
Effects of residency training in family medicine v. internship training on professional attitudes and practice patterns

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Objectives: To determine whether the professional attitudes and practice patterns of physicians with residency training in family medicine differ from those of generalists with internship training.

Design: Mail survey conducted in 1985–86.

Setting: Province of Quebec.

Participants: A stratified random sample of French-speaking family and general practitioners who graduated after 1972 (325 physicians with residency training and 304 with internship training) (response rate 82%).

Main results: Physicians with residency training were 3 years younger on average than those with internship training, were more likely to be female (38% v. 18%, $p < 0.001$) and were more likely to work on a salaried basis in CLSCs (public community health centres) (36% v. 14%, $p < 0.001$). Even after these confounding factors were controlled for, physicians with residency training seemed to be more sensitive to the psychosocial aspects of patient care and tended to attach more importance to informing patients about useful materials and resources concerning their health problems. They were not, however, more likely to value health counselling or integrate it in medical practice.

Conclusion: Our findings provide some evidence that the new requirement that physicians complete a residency in family medicine to obtain medical licensure in general practice in Quebec may foster a more patient-centred approach to health care.

Objectifs : Déterminer si les attitudes professionnelles et les modes de pratique des médecins possédant une formation de résident en médecine de famille sont différents de ceux des omnipraticiens qui possèdent une formation d'interne.

Conception : Sondage postal fait en 1985–1986.

Contexte : Province de Québec.

Participants : Un échantillon aléatoire et stratifié des médecins de famille et des omnipraticiens francophones qui ont obtenu leur diplôme après 1972 (325 médecins possédant une formation de résident et 304 une formation d'interne) (taux de réponse de 82 %).

Résultats principaux : Les médecins possédant une formation de résident étaient plus jeunes de 3 ans en moyenne que ceux qui possédaient une formation d'interne, et il était plus probable qu'ils soient des femmes (38 % contre 18 %, $p < 0,001$) et des salariés à l'emploi de centres locaux de services communautaires (36 % contre 14 %, $p < 0,001$). Même si l'on tient compte de ces facteurs confusionnels, les médecins qui possèdent une formation de résident semblent plus sensibles aux aspects psychosociaux des soins aux patients, et ils ont tendance à accorder plus d'importance à l'information des patients au

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sujet de documents et de ressources utiles en ce qui a trait à leurs problèmes de santé. Cependant, il n'était pas plus probable qu'ils valorisent le counselling médical ou qu'ils l'intègrent à leur pratique.

Conclusion : Nos constatations prouvent en quelque sorte que la nouvelle exigence faite aux médecins de terminer leur résidence en médecine de famille pour obtenir un permis d'exercice en omnipratique au Québec peuvent favoriser une démarche envers les soins de santé davantage axée sur les patients.

Since 1967 residency training programs in family medicine have gradually been introduced in every faculty of medicine in Canada to serve as an alternative to internships for physicians planning a career in general practice. These programs were created because of the growing concern in the medical profession that the internship did not meet the specific training needs of general practitioners.^{1,2} Aside from enabling physicians to experience the realities of primary health care, residency training aims to improve residents' basic skills in various areas thought to be essential for the provision of comprehensive and continuing primary health care to individuals and families in the community.^{3,4} These skills include medical interviewing, attending to psychosocial factors in caring for patients, proper use and coordination of health care resources, disease prevention, patient education and health counselling.

