Contemporary Themes

Career preferences of doctors graduating in 1974

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Summary

Questionnaires were sent to all 2348 doctors who had graduated from medical schools in England, Scotland, and Wales in 1974 asking about their career preferences. Most were in their second preregistration post, and the response rate was 86.1%. The most popular first choice of career was general practice (665 of the responders; 32.9%), followed by medicine (454; 22.5%), surgery (321; 15.9%), and paediatrics (129; 6.4%). Only 507 of the responders (25.1%), however, stated that their preference was "definite." First choices differed widely between men and women graduates and between graduates of different medical schools.

Introduction

In view of the high response rates and interest shown in previous inquiries¹⁻³ into career preferences of graduates of the Manchester and Sheffield medical schools we decided to survey all doctors who had graduated from the medical schools of England, Scotland, and Wales in 1974. This was done during the spring and early summer of 1975, when most were in their second preregistration post. Names and addresses were obtained from the deans of the medical schools, and each graduate was sent a questionnaire. Two reminders were sent to non-responders, and the last replies were received during September 1975.

Results

Out of 2348 graduates contacted 2022 (86.1%) replied. The response rates varied between medical schools (table I), being 90% or above for five schools and below 80% for four. The lowest response rate was 73%. Some responders failed to answer all the questions.

DETAILS OF RESPONDERS

Sex, age, and marital state—Altogether 1442 of the responders (71.3%) were men and 548 (27.1%) women, the sex of the remaining 32 (1.6%) being unknown. The ratios of men to women varied considerably between medical schools (table I). Table II shows the marital state of the responders in relation to their age; 855 (42.3%) were known to be married.

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TABLE I—Response rates of graduates of various medical schools and proportions of responders known to be women

Medical school	Response rate (%)	% of responders known to be women	Medical school	Response rate (%)	% of responders known to be women
Aberdeen	89	44	Charing Cross	85	29
Birmingham	87	29	Guy's	74	15
Bristol	90	37	King's College	85	25
Dundee	94	31	The London	89	19
Edinburgh	90	26	The Middlesex	88	15
Glasgow	88	26	Royal Free	89	47
Leeds	91	30	St Bartholomew's	86	13
Liverpool	79	29	St George's	73	21
Manchester	86	30	St Mary's	89	31
Newcastle	89	30	St Thomas's	84	21
Oxford	76	12	University College	85	32
Sheffield	91	33	Westminster	87	15
Wales	87	30			

TABLE II—Age and marital state of responders

Age (years)	Married	Single	Unknown	Total
Unknown	14	27	22	63 (3.1%)
22	1	6	1	8 (0.4%)
23	77	104	13	194 (9.6%)
24	268	384	38	690 (34.1%)
25	295	316	44	655 (32.4%)
26	91	100	15	206 (10.2%)
27	37	29	8	74 (3.7%)
28	23	18	4	45 (2.2%)
29	11	6	2	19 (0.9%)
30	10	1	1	17 (0.8%)
Over 30	28	20	3	51 (2.5%)
Total	855 (42.3%)	1016 (50.3%)	151 (7.5%)	2022 (100%)

Country of birth and nationality—Table III shows the countries of birth of the responders. Altogether 1924 (95.2%) were British, 71 (3.5%) were of other nationalities, and 27 (1.3%) did not give their nationality. It is important to distinguish between nationality and country of birth, since data from the University Grants Committee are calculated from figures for "home-based" students, whereas the DHSS tables are based on "British-born" doctors. If allowance is made for those responders whose nationality and place of birth were not given it appears that in 1974 there were between 100 and 200 graduates of British nationality who were not born in the United Kingdom.

TABLE III—Countries of birth of responders

Country of birth	No	%
England	1110	54.9
Wales	88	4.4
Scotland	256	12.7
Northern Ireland	16	0.8
UK (not-specified)	253	12.5
Eire	3	0.1
Other (non-UK)	196	9.7
Unknown	100	4.9
Total	2022	100.0

FIRMNESS OF CAREER CHOICE

In response to the question "Have you made up your mind about your future career?" 507 of the responders (25.1%) answered "definitely," 1036 (51.2%) "probably," and 472 (23.3%) "not really." As with our previous surveys, the relatively low proportion of graduates having made a definite career decision should be born in mind in interpreting the results.

