller accroît l'intérêt de l'étudiant à faire carrière en médecine familiale, en plus d'améliorer son opinion sur le cours de médecine, et ce, quel que soit son choix de carrière éventuel.
- Il semble que les conseillers facultaires qui sont membres du Collège Royal ne diminuent pas l'intérêt pour une carrière en médecine familiale, ce qui suggère que les conseillers facultaires de l'université de Calgary n'ont pas vraiment d'influence sur le choix de carrière.

Cet article a fait l'objet d'une révision par des pairs.
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The province of Alberta is estimated to have a shortage of approximately 1000 family physicians to serve its 3.5 million residents.¹ In 2011, there were 159 unmatched family medicine (FM) positions in the first iteration of the Canadian Resident Matching Service (CaRMS) match. This represents 12.7% of FM positions.² Several initiatives have been developed by the University of Calgary's Faculty of Medicine in Alberta to promote FM. The Faculty Advisor Program matches each medical student with a volunteer faculty member at the beginning of the first year to advise on educational, personal, professional, and career matters throughout their studies. Students are randomly paired with either an FM faculty advisor or with a Royal College (RC) specialist faculty advisor.

While some students enter medical school with a specific medical career in mind, it has been shown that up to 80% of students change their career choices during medical school.³ Factors such as sex,⁴⁻⁶ age,⁶ marital status,^{6,7} personality or personal ambition,⁴ work-life balance,^{4,8} perceived future income,⁷ opportunities,⁹ and prestige⁹ have been found to influence medical student career interest and choice. Formal faculty advisors, informal mentors, and role models have all been found to have an effect.¹⁰⁻¹²

The literature suggests that medical students express high interest in, and satisfaction with, formal mentorship programs that assist with career guidance.¹³⁻¹⁷ In contrast, relatively few studies have examined the association between formally assigned faculty advisors' influence on medical student experience, career interest, and discipline of choice at the time of residency application. Berman et al¹⁸ found that formally assigned mentors in a surgical clerkship influenced interest in that discipline. Another study found that an internal medicine research mentoring program influenced students' career choice toward internal medicine.¹⁹ The University of Michigan Medical School, which has created an extensive career development program that includes career assessment, provision of information and resources, and formal faculty mentoring, found that more than half (53%) of their students reported that the career development program had influenced their career choices.¹⁷ The researchers did not examine the influence of the faculty advisors in isolation of other program components, nor did they examine the influence on the choice of a particular medical discipline.

While the literature suggests that formal faculty advisors might affect medical student career interest and choice, there are several important gaps. As studies have suggested that duration of the mentorship relationship might be an important factor,²⁰ there is a need to examine the effect of mentorship programs lasting throughout the entire undergraduate medical education rather than ones that occur in relatively short blocks

such as those in clerkship. Additionally, there is a need for studies that examine the links between formal faculty advisors and medical student interest in FM as a career. To our knowledge, based on an extensive literature review, no study has addressed these questions and also considered the effect of the discipline of the faculty advisor on student career interest. This study examined whether the discipline of formal, 3-year term faculty advisors at the University of Calgary had an effect on the experience of medical school overall and on medical student career interest in FM.

METHODS

The University of Calgary's medical school program is a 3-year, intensive program. An anonymous, paper-based survey was administered to 104 graduating students in January 2011 before students made their CaRMS ranking choices. The survey was developed by the authors and had not been previously piloted or validated. The survey was administered once; no follow-up was attempted as the survey was completely anonymous and completed during class time. The survey examined aspects of the Faculty Advisor Program and potential factors in the medical students' experiences with the program, including the number of times they had met with their advisors, topics of discussions, their advisors' disciplines, and their influence on career interest and discipline of choice. In this study, *career interest* was defined as an interest in or desire to pursue FM, and *discipline of choice* was defined as an intention to rank the discipline on the CaRMS match.

Survey data were analyzed using STATA, version 11.2. Bivariate analyses were performed to examine differences in respondents' career interests and experiences with the Faculty Advisor Program, comparing respondents assigned to FM versus RC faculty advisors. For binary categorical variables, χ^2 tests of significance were computed, and t tests were computed for count and Likert-scale variables. The study was approved by the University of Calgary Conjoint Health Research Ethics Board.

RESULTS

An overall survey response rate of 86% (89 of 104) was achieved. Of the surveys returned, 39 (44%) were from male students, 45 (51%) were from female students, and 5 (6%) respondents did not disclose their sex. A total of 16 (18%) respondents were assigned to FM faculty advisors and 73 (82%) were assigned to RC advisors. While notable, the large difference in the number of students in the FM faculty advisor group compared with the RC

faculty advisor group does accurately represent the distribution in the class as a whole. Among the 89 respondents, 100% ($n=16$) assigned to a FM faculty advisor reported having met with their advisors since starting medical school, compared with 82% ($n=60$) assigned to RC faculty advisors ($P=.07$). **Figure 1** shows that the respondents assigned to FM faculty advisors met more often with their advisors compared with the respondents assigned to RC faculty advisors ($P=.03$).

