Modernising medical careers and factors influencing career choices of medical students

This article details medical students' views towards future career choices and factors that may influence this choice. The role of gender in career choice and the importance of structured career advice and management is highlighted and discussed.

Postgraduate medical training is undergoing radical change. The Department of Health's initiative Modernising Medical Careers (MMC) came into operation in August 2005 (Department of Health, 2003, 2004, 2005). These reforms and the recent, highly publicized, applications for specialist training jobs in 2007 have brought the subject of medical careers to the forefront.

Medical education continues throughout a doctor's career and those in the profession travel down a path of continuous learning. The undergraduate years mark the beginning of this journey and aim to provide 'a foundation for future learning and practice as a pre-registration house officer and beyond' (General Medical Council, 1993). Experiences and perceptions during the undergraduate years may contribute to a doctor's perception of future careers. In spite of this, there is little knowledge of undergraduates' views towards future careers or what they feel is important to them in making a career choice. This study aimed to ascertain how medical students from the University of Manchester rate various medical specialities as a likely future career and to determine the factors important to undergraduates in making a career choice.

Methods

An online survey was designed and posted on the University of Manchester website. Questions were constructed using information from previous studies concerned with medical career choices (Lillemoe et al, 1994; Ranta et al, 2002; Lambert et al, 2003). A total of 1988 medical students (all students in years 1 to 5) at the University of Manchester were e-mailed with an invitation to complete the survey and short explanation of the study. A reminder e-mail was sent 6 weeks later. An additional 4 weeks was provided for further responses. Respondents were able to access, complete and submit the survey online. Demographic information collected included age, gender, year of study, year of entry to medical school, attainment of an intercalated degree, and whether there was a doctor in the immediate family. Immediate family was defined as a parent or equivalent guardians, spouse or siblings.

Career choice

Students rated various specialties (31 medical specialties and a 'career not in medicine') as a possible career choice on a Likert scale (Woodward, 1988) ranging from 1 (extremely unlikely) to 5 (extremely likely).

Factors important in making a career choice

Students indicated the importance of each of 25 factors to them in making a future career choice. A Likert scale ranging from 1 (not at all important) to 5 (extremely important) was provided for their responses.

Statistical analysis

Submitted data were automatically stored on a database. SPSS 11.0 and StatsDirect version 2.4.5 were used for statistical analysis. The Mann–Whitney test followed by Bonferroni correction was used to compare different groups of students. Results were recorded as statistically significant if the *P* value was <0.05.

Results

A total of 1988 medical students were invited to complete the survey. *Table 1* gives numbers of students in each year and the corresponding numbers of respondents. All students enter for a 5-year course at the University of Manchester, 1 year longer if doing an intercalated degree or pre-medical year. There is no graduate course option.

The total number of respondents was 395. Of those, 41% were pre-clinical students (n=162) and 59% clinical students (n=233). A total of 251 females (63.5%) and 144 males (36.5%) replied to the survey. A total of 323 (81.8%) students stated they did not have a doctor in the immediate family. Of the respondents 361 (91.4%)

Table 1. Demographic data of medical students at the University of Manchester and respondents to the survey

		No of medical students, University of Manchester (n=1988)	No of respondents to survey (n=395)	Ratio of male to female medical students, University of Manchester	Ratio of male to female medical student respondents
Pre-clinical years	Year 1	379 (19%)	124 (33%)	143:236	41:83
	Year 2	367 (18%)	38 (10%)	138:229	12:26
Clinical years	Year 3	412 (21%)	68 (17%)	192:220	25:43
	Year 4	433 (22%)	84 (20%)	194:239	32:52
	Year 5	397 (20%)	81 (20%)	179:218	34:47

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had not completed an intercalated degree. The intercalated students were all in the clinical years of study.

