

Undergraduate medical students' interest in specialising in Family Medicine at the University of the Free State, 2014

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Background: There is a large demand for Family Medicine specialists, yet not enough medical students specialise in this field. This study investigated the interest of undergraduate medical students at the University of the Free State in pursuing a career in Family Medicine, factors associated with this interest, and their opinion of Family Medicine as a specialty.

Methods: In this prospective cross-sectional study, anonymous, self-reporting questionnaires, available in English and Afrikaans, were distributed to first- to fifth-year undergraduates. Data were collected on demographic variables and interest in Family Medicine and other disciplines. The students had to rate the likelihood of them selecting 15 different specialties as a future career according to a five-point Likert scale. Opinions concerning Family Medicine were tested with a yes/no response as to the agreement to five statements.

Results: Fifth-year students were excluded due to poor response rate (13.6%). The response rate for the first- to fourth-year groups was 86.4%. Interest in Family Medicine decreased from first to third year (22.4, 21.2 and 14.0%, respectively), but increased again in the fourth year (23.3%). Females and speakers of African languages showed the most interest in this field. Medical students, especially first years, generally had poor knowledge regarding Family Medicine.

Conclusion: Family Medicine is not a preferred specialty in any of the four year groups, and students had insufficient knowledge of the field. Family Medicine should be introduced earlier into the medical curriculum.

Keywords: Family Medicine, interest, knowledge, specialisation, undergraduate medical education

Introduction

South Africa has engaged in an ambitious national project to provide universal access to quality primary health care.¹ This involves, among other components, a 're-engineering of primary health care'. Human resource implications of this have been spelled out in a national 'Human Resources for Health Strategy', which emphasises the increasing role of family physicians and other medical practitioners in the primary healthcare team.²

Family Medicine was recognised as a specialty in South Africa in 2007.³⁻⁵ In 2008, 790 family physicians were registered, with an estimated gap of 888 Family Medicine specialists.² Nevertheless, less than 40 specialist family physicians graduate yearly.⁶

According to Mash, the family physician 'is a doctor who provides and co-ordinates personal, primary, and continuing comprehensive health care for individuals and families', 'care for both sexes of all ages, for physical, behavioural, and social problems'.⁷ A lively discussion of Family Medicine in South Africa has been trying to define the role of Family Medicine in South Africa.⁸⁻¹⁰

South African regulations relating to the training of undergraduate medical students list under the 'Values and attitudes outcomes': 'a recognition of the importance of primary health care and of a community oriented approach to health care'.¹¹

The medical curriculum implemented by universities directly influences students' views of Family Medicine. A longitudinal cohort study¹² done at a Canadian medical school observed that

undergraduate medical students' interest in Family Medicine declined significantly in their second year. A qualitative study¹³ across three Canadian universities examined the influences of pre-medical school, medical school, postgraduate training, and life-in-medicine on choosing a career in Family Medicine. During preclinical training, Family Medicine was marginalised in the curriculum, receiving negative connotations due to lack of exposure. However, the clinical period was crucial in persuading students to enter Family Medicine. Role models in the specialty also impacted students' views. Exhausted and frustrated family physicians served to dissuade eager students, allowing other specialties to assert their superiority. A retrospective cohort study¹⁴ in the United States of America found a significant increase in the percentage of graduates choosing Family Medicine from medical schools that had introduced rotations in Family Practice, while the establishing of a Family Medicine Department did not show a positive effect.

A Canadian cross-sectional study¹⁵ in first- to third-year medical students analysed the effects of rural and urban backgrounds on choosing specialties. Students selecting Family Medicine (28.2%) tended to be older, female, or have a rural upbringing. These students placed emphasis on the patient/doctor bond and were enticed by a shorter residency. Those choosing other specialties were motivated by status, revenue and depth of skill. This study showed that personality, values and circumstances affect undergraduates' perceptions of Family Medicine.

A 1998 study at the University of Stellenbosch¹⁶ evaluated the effectiveness of a two-week course of community-based training in Family Medicine. Questionnaires were distributed to 146

final-year students with a response rate of 89%. The feedback obtained was generally positive as students learnt more from a practical approach. Half of the students felt that the programme should be extended in their final year, while almost 90% believed that earlier exposure to Family Medicine was needed. According to Mash and de Villiers,¹⁶ the curriculum should reflect the needs of South Africa, with greater emphasis placed on primary care. Early exposure will allow students to adapt quicker to community needs and apply their theoretical knowledge.

