

Participation in CME activities

Family physicians in practice for more than 25 years versus those in practice for less than 25 years

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ABSTRACT

OBJECTIVE To compare the continuing medical education (CME) activities of family physicians in the province of Quebec with more than 25 years in practice with those with less than 25 years in practice.

DESIGN Mailed questionnaire survey.

SETTING Family practices in the province of Quebec.

PARTICIPANTS All physicians (n = 722) with more than 25 years in practice (expressed as older) and a matched sample of 721 physicians with less than 25 years in practice (expressed as younger).

MAIN OUTCOME MEASURES Types of CME activities and time spent on them, participant characteristics.

RESULTS Older physicians spent more time in individual CME activities than younger ones (21 hours vs 18 hours monthly). Younger physicians, however, spent more time in group CME activities than older ones did (100 hours vs 80 hours yearly). *Excluding* physicians who devoted no time to CME activities, only two activities differentiated between the two groups: older physicians spent more time than their younger colleagues reading and listening to audiocassettes.

CONCLUSIONS Older physicians maintained their clinical competence by participating in *different* CME activities from younger physicians. They participated in as many CME activities as their younger colleagues.

RÉSUMÉ

OBJECTIF Comparer la participation aux activités de formation médicale continue (FMC) des médecins de famille de la province de Québec qui exercent depuis plus de 25 ans à la participation de ceux qui exercent depuis moins de 25 ans.

DEVIS Sondage postal.

MILIEU Cabinets de médecine familiale dans la province de Québec.

PARTICIPANTS Tous les médecins (n=722) en exercice depuis plus de 25 ans (désignés comme plus âgés) et un échantillon apparié de 721 médecins ayant exercé depuis moins de 25 ans (désignés comme plus jeunes).

PRINCIPALES MESURES DES RÉSULTATS Type d'activités de FMC et le temps qui leur est consacré, caractéristiques des participants.

RÉSULTATS Les médecins plus âgés consacrent plus de temps aux activités individuelles de FMC que les médecins plus jeunes (21 heures vs. 18 heures par mois). Par contre, les médecins plus jeunes consacrent plus de temps aux activités de groupe (100 heures vs 80 heures par année). *À l'exception* des médecins qui ne participent à aucune activité de FMC, seulement deux activités différencient les deux groupes: les médecins plus âgés consacrent plus de temps que leurs collègues plus jeunes à la lecture et à l'écoute d'audiocassettes.

CONCLUSIONS Les médecins plus âgés maintiennent leurs compétences cliniques en participant à autant d'activités de FMC que les médecins plus jeunes, mais ces activités sont de nature *différente*.

This article has been peer reviewed.

Cet article a fait l'objet d'une évaluation externe.

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Physicians have always preferred and most frequently used reading as a source of continuing medical education (CME).^{1,3} Practising physicians spend more than 3 hours weekly reading medical literature.^{4,6}

Group activities, conferences, and colloquia have also grown in popularity in the last two decades.⁷ In 1991, the pharmaceutical industry alone spent \$5 billion promoting its products, with an increasing proportion of this money earmarked for CME activities.⁸

Many studies have shown the characteristics and the CME needs of general practitioners.⁹⁻¹¹ Few studies have systematically explored the use of group CME activities, but some have documented that less participation in group CME activities is associated with being older, having a rural practice, having a solo practice, and having no contact with medical students.¹²⁻¹⁴

Many organizers of CME activities in Quebec believe that older physicians are not interested, and are thus less active, in CME in comparison to their colleagues in the medical profession as a whole. In *The Physician as Learner*,¹⁵ Bennett links age and learning. Her work highlights the need to answer the questions raised by our research.

This article is a descriptive and comparative study of the profile of CME activities of two groups of practising physicians: all physicians in Quebec with more than 25 years in practice (expressed as older) and a stratified random sample of physicians with less than 25 years in practice (expressed as younger). The following questions are addressed: do older physicians spend less time on CME activities than younger ones? What amount of time is devoted to each type of CME activity and how do the two groups compare?

METHODS

Subjects

The population consisted of all family physicians in active practice in the province of Quebec between June 1, 1989, and May 31, 1990, who were listed in the Fédération des médecins du Québec (FMOQ)

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central database. Active practice was defined either by the quantity of billings to the medicare plan (more than \$40 000) or a minimum of 17.5 hours weekly (paid in the form of a fixed honorarium). Because the study targeted physicians with more than 25 years in practice, it was essential to contact those in active practice in order to avoid the bias that could have been introduced by retired and semi-retired physicians.

