

MEDICAL EDUCATION

Some Social Characteristics of Students in Canadian Medical Schools, 1965-66

D. G. FISH, Ph.D.,* C. FARMER, M.A.† and
R. NELSON-JONES, Ph.D.,‡ *Ottawa, Ont.*

THIS paper aims to provide a descriptive analysis of some social characteristics of students enrolled in Canadian medical schools during the 1965-66 academic year. The three characteristics upon which attention is focused are the size of community in which the medical students spent their high school years, the educational level of their parents and the occupational status of their parents.

Descriptive analyses of social characteristics of medical students perform three functions: (1) validation of "folklore", (2) monitoring the participation of social groups in higher education and (3) prediction of behaviour and attitudes of medical students.

1. Validation of "Folklore"

It appears to be a widely held belief that doctors are an élite group in society, recruited largely from families of physicians and from the higher socioeconomic classes. Since such a belief has important implications for recruitment for the profession and for relationships between doctors and patients, it seems important to establish its empirical basis.

2. Monitoring the Participation of Social Groups in Higher Education

To the extent that modern society subscribes to the principle of universal accessibility of higher education for those capable of benefiting by it, it is necessary to monitor the participation rate of various social groups in the higher educational system.

All previous studies have shown that there is a tendency for the urban and upper social groups (whether measured by education or parental occupation) to be over-represented in

the medical student population. For example, the Report of the Royal Commission on Health Services commented on the relative lack of representation in Canadian medical schools of students from rural areas and the smaller urban centres.¹ The Commission also reported a disproportionate number of students in Canadian medical schools drawn from the occupational middle and upper classes relative to the occupational structure of the Canadian population. Approximately half of the Canadian-born medical students came from the socioeconomic groups of owners and proprietors, managers and superintendents and professional occupations.

Several studies in the United States have confirmed the impression that medical students are drawn disproportionately from the higher income and professional occupation groups. For example, Rosinski² measured social class by occupation of fathers at four representative American medical schools and found that 12.5% of the students examined came from the lower classes, whereas 54% of the total United States population could be thus classified. Becker *et al.*,³ reporting on a study of 62 medical students at the University of Kansas in 1957, found that 64.5% of the fathers of these students had had some college education. They also examined the occupational status of the fathers and found that 19% were doctors of medicine, 16% were executives or entrepreneurs, and a further 16% were "other professionals".

3. Prediction, Behaviour and Attitudes of Medical Students

Social-science literature is replete with studies of the behavioural and attitudinal correlates of various indices of social class and social status. It can be hypothesized, therefore, that the social characteristics and particularly the social status of medical students is predictive of their career choices within the field of medicine, their medical-school performance, their relationship with their peers and faculty and of their performance and location in practice. For instance Weiskotten

*Director of Research, Association of Canadian Medical Colleges.

†Assistant Professor of Sociology, Carleton University, Ottawa, Ontario.

‡Research Associate, A.C.M.C.

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Reprint requests to: Dr. D. G. Fish, Director of Research, Association of Canadian Medical Colleges, 151 Slater Street, Ottawa 4, Ontario.

*et al.*⁴ found that medical school graduates in the United States tend to practise in communities of the same size as those in which they resided before graduation.

METHOD

The data examined in this paper were collected by means of a questionnaire sent in February 1966 to all students then enrolled in Canadian medical schools. Information was elicited on the following items: age, sex, ethnic origin, religion, marital status, place of birth, community of residence during high school, educational level of parents and occupational status of parents.

There were 3415 respondents to the questionnaire, representing a response rate of 84.9%.^{*} There were some variations in response rate both among medical schools and among students in the different class years. For instance, while the response rate for first-year students was 100%, the response rate for fourth-year students was 69.3%. One reason for this difference was the greater difficulty experienced in contacting students during their clinical years than during their basic years.