Future career choices

Pre-clinical students were significantly more likely (P=0.003) to choose audiology, general surgery, haematology, microbiology, neurology or oncology as a future career choice than clinical students. There were no statistically significant differences in how pre-clinical and clinical students rated the other 26 options including a 'career not in medicine'.

Male students rated obstetrics and gynaecology, orthopaedics, psychiatry, cardiology, vascular surgery (P=0.003), general surgery (P=0.01) and microbiology (P=0.03) as a more likely future career choice than females. However, paediatrics (P=0.002), maxillofacial surgery (P=0.003) and general practice (P=0.01) were statistically significantly more likely future careers among female medical students when compared to males (*Figure 1*). There was no significant difference found between the genders for the other specialities.

Medical students who had completed an intercalated degree were found to have no significant difference in the likely future specialties compared to the clinical students with no intercalated degree.

Factors important in making a career choice

The most important factor in making a career choice was other people's perception of the job, followed by having short working days, large amount of patient contact, enough time for own leisure activities, being easily compatible with having a family and opportunity for private practice. *Table 2* displays all factors in descending order of importance.

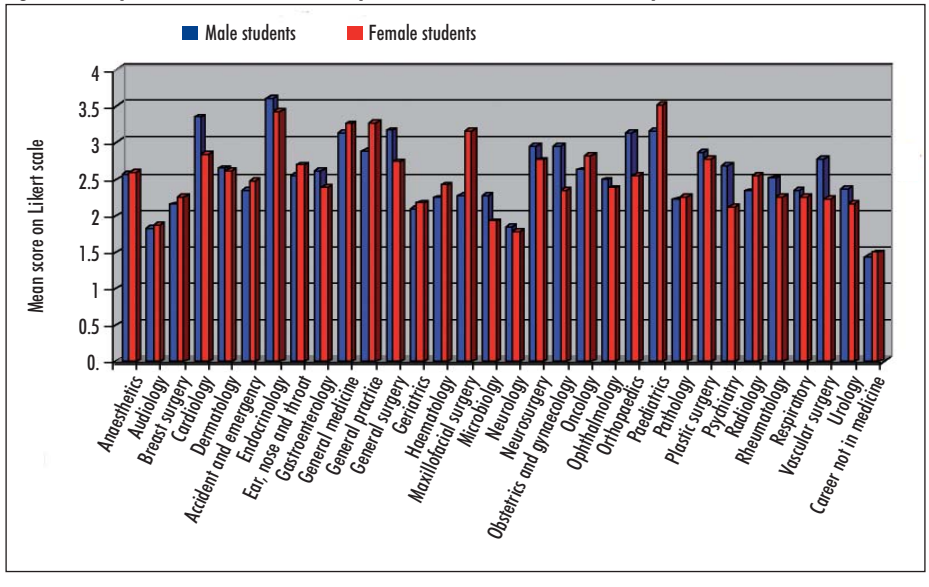
Influence of a role model was found to be significantly more important to clinical students, as was having little on-call commitments, a high wage, short working days, clinical experience of the specialty and being personally interested in the subject (*Table 3*).

There were several statistically significant differences in how male and female students rated the factors important in making a career choice (*Table 4*). A high wage was more important among males (P=0.02), as was prestige of the job (P=0.0025), requirement for manual dexterity (P=0.0025), and a wide variety in caseload (P=0.0025). In addition, gender distribution in the speciality (P=0.05) was a more important factor in making a career choice among male students.

Female students indicated that having short working days (P=0.05), large amount of patient contact (P=0.0025), flexibility with training (P=0.0025) and being easily compatible with having a family (P=0.0025) were more important influencing factors when compared to males. Having enough time for leisure activities was more important among female students, but this was not a significant finding (P=0.06).

The factors significantly less important to medical students with an intercalated degree, when compared to clinical students with no intercalated degree, were other people's perception of the job (P=0.008) and requirement of specialized skills (P=0.001).

Figure 1. Comparison of male and female preferences for different medical specialties.