PRACTICE IN UNITED KINGDOM

The responders were asked whether they intended to practise permanently in the United Kingdom—that is, discounting any periods that might be spent abroad before finally settling in this country. Altogether 647 (32%) claimed that they definitely intended to practise in the United Kingdom, only 50 (2.5%) said "definitely not," 1009 (49.9%) said "probably yes," and 152 (7.5%) said "probably no." A further 155 (7.7%) were undecided.

CHOICE OF CAREER

Table IV shows the first, second, and third choices of career for all responders. The "mainstream" classification of the Todd Report⁴ was used, with the addition of paediatrics as a separate specialty from medicine. Table V shows the proportions of responders who gave various medical and surgical subspecialties as their first choice of career. In addition to the responders shown in table V there were 30 who gave a medical or surgical specialty as a tied first choice with

TABLE IV—Proportions of responders giving various specialties as first, second, and third choices of career

Specialty	First choice		Second choice		Third choice	
	No	%	No	%	No	%
Medicine	454	22.5	394	19.5	141	7.0
Surgery	321	15.9	214	10.6	85	4.2
Obstetrics and gynaecology ..	78	3.9	116	5.7	72	3.6
General practice ..	665	32.9	377	18.6	324	16.0
General practice with other specialty ..	29	1.4	9	0.4	9	0.4
Psychiatry	74	3.7	73	3.6	52	2.6
Community medicine ..	10	0.5	55	2.7	55	2.7
Pathology	53	2.6	59	2.9	42	2.1
Anaesthetics	86	4.3	86	4.3	62	3.1
Radiology	32	1.6	42	2.1	47	2.3
Other (medical) ..	64	3.2	88	4.4	73	3.6
Paediatrics	129	6.4	147	7.3	82	4.1
Other (non-medical) ..	8	0.4	8	0.4	9	0.4
Not indicated ..	19	0.9	354	17.5	969	47.9

TABLE V—Proportions of responders giving individual medical and surgical specialties as first choice of career (including tied first and second, and tied first, second, and third choices)*

Medical specialties	No	%	Surgical specialties	No	%
General medicine (including "medicine")	305	61.6	General surgery (including "surgery")	182	59.9
Cardiology	11	2.2	Accident and emergency	6	2.0
Dermatology	12	2.4	Ear, nose, and throat ..	3	1.0
Endocrinology	2	0.4	Neurosurgery	7	2.3
Geriatrics	0	0.0	Ophthalmology	12	3.9
Clinical haematology	10	2.0	Orthopaedics	34	11.2
Nephrology	1	0.2	Paediatric surgery ..	5	1.6
Neurology	11	2.2	Plastic surgery	4	1.3
Respiratory/chest medicine	3	0.6	Thoracic/cardiac surgery	8	2.6
Rheumatology	2	0.4	Urology	1	0.3
Other (specified) ..	13	2.6	Other (specified) ..	12	3.9
Specialty not specified	1	0.2	Specialty not specified	6	2.0
Academic medicine ..	8	1.6	Academic surgery ..	0	0.0
2 or 3 medical options equal	16	3.2	2 or 3 surgical options equal	24	7.9
Option tied with non-medicine choice ..	100	20.2	Option tied with non-surgery choice ..	0	0.0
Total	495	100	Total	304	100

*Medicine and surgery tied as equal first choices in 18 cases.

something other than medicine or surgery; in 19 of these cases the medical or surgical choice in question was general surgery.

Altogether 29 of the responders gave as their first choice general practice combined with some other form of work (table IV). The most popular combinations were general practice with anaesthetics and with general medicine, which occurred seven and six times respectively. It was, perhaps, surprising that so few responders showed an interest in a combined career of this kind.

Table VI shows the relationship between the sex of the responders and their first choice of career. The proportions of women varied greatly with the career option, from 6.8% for surgery to 66.7% for community medicine.