Among the respondents assigned to FM faculty advisors, 44% reported discussing educational topics, 75% discussed personal topics, and 94% discussed professional topics during meetings. In contrast, among respondents assigned to RC faculty advisors, 33% reported discussing educational topics, 37% discussed personal topics, and 48% discussed professional topics (**Figure 2**). In this group, a total of 40% reported not discussing anything related to education, personal, or professional matters (data not shown).

Table 1 shows survey responses related to the effects of faculty advisors on medical school experience and the influence on career interest. A significant relationship was noted between the faculty advisor's career and a student's overall medical school experience. Respondents assigned to FM faculty advisors more often reported that the relationship with their advisors was beneficial to their medical school experience compared with those assigned to RC faculty advisors (81% vs 42% respectively, $P=.005$). There was no significant difference between the proportion of respondents assigned to FM faculty advisors (54%) and the proportion assigned to RC faculty advisors (49%) indicating that they would be ranking FM on the CaRMS match ($P=.76$). Similarly, among the respondents in the FM faculty advisor group, 33% reported that they would be ranking FM as their first discipline of choice on the CaRMS match compared with 26% in the RC faculty advisor group ($P=.58$). A difference was observed between the 2 groups when they were asked whether the relationship with their faculty advisors had increased their interest in or desire to pursue FM, with respondents in the FM faculty advisor group more often reporting an increased desire ($P=.01$). No statistically significant difference between the 2 groups was observed when they were asked whether their relationship with their faculty advisors had decreased their desire to make FM their career of choice ($P=.44$).

DISCUSSION

This study found a statistically significant difference in the association between the discipline of the advisor (FM vs RC) and increased student interest in FM as a career. Students paired with FM faculty advisors had a significant increase in their interest in FM ($P=.01$). It

Figure 1. Average number of meetings with faculty advisor: $N = 89$.

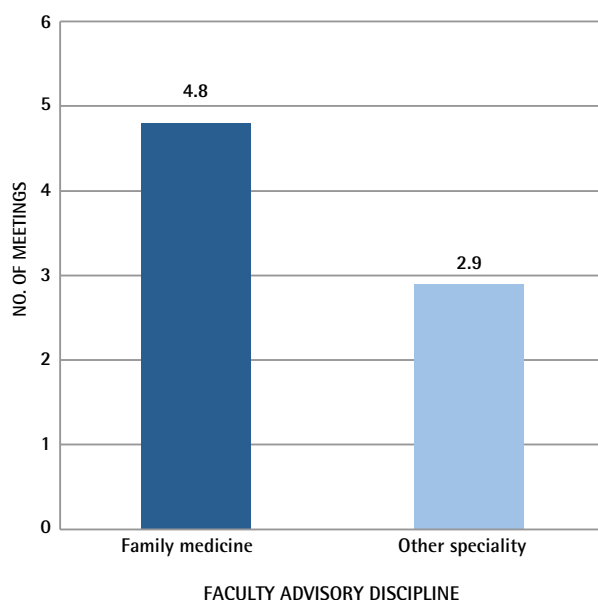
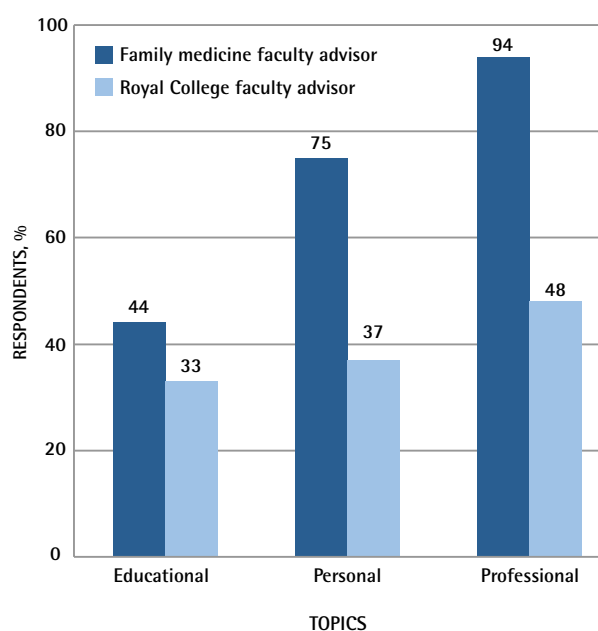


Figure 2. Topics discussed during meetings with faculty advisors: $N = 89$.



is not surprising that having an FM advisor is associated with an increased desire to pursue FM, especially among those with a pre-existing FM career interest, as the FM advisor might serve as a role model and a valuable source of information for the student. Hunt et al²⁰

Table 1. Benefits of faculty advisors to the medical school experience and influence on career interest