The returns to the A.C.M.C. questionnaire were compared with data on community size, educational level and occupational status collected for the Canadian population in the June 1961 census. Changes in the Canadian population during the period between the census and the present survey of medical students do not, in any large measure, alter the findings of this study.

FINDINGS

Size of Community

Table I shows that (using the 1961 census definition of "urban" as a community of 1000 or over in population) 91.6% of 1965-66 medical students spent their high-school years in urban as opposed to rural communities. Since the 1961 census showed that 69.6% of the Canadian population lived in urban communities, the difference between the medical student and Canadian population figures demonstrates that a relatively large proportion of medical students spent their high-school years in urban communities.

^{*}Some discrepancies occur in the totals given in the tables in this paper since the figures represent the number of respondents who answered a given question and not the total number of respondents. Foreign students comprised 7.7% of the respondents. They have been included in the comparisons with the Canadian population, but it is not believed that they influence the general tenor of the findings.

TABLE I.—COMPARISON BETWEEN RURAL—URBAN RESIDENCE OF MEDICAL STUDENTS IN CANADA (1965-66) DURING THEIR HIGH-SCHOOL YEARS AND THAT OF THE CANADIAN POPULATION IN 1961

	Urban residence† %	Rural residence‡ %	Total %
Student respondents... (N =).....	91.6 (3063)	8.4 (280)	100.0 (3343)
Canadian population 1961*.....	69.6	30.4	100.0

*Source: 1961 Census of Canada.
†"Urban" is defined in the census as residence in communities of 1000 or over.
‡"Rural" is defined in the census as residence in communities under 1000 in population.

Table II breaks down the urban category of community into five sub-categories. The proportion of medical students who spent their high-school years in communities in each of these size categories is similar to the proportion of the Canadian population in these categories. This is perhaps somewhat surprising in that one might

TABLE II.—COMPARISON BETWEEN MEDICAL STUDENTS IN CANADA (1965-66) WHO REPORTED URBAN RESIDENCE DURING THEIR HIGH-SCHOOL YEARS AND URBAN RESIDENCE OF THE CANADIAN POPULATION IN 1961 BY COMMUNITY SIZE

	Urban community size					Total urban %
	100,000+ %	30,000- 99,999 %	10,000- 29,999 %	5000- 9999 %	1000- 4999 %	
Student respondents.. (N =).....	56.6 (1735)	14.5 (445)	12.1 (370)	5.9 (181)	10.8 (332)	100.0 (3063)
Canadian population 1961*.....	62.4	13.4	8.3	4.6	11.2	100.0

*1961 Census of Canada.

have expected a disproportionate number of medical students to be drawn from the very large cities, and particularly from the cities in which the medical schools are located. It seems clear that it is only the rural communities which do not produce a proportionate number of medical students.

TABLE III.—COMPARISON BY PROVINCE AND SCHOOL BETWEEN STUDENTS IN CANADA (1965-66) WHO REPORTED URBAN RESIDENCE DURING THEIR HIGH-SCHOOL YEARS AND URBAN RESIDENCE OF THE CANADIAN POPULATION IN 1961

School	(N)	%	Province	Per cent of urban population %	Difference between population and medical students %	
British Columbia.....	(182)	94.3	British Columbia.....	72.6	21.7	
Alberta.....	(258)	86.2	Alberta.....	63.3	22.9	
Saskatchewan.....	(89)	74.7	Saskatchewan.....	43.0	31.7	
Manitoba.....	(187)	89.4	Manitoba.....	63.9	25.5	
Western Ontario.....	(209)	87.8				
Toronto.....	(545)	96.9	93.4 Ontario.....	77.3	16.1	
Queen's.....	(195)	91.9				
Ottawa.....	(173)	91.5				
McGill.....	(313)	94.8	93.9 Quebec.....	74.3	19.6	
Montreal.....	(333)	91.2				
Laval.....	(374)	95.6				
Dalhousie.....	(205)	86.8	New Brunswick.....	46.5	49.8	35.0
			Nova Scotia.....	54.3		
			Prince Edward Island.....	32.4		
			Newfoundland.....	50.7		