The extent to which training in family medicine helps residents become better family doctors is an issue that has only recently been explored. Several investigators have used billing data from health insurance plans to compare billing patterns between general practitioners with residency training and those with internship training.⁵⁻⁹ Their findings suggest that the two groups are fairly comparable in the volume and costs of services provided, although graduates of residency training programs have been found to have a more diversified practice than their colleagues with internship training.^{6,9} In other studies family medicine graduates have been shown to be more likely to practise in public primary care settings¹⁰ and to value psychosocial aspects of patient care,⁷⁻¹¹ involvement of patients in their own health care and multidisciplinary work.¹¹ In one study the influence of residency training in family medicine was assessed by means of a chart audit and questionnaires measuring patients' satisfaction with care.¹² Although no relation was found between postgraduate training and patient satisfaction, certification in family medicine was found to be associated with higher performance scores for management of clinical problems, use of drugs and secondary prevention. Similar tendencies were reported in US studies in which self-reported measures of clinical practices were used,¹³⁻¹⁶ although residency training did not seem to be associated with greater involvement in health promotion.

We performed a study to determine whether physicians with residency training in family medicine differ from those with internship training in such practice patterns as professional activities, practice setting and location and in their attitudes and practices in three areas that have increasingly been emphasized in primary care in recent years: attending to psychosocial factors in caring for patients, educating chronically ill patients about their health problems and counselling patients on health matters. We hypothesized that family medicine graduates would differ from physicians with internship training in these aspects of medical practice.

Methods

Data for the study were obtained from a 1985-86 mail survey of a representative sample of Quebec general practitioners. The sample of physicians was drawn from the computerized files of the Federation of General Practitioners of Quebec. These files include the names and addresses of all generalists practising in Quebec as well as sex, year of graduation, postgraduate training and type of practice. The sampling population was limited to French-speaking general practitioners in Quebec who were directly involved in patient care, a total of 3584 physicians. The sample was drawn by means of stratified random sampling. Three variables served as the basis for stratification: sex, type of postgraduate training (rotating or mixed internship v. residency in family medicine) and type of medical practice (fee-for-service v. salaried). Simple random sampling was used within the eight strata of the sample.

The sample comprised 900 physicians, 27 of whom were found to be ineligible or could not be located. Of the remaining 873 physicians 361 had been trained in family medicine, and 512 had received their training in a mixed or rotating internship. A total of 720 respondents returned the questionnaire, a response rate of 82%. This high rate was achieved because four follow-up letters were sent after the initial mailing of the questionnaire and because the Dillman Total Design Method of implementing mail surveys was used.¹⁷ Because residency training programs in family medicine were established in Quebec in the early 1970s, comparisons between family medicine graduates and other gener-

alists were restricted to physicians who graduated after 1972, thus reducing the sample size to 629 (325 family medicine graduates and 304 physicians with internship training). The basic characteristics of the sample are shown in Table 1.

The survey questionnaire was pretested in a population of 60 physicians. It comprised items designed to measure physicians' attitudes and practices with regard to attending to psychosocial factors when caring for patients, providing chronically ill patients with information on the nature and management of their health problem(s) and providing health counselling, especially to patients who smoke or are obese. The physicians were presented with clinical scenarios, each accompanied by a list of possible interventions. The physicians were first asked the extent to which they favoured each intervention (measure of attitudes) and then the extent to which, given the particular constraints impinging on them and their practice, they succeeded in integrating these interventions in their own practice (measure of practices). For each intervention there were six possible answers, ranging from "never" to "always."

The comprehension of each item in the questionnaire and the reliability of the attitude and practice scales were assessed. Items that led to confusion on the part of respondents were eliminated or modified before the survey was carried out. The final version of the questionnaire took about 20 minutes to complete. Factor analyses of the items designed to measure attitudes and practices led to the construction of five attitude scales and five corresponding practice scales, which were labelled as follows: attending to psychosocial factors in caring for patients (five items), informing patients about their health problems (six items), informing patients

about useful materials and resources concerning their health problems (four items), counselling obese patients (five items) and counselling patients who smoke (three items). The scales achieved acceptable reliability levels, as measured with the Cronbach α ,¹⁸ ranging from 0.77 to 0.93 (information on the composition of the scales can be obtained from the authors on request).

The survey also contained questions about physicians' practice patterns, such as location of practice, type of practice and degree of involvement in hospital care, home care, administration, community health, teaching and research.

