The Impact of Family Medicine Interest Groups and Student-Run Free Clinics on Primary Care Career Choice: A Narrative Synthesis

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BACKGROUND AND OBJECTIVES: Student-directed activities such as family medicine interest groups (FMIG) and student-run free clinics (SRFC) have been examined to discover their impact on entry into family medicine and primary care. The objective of this review was to synthesize study results to better incorporate and optimize these activities to support family medicine and primary care career choice.

METHODS: We conducted a comprehensive literature search using PubMed, Scopus, and CINAHL to identify all English-language research articles on FMIG and SRFC. We examined how participation relates to entry into family medicine and primary care specialties. Exclusion criteria were nonresearch articles, review articles, and research conducted outside the United States, Canada, Australia, and New Zealand. We used a 16-point quality rubric to evaluate 18 (11 FMIG, seven SRFC) articles that met our criteria.

RESULTS: Of the nine articles that examined whether FMIG participation impacted entry into family medicine, five papers noted a positive relationship, one paper noted unclear correlation, and three papers noted that FMIG did not impact entry into family medicine. Of the seven articles about SRFC, only one showed a positive relationship between SRFC activity and entry into primary care.

CONCLUSIONS: Larger-scale and higher quality studies are necessary to determine the impact of FMIG and SRFC on entry into family medicine and primary care. However, available evidence supports that FMIG participation is positively associated with family medicine career choice. In contrast, SRFC participation is not clearly associated with primary care career choice.

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There is a consistent need for more family physicians. The family medicine academic community has sought methods to increase the number of students who choose family medicine and other primary care specialties as their future practice. Medical schools control admissions processes and curricular materials, and faculty members provide mentorship and act as role models. On the other hand, students proactively engage in extracurricular activities that can shape their identities as future physicians, and ultimately, their career choices. In this review, we examined the effect of family medicine interest groups (FMIG) and student-run free clinics (SRFC) on student entry into family medicine and primary care.

FMIGs in the United States are supported by the American Academy of Family Physicians, and often by departments of family medicine. The first mention of such interest groups in medical education literature was in 1978, as “Family Practice Club.” FMIGs are student-run interest groups with oversight by faculty advisors. They allow students to explore their interests in primary care, gain leadership experience, and be involved in community service. SRFCs are also organized by students and aim to provide free medical care to underserved communities.
We also reviewed the citations of articles meeting inclusion criteria (citation chaining) to ensure a comprehensive search. In total, we reviewed titles and abstracts of 361 articles (47 from the primary search, 199 from the secondary search, 14 related articles, and 101 after citation chaining). When necessary, the full text of the article was reviewed.

Consistent with the primary search, we selected research papers for inclusion if they were published in English and took place in the United States, Australia, New Zealand, or Canada, based on similarity of educational structure and workforce challenges. Additionally, they needed to relate to the research question, “Do FMIGs and SRFCs impact interest and entry to family medicine?” Papers were included if they included “FMIG” or “SRFC” as either a specific variable in the analysis (for quantitative papers) or as a theme (for qualitative papers). The outcomes of interest were student primary care/family medicine interest, intention to match, or entering a primary care career, as determined by study authors. Concordant with the broader study, nonresearch studies and studies without a primary care outcome were excluded. Where uncertainty about inclusion existed, one or more additional researchers discussed each article until consensus was reached.

Authors T.S. and A.K. conducted a quality review using a previously described rubric to evaluate each of the included articles. We compared quality review scores by t test for all articles, FMIG articles, and SRFC articles with clear outcomes. We performed a narrative synthesis to group and report key findings from similar papers. The study was determined to be non-human subjects research by the Michigan State University Institutional Review Board.

Results

We included a total of 18 papers in the FMIG and SRFC review (Table 1). Eleven articles were included describing FMIG (1978 - 2019) and seven describing SRFC (1985-2016).

For FMIG, seven were single-institution and four were multi-institutional studies. The first paper published in 1978, termed the program “Family Practice Club,” but otherwise “FMIG” was the shared name for this entity. Most were surveys (four student surveys, one predoctoral director survey, and one medical school survey); four used institutional program records and match data, and one was based on a student focus group (Table 2). Ten of the articles were specifically family medicine and FMIG-related, and one article included all specialty student interest groups. For outcomes, 10 examined match data or definitive choice of family medicine as a specialty, and one discussed FMIG effect on specialty interest. Of the nine articles that looked at whether FMIG was associated with entry into family medicine, five papers noted a positive relationship, one paper did not specifically study FMIG as a discrete variable but included FMIG as

| Number of Papers | Reviewed (FMIG/SRFC and Mentorship/Role Model) | Included for FMIG | Included for SRFC |
|------------------|-----------------------------------------------|------------------|------------------|
| Primary search   | 47                                             | 4                | 4                |
| Secondary search | 199                                            | 4                | 2                |
| Related articles | 14                                             | 0                | 0                |
| Citation chaining| 101                                            | 3                | 1                |
| Total            | 361                                            | 11               | 7                |

Abbreviations: FMIG, family medicine interest group; SRFC, student-run free clinic.
part of a larger program, and three papers noted that FMIG participation was not associated with entry into family medicine (Table 3).

For SRFC, six were single-institution studies and one was a multi-institutional study. Three studies asked students about increased interest or intent to go into primary care and three articles examined match data (Table 2). Only one paper indicated that SRFC activity correlated with entry into primary care; it was the oldest paper, published in 1985.18

Quality review scores range from 6.5-26, and are included in Table 3. There was no statistically significant difference of quality scores for studies with either positive or negative outcome, when comparing all articles, FMIG articles and SRFC articles.