TABLE IV.—DISTRIBUTION OF MEDICAL STUDENTS IN CANADA BY MEDICAL SCHOOL (1965-66) ACCORDING TO SIZE OF COMMUNITY IN WHICH THEY SPENT THEIR HIGH-SCHOOL YEARS

Medical school	Community size						Total %	Total (N)
	Under 1000 %	1000- 4999 %	5000- 9999 %	10,000- 29,999 %	30,000- 99,999 %	100,000+ %		
British Columbia.....	5.7	10.4	4.2	13.5	13.5	52.9	100.0	(193)
Alberta.....	13.8	14.1	2.7	8.4	5.4	55.9	100.0	(299)
Saskatchewan.....	25.3	21.9	2.6	12.7	10.1	27.8	100.0	(119)
Manitoba.....	10.6	9.1	5.3	5.3	5.3	64.6	100.0	(209)
Western Ontario.....	12.2	8.5	5.5	10.6	18.1	45.4	100.0	(238)
Toronto.....	3.1	6.3	3.6	5.7	9.1	72.5	100.0	(562)
Queen's.....	8.1	10.9	9.5	12.8	25.5	33.5	100.0	(212)
Ottawa.....	8.5	11.2	4.3	10.6	14.9	50.8	100.0	(189)
McGill.....	5.2	4.9	4.6	8.2	12.8	64.6	100.0	(330)
Montreal.....	8.8	5.3	4.4	11.6	8.8	61.4	100.0	(365)
Laval.....	4.4	13.8	9.7	20.5	18.9	33.0	100.0	(392)
Dalhousie.....	13.2	15.7	8.9	17.4	23.8	21.2	100.0	(236)
Total medical students.....	8.4	9.9	5.4	11.1	13.3	51.9	100.0	(3344)

A comparison which breaks down the national figures on community size by medical school and province is given in Table III. Here it may be seen that the largest differences between the urban composition of the provincial population and that of the provincial medical student body occur in Saskatchewan and the Atlantic Provinces.* These are the two areas with the lowest proportions of urban population in Canada. Conversely, the two provinces with the highest proportions of urban population—namely Ontario and Quebec—are also those with the smallest differences. These findings provide additional evidence that rural residence makes it less likely that the student will participate in a medical education compared to his urban peers.

The percentage of students at the individual Canadian medical schools whose high-school background was in communities of various sizes may be seen in Table IV. Saskatchewan drew 47.2% of its enrolment from students whose high-school backgrounds were in communities of under 5000 population; Dalhousie and Alberta drew 28.9% and 27.9% respectively from such communities. Toronto, Manitoba, McGill and Montreal, on the other hand, each enrolled over 60% of students whose high-school years were spent in communities of 100,000 population and over.

Educational Level of Parents

Table V provides data on the educational level of both parents of medical students and relates them to the educational level of the Canadian population in the 40 to 69 age bracket.† It was found that 38% of the medical students' fathers

had some university education, whereas the corresponding figure for the 40- to 69-year-old Canadian population as a whole was 7.5% and for urban residents only it was 9.5%.

The mothers of medical students had also attained a higher educational level than the general 40- to 69-year-old female Canadian population. For example, whereas 58.9% of mothers of medical students had had some secondary education and 19.5% some university education, the corresponding figures for the 40- to 69-year-old female Canadian population were 45.1% and 4.6% respectively.

