Middle Articles

MEDICAL EDUCATION

Women Medical Graduates of the University of Birmingham 1959–63

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There have been very few studies of the work and achievements of British women medical graduates. Robb-Smith (1962) recorded what he termed the "fate" of 138 of the 139 women who had graduated from Oxford between 1922 and 1950, and Kahan and MacFaul (1962) gave details of two-thirds of the women who had been students at the Middlesex Hospital during the previous 15 years. Lunn (1964) published information regarding 88% of the 1930–52 women graduates from Sheffield, a medical school which gives a higher-than-average number of its places to women. Data in respect of 87% of the women who trained at the Royal Free Hospital, London, and graduated between 1945 and 1964 have recently been published (Flynn and Gardner, 1969). This contribution is notable not only in respect of the numbers involved, for the Royal Free Hospital is by tradition the major medical school for women, but also for the wealth of detail provided by the research. Another recent paper (Timbury and Ratzer, 1969) records the current work and achievements of 106 of the 137 women who graduated in Glasgow during 1951–4. Surveys by the Medical Women's Federation (Lawrie, Newhouse, and Elliott, 1966) and the Medical Practitioners' Union (Jefferys and Elliott, 1966) have provided information on a national scale regarding approximately three-quarters of women doctors resident in the United Kingdom.

The University of Birmingham maintains a close interest in the careers of its medical graduates and has published information regarding all the women graduating during the years 1948–58 (Whitfield, 1963, 1964a, 1964b). A recent survey of all the 1959–63 graduates has provided further data which reflect changing trends and other factors thought to be relevant to the present climate of shortage of doctors.

Methods

In 1968 a letter was sent to all those graduating in medicine from Birmingham during the years 1959–63 asking them to complete and return a form giving details of their current work and interests. Where necessary a second or third request was dispatched. Nearly all replied and many enclosed supplementary letters giving additional data. Information regarding the few non-respondents was obtained either from their parents or from contemporaries who had maintained close contact with them.

Details of the undergraduate performance of the group were available from university records.

Results

Of the 419 undergraduates who graduated in medicine from Birmingham in the period 1959–63 96 (22.9%) were women. In 1968 70 of the 96 were married.

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The number of women graduating in each year fluctuates, but over the 16 years 1948–63 it averaged 23.3% of the total graduates (see Chart).

Percentage of women among the total graduating in medicine from the University of Birmingham 1948–63.

The applications which the University of Birmingham receives for the places available in medicine cannot be enumerated so precisely, but they are about three-quarters male and one-quarter female, so there is clearly no significant prejudice against female applicants. The undergraduate performance of the women who graduated during 1959–63 was, however, less distinguished than that of the men (Table I). Only 7 (7.3%) of the women were awarded prizes and scholarships as compared with 48 (14.9%) of the men, while the number of prizes and scholarships per graduate was 0.18 for women and 0.25 for men. Almost the same proportion of women (2.1%) as men (2.2%) achieved honours degrees, but more distinctions went to the men. Five (5.2%) of the women obtained a total of nine distinctions as compared with 40 awarded to 29 (9.0%) of the men.

TABLE I.—Prizes, Scholarships, Honours, and Distinctions Obtained by Male and Female Medical Graduates of the University of Birmingham 1959–63

	Prizes and Scholarships				Distinctions		
	Total Obtained	Percentage of Graduates Obtaining	No. per Graduate	Honours. Percentage Obtaining	Total Obtained	Percentage of Graduates Obtaining	No. per Graduate
Males (323)	82	14.9	0.25	2.2	40	9.0	0.124
Females (96)	17	7.3	0.18	2.1	9	5.2	0.094

Higher Qualifications

Thirty-five (36.5%) of the 96 women graduates had in 1968 obtained 41 higher qualifications (Table II). The comparable figures for the 323 men graduating during the same period

were 243 higher degrees and diplomas achieved by 187 (57.9%). The male preponderance is understandable in that higher qualifications are essential for all forms of specialist practice to which women graduates, particularly those who are married, less often aspire.

TABLE II.—*The 41 Higher Qualifications Obtained up to 1968 by the 96 Women Graduating in Medicine from the University of Birmingham 1959-63*

M.D.	1	D.A.	7	D.C.H.	4
B.Sc.	4	F.F.A.R.C.S.	2	D.O.	2
M.R.C.P.	1	D.P.M.	4	D.M.R.D.	1
D.R.C.O.G.	15				

Fifteen of the women graduates had obtained the D.R.C.O.G., four the D.C.H., seven the D.A., and two the F.F.A.R.C.S., reflecting the dominant interest of women doctors in obstetrics, paediatrics, and anaesthetics. A similar trend was shown by the 1948-58 graduates (Whitfield, 1964b).