Discussion

This survey provides an overview of the popularity of 31 medical specialties as a career choice. Although the response rate

Table 2. Overall ranking among pre-clinical and clinical medical students of the factors important in making a career choice

	Factor	Mean*
1	Other people's perception of the job	4.75
2	Large amount of patient contact	4.75
3	Having short working days	3.94
4	Enough time left for own leisure activities	3.73
5	Easily compatible with having a family	3.72
6	Opportunity for private practice	3.69
7	Requirement of specialized skills	3.49
8	Influence of a role model in the speciality	3.36
9	Involves close interaction with other specialties	3.36
10	Pre-clinical experience of the field	3.25
11	A wide variety in caseload	3.16
12	Flexibility with training	3.07
13	Requires manual dexterity	3.00
14	Gender distribution in the speciality	2.80
15	High wage	2.75
16	Personally interested in the subject	2.74
17	Little on-call commitments	2.70
18	Low risk of litigation	2.67
19	Technically challenging speciality	2.61
20	Opportunity to do research	2.59
21	Prestige of the job	2.56
22	Short length of training	2.38
23	Inclination for speciality before medical school	2.33
24	Clinical experience of the speciality	2.30
25	Field involves using one's artistic flair	2.29

*Mean score corresponds to the Likert scale ranging from 1=not at all important to 5=extremely important

Table 3. Factors important in making a career choice where statistically significant differences were found between pre-clinical and clinical students

Factor	Group of students in which this factor was significantly more important in making a career choice	*P* value
Influence of a role model in the speciality	Clinical students	<0.0025
Having short working days	Clinical students	<0.0025
Personally interested in the subject	Clinical students	<0.0025
Clinical experience of the speciality	Clinical students	<0.0025
Little on-call commitments	Clinical students	<0.0025
High wage	Clinical students	0.045
Pre-clinical experience of the speciality	Pre-clinical students	<0.0025

Table 4. Factors important in making a career choice for male and female students (pre-clinical and clinical students)

Factors influencing career choice (listed in descending order of the mean score by female students)	Female students mean* scores for each factor	Male students mean* scores for each factor
Other people's perception of the job	4.79	4.67
Having short working days	4.05	3.76
Large amount of patient contact	4.05	3.67
Easily compatible with having a family	3.90	3.41
Enough time left for own leisure activities	3.80	3.60
Opportunity for private practice	3.78	3.51
Requirement of specialized skills	3.47	3.51
Involves close interaction with other specialties	3.42	3.26
Flexibility with training	3.40	2.48
Influence of a role model in the speciality	3.29	3.49
Pre-clinical experience of the field	3.27	3.19
A wide variety in caseload	2.97	3.51
Requires manual dexterity	2.86	3.24
Little on-call commitments	2.78	2.57
Personally interested in the subject	2.77	2.68
Low risk of litigation	2.73	2.58
Gender distribution in the speciality	2.67	3.03
High wage	2.62	2.99
Technically challenging speciality	2.55	2.70
Opportunity to do research	2.51	2.73
Prestige of the job	2.40	2.83
Field involves using one's artistic flair	2.33	2.22
Clinical experience of the speciality	2.33	2.25
Short length of training	2.31	2.49
Inclination for speciality before medical school	2.25	2.47

*Mean score corresponds to the Likert scale ranging from 1=not at all important to 5=extremely important

of the study was low, the demographics of University of Manchester medical students are comparable to those of the respondents. This study shows a gender difference in career preference. This is important as greater numbers of female medical students are being recruited (Goodyear et al, 2007). Male students were more likely to indicate general surgery, orthopaedics or vascular surgery as a likely future career choice. This corresponds with a national study of UK graduates where approximately three times more male graduates had chosen surgery (Goldacre et al, 2004). Male students were more likely to rate obstetrics and gynaecology as a likely career choice than females in this study, which is in contrast to a West Midlands deanery study of foundation year doctors (Goodyear et al, 2007). However, paediatrics and general practice was more popular with female students in this study which correlates with the West Midland deanery study (Goodyear et al, 2007).

