
Have primary care sports medicine fellowships influenced family medicine match rates?

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Citation

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Abstract

Introduction: The Future of Family Medicine Project Final Report comments on the declining interest of United States medical graduates (USMGs) in family medicine (FM). Accredited primary care sports medicine (PCSM) fellowships have proliferated since 1997. The objectives of this study are to determine whether FM residencies with PCSM fellowships are more successful filling their National Resident Matching Program (NRMP) quota of available FM positions and/or are more successful matching USMGs.

Methods: A retrospective cohort study compared NRMP data for all FM residencies participating in the NRMP main match process during the years 1997 through 2006. FM residencies were examined year by year for the effect of having an accredited PCSM fellowship.

Results: The annual percentages of total FM spots filled and whether a FM residency completely filled were not statistically different between comparison groups. The annual percentages of USMGs matched were significantly higher (p value = 0.000, $F = 19.126$) at FM residencies with PCSM fellowships.

Discussion: FM residencies with PCSM fellowships have not been more successful overall in filling their quota of available FM positions via the NRMP main match; however, annually they have matched a higher proportion of USMGs. Results of this study are relevant for implementing FFM Task Force 4 recommendations.

FUNDING SOURCE:

Departmental funds from Southwest Georgia Family Medicine Residency, sponsored by Phoebe Putney Memorial Hospital, were used to purchase the 1997 through 2006 family medicine match results data from the National Resident Matching Program.

PRESENTATION INFORMATION

Content of this manuscript was presented in poster form during the scientific poster session of the June 2007 AAFP Annual Workshop for Program Directors of Family Medicine Residencies in Overland Park, KS where it won the 2nd Place Award in the Resident Education/Training/Curriculum category.

INTRODUCTION

The Future of Family Medicine (FFM) Project Final Report comments on the declining interest of rising United States

senior medical students in the specialty of family medicine (FM) and identifies making FM a more attractive career option as one of the major challenges that will influence the future viability of the specialty (1). In 2007 2,313 FM positions filled out of the 2,621 offered in the National Resident Matching Program (NRMP) main match process for an overall fill rate of 88.2% (2). In 1997 2,905 FM positions filled out of the 3,262 offered for an overall fill rate of 89.1% (2). While these overall fill rates are similar, 2,340 FM positions filled with US senior medical students in 1997 whereas only 1,107 FM positions filled with US senior medical students in 2007, a decrease of 52.7% (2). Despite the declining interest in FM, interest in primary care sports medicine (PCSM) training programs affiliated with FM residencies has grown and remains strong. These FM affiliated PCSM fellowships have been in existence for many years, however, accreditation for PCSM programs through the Accreditation Council for Graduate Medical

Education (ACGME) has been available only since 1997. NRMP fellowship match results data show a steady increase in PCSM fellowship applicants and positions nationwide and in 2007 there were 162 active applicants for 118 active PCSM fellowship positions affiliated with FM residencies (3). Some FM residency directors and PCSM fellowship directors have publicly claimed, based on anecdotal experiences, that having an accredited PCSM fellowship confers a recruiting advantage to its affiliated FM residency. To our knowledge, there is no data published in the medical literature to support or refute these claims. Thus, the primary objective of this study is to determine whether FM residencies with accredited PCSM fellowships are more successful filling their quota of available FM positions via the NRMP main match process than FM residencies that do not have accredited PCSM fellowships. The secondary objective is to determine whether FM residencies with accredited PCSM fellowships are more successful matching US medical school graduates (USMGs) than FM residencies that do not have accredited PCSM fellowships.

METHODS

A retrospective cohort study design was utilized. After obtaining a letter of exemption from the Institutional Review Board of Phoebe Putney Memorial Hospital and proper execution of an NRMP data licensing agreement, NRMP data was obtained for all participating FM residency programs for the years 1997 through 2006. It should be noted that military-based FM residencies do not participate in the NRMP process. FM residencies with four or more positions available in the match were examined year by year for the effect of a residency having an accredited PCSM fellowship by looking at whether the residency filled through the NRMP main match, the percentage of available NRMP spots filled, the percentage of available spots filled by USMGs, the percentage of individuals matched through the NRMP process that were USMGs, and the number of USMGs matched through the NRMP process. A linear regression analysis and logistical regression analysis were performed using SPSS 14.0 for Windows.

RESULTS

NRMP data were available for a total of 4094 program-years₄ from 1997 through 2006. The breakdown of program-years by programs without and with PCSM fellowships and by program types is listed in Table 1. We were able to categorize the FM programs into the American Academy of Family Physicians' numerical program type designations 96.2% of the time. Program type 2 (community-based,

university-affiliated) FM residencies made up 58.1% of the sample. Program type 3 (community-based, university-administered) had a significantly different fill rate so the program type variable was dichotomized to type 3 and other. FM programs with an accredited PCSM fellowship made up 13.7% of the sample. FM programs filled 52.7% of the time over the ten years. The annual percentages of total spots filled or whether a FM program filled/not filled did not vary between FM residencies with and those without PCSM fellowships. Figure 1 graphically depicts the changes over time of annual fill rates for both FM residencies without and with PCSM fellowships. The R-squared for the best model for both the linear regression of percentage filled and the logistical regression of filled/not filled was less than 0.04. Therefore, very little of the variance is explained in the models we were able to design.