Table VII shows the distribution of career choices for individual medical schools. Here also there are striking differences. For example, the proportions of graduates giving medicine as a first choice varied from 41.3% to 9.8%, and the proportions choosing anaesthetics and pathology ranged from 13.6% to nil and 9.7% to nil respectively. Preferences for general practice ranged from 47.1% to 19.5%.

CHANCES OF SUCCESS

The responders were asked to assess their chances of success in their chosen careers. The question was clearly open to varying interpretation according to what was meant by success. Overall, 25.1%

TABLE VII—First choices of career selected by responders from each medical school. Figures are percentages of responders

	Medicine	Surgery	Obstetrics and gynaecology	General practice	General practice with other specialty	Psychiatry	Community medicine	Pathology	Anaesthetics	Radiology	Paediatrics	Other medical	Non-medical
Aberdeen	9.8	9.8	3.7	42.7	2.4	6.1	0	4.9	7.3	1.2	7.3	4.9	0
Birmingham	12.1	16.8	0	36.4	1.8	6.5	0	0	5.6	0.9	7.5	10.3	0.9
Bristol	10.3	7.7	5.1	47.1	1.3	1.3	2.6	3.8	10.3	2.6	5.1	2.6	0
Dundee	12.9	22.6	4.8	24.2	0	8.1	3.2	9.7	3.2	1.6	1.6	3.2	1.6
Edinburgh	21.5	13.8	6.2	30.8	0.8	6.4	0	3.8	6.9	1.5	6.4	1.5	1.5
Glasgow	26.2	23.2	3.0	27.4	2.4	3.0	1.8	1.2	3.0	1.2	4.2	3.0	0
Leeds	16.4	11.9	3.0	44.8	3.0	1.5	0	1.5	7.5	0	6.0	1.5	0
Liverpool	14.0	14.0	7.5	32.3	1.1	4.3	1.1	2.2	4.3	3.2	11.8	1.1	0
Manchester	16.3	14.0	2.3	39.5	0.8	5.4	0	0.8	4.7	2.3	9.3	1.6	0
Newcastle	21.4	14.3	1.4	41.4	0	2.9	0	5.7	4.3	0	5.7	1.4	0
Oxford	34.1	24.4	2.4	19.5	2.4	4.9	0	4.9	2.4	0	0	4.9	0
Sheffield	19.4	19.4	8.3	30.6	0	5.6	0	0	5.6	1.4	5.6	4.2	0
Wales	41.3	15.0	3.8	22.5	2.6	1.3	0	1.3	1.3	1.3	8.8	1.3	0
Charing Cross ..	20.6	14.7	5.9	38.2	2.9	0	0	2.9	0	0	5.9	8.8	0
Guy's	25.6	23.3	4.7	27.9	2.3	4.7	0	2.3	1.2	2.3	3.5	1.2	1.2
King's College ..	24.6	10.1	5.8	29.0	0	4.3	0	2.9	13.0	0	7.2	2.9	0
The London	22.0	22.0	1.0	35.0	1.0	2.0	0	3.0	0	1.0	8.0	3.0	1.0
The Middlesex ..	19.4	13.9	2.8	34.7	1.4	6.9	1.4	4.2	2.8	4.2	5.6	2.8	0
Royal Free	25.3	11.4	3.8	40.5	5.2	1.3	0	2.6	1.3	0	5.1	3.8	0
St Bartholomew's ..	36.6	19.7	5.6	21.1	0	0	1.4	1.4	1.4	1.4	7.0	2.8	0
St George's	37.2	16.3	7.0	20.9	0	4.7	0	4.7	2.3	4.7	0	2.3	0
St Mary's	31.0	15.5	0	39.4	0	2.8	0	1.4	1.4	1.4	5.6	0	1.4
St Thomas's	27.9	17.6	4.4	33.4	1.5	0	0	1.5	2.9	2.9	4.4	2.9	0
University College ..	25.3	9.9	5.5	28.6	2.2	2.2	0	3.3	0	1.1	14.3	7.7	0
Westminster	27.1	11.9	1.7	25.4	0	3.4	0	1.7	13.6	3.4	5.1	1.7	1.7
Total	22.5	15.9	3.9	32.9	1.4	3.7	0.5	2.6	4.3	1.6	6.4	3.2	0.4

