# Career choices, work patterns and perceptions of undergraduate education of McMaster medical graduates: comparison between men and women

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**A survey of the first six classes to graduate from McMaster University's medical school was carried out 5 years after graduation for the classes of 1972 to 1974 and 2 years after graduation for the classes of 1975 to 1977. Although the men and women entered similar fields of medicine the women were more likely to have taken time away from work and to be working fewer hours, and more women than men were influenced by their spouses in their career choices. More women than men expressed some dissatisfaction with the 3-year undergraduate program, and more women identified the "anxiety level created" as a weakness of the program. The women compared their preparation for the first year of postgraduate training with that of other trainees somewhat less favourably than did the men.**

**Une enquête portant sur les six premières promotions reçues à l'école de médecine de l'université McMaster a été réalisée 5 ans après la sortie des promotions de 1972 à 1974 et 2 ans après la sortie des promotions de 1975 à 1977. Bien que les hommes et les femmes se soient dirigés vers des champs similaires de la médecine, les femmes étaient plus susceptibles d'avoir pris congé du travail ou d'avoir un horaire de travail réduit, et plus de femmes que d'hommes avaient été influencées par leur conjoint dans leur choix de carrière. Plus de femmes que d'hommes exprimaient une certaine insatisfaction du programme d'études de 3 ans, et plus de femmes identifiaient le "niveau d'anxiété créée" comme étant une faiblesse du programme. Les femmes comparaient quelque peu moins favorablement que les hommes leur préparation pour la première année d'internat par rapport à celle d'autres internes.**

The proportion of women graduating from Canadian medical schools has increased from 7% in 1960 to 12% in 1970 and 32% in 1980.[1] On the basis of the proportion of women being admitted to medical school this increase is expected to continue. If women select specialties or practice patterns different from those selected by men the increasing proportion of women physicians may affect the nature and quantity of available medical care.

The proportion of women in the medical undergraduate program at McMaster University in Hamilton, Ont. has increased more rapidly than that in all other Canadian medical schools as a whole. Only two women (11%) were in the first graduating class, in 1972, but by 1978 half the graduating students were women, and since then the proportion has remained close to half. The effects of this change on the physician population are now being questioned at McMaster University.

McMaster's medical undergraduate program is not traditional: it is a 3-year program that uses a problem-solving approach, integrating relevant disciplines. The students usually work in small groups and are, to an important extent, self-directed.[2] It is widely accepted that while medical school is stressful for most students it is particularly so for women. Since many students enrol in the McMaster medical program after more conventional undergraduate experiences their need to adapt to a new approach to learning may create additional stress.

The men and women medical graduates of McMaster University's first six classes (from 1972 through 1977) have provided information that has enabled us to compare them in three areas in which differences were expected on the basis of studies done elsewhere. These areas are medical field of choice, family and social influences on choice of medical field, practice type and location, and stress during medical education.

## Method

A pretested questionnaire was sent to all students of the medical classes of 1972 to 1974 5 years after they graduated and to those of the classes of 1975 to 1977 2 years after they graduated. Many of the items on career choices and preferences were adapted from questionnaires used in the 1976 follow-up of the Association of American Medical Colleges longitudinal study of the class of 1960[3] and the study of Canadian medical graduates of 1965.[4]

Data were examined for the items relating to field of choice, influence of lifestyle on that choice and on the choice of practice pattern and location, and perceptions of the undergraduate and postgraduate medical education received.

The differences between the men and women were considered to be significant if P was 0.05 or less.

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## Results

There were 254 men and 104 women in the six classes studied; 232 men (91.3%) and 86 women (82.7%) (P = 0.030) responded to the questionnaire, for a response rate of 89%. No correction has been made for the somewhat lower response rate among the women.

All of the women and all but two of the men reported that they were currently active in the medical profession; the other two men had just completed their training and had not yet started to practise.

### *Field of choice*

The fields used for the comparisons were primary care (family and general practice), internal medicine (and its subspecialties), surgery (general surgery and surgical subspecialties), emergency medicine, obstetrics and gynecology, pediatrics and psychiatry. Of the 318 respondents 91.2% reported that they were actively involved in one of these fields; there were no significant differences between the proportions of men and women entering any of these fields.