At the University of KwaZulu-Natal, 86% of first-year students intended to specialise after graduation. Family Medicine was only the sixth most chosen discipline, while surgical disciplines and General Surgery, General Medicine and Cardiology, and Paediatrics were more popular.¹⁷ In a cross-sectional survey at all eight South African medical schools in 2007/2008, De Vries *et al.*¹⁸ identified Internal Medicine as the overall favourite and the first choice among female students, with Surgery being the runner-up and favourite among male students, followed by Paediatrics, and Obstetrics and Gynaecology. Burch *et al.*¹⁹ found that in 2006, 91.2% of final-year medical students from nine universities in five sub-Saharan African countries, including South Africa, intended to specialise after graduating, with Surgery, Internal Medicine and Paediatrics being the favourite choices and only 4.5% preferring Family Medicine.

Research also mentions a hidden curriculum,^{12,20} which represents the stigma and negativity surrounding Family Medicine. The specialty is perceived as inferior, an idea propagated by medical schools. Student prejudices develop and common opinions are that primary care is unchallenging and lacks prestige.

The undergraduate medical programme of the University of the Free State (UFS) comprises 5 years, and is divided into 10 semesters. The first five semesters consist of modules in basic medical sciences, while Semesters 6 to 10 cover the disciplines of clinical medicine. Medical students are exposed to Family Medicine concepts in their first (module: 'The Doctor and the Environment'), third (module: 'Diversity, Human Rights and Legal Ethics') and fifth year (6-week Family Medicine rotation). Clinical Family Medicine is thus only covered in the last two semesters of the clinical years, while other clinical disciplines such as Internal Medicine, Surgery, Paediatrics, Obstetrics and Gynaecology, and Psychiatry are presented from Semesters 6 through to 10.²¹

Aim of the study

The aim of this study was to investigate the interest of undergraduate medical students at the UFS in specialising in Family Medicine as compared with other disciplines, and factors associated with such choices.

Objectives

- To compare the percentage of medical students interested in specialising in Family Medicine across the five-year MBChB course.
- To compare the percentage of medical students interested in specialising in Family Medicine to other specialty options.
- To determine whether demographic factors such as gender and home language are associated with the interest in specialising in Family Medicine.
- To assess the general opinion of and knowledge about Family Medicine among medical students.

Materials and methodology

Study design and sampling

This was a prospective, cross-sectional study. The target population was all first- to fifth-year undergraduate medical students at the UFS during the second semester of 2014. The estimated size of this population was 600 students. Students from both English and Afrikaans classes were included. Students who were not present on the day the questionnaires were handed out and students who did not want to participate were excluded from the study. Due to administrative problems, the Afrikaans fourth-year class completed their questionnaires at the start of their fifth year in 2015, after their two-week Family Medicine elective.

Measurements

Anonymous, self-reported questionnaires, available in English and Afrikaans, were distributed by the student researchers to all five year groups before the commencement of a class. After completion, these questionnaires were collected by the researchers.

Data were collected on demographic variables, such as age, gender, race, home language, and year of study. Students' intention to specialise after completion of their medical degree was determined through a yes/no question. Students had to rate the likelihood of selecting each of 15 pre-specified specialties, including 'Family Medicine' and 'Other', as a future career according to a five-point Likert rating scale (1 = highly unlikely, 2 = unlikely, 3 = neutral, 4 = likely, 5 = very likely). For the reporting of results 'highly unlikely' and 'unlikely' were grouped together, and 'likely' and 'very likely' were grouped together. Opinion of Family Medicine as a specialty was tested with a yes/no response as to the agreement with each of the five statements.

Pilot study

The pilot study was conducted with 10 second-year nursing students of the School of Nursing, Faculty of Health Sciences, UFS. This confirmed that the questionnaires were understandable and user-friendly. Data from the pilot study were not included in the main data-set.

Data analysis

Data were analysed by the Department of Biostatistics, Faculty of Health Sciences, UFS, by frequency tables.

Ethical considerations

The study protocol (STUD Nr 32/2014) was approved by the Ethics Committee of the Faculty of Health Sciences, UFS. Permission to conduct the study was obtained from the Dean of the Faculty of Health Sciences, the Heads of the Schools of Medicine and Nursing, the Vice-Rector of Academics of the UFS and the Head of the Department of Family Medicine. Participation in the study was voluntary and students could withdraw from the study at any point. An information leaflet to explain the study and consent was handed out together with the questionnaire, and the anonymous completion of the questionnaire by the students was accordingly considered as implicit consent for participation.