Discussion
Although studies have mixed results, most indicate a positive association between FMIG participation and family medicine interest. Several papers measured student-reported interest and intent to consider family medicine as a career instead of using more advanced metrics, such as match and practice data. Only one study examined primary care careers as an outcome. Only one study employed qualitative methodology.16 FMIGs vary widely in their programming, governance, and support, and it is difficult to know what elements of FMIG participation impact student choice. It is not clear whether FMIG participation primarily helps undifferentiated students gain interest in the specialty, or whether it helps support those who already have an established interest in family medicine, though one study concluded that participation can engage both groups of students.12

There were few papers that examined the relationship between participation in SRFC and specialty choice. The literature suggests that SRFC participation does not correlate with entry into primary care. However, a limitation is that most papers were based at a single institution and had lower quality review scores.

Larger-scale and higher quality research are needed to investigate how FMIGs and SRFCs may impact entry into family medicine. An FMIG research network could generate multi-institutional studies. The Society of SRFC could support higher impact scholarly work.25 A national medical student survey through the Council of Academic Family Medicine Educational Research Alliance (CERA) could be used to gather multi-institutional data. Single institutions wishing to examine these issues should consider conducting in-depth, qualitative studies to better understand how FMIGs and SRFCs shape students’ career formation.

Although the literature has limitations, participation in FMIGs is more positively associated with student choice to match to family medicine residencies, while participation in SRFC more consistently lacks an association with matching to primary care residencies. If institutions have limited resources to support student-led activities in primary care with the goal to improve family medicine match rates, this study suggests those resources should be focused on FMIGs.

### Table 2: Study Design and Methodology of Included Articles

| Type          | Method                                      | References               |
|---------------|---------------------------------------------|--------------------------|
| FMIG          | 7 single institution                        | Eagleston,4 Wei McIntosh,9 Wilkinson,10 Kost,12 Kost,13 Kerr,16 Kim17 |
|               | 4 multi-institutional                       | Rosenthal,2 Hinchey,11 Kost,14 Baraka15 |
|               | Surveys of students                         | Eagleston,4 Hinchey,11 Wilkinson,10 Kim17 |
|               | Survey of predoc directors, medical schools | Rosenthal,2 Baraka15 |
|               | Program records and match data              | Wei McIntosh,9 Kost,12 Kost,13 Kost14 |
|               | Focus group of students                     | Kerr16                   |
| SRFC          | 6 Single institution                        | Campos-Outcalt,19 Vaikunth,19 Brown,20 Tran,21 Smith22 |
|               | 1 multi-institutional                       | Tong24                   |
|               | Survey of students                          | Brown,20 Tran,21 Smith,22 Weinreich23 |
|               | Program evaluation and match data           | Campos-Outcalt,19 Vaikunth,19 Tong24 |

Abbreviations: FMIG, family medicine interest group; SRFC, student-run free clinic.
Table 3: Studies on FMIG, SRFC and Entry Into Family Medicine/Primary Care

| Study | Quality review score | Population and Years of Study | Key Findings |
|-------|----------------------|-------------------------------|--------------|
| Eagleston\(^4\) 1978 | 10 | Single institution 1976 | Students matched to FM residencies rated family practice club as slightly influential to career choice |
| Baraka\(^5\) 1995 | 12 | National sample 1992 | Participation in FMIGs at medical schools positively correlated with FM residency choice (r=.33) |
| Kost\(^6\) 2015 | 18 | Single institution 2000-2011 | FMIG participation associated with choosing FM (OR 2.45) |
| Kost\(^7\) 2019 | 25.5 | National sample 2015 | FMIG participation associated with choosing FM (OR 2.35). |
| Kost\(^8\) 2019 | 22.5 | Single institution 2003-2007 | FMIG participation associated with choosing FM (OR 3.27-4.19) |
| Hinchey\(^9\) 2011 | 22.5 | National sample 2009 | Matching to FM residency associated with FMIG participation (RR 4.5) |
| Wilkinson\(^10\) 2010 | 14 | Single institution 2004-2010 | FMIG not studied as an individual variable; program that included FMIG associated with increased match to FM (OR=1.94) |
| Rosenthal\(^11\) 2004 | 12 | National sample 2002 | FMIG investment (faculty time, investment, activity types) not associated with students entering FM |
| Kim\(^12\) 2016 | 13.5 | Single institution 2015 | FMIG not associated with entry into FM |
| Wei McIntosh\(^13\) 2016 | 16.5 | Single institution 2006-2015 | FMIG leadership not associated with entry into FM or PC |
| Brown\(^14\) 2016 | 20.5 | Single institution 2014 | No association with SRFC volunteering and planning to enter a PC residency |
| Tran\(^15\) 2017 | 13.5 | Single institution 2014 | No association with SRFC volunteering and interest in becoming a PC physician |
| Tong\(^16\) 2012 | 26 | National sample 2005 | No association of SRFC presence and PC match rate of school |
| Vaikunth\(^17\) 2014 | 16.5 | Single institution 2005-2012 | No association of SRFC participation and student match to PC residency |
| Weinreich\(^18\) 2015 | 14.5 | Single institution 2005-2015 | No association of SRFC participation and student match to PC residency |
| Campos-Outcalt\(^19\) 1985 | 6.5 | Single institution 1978-1982 | Participation in SRFC associated with student match to FM |
| Smith\(^20\) 2014 | 22 | Single institution 2001-2010 | Participation in SRFC/elective associated with increase in interest in becoming a PC physician (P<0.02) |

Abbreviations: FMIG, family medicine interest group; SRFC, student-run free clinic.
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