Place of Work

Of the 96 women graduates one-third were resident in the Birmingham Region in 1968, eight were elsewhere in the Midlands, 42 were scattered over other areas of the United Kingdom, and 14 were abroad. Five were born abroad and had come to Birmingham to study medicine, returning to their own country shortly after graduation. Of the remaining nine, six were thought to be permanent emigrants—two to Canada, one to Australia, one to the United States, one to Hong Kong, and one to Rhodesia. The reasons for emigration were in two instances marriage to non-British subjects, in two marriage to husbands who wished to emigrate, and two unmarried graduates desired to work abroad.

Current Employment

The work which the 96 women graduates were doing in 1968 is shown in Table III. It will be seen that one-third were engaged in general practice—27 in the United Kingdom and five abroad. Of those in this country 13 were working full-time in partnership, five as whole-time assistants, and nine as part-time assistants. The next largest group were those in public health, of whom the majority were working part-time. Anaesthetics was the next most popular sphere of work, and of those in this specialty one-half were devoting their whole time to it. Psychiatry and paediatrics claimed smaller numbers, and the remainder were spread over various other specialties. None were surgeons or gynaecologists and only two were engaged in medicine. One of these, a brilliant Nigerian, was working as an academic physician in her own country, while the other stated that she intended to transfer to radiology in the near future.

TABLE III.—*Sphere of Work in 1968 of 96 Women Graduating in Medicine from the University of Birmingham 1959-63*

	General Practice	Public Health	Anaesthetics	Psychiatry	Paediatrics	Other
No. working whole time	22	6	7	6	3	5
No. working part time	10	10	6	1	1	7

12 women were not working medically.

Four of those who were working part-time were devoting their efforts to family planning, and several others engaged mainly in other disciplines were doing one or two sessions per week in this specialty, which is particularly suitable for women with domestic and family commitments.

The sphere of work of the 1959-63 women graduates is therefore very similar to that of those who graduated in 1948-58 (Whitfield, 1964b), but a striking difference is in those not working medically. In 1963 60 (26.2%) of the 229 1948-58 women graduates were doing no medical work, while in 1968

of the 96 1959-63 women graduates only 12 (12.5%) were medically unemployed.

Many of those who were working only part-time were dissatisfied with their present work and wished to engage in another branch of medicine, but what they were doing was all that was practicable with their current domestic and family responsibilities.

Marriage in some instances also appeared to have precluded the fulfilment of a professional career of brilliant promise. One graduate who achieved six prizes and scholarships and an honours degree and who was awarded two distinctions has obtained no higher qualifications and is engaged in the school medical service and maternity and child welfare, where doubtless she is doing most excellent and valuable work, but her intellectual and personal qualities are sufficient to carry her to the heights of the profession.

Wastage

In addition to the 419 men and women who obtained qualifying medical degrees from Birmingham in the years 1959-63 there were another 42 who should have graduated during this period but who did not complete the course—33 men and 9 women—so undergraduate wastage, while considerable (9.1% of the total intake), was not disproportionately high among the women. Thirty-six (28 men and 8 women) were required to withdraw or withdrew voluntarily because of repeated examination failure, the remaining woman gave up to get married; while of the other five males three transferred to dentistry, one committed suicide, and one suffered a severe psychiatric illness.

All surviving males graduating during 1959-63 were in 1968 fully employed in some branch of medicine, except two who were practising dentistry. Of the 96 women all those still unmarried were working full-time. Of the married graduates 12 were doing no medical work and 35 were working only part-time (Table IV). If these 35 were contributing one-half of their time to medicine, which is a very generous estimate, the current loss to medicine represents 7% of the total output of the Birmingham Medical School. While this proportion is small it is of importance in the present situation of shortage of doctors in the United Kingdom.

TABLE IV.—*1968 Work Status of Male and Female Medical Graduates of the University of Birmingham 1959-63*

	No.	Working Full Time	Working Part Time	Not Working Medically
Surviving males*	321	321†	0	0
Unmarried women graduates	26	26	0	0
Married women graduates	70	23	35	12

* Two of the male graduates had been killed in traffic accidents.

† Two are practising dental surgery.

The reason for not working medically or for working only part-time was almost exclusively the responsibility for young children. A few medical mothers preferred looking after their children to working as a doctor. Most, however, wished to do whole-time medical work but found it impossible because of the difficulty in procuring someone to look after their family while they were working, and, if such help was available, paying the high wages, the national insurance contributions, and the selective employment tax. If the married woman doctor does work her own earnings are added to those of her husband's for tax purposes, and the net reward commonly falls far short of that which is required to provide an adequate domestic substitute. Nevertheless, medicine is a satisfying and compelling profession, and many women graduates are successfully combining motherhood with a valuable contribution to the National Health Service. Many of those not currently employed or working only part-time will doubtless return to full-time work as their children get older, and the proportion of women medical graduates of the University of Birmingham

who are not working medically has fallen significantly in recent years (Whitfield, 1964b).

Many women doctors whose children are grown up, however, do no medical work. The reasons are thought to be chiefly because with our present system of taxation it is not economically worth while, but a few feel reluctant to re-enter a profession which is advancing so rapidly and from which they have so long been disengaged. In 1966 an offer was made to all women medical graduates in the Birmingham Region who were medically unemployed to find them any work they might wish to do, and, if necessary, to train them for it without fee. There was virtually no response.