Results

In total, 464 undergraduate medical students completed the questionnaire (response rate 69.6%; $n = 464/667$). However, due to the poor response rate of the fifth-year students (13.6%; $n = 21/154$), data from this group were excluded from the study, changing the overall response rate to 86.4% ($n = 443/513$) for the remaining four year groups. The response rate for each year

group was: first year (81.7%; $n = 134/164$), second year (75.6%; $n = 99/131$), third year (97.3%; $n = 107/110$) and fourth year (95.4%; $n = 103/108$).

The study population (excluding fifth-year students) consisted of 45.8% ($n = 203$) male and 54.2% ($n = 240$) female students. The majority indicated Afrikaans as predominant home language (64.7%), whereas 24.4% indicated English and 10.8% an African language as predominant home language.

Intention to specialise

Over all four year groups, 92.8% of the students expressed the intention to specialise after graduation. This rate declined from 94.8% in the first year to 87.4% in the fourth year.

Undergraduate medical students interested in Family Medicine

Overall, 20.3% ($n = 90$) of the participating medical students expressed interest in a career in Family Medicine, with the highest percentage (23.3%) in the fourth-year group and the lowest in the third-year group (14.0%) (Figure 1).

Across all four years, female students showed a greater inclination towards specialising in Family Medicine (see Figure 1).

In general, English-speaking undergraduate students were less likely to consider a future in Family Medicine than their Afrikaans- and African language-speaking counterparts. More than half (52.9%) of first-year African-language speaking students were interested in Family Medicine; however, the percentage declined over the second and third year, with an increase in the fourth year. For English- and Afrikaans-speaking students, the highest percentage interested in Family Medicine was found in the fourth-year group (Figure 2).

Table 1 shows the three disciplines considered for future specialisation by the most students in each year of study, as well as the corresponding percentage considering Family Medicine. Surgery, Internal Medicine and Paediatrics are among the top three in three of the four year groups, although the percentage choosing Surgery is markedly lower in the fourth-year group than the first- to third-year groups. In the Afrikaans fourth-year class who had completed their Family Medicine elective, 20% indicated Family Medicine as a likely specialisation, compared with 27% in the English class who had not yet done that elective.

General opinion of Family Medicine by undergraduate medical students

As illustrated in Figure 3, most of the participants associated Family Medicine with general practice, with the highest percentage in the first-year group (73.1%). At least half of the first- to third-year students felt that Family Medicine was less glamorous than other medical fields. In contrast, 37.1% of fourth-year students agreed with this statement. A lower percentage of

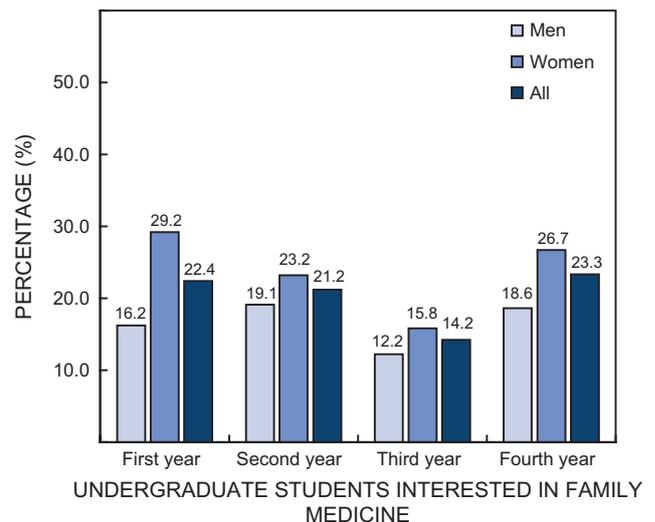


Figure 1: Percentage of undergraduate students who are interested in specialising in Family Medicine, according to gender and year of study.

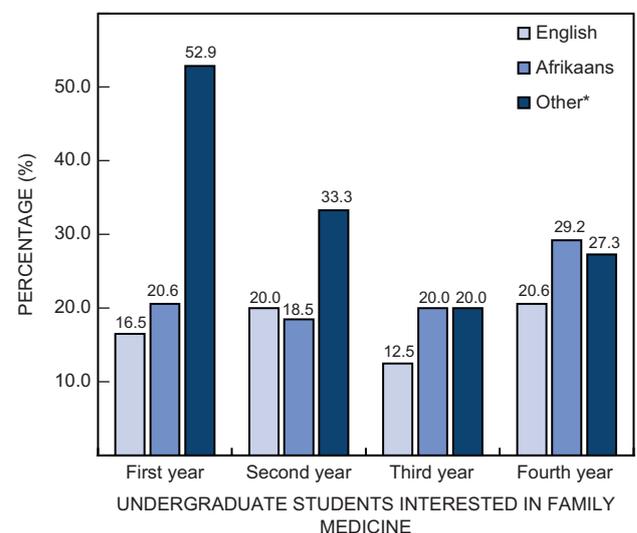


Figure 2: Percentage of undergraduate students who are interested in specialising in Family Medicine, according to home language and year of study.