Several studies suggest defining experienced physicians as those with between 20 and 30 years in practice.^{9,16} To have large enough samples for comparison, the threshold in this study was set at 25 years of experience.

Two groups were identified: all physicians in practice for more than 25 years, and a sample of physicians in practice for less than 25 years. According to the FMOQ central database, 722 physicians had more than 25 years in practice. A second stratified random sample, matched for sex and region of practice, was drawn from those with fewer than 25 years in practice (n = 721). The importance of sex on participation in CME activities is well documented.^{9,13,14} Because most physicians with more than 25 years in practice were men, it was necessary to select a sample of younger physicians that was matched for sex.

Questionnaire

A self-administered questionnaire in French or English was designed to collect information on CME activities during the 12 preceding months. This questionnaire was pretested by a few representative family physicians.

The following variables were measured: respondents' age, sex, mother tongue, type of practice (type, sectors, site), privileges in institutions, and workload in clinical care (number of hours weekly and number of weeks yearly). The following data were collected on CME activities: number of hours devoted each month to individual activities (reading, audiocassettes, videocassettes, self-evaluation programs, self-training modules, television programs, discussion with colleagues, computer software, on-site training), and time spent each year on group activities (days yearly in courses offered by CME organizations, hours yearly devoted to scientific meetings in institutions or courses offered by the pharmaceutical industry, days yearly spent in CME activities outside the province of Quebec). All data from group activities were converted into hours yearly, assuming 7 hours daily.

The Dillman method was used to collect the data.¹⁷ Two weeks after the questionnaire was mailed, a reminder was sent to all nonrespondents. Two weeks after the reminder, a second copy of the questionnaire was sent to nonrespondents.

Statistical analysis

Non-parametric techniques were used to analyze the data. Using non-parametric techniques was dictated by the fact that the distributions were highly skewed in the samples and probably in the whole population as well. The analyses were done in two stages. First the χ^2 test was used to compare the proportions in both groups of

physicians devoting some time or no time at all to CME activities. Second, the Mann-Whitney test was used to compare the distributions (excluding those who spent no time participating in CME activities). Considering the many statistical tests done, only *P* values lower than .01 were considered significant. All tests were two-tailed.

RESULTS

In the older group, 546 (76%) physicians responded to the questionnaire and 530 (73%) of these questionnaires contained valid data. Thirty-one questionnaires were excluded from the analysis: 16 respondents

Table 1. Respondent characteristics

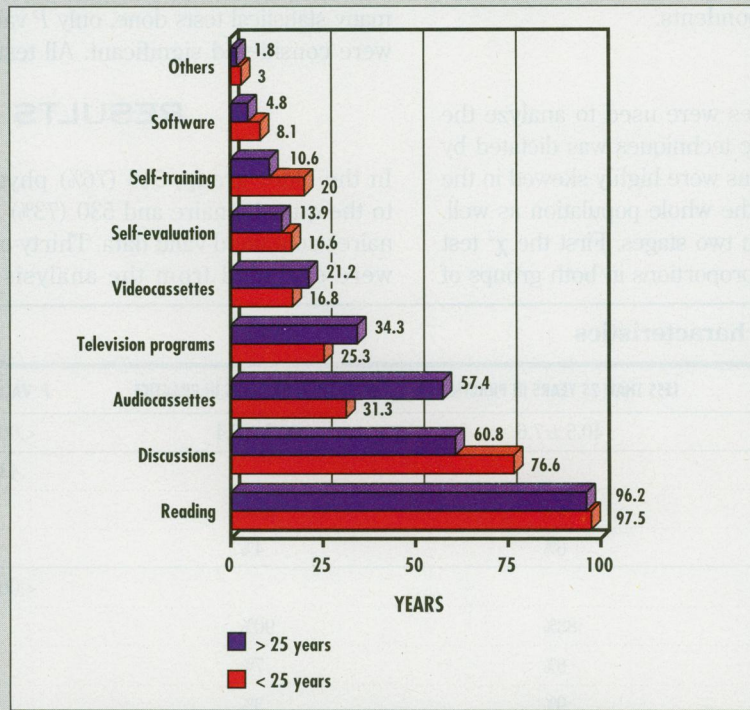
| CHARACTERISTICS | LESS THAN 25 YEARS IN PRACTICE | MORE THAN 25 YEARS IN PRACTICE | P VALUE |
|----------------------------------|--------------------------------|--------------------------------|---------|
| Age (mean \pm SD) | 40.5 \pm 7.6 | 60.3 \pm 6.4 | <.001 |
| Sex | | | .43 |
| • Male | 94% | 96% | |
| • Female | 6% | 4% | |
| Mother tongue | | | <.001 |
| • French | 83% | 90% | |
| • English | 8% | 7% | |
| • Other | 9% | 3% | |
| Practice location | | | .63 |
| • Remote region | 9% | 11% | |
| • Academic region | 76% | 75% | |
| • Other | 15% | 14% | |
| Hospital privileges | | | .45 |
| • Yes | 83% | 81% | |
| • No | 17% | 19% | |
| Type of practice | | | |
| • Solo | 29% | 57% | <.001 |
| • Group | 41% | 23% | <.001 |
| • Community centre | 4% | 2% | <.002 |
| • Hospital | 19% | 8% | <.001 |
| • Other | 7% | 11% | .45 |
| Sectors of practice | | | |
| • Emergency | 10% | 1% | <.001 |
| • Geriatric care | 2% | 7% | <.001 |
| • General practice | 77% | 79% | .43 |
| • Other | 11% | 13% | .35 |
| Clinical load | | | |
| • Hours per week (mean \pm SD) | 46.6 \pm 10.9 | 43.1 \pm 10.9 | <.001 |
| • Weeks per year (mean \pm SD) | 46.8 \pm 3.4 | 46.8 \pm 2.9 | 1.0 |