TABLE V.—COMPARISON BETWEEN THE EDUCATION OF PARENTS OF MEDICAL STUDENTS IN CANADA (1965-66) AND THE CANADIAN MALE AND FEMALE POPULATION 40 TO 69 YEARS OF AGE

	No schooling to complete elementary %	Some secondary to complete secondary %	Some university or university degree %	Total
	Students' fathers..... N =.....	23.5 (780)	38.5 (1287)	
Education of Canadian male to population 40 to 69 years, 1961.....	55.8	36.7	7.5	100.0
Urban* residents only..	48.6	41.9	9.5	100.0
Students' mothers..... N =.....	21.6 (719)	58.9 (1965)	19.5 (648)	100.0 (3332)
Education of Canadian female population 40 to 69 years, 1961.....	50.3	45.1	4.6	100.0
Urban† residents only..	46.1	48.7	5.2	100.0

*Canadian males, 40 to 69, urban residence, 1961.
†Canadian females, 40 to 69, urban residence, 1961.

Occupational Status of Parents

Table VI compares the occupations of fathers of medical students in Canada with those of males in the Canadian labour force. The labour force data come both from the 1961 census and from an occupational survey conducted in 1965 by the Dominion Bureau of Statistics.⁵ Over 35% of the students' fathers were categorized as professionals, compared with 7.6% of the Canadian

*Dalhousie has assumed responsibility traditionally for the education of Atlantic Province medical students.
†This age bracket was chosen on the assumption that few of the parents would be under 40 or over 70 years of age.

TABLE VI.—COMPARISON BETWEEN OCCUPATIONS OF FATHERS OF MEDICAL STUDENTS IN CANADA (1965 - 66) AND THOSE OF MALES IN THE CANADIAN LABOUR FORCE

Occupation	Students' fathers		Males in labour force	
	N	%	1961*	1965†
Physicians.....	368	11.2	0.4	
Dentists.....	30	0.9	0.1	
Other health professionals.....	57	1.7	0.4	
Total health professionals.....	455	13.8	0.9	
Other professionals...	699	21.3	6.7	
Total professionals.....	1154	35.2	7.6	9.3
Non-professionals....	2120	64.8	92.4‡	90.7
Total.....	3274	100.0	100.0	100.0

*Source: 1961 Census of Canada—males 15 years and over.

†Estimate of males 15 years and over in Canadian labour force—12-month average, 1965. Special table, Dominion Bureau of Statistics, Ottawa.

‡Includes 2.6% "not stated".

labour force in 1961 and 9.3% in 1965. The proportion of students' fathers who were physicians (11.2%) was higher than the proportion of professionals in all categories in the Canadian labour force. This finding tends to support the hypothesis that the sons of doctors have a higher probability of becoming doctors than those of any other parental occupation.

Data on the occupational status of fathers is provided in Table VII. Approximately 60% of

TABLE VII.—COMPARISON BETWEEN TYPE OF OCCUPATION OF FATHERS OF MEDICAL STUDENTS IN CANADA (1965-66) AND THAT OF MALES IN THE CANADIAN LABOUR FORCE

Type of occupation	Students' fathers		Males in labour force*	
	N	%	1961 %	1965† %
Managerial.....	846	25.8	10.2	11.6
Professional and technical.....	1154	35.2	7.6	9.3
Clerical.....	89	2.7	6.9	6.6
Sales.....	217	6.6	5.6	6.3
Service and recreation.....	88	2.7	8.6	6.8
Transportation and communication....	110	3.4	7.5	8.2
Farming.....	249	7.6	12.2	11.0
Logging, fishing and mining.....	22	0.7	3.8	3.1
Crafts.....	409	12.5	28.8	30.6
Labouring.....	90	2.8	6.2	6.5
Not stated.....	—	—	2.6	—
All occupations.....	3274	100.0	100.0	100.0

*Fifteen years of age and over.

†Estimate of males 15 years and over in Canadian labour force—12-month average, 1965. Special table, Dominion Bureau of Statistics, Ottawa.