Note: *Ndebele, Pedi, Sotho, Swazi, Tswana, Tsonga, Venda, Xhosa, Zulu.

participants agreed with the remaining three statements: Family Medicine is 'not scientifically based' or 'not a proper specialty', and 'is inferior to other specialties'. The third-year students, though, had the highest percentage of participants in agreement with each of these statements. The fourth-year Afrikaans class who had completed their Family Medicine elective did not have more informed opinions than the English class who had not completed the elective.

Table 1: Top three likely specialties and Family Medicine per year group

First-year group		Second-year group		Third-year group		Fourth-year group	
Specialty	%	Specialty	%	Specialty	%	Specialty	%
Surgery	67.2	Surgery	63.3	Surgery	55.1	Paediatrics	39.8
Internal Medicine	48.1	Internal Medicine	46.9	Internal Medicine	50.5	Surgery/Internal Medicine	37.9
Paediatrics	44.4	Neurology	37.8	Paediatrics	49.1	Neurology	32.4
Family Medicine (6th position)	22.6	Family Medicine (8th position)	21.4	Family Medicine (10th position)	14.0	Family Medicine (8th position)	23.3

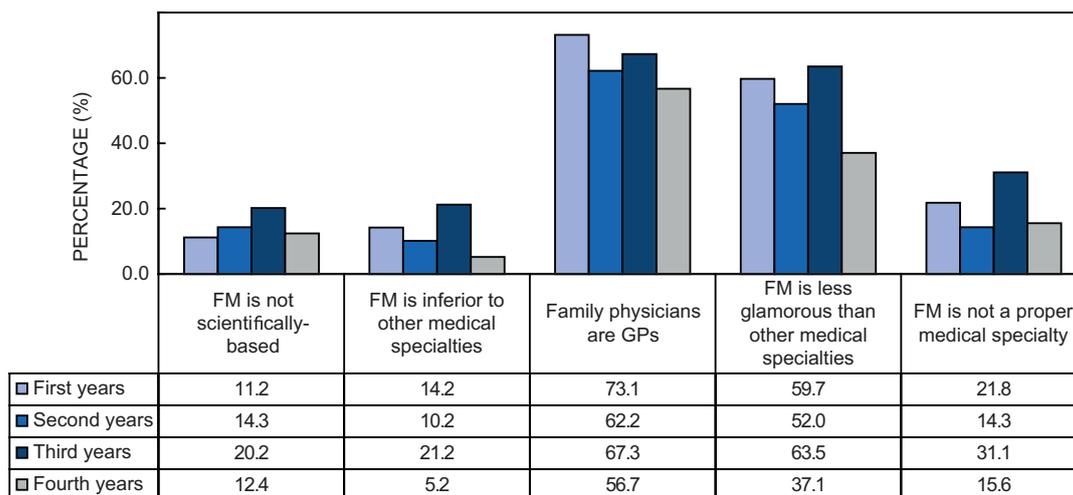


Figure 3: Percentage of undergraduate students who agreed with the five statements on Family Medicine.

Discussion

The percentage of medical students interested in specialising in Family Medicine showed a decline from the first year through to the third year of study, which is in line with results from the Canadian study¹² but, in comparison, improved during the fourth year. The authors hypothesised that the second years would have the lowest interest, as this is the study year with the least exposure to Family Medicine. This was not reflected in our results, which showed that the third-year students had the lowest likelihood of choosing a career in Family Medicine. Third-year medical students begin their clinical phase in Semester 6, rotating in the different departments (Surgery, Internal Medicine, Paediatrics); however, Family Medicine is excluded. Therefore, emphasis is shifted away from Family Medicine, and could be the reason for the low interest rate. The fourth-year group had the highest percentage of students interested in Family Medicine as a career. This can be due to more exposure to family physicians during their rotations, and the fact that the fourth-year Afrikaans class had completed their elective in Family Medicine prior to the study. As reported by Mash and De Villiers,¹⁶ clinical exposure positively influences students' attitudes towards Family Medicine.

Medical students' interest in specialising in Family Medicine, compared with other specialties, was highest in the first year, ranking at 6th position; this decreased in the second year to 8th position and in the third year to 10th position. In the fourth year, there was an improvement to 8th position. This trend in Family Medicine was unexpected as exposure to Family Medicine over the years was thought to increase interest in Family Medicine.