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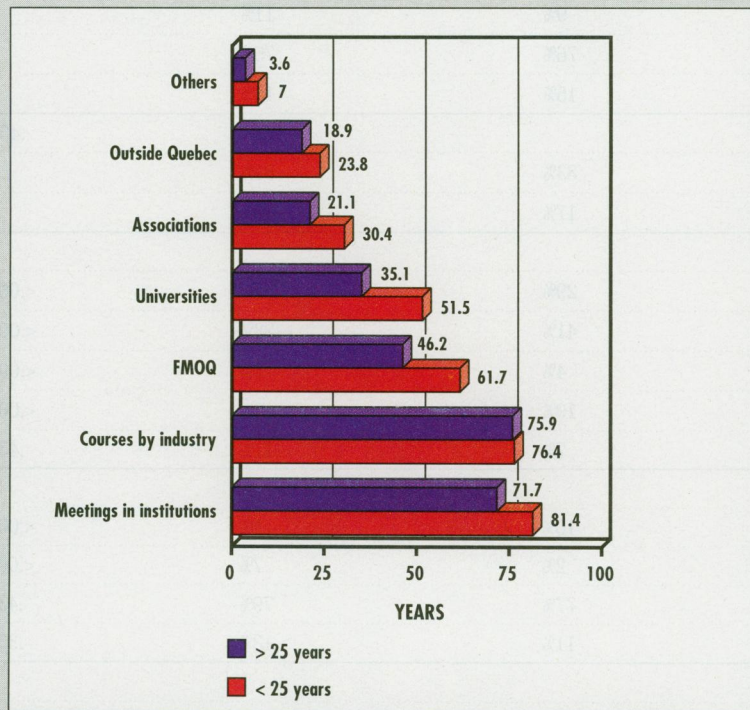
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Figure 1. Proportions of physicians who reported spending time each month in continuing medical education activities: *A) Individual activities, B) Group activities.*



A



B

Table 2. Time spent in individual activities: Hours per month, excluding physicians who spent no time on continuing medical education

| CME ACTIVITY | LESS THAN 25 YEARS | | MORE THAN 25 YEARS | | P VALUE |
|-----------------------------|--------------------|----------------|--------------------|----------------|---------|
| | MEAN (SD) | MEDIAN (RANGE) | MEAN (SD) | MEDIAN (RANGE) | |
| Reading | 10.8 (10.9) | 8 (1-100) | 13.7 (13.5) | 10 (0.3-110) | <.001 |
| Audiocassettes | 2.9 (3.8) | 2 (0.5-30) | 3.5 (4.3) | 2 (0.1-40) | <.005 |
| Videocassettes | 2.3 (1.9) | 2 (0.5-10) | 2.2 (2.4) | 1 (0.3-20) | .46 |
| Self-evaluation programs | 3.1 (3.4) | 2 (0.5-20) | 3.2 (4.9) | 2 (0.1-25) | .38 |
| Self-learning modules | 2.4 (2.9) | 1 (0.5-20) | 3.1 (3.4) | 1 (0.3-15) | .31 |
| Television programs | 2.8 (2.4) | 2 (0.5-10) | 3.0 (3.1) | 2 (0.3-20) | .73 |
| Discussions with colleagues | 4.5 (4.3) | 3 (0.5-30) | 4.4 (5.0) | 3 (0.3-40) | .47 |
| Computer software | 4.7 (5.3) | 3 (1-30) | 5.3 (7.7) | 2 (0.3-30) | .69 |
| Other | 9.2 (7.6) | 8 (1-30) | 12.1 (16.4) | 3 (1-40) | .41 |