The linear regression for the annual fill rates of the USMGs is shown in Table 2. The annual percentages of USMGs matched was significantly higher (p value = 0.000, F = 19.126) in FM residencies with accredited PCSM fellowships than in FM residencies without PCSM fellowships. The three possible ways to analyze USMGs matched per year – as a percent of available NRMP spots, as a percent of all individuals matched, or as the total number of individuals – were all significantly higher for FM residencies with PCSM fellowships than FM residencies without PCSM fellowships. Figure 2 displays the consistently higher annual rates at which USMGs matched at FM residencies having PCSM fellowships versus at those FM residencies without PCSM fellowships.

Figure 1

Table 1: Breakdown of Family Medicine Program-years by PCSM and AAFP Program Type*

	Program-years	Percentage
Total	4094	100
Without PCSM	3532	86.3
With PCSM	562	13.7
Type 1	206	5.0
Type 2	2378	58.1
Type 3	829	20.2
Type 4	527	12.9
Type 5	0	0

* AAFP's Numerical Type Designations for Family Medicine Residency Programs:
 Type 1 = community-based, unaffiliated with a university
 Type 2 = community-based, university-affiliated
 Type 3 = community-based, university-administered
 Type 4 = university-based
 Type 5 = military-based

Figure 2

Figure 1: Results of Primary Objective Analysis

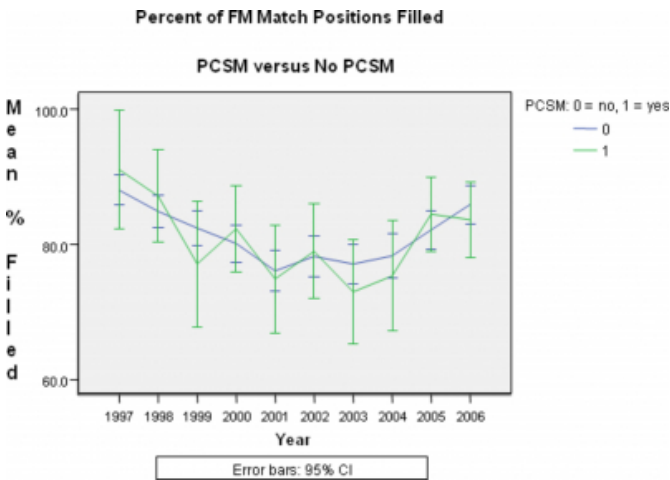


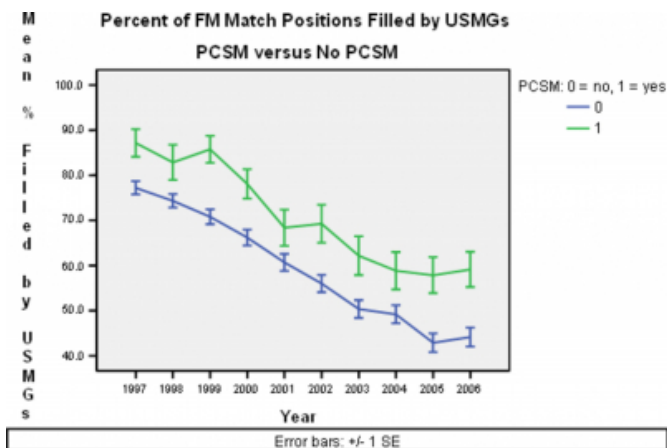
Figure 3

Table 2: Predictors of USMG percentage

	B	Std. Error	t-value	Sig.	95% Confidence Interval for B	
(Constant)	55.204	1.432	38.537	.000	52.396	58.013
PCSM	8.774	1.514	5.795	.000	5.806	11.743
More than 4 residents in NRMP	11.328	1.035	10.940	.000	9.298	13.357
Compared to 1997	-3.753	.181	-20.719	.000	-4.109	-3.398
Not Program Type 3	7.848	1.262	6.221	.000	5.375	10.322

Figure 4

Figure 2: Results of Secondary Objective Analysis



DISCUSSION

The results of this analysis demonstrate that FM residencies with accredited PCSM fellowships have not been more successful overall in annually filling their quota of available positions through the NRMP main match process compared to FM residencies without PCSM fellowships. However, FM

residencies with accredited PCSM fellowships annually have matched a significantly higher proportion of USMGs than FM residencies without PCSM fellowships. It remains unclear whether this positive correlation is specific to FM residencies having accredited PCSM fellowships. Further studies are needed to investigate possible correlations between having accredited and non-accredited fellowships in other FM content areas and FM residency match rates. In the meantime, during this critical time of low interest in FM as a specialty exhibited by United States senior medical students, the results of this study should be considered relevant to the implementation of FFM Project recommendations, specifically those of Task Force 4 regarding the development of successful medical student communication and recruitment strategies.

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3. National Resident Matching Program. 2007 Primary Care Sports Medicine Fellowship Match Results Statistics. Available at http://www.nrmp.org/fellow/match_name/sports_med/stats.html. Site last visited August 30, 2007.
4. Program-years were derived by counting the number of FM residency programs analyzed in the entire data set for the ten-year period studied (1997 through 2006). Thus, many FM residency programs were counted several times over the ten years, but no program was counted more than once in a given year.

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