VARIABLE	FAMILY MEDICINE FACULTY ADVISOR GROUP	ROYAL COLLEGE FACULTY ADVISOR GROUP	P VALUE
Relationship beneficial to medical school experience, n (%)			.005
• Yes	13 (81)	30 (42)	
• No	3 (19)	41 (58)	
Plan to rank family medicine on CaRMS match, n (%)			.76
• Yes	7 (54)	35 (49)	
• No	6 (46)	36 (51)	
Plan to rank family medicine first on CaRMS match, n (%)			.58
• Yes	5 (33)	19 (26)	
• No	10 (67)	53 (74)	
Relationship increased desire to pursue family medicine, mean score on a Likert scale from 1 (not at all) to 5 (extremely)	2.1	1.4	.01
Relationship decreased desire to pursue family medicine, mean score on a Likert scale from 1 (not at all) to 5 (extremely)	1.2	1.3	.44

CaRMS—Canadian Resident Matching Service.

similarly found a non-significant trend toward choosing primary care among students mentored by primary care physicians during a physical diagnosis course. It is encouraging that RC advisors did not appear to erode FM career interest. We speculate that the low influence scores (mean score on a Likert scale from 1 [not at all] to 5 [extremely] of 1.2 for those in the FM advisor group and 1.3 for those in the RC advisor group) suggest that faculty advisors at the University of Calgary provide neutral career advice.

The lack of a statistically significant association between the discipline of the advisor and planning to rank FM on the CaRMS match, whether or not it was their first discipline of choice, suggests that the discipline of the faculty advisor does not affect medical students' expected career choice in relation to FM. Given the

finding that having an FM advisor increased desire to pursue FM, it might be that these relationships strengthen pre-existing FM interest, as there appeared to be no effect on the CaRMS ranking intent. This could be a manifestation of truly neutral career advice provided by the faculty advisors, or an artifact of the relatively small sample size. It is conceivable that although students paired with FM faculty advisors experienced increased career interest in FM (perhaps by FM faculty advisors correcting students' misconceptions about FM), they were primarily considering other disciplines. Hence, increased interest in FM does not necessarily translate into it becoming a discipline of choice.

Our findings suggest that FM faculty advisors are more active in their mentorship role compared with RC faculty advisors. Kalén et al²¹ found that most medical students (76%) experienced challenges meeting with their mentors, with logistics and time constraints commonly cited. Mentoring takes time, effort, and commitment.²² It is possible that RC faculty advisors as a group experienced more difficulty in scheduling time with those they were mentoring. Future research should aim to better understand the specifics of why RC faculty advisors appear to be less active in their mentorship role by examining barriers to successful mentoring relationships. A qualitative exploration of barriers might be particularly insightful. While there is ongoing discussion about the relative value of a structured versus an unstructured faculty advisor system, the fact that nearly one-fifth of students (18%) in the RC faculty advisor group never met with their faculty advisors suggests that it might be desirable to organize structured meeting times for faculty advisors and medical students.

In this study, we also found that faculty advisors were rated as beneficial to the medical school experience. This was noted in particular among students paired with FM faculty advisors (81%) compared with students paired with RC faculty advisors (42%, $P=.005$). We speculate that this might partly be explained by students paired with FM faculty advisors meeting with their advisors more frequently, which allows for greater potential effect. The finding that most students paired with RC faculty advisors did not find the relationship beneficial is likely a reflection of the relatively large number of students in this group who did not meet with their faculty advisors at all. A qualitative exploration of students' interpretations of "beneficial," types of benefits, and why a difference exists between those mentored by FM versus RC faculty advisors would be valuable. Nevertheless, as supported by the literature,²¹ our findings suggest that formal faculty advisors have the potential to positively affect the medical school experience.

Limitations

As the survey tool was not piloted, validity and reliability were not assessed. The psychometric properties of

the survey should be evaluated to substantiate the findings of this study and before further work is done in this area. The relatively small sample hampered multivariate analyses to examine the relationships between the faculty advisor groups and career interests, such as controlling for the effects of potential confounding factors like the number of meetings with the faculty advisor. Future research should examine the role of factors such as number of meetings and presence and disciplines of informal mentors when examining the relationship between faculty advisor group and career interest and intent. Finally, as the survey was administered before the CaRMS application, expected discipline of choice was used as a surrogate for actual career choice in this study. Further research could include a larger sample size and examine the association between the discipline of the faculty advisors and students' final discipline rankings in the CaRMS match.

Social learning theory might predict that relationships of longer duration should have a more meaningful and potential profound effect. A study in a 4-year curriculum might lend further support to the importance of the length of mentorship on career interest and choice, thereby also strengthening the relevance of social learning theory to undergraduate medical education.

Conclusion

Although there was a significant positive effect on FM interest by FM faculty advisors, the discipline of formally assigned, 3-year term, faculty advisors at the University of Calgary did not have a statistically significant effect on students ranking FM as a discipline of choice on CaRMS applications. Faculty advisors appear to have a positive effect on students' medical school experience, with FM faculty advisors particularly active in their role. Providing medical students with opportunities to be mentored by FM faculty advisors should be considered as a potential strategy to support initial career interest in FM.

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Contributors

All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

None declared

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