were practising, but devoted less than 17.5 hours a week to care, 10 were retired, three had experienced lengthy illnesses during the year covered by the study, and two respondents were no longer practising medicine. The final sample contained 499 questionnaires (69%). In the younger group, 533 (74%) physicians responded, and 502 (70%) valid questionnaires were used in our analysis. Sixteen questionnaires were excluded: 12 respondents devoted less than 17.5 hours a week to care, and four respondents were no longer practising medicine. The final sample was composed of 486 questionnaires (67%).

When compared with respondents, nonrespondents in both groups were slightly older, English-speaking, and were practising near a university.

Table 1 presents the characteristics of the subjects in both groups; as expected, there is a significant difference in mean ages (40.5 vs 60.3), and the distribution of the stratification variables of sex and location of practice are similar. Both groups also had similar hospital privileges and clinical loads. Slight differences are observed for mother tongue, types of practice (older physicians worked more in solo practice), and sectors of practice (younger physicians worked more in emergency rooms).

Almost all respondents reported participating in both individual activities (98.7% and 97.8%) and group activities (96.6% and 93.8%). Younger physicians spent fewer hours monthly in individual activities (17.9 vs 21.1; $P < .005$) and more hours per year in group activities (99.6 vs 79.8; $P < .001$) than their older counterparts.

Figure 1 compares the proportions of respondents who reported spending time in 10 individual activities and 7 group activities. Reading and discussions with colleagues were the two individual modes used most often by both groups. Self-training modules (20.0% vs 10.6%; $P < .001$) and discussions with colleagues (76.6% vs 60.8%; $P < .001$) were used by a higher proportion of younger physicians than older ones. Older physicians used more televised CME activities (34.3% vs 25.3%; $P = .002$) and audiotaped activities (57.4% vs 31.3%; $P < .001$) than younger ones.

For the group activities, both groups reported a high level of attendance at scientific meetings in institutions and courses offered by the pharmaceutical industry. A higher proportion of younger physicians participated in more activities in comparison with older ones: meetings in institutions (81.4% vs 71.7%; $P < .001$), courses given by the FMOQ (61.7% vs 46.2%; $P < .001$), and courses given by universities (51.5% vs 35.1%; $P < .001$) and professional associations (30.4% vs 21.1%; $P < .001$).

Tables 2 and **3** present means, medians, standard deviations, and ranges calculated for respondents in both groups who devoted time to specific individual and group CME activities. Few differences between groups were apparent for individual activities: older physicians devoted significantly more time to reading (13.7 vs 10.8; $P < .001$) and to listening to audiocassettes (3.5 vs 2.9; $P < .005$) than younger ones. No significant differences were found for group activities.

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Table 3. Time spent in group activities: Hours per year, excluding physicians who spent no time on continuing medical education

| CME ACTIVITY | LESS THAN 25 YEARS | | MORE THAN 25 YEARS | | P VALUE |
|---|--------------------|----------------|--------------------|----------------|---------|
| | MEAN (SD) | MEDIAN (RANGE) | MEAN (SD) | MEDIAN (RANGE) | |
| Medical meetings offered by institutions | 23.9 (27.3) | 18 (1-262) | 22.5 (19.0) | 20 (2-175) | .50 |
| Meetings organized by the pharmaceutical industry | 16.0 (20.9) | 10 (0.5-300) | 15.6 (16.3) | 10 (1-160) | .72 |
| Fédération des médecins du Québec | 35.5 (29.5) | 28 (7-280) | 39.1 (36.8) | 26 (7-280) | .87 |
| Universities | 40.6 (59.7) | 28 (4-700) | 42.2 (55.6) | 28 (7-350) | .65 |
| Professional associations | 29.8 (39.5) | 14 (7-392) | 27.8 (26.5) | 21 (4-147) | .72 |
| Meetings outside Quebec | 41.4 (35.7) | 35 (7-210) | 36.3 (31.0) | 28 (7-210) | .16 |
| Other | 40.1 (42.4) | 21 (14-210) | 36.5 (35.4) | 24 (7-140) | .62 |