Previous studies have shown that there is difficulty in predicting eventual careers from early medical career choice even after graduation (Edwards et al, 1997). Thus, the responses of individuals may not reflect their final career choices. In addition, medical students' career preferences have been shown to differ between medical schools (Goldacre et al, 2004).

A previous study found that UK medical students who obtained an intercalated degree were interested in medical research and laboratory medicine and less likely to want to pursue a career in general practice; the effect of the intercalated degree being greatest when the student chose to intercalate, rather than it being an integrated part of the course (McManus et al, 1999). A further study found that doctors with an intercalated degree were less likely to want a long-term career in general practice and more likely to choose hospital medicine and pathology (Lambert et al, 2001). The current survey found no significant difference in likely future career choice between intercalated students and non-intercalated clinical students. Manchester medical school's students make a choice to intercalate. Interestingly, opportunity for research was not found to be more important in making a career choice.

In both the UK and abroad, there is evidence that career choices have been influenced by experiences in medical school (Lambert et al, 2003; Williams and Cantillon, 2003). A previous study provided students with 10 factors to rank in order of importance. It found that having a teacher as a role model, career progression, on-call commitment, interest in the subject, a love of anatomy and enjoyment were important in making a career choice among medical students (Ranta et al, 2002). Similar lifestyle factors and interest in the subject were found to be important in the present study. However, the present study compared 25 factors and different subgroups. The importance of a role model was significantly more important to clinical students than pre-clinical students. In a previous UK graduate study, a particular teacher or department was also rated as having a great deal of influence on career choice by a significantly high percentage of respondents from Manchester (Goldacre et al, 2004).

Approximately a third of doctors reject a career choice that they had previously seriously considered (McManus et al, 1999). Doctors rejecting hospital medicine and surgical specialities were most likely to specify reasons related to quality of life (Lambert et al, 2003). The British Medical Association cohort study highlights how work–life balance is increasingly important to UK doctors (British Medical Association, 2005), with working conditions and hours of work common reasons for change in career. This is reflected in this study where lifestyle factors were highly rated factors in making a career choice among undergraduates. The cohort study of 2006 medical graduates reports similar findings to this study in that females, when compared to males, require flexibility of training, with family being an important factor (British Medical Association, 2006). The current study found that gender distribution was more important to the male respondents, which has not been highlighted in previous work.

The results of this survey, although not universally predictive of medical students' likely future career choices, may prove useful in assessing how specialities are viewed as a future career. In light of the increasing numbers of females entering medical school, the differences in results found between male and female undergraduates is of interest. The perceived importance of various factors, including those concerned with lifestyle, in making a career choice is highlighted by the results of this survey. Being aware of what future doctors are looking for in their future careers may aid those providing training and career advice to young doctors.

It has been highlighted that career advice should be more tailored and structured, with a collaborative approach between Royal colleges, deaneries and medical schools (Modernising Medical Careers, 2005). *Modernising Medical Careers: The Next Steps* (Department of Health, 2004) addresses current downfalls in career advice for medical professionals and in the current climate where great changes in the medical career structure is taking place, up to date information regarding UK undergraduates and their views towards future careers should be sought. Continuing research and exploring the needs and expectations of our future doctors are likely to be essential tools during this period of uncertainty and transition in medical training. **BJHM**

Conflict of interest: none.

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KEY POINTS

- Reforms in postgraduate medical training have brought the issue of career choice to the forefront. Views of undergraduates are important as they are trained to be doctors of the future.
- Gender was found to influence speciality preference for likely future career choices.
- Lifestyle factors were found to be important to medical students when making a career choice. This is often a reason for changing speciality or leaving medicine.
- Structured career advice and collaboration between Royal colleges, deaneries and medical schools, commencing from medical school may provide a good basis for well-informed career choices.