The reason for the higher percentage of first-year students interested in Family Medicine could be the result of limited exposure to and knowledge of other specialties and what each specialty entails. Most first-year students indicated that family physicians were general practitioners, which highlights their lack of knowledge of this field.

The percentage of students interested in Family Medicine decreased during the second and third year of study. This could be due to increased exposure to other specialties, thus diverting the students' interest. Second- and third-year medical students are exposed to modules related to specific organ systems with Family Medicine being marginalised; students also start their clinical rotations in various specialties, with the exclusion of

Family Medicine.²¹ This can be seen where interest in Surgery, Internal Medicine and Paediatrics remained high over the years, while interest in Family Medicine decreased over the first three years of study.

Overall interest of the students in Family Medicine remained below 25% for each year. This may be partly due to the students' lack of knowledge about what Family Medicine entails, as the majority of all the undergraduate students indicated that family physicians are general practitioners. This was reiterated by Stassen⁶ who noted that family physicians are sometimes incorrectly equated with general practitioners. However, given the postgraduate training, they are 'expert generalists'—generalists on an expertise level equivalent to specialist surgeons, obstetricians and paediatricians. Another perception that students had about Family Medicine was that this field is less glamorous than and inferior to other medical fields. Monetary appeal is another factor that could motivate students' career choices. The less money students assume to be involved in a medical specialty, the less glamorous it may appear. Students might want the monetary gain to compensate for the years of studying and the effort involved. To counteract misleading perceptions, accurate, detailed information regarding Family Medicine is required early in the undergraduate curriculum. Also, longer clinical exposure will combat the stigmatisation surrounding this specialty.¹⁴ Greater prominence needs to be placed on patient-centred instead of disease-centred care in order for Family Medicine to compete with other specialties.

Female medical students, across all four year groups, are more likely to specialise in this field, supporting the findings of the American study.¹⁵ A possible explanation could be that females are more attuned to their emotions, helping them with patient interaction and building a good doctor-patient relationship. Women may enjoy being more involved with a family unit as well as the provision of continuous care, seeing their patients and the following generations 'develop' over time. This may be more rewarding for women than men. Family Medicine is a diverse field, which could deter some men who prefer a more 'hands on' approach, requiring specific skills and focus directed to one area. Women's career choices are more influenced by plans to have a family.¹⁸ Family Medicine may be seen as an opportunity to fulfil the caregiver role at home, as it will allow for a little more flexibility with regard to time constraints and home life.

African languages-speaking students were more likely to specialise in Family Medicine than English- and Afrikaans-speaking students. It should be noted that the number of African languages-speaking students per year group is small and these results should therefore not be over-interpreted.

UFS medical students seem to have inadequate knowledge of Family Medicine. The majority of students in all four groups felt that Family Medicine specialists and general practitioners are the same profession, and that Family Medicine is a less glamorous option compared with other specialities.

Study limitations

Due to the poor response rate (13.6%), data from the fifth-year group had to be excluded from the analysis, and the impact of clinical exposure on interest in Family Medicine could not be accurately assessed. English second-year students were the only class to have a response rate below 80%, which could have skewed the data and introduced bias. There was no standardisation for fourth-year students in the Afrikaans class, who were surveyed after their elective in Family Medicine compared with the English class who had not completed their elective, making comparisons difficult.

The pilot study could have been more extensive, including Family Medicine interns for a more comprehensive view of the compatibility of the questionnaire.

Conclusion

Family Medicine is not a preferred choice of specialty in any of the four year groups, and students had insufficient knowledge of the field. In this study, gender and language showed certain consistencies regarding which group is more inclined to specialise in this field. Family Medicine is a medical specialty that is clearly in demand in South Africa. Medical schools need to focus on promoting this specialty, which is not a well-chosen specialty in any year group, nor is it popular in any way. It is also not well defined for medical students, and therefore is regarded as inferior. Universities should take responsibility for defining Family Medicine parameters to students, which could include counteracting misleading perceptions, while longer clinical exposure may combat stigmatisation.

This study provides insightful information on medical students' perceptions and attitudes regarding Family Medicine. This can be used to assess the effectiveness of the medical programme at the UFS. According to research, greater integration of Family Medicine in the degree with emphasis placed on clinical exposure stimulates more interest among medical undergraduates. This change may encourage and cultivate positive perceptions of Family Medicine by removing stigmatisations.

Recommendations

We recommend that further research be continued at the UFS (to follow up the classes year by year, to establish whether the trend continues throughout subsequent years) as well as other medical schools across South Africa, to find out whether there is enough interest from medical students to venture into this field, in order to help correct the staffing deficits in the field of primary health care.

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