DISCUSSION

Older physicians in this study constituted the total active population. The sample of younger physicians was representative of Québécois physicians. According to official data provided by the Quebec licensing authority, in 1990, general practitioners in the province worked an annual average of 46.1 weeks, as compared with 46.8 weeks observed in this study, even when excluding physicians who practised part-time.¹⁸

We hoped to document differences in older and younger physicians' profiles of CME activities; some interesting results were observed. Our study confirms the lower participation rate of older physicians in group CME activities, but goes further than some other authors in pointing out that, when older physicians do participate in group activities, they spend the same amount of time in these activities as their younger counterparts.^{4,9,12} The literature documents individual CME activities less. Data from our study also confirmed that reading is the most popular CME activity.^{6,19} Reading is used more by older physicians.

Possible explanations

Many factors could explain why older physicians spend more time in individual activities and less time in group activities. There are more older physicians working in solo practice who would find it difficult to take time away from their offices. These physicians might limit their participation in formal, organized CME activities. Furthermore, individual CME activities are less

expensive and could be introduced more flexibly into practice.²⁰⁻²²

Because more younger physicians practise in group settings, discussions with specialist colleagues probably occur more easily and more frequently than in solo practice. As observed with other activities, however, older physicians who reported discussions with colleagues as a CME activity spent similar amounts of time in those discussions. Self-training modules are a more modern way of learning and are used by a greater proportion of and to a greater extent by younger physicians. This is probably because the modules are similar to the teaching methods to which they were exposed when they were still at university.

The computer revolution has not spread much in CME. Few well-designed software packages were available in 1992, and it is unsurprising that few physicians reported using this learning method. There were and are still very few CME software packages available in French.

In this study, differences between younger and older physicians were clearly identified. Courses offered by the FMOQ and by universities were attended by a higher proportion of younger physicians.

Key point

Family physicians with more than 25 years of practice participate in the same number of hours of continuing medical education each year as their younger counterparts, but tend to spend more time on individual activities, such as reading or listening to tapes.

Among group activities, only the courses provided by pharmaceutical companies attracted similar proportions of younger and older physicians. These sessions are generally free of charge, take place in the evening (thus reducing the need to be away from the office), and often offer substantial secondary benefits.^{19,23}

Large variations in individual profiles were observed; for example, participation in group activities ranged from 4 hours to 700 hours annually among younger physicians and from 2 hours to 544 hours annually among older physicians. There is no doubt that this variation in CME profiles occurs and that it is linked to physicians' different profiles in terms of fields and types of practice.^{5,6,12}

Limitations

Although the questionnaire we used was pretested, it was not validated before the study. The internal validity of the results is not an issue; it is unlikely that the estimation of hours is more biased in one group than in the other. Moreover, this bias has not been evaluated in any of the studies published to date. For external validity, it could be that only highly motivated physicians responded to the questionnaire, resulting in higher estimates. A response rate of 78% or more could have reduced the bias associated with the motivated response.

The physicians themselves might overestimate their participation in CME activities. It must be acknowledged that no official record would provide an accurate indication of the number of hours spent on CME activities. The FMOQ central database provides only a rough estimate. Registration of participants for courses given in institutions or by the pharmaceutical industry is seldom systematic. On the other hand, the average number of hours our subjects reported that they spent reading corresponds to that recorded in the literature.^{5,6}

Slotnick²⁴ has shown that the opportunity to earn CME credits is the main factor motivating physicians to participate in group CME activities. In the province of Quebec, physicians are not required to earn CME credits in order to maintain either their licence to practise or hospital privileges. Consequently, the overestimation of hours by the two groups cannot be attributed to the need to acquire CME credits.

The results of this study paint a portrait of the CME activities of practising physicians in early 1992. A recent unpublished study demonstrates that the situation has not changed.²⁵ We believe these results

still accurately represent the differences in CME activities between younger and older physicians.

CONCLUSION

Many studies have focused on the low level of older physicians' participation in CME activities. Their conclusions were based solely on group activities. Few data were available on individual CME activities and the amount of time devoted to each activity. This study offers a first look at participation in individual activities. The results show that physicians with more than 25 years in practice maintain their clinical competence by using different modes of CME activities from physicians with less than 25 years in practice. Older physicians still participate as much as their younger counterparts in all aspects of CME. ♣

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