TABLE VI—Sex distribution of responders giving various specialties as first choice of career

First choice of career	Men	Women	Sex not stated	% women (of responders of known sex)
Medicine	347	98	9	22.0
Surgery	290	21	10	6.8
Obstetrics and gynaecology ..	56	22		28.2
General practice	433	226	6	34.3
General practice with other specialty	20	9		31.0
Psychiatry	49	24	1	32.9
Community medicine	3	6	1	66.7
Pathology	27	24	2	47.1
Anaesthetics	62	24		27.9
Radiology	20	11	1	35.5
Other (medical)	47	17		26.6
Paediatrics	68	59	2	46.5
Other (non-medical)	4	4		50.0
Not indicated	16	3		15.8
Total	1442	548	32	27.5

TABLE VIII—Percentages of responders estimating various chances of success in different specialties

	Certain	>75%	<75%	<25%	Total number giving specialty as first choice
Medicine	7	32	46	9	454
Paediatrics	5	38	40	13	129
Surgery	7	40	41	10	321
Obstetrics and gynaecology ..	4	38	37	17	78
General practice	55	40	2	1	665
Psychiatry	20	62	11	3	74
Community medicine	30	20	40	10	10
Pathology	22	43	23	9	53
Anaesthetics	20	71	9	0	86
Radiology and radiotherapy ..	9	72	19	0	32

of the responders rated their success as certain, and 40.5% thought that they had a better than 75% chance, 24.3% less than a 75% chance, and 6.7% less than a 25% chance. Over half of the responders

who gave general practice as their first choice estimated their chances of success as certain (table VIII) compared with less than 10% of those preferring medicine, surgery, obstetrics, and radiology. Despite the large number of responders giving paediatrics as their first choice only 5% felt sure of success.

There was some evidence of variation between medical schools: among Manchester graduates only eight out of 21 preferring medicine considered their chances of success to be certain or above 75%, and likewise only four out of 18 preferring surgery. The comparable estimates of career prospects from King's College Hospital graduates were 11 out of 17 and 5 out of 7 for medicine and surgery respectively. In the case of general practice, 48 out of 52 Manchester graduates felt that they had a certain or better than 75% assured career, and 19 out of 20 King's College graduates felt the same.

Conclusion

The response rate to this inquiry was encouragingly high, but too many conclusions should not be drawn from a single sample of data. We are currently conducting a similar survey of doctors who graduated in 1975 and hope that the high rate of response will be maintained. Further studies will also be made, and we intend to follow up the careers of our original responders to see how their progress relates to their original preferences and intentions.

We are grateful to the deans and all those in the medical schools who supplied lists of names and addresses. We appreciate their interest in the project.

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Statistics at Square One

XVII—Some non-parametric tests

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Values such as the mean and standard deviation that characterise a normal distribution are known as its parameters. Some data that we require to analyse do not conform to a normal distribution. Tests have been devised specially for situations such as this where we do not wish to make any assumption about the nature of the distribution. They are known as non-parametric tests. However, they can be applied also to normally distributed data.

Wilcoxon's rank sum tests

Wilcoxon's rank sum tests¹ are procedures of this kind. Examples of these tests follow, first on paired data (the signed rank test), then on unpaired data (the two-sample test). The Mann-Whitney U test has a similar approach to the problem and gives entirely equivalent results to the Wilcoxon two-sample test.

Dr Rosemary Mauve, a senior registrar in the rheumatology clinic of a district hospital, is studying the possible benefits of a new drug for rheumatoid arthritis. Among other properties its effect on the course of the disease is measured by the concentration of a globulin fraction in the plasma. Twenty patients have been selected for trial of the new drug (treatment B) against a standard form of treatment (treatment A).

Owing to the nature of the disease and its response to treatment

British Medical Journal

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