TABLE VIII.—COMPARISON BETWEEN PROFESSIONAL QUALIFICATIONS HELD BY MOTHERS OF MEDICAL STUDENTS IN CANADA (1965-66) AND THE PROFESSIONAL OCCUPATIONS OF FEMALES IN THE CANADIAN LABOUR FORCE

Occupation	Qualifications held by students' mothers		Occupations of females in labour force	
	N	%	1961*	1965†
Physicians.....	19	0.6	0.1	
Dentists.....	1	0.03	0.01	
Nurses.....	260	7.8	3.4	
Other health professionals.....	40	1.2	2.0	
Total health professionals.....	320	9.5	5.5	
Teachers.....	441	13.2	7.1	
Other professionals...	50	1.5	2.8	
Total professionals.....	811	24.2	15.4	16.4
Non-professionals....	2539	75.8	84.6‡	83.6
Total.....	3350	100.0	100.0	100.0

*Source: 1961 Census of Canada—females 15 years and over.

†Estimate of females 15 years and over in Canadian labour force—12-month average, 1965. Special table, Dominion Bureau of Statistics, Ottawa.

‡Includes 2.4% "not stated".

the students' fathers were classified in either the managerial or professional and technical categories, whereas the corresponding figure for the Canadian labour force was in the region of 20%. On the other hand, craftsmen comprised some 30% of the Canadian labour force, whereas only 12.5% of the students' fathers were thus classified.

Table VIII provides information on the professional qualifications held by the medical students' mothers. Here it may be seen that 9.5% were classified as holding qualifications in the health professions and a further 13.2% as possessing teaching qualifications. The table shows that 5.5% and 7.1% of the total female Canadian labour force were occupied in the health professions and teaching, respectively.

DISCUSSION

The major findings of this study can be stated as follows: (1) a disproportionately high percentage of medical students spent their high-school years in urban as compared to rural communities; (2) both the mothers and fathers of the medical students had attained a higher educational level than the male and female Canadian population at large, and (3) there was a much higher percentage of medical students' fathers in the managerial and professional categories than in the overall male Canadian labour force.

If all medical students were to take up practice in communities of the size in which they spent their high-school years (and the findings of Weiskotten and his associates⁴ indicate a tendency in this direction), it could be argued that rural communities in Canada are likely to be underpopulated with doctors. The impact of this situation, however, may be mitigated by the continuing population shift to urban areas. Nevertheless, whether Canadian medical schools, particularly those in provinces with large rural populations, might be well advised to intensify their recruitment efforts in rural areas, is a matter which merits further consideration.

The findings concerning the high educational level and occupational status of medical students' parents, relative to the population at large, corroborate the findings of the Royal Commission on Health Services,¹ Rosinski² and Becker and associates.³ They indicate that the opportunities for entering medical school are not the same for students from various social classes. This, however, does not necessarily imply that medical school admission committees are biased in favour of selecting applicants from the middle and upper social classes. Rather it may be the case, as Rosinski states, that the schools:

" . . . merely select the best from the applicant pool . . . (and) . . . in that pool the number from the wealthier group, ergo, the higher social classes is greater. The number of superior students from the lower social classes is not large because too many obstacles are placed before them in their search for a medical career."²

Many factors restrain socioeconomically disadvantaged students from entering the medical profession. These include the relative intellectual poverty of their homes, their frequently in-

adequate high-school preparation, low occupational aspirations, lack of information about the profession, feelings of insecurity in regard to the personal as well as intellectual aspects of a college experience, and lack of financial and motivational ability to tolerate the deferred gratification entailed in training for the medical profession.

While medical schools cannot be expected to remove all these restraints, it is conceivable that the entry of disadvantaged students into the medical profession could be eased. Three ways in which this might be possible are: by ensuring that there is adequate provision of information about medical schools and the medical profession to rural and disadvantaged students and their counsellors; by ensuring the availability of adequate financial aid; and by maintaining flexibility with respect to requirements for admission to medical school, so that students with unconventional social and educational backgrounds can be accommodated.

Recent applicant research by the A.C.M.C.⁶ indicates that some Canadian medical schools face a shortage of qualified applicants. Intensified recruitment effort among rural students and among students from the disadvantaged social classes may serve both the interests of the schools in filling their places and the cause of social justice in moving towards universal accessibility.

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