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CONFERENCES AND MEETINGS

Current Aspects of Cardiology

[FROM A SPECIAL CORRESPONDENT]

A three-day symposium on current aspects of cardiology, arranged by the Institute of Cardiology, was held at the Royal College of Physicians from 16 to 18 June. At the opening session, under the chairmanship of Dr. WALLACE BRIGDEN (National Heart Hospital, London), the natural history of ischaemic heart disease was outlined by Dr. WALTER SOMERVILLE (Middlesex Hospital, London). He first criticized the imprecision of the term, which was unsatisfactory because the causes of myocardial ischaemia included such varied conditions as aortic valve disease, syphilitic stenosis of the coronary ostia, coronary embolism, severe anaemia, and thyrotoxicosis as well as coronary arteriosclerosis. Though they were normal at birth, the coronary arteries began to show changes soon afterwards, and these were more in some ethnic groups than others. This suggested that genetic factors were primarily responsible, but environmental influences might play an additional part.

Continuing, Dr. Somerville pointed out that freedom from ischaemic symptoms during the first three or four decades of life did not mean that the coronary arteries were healthy. Occlusive but asymptomatic coronary disease had been found in a high proportion of U.S. casualties in the Korean war, and more recently by Mason at the Royal Air Force Institute of Pathology at Farnborough in Hampshire. Among 30 Air Force personnel aged 19–24 dying from non-coronary causes the incidence of occlusive coronary changes had been only 3%, but this rose to 13% in the 25–30 age group, then to 46% at 31–36, reaching 100% in four men in their late 30s. The degree of occlusion could be severe at this age. Obstruction of over three-quarters of the vessel lumen had been found in both the pilot and co-pilot of a crashed aircraft.

Discussing the "coronary epidemic," Dr. Somerville questioned the reliability of the data on which this widely accepted concept was based. According to published figures, the almost fourfold increase in deaths from

coronary heart disease between 1940 and 1960 had been largely counterbalanced by a two-thirds decline in deaths from "other myocardial degeneration" during the same period. Apart from an increase due to the rising average age of the population, the coronary epidemic might be explained by changes in classification and wider use of the terms coronary thrombosis and ischaemic heart disease.

In reply to a question from Professor PETER HARRIS (Institute of Cardiology, London) about the relation between thrombosis and infarction Dr. Somerville said that thrombotic coronary occlusion was demonstrated in only about half of necropsies following death from myocardial infarction. Some infarcts might be caused by other, as yet unrecognized, conditions; and Dr. BRIGDEN emphasized that the demonstration of coronary thrombus depended on the timing of the post-mortem examination and the care with which it was carried out.

Inheritance of Coronary Artery Disease

Positive evidence for the major role of inheritance in the aetiology of coronary artery disease was presented by Professor HENRY NEUFELD (Tel-Aviv University Medical School, Israel) at a later session. In a necropsy study of 211 infants and children without known heart disease he had found histological changes in the walls of the coronary arteries from the first day of life onwards. These changes were very much more definite in male infants of the Ashkenazim (Jews of western and central European origin known to suffer very frequently from coronary disease) than among Yemenite Jews or the Bedouin.

The characteristic changes particularly observed in Ashkenazy boys started with splitting of the internal elastic membrane, possibly caused by increase in the systemic blood pressure at birth. By two weeks this splitting was more appreciable, and was accompanied by fibroblast proliferation and the appear-

ance of radially disposed muscle fibres. Between 2 and 7 months a musculo-elastic layer built up in the split internal elastic membrane, and other changes included intimal proliferation and fibrosis, mucopolysaccharide deposits, and development of an external elastic membrane. The coronary arteries of some Ashkenazy boys of under 10 showed atheromatous plaques and narrowing of the lumen resembling those seen in a 60-year-old man with severe coronary disease.

Professor REGINALD HUDSON (Institute of Cardiology, London) thought that evolutionary changes in coronary arteries were primarily determined by race. Environmental factors were secondary; babies did not smoke or suffer from hypertension, though they did ride everywhere and ate a diet saturated with animal fats. It was mentioned in discussion that bottle-feeding was increasing rapidly among the Ashkenazim, whereas breast-feeding was still almost universal among the Yemenite Jews and the Bedouin.

One other "environmental" factor—the effect of early hypertension on the coronary arteries—was also reported by Professor Neufeld. In children with coarctation of the aorta he had found thickening of the media and other changes, one 5-year-old boy with coarctation showing severe intimal changes, plaque formation, and calcification. Very early surgery was therefore indicated for coarctation. Turning to other environmental factors, speakers were on the whole sceptical that physical exercise protected from cardiac infarction, though Professor HERBERT GRISWOLD (University of Oregon Medical School, U.S.A.) reported that infarct patients who were physically fit had a fourfold better chance of survival than the unfit.

Evaluation of Angina

The need for objective methods to evaluate the severity of angina and the effectiveness of therapy was brought out by several speakers.