### *Influence of lifestyle on field of choice*

*Duration of professional training and practice, and practice pattern:* The men and the women were equally likely to choose to complete a residency program; in addition, those who entered primary care were equally likely to have completed a family practice residency program. The proportions of men (46%) and women (38%) who selected short residency programs in family practice, general practice and emergency medicine were not significantly different. Among the men and women graduates who were still in training, the number of years they planned to continue training and the frequency with which they identified the length of residency as an important factor in their choice of field did not differ.

The certification status and plans for certification did not differ significantly between men and women, although a higher proportion of men were or intended to become certified (Table I). This finding is reflected in the proportions certified or intending to seek certification by the Royal College of Physicians and Surgeons of Canada (38.8% of men, 25.6% of women; P = 0.039), but not in the corresponding proportions for certification in family medicine, which were nearly equal (22.1% and 15.6% respectively).

Since their graduation from medical school more women (24.4%) than men (7.7%) (P < 0.001) had taken time away from professional activities. However, the length of time taken did not differ between the sexes. Although more women with children (34.5%) than those without (19.2%) took time away from work, the difference was not significant given the small numbers. The most common reason given for taking time off by both men and women was to travel.

Among the graduates who had started to practise we found no difference in the proportions of men and women selecting solo, group or other kinds of practice, or in the proportions who chose to practise full time rather than part time or as locum tenens. However, our numbers for these comparisons were small. Nevertheless, we found that women were more likely to work fewer than 40 hours per week and less likely to work 60 hours or more per week (Table II).

*Factors influencing choice of field and practice location:* The respondents were asked to indicate which of 11 factors had been important in determining their choice of field. The same two factors, "personal challenge" and "positive clinical experience(s) in the field", were most often cited by both men and women. However, women selected "positive clinical experience(s) in the field", "working hours" and "influence of

Table I—Proportions of men and women who were or intended to become certified*

| Variable | No. (and %) of respondents† | |
|---|---|---|
| | Men, n = 208 | Women, n = 77 |
| Certified | 71 (34.1) | 13 (16.9) |
| Intending to become certified | 109 (52.4) | 34 (44.2) |
| Not intending to become certified | 28 (13.5) | 30 (39.0) |

*Thirty-three respondents did not answer this question.
†Certified v. not certified $\chi_1^2 = 7.74$, P = 0.005; and certified and intending to become certified v. not intending to become certified $\chi_1^2 = 22.54$, P < 0.001.

Table II—Number of hours worked per week by men and women in practice*

| No. of hours per week | No. (and %) of respondents in practice† | |
|---|---|---|
| | Men, n = 128 | Women, n = 39 |
| < 40 | 4 (3.1) | 9 (23.1) |
| 40–59 | 48 (37.5) | 21 (53.8) |
| ≥ 60 | 76 (59.4) | 9 (23.1) |

*Six respondents did not answer this question.
†Less than 40 hours v. 40 hours or more $\chi_1^2 = 14.33$, P < 0.001; and less than 60 hours v. 60 hours or more $\chi_1^2 = 15.76$, P < 0.001.

Table III—Factors influencing choice of field and practice location of men and women

| Factor* | No. (and %) of times cited as important | |
|---|---|---|
| | Men, n = 232 | Women, n = 86 |
| Personal challenge | 187 (83.9) | 70 (85.4) |
| Positive clinical experience(s) in the field† | 161 (71.6) | 71 (82.6) |
| Working hours‡ | 66 (30.3) | 39 (47.6) |
| Length of residency | 64 (28.8) | 32 (39.5) |
| Influence of spouse§ | 29 (13.4) | 22 (27.2) |

*Important v. not important: †$\chi_1^2 = 4.82$, P = 0.028; ‡$\chi_1^2 = 7.08$, P = 0.008; and §$\chi_1^2 = 6.97$, P = 0.008.

spouse" significantly more often than men (Table III). Significantly more ($P < 0.001$) women than men had never married.

The respondents were also asked to identify which of 21 factors had been important in determining their choice of practice location and to rank the three most important. The same three factors, "climate–geographic", "preference for urban or rural living" and "influence of spouse", were most often cited by both men and women. Again, "influence of spouse" was more often important, though not significantly so, for women than for men.

*Perceptions of medical education*

Several items in the questionnaire dealt with the length of the undergraduate program (3 years). Men were more likely than women to prefer a 3-year rather than a 4-year program and to report no disadvantages from having completed the program in 3 years (Table IV).

The graduates were then asked about the type of 3- or 4-year program they would find most appealing if they were to begin medical school again. Again, more men (85%) than women (74%) ($P = 0.035$) said they would select a 3-year program, and more men (73%) than women (58%) ($P = 0.01$) said they would select the McMaster program rather than a more structured medical curriculum.

The respondents were asked to classify 17 aspects of the undergraduate program as either strengths or weaknesses. We found no differences in the answers of the men and women for 16, but more women (64.0%) than men (44.3%) ($P = 0.003$) identified "anxiety level created" as a weakness.

Table IV—Opinions of men and women about the 3-year undergraduate program

| Variable* | No. (and %) of graduates | | Significance of difference |
|---|---|---|---|
| | Men | Women | |
| Preferred 3-year rather than 4-year program† | 190 (84.8) | 60 (70.6) | $\chi^2_1 = 7.18$, $P = 0.007$ |
| Found no disadvantages from having completed 3-year program‡ | 87 (42.0) | 20 (24.4) | $\chi^2_1 = 7.10$, $P = 0.008$ |
| Advantages from having completed 3-year program outweighed disadvantages§ | 181 (83.8) | 62 (76.5) | |

*Numbers not answering the question: †8 men and 1 woman, ‡25 men and 4 women and §16 men and 5 women.

In assessing their overall preparation for their first postgraduate year the men were more likely than the women ($P = 0.034$) to consider themselves better prepared than other trainees.

When the respondents were asked to rate their satisfaction with what they were currently doing in medicine and with the decisions they had made about the sequence and type of their postgraduate training, more than 85% of the men and women reported that they were "very satisfied" or "satisfied" in both areas.

A more detailed analysis of the graduates' opinions of the McMaster curriculum can be found elsewhere.[5]

## Discussion

The men and women graduates of McMaster University's first six medical classes seemed to choose the same fields of medicine. Recent studies in the United States have shown that women physicians are no longer choosing the fields they formerly chose[6,7] (M.P. Wilson: personal communication, 1979). In the past the only consistently detected determinant of career choice was sex. For example, women were more likely than men to select pediatrics and psychiatry. Now, increasing numbers of women are entering family medicine and internal medicine, although, generally, disproportionately low numbers are entering surgery and its subspecialties. A study of one medical school in the United States has shown that, while a small proportion of women (4.7%) entered a surgical specialty, a much larger proportion (15%), judged on preference alone, would have selected surgery;[8] this is the largest discrepancy between choice and preference for any of the specialties examined. The proportions of the men and women in our study, even of those in surgery, did not differ; the numbers were small, and only large differences would have been statistically significant.

The results of our study suggest that the increasing proportions of women graduates may not affect the distribution of new graduates among the various specialties. The men and women entered similar fields, and their career choices were equally influenced by the length of postgraduate training. However, it appears that women physicians will still choose careers that allow them to work shorter hours than men. Earlier studies in Canada showed that women were more likely than men to be working part time, but that only a small proportion of the women did not work at all.[9-11] A study of the graduates of the 1962 class of the University of Toronto 15 years after they had entered medical school suggested that the proportion of physicians working less than full time may not be very much higher for women than for men.[10] That women work fewer hours per week soon after graduation may not be an accurate indication of their life-time productivity, since this is often the time they are also caring for young children. In our study the fact that the women graduates worked shorter hours presumably reflects the influences of family and social considerations on their career choices, as supported by the difference in the proportions of men and women who cited "influence of spouse" as an important factor in their career choice. There has been some debate about the extent to which physicians' spouses influence their practice location,[12-14] but a greater degree of influence by husbands than by wives on career choice has not been recognized.

With reference to lifestyle some of our results are less easy to explain. Women were less likely than men to be certified or to be intending to become certified, although their career choices would not appear to limit the possibility. This may reflect a difference in the long-term career plans of men and women that was not otherwise apparent in our study.

A higher proportion of women than men expressed some dissatisfaction with the McMaster program. The fact that more women would have preferred a 4-year program may indicate that they felt rushed or inadequately prepared, or may be related to the high proportions who reported that the "anxiety level created" was a weakness and who expressed a preference for more structure in their education. Various factors, such as difficulty in adjusting, role strain and conflict, and sexual discrimination, may make medical school more stressful for women.[15-19] Support and counselling services have been established to help women overcome these difficulties. The McMaster program is continuing to develop extensive support systems for its students, and the increasing proportions of women students in recent years may add further support. Studies are necessary to determine whether this support has been beneficial.

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