To obtain data that would be truly representative of the two study groups comparisons between the two groups were performed on weighted data to take into account imbalance across sample strata due to variation in sample size and response rate. However, in assessing the true effect of training in family medicine we controlled for potential confounding factors, such as age and sex. For that purpose statistical analyses were done on unweighted data by using log-linear models for categorical variables and analysis of covariance for continuous variables. Data analyses were done with the SPSS-X statistical software package.¹⁹

Results

As expected, physicians with residency training differed from those with internship training in age and sex: the former were 3 years younger on average than the latter (29.9 v. 33.0 years old, $p < 0.001$) and were more likely to be female (38% v. 18%, $p < 0.001$). They were also significantly more likely to work in public community health centres, also known as CLSCs (36% v. 14%, $p < 0.001$). These

Table 1: Population size, sample size and response rate for the various sample strata

Type of practice; type of training	Population size*	Sample size	No. of respondents	Response rate, %
Fee-for-service				
Internship				
Men	2241	164	109	66
Women	398	157	109	69
Residency				
Men	238	115	96	83
Women	103	94	84	89
Salaried				
Internship				
Men	252	93	78	84
Women	162	108	95	88
Residency				
Men	89	76	64	84
Women	101	93	85	91

*Based on estimates derived from data of the Federation of General Practitioners of Quebec.

institutions, which were established in the early 1970s in Quebec, are publicly owned primary care centres that provide both medical and social services at the local community level. Since these differences were potential confounders, comparisons between the two groups were done separately for fee-for-ser-

vice physicians and for those working in CLSCs.

In the fee-for-service group significantly more physicians with residency training than those with internship training reported being involved in hospital care ($p < 0.001$), administration ($p = 0.03$) and medical teaching ($p = 0.01$) and in being in a group

Table 2: Characteristics of the fee-for-service general practitioners by type of postgraduate training

Characteristic	Type of training		<i>p</i> value*
	Mixed or rotating internship (n = 161)	Residency (n = 176)	
Practice setting, % of respondents			
Private office	94	79	NS
Hospital	55	73	0.00
Emergency department	49	67	NS
Outpatient department	36	42	NS
Patient's home	62	54	NS
Geriatric hospital	25	24	NS
Professional activities, % of respondents			
Patient care	100	100	—
Administration	36	41	0.03
Teaching	26	37	0.01
Community health	20	21	NS
Size of community, % of respondents			
< 20 000	41	41	
20 000–99 999	34	38	NS
≥ 100 000	25	21	
Type of practice, % of respondents			
Solo	36	25	0.04
Group	64	75	
Clinical attitudes, mean score†			
Attending to psychosocial factors in patient care	−0.20	0.21	0.00
Informing patient about health problem	−0.08	−0.04	NS
Informing patient about useful materials and resources	0.05	0.28	NS
Counselling obese patients	0.06	0.08	NS
Counselling patients who smoke	−0.02	0.06	NS
Clinical practices, mean score†			
Attending to psychosocial factors in patient care	−0.24	−0.03	NS
Informing patient about health problem	−0.09	−0.02	NS
Informing patient about useful materials and resources	−0.03	−0.09	NS
Counselling obese patients	−0.11	−0.20	NS
Counselling patients who smoke	−0.10	−0.02	NS

*After adjustment for age and sex. Log-linear models were used for categoric variables, analysis of covariance was used for continuous variables. NS = not significant.
†Measured with multi-item scales constructed from standardized factorial scores ranging approximately from −3 (low) to 3 (high).

practice ($p = 0.04$) (Table 2). There was no difference between the two groups in attitudes and practices regarding patient education and health counseling. However, physicians with residency training attributed more importance to attending to psychosocial factors in caring for patients than did their colleagues with internship training (standardized score 0.21 v. -0.20 , $p < 0.001$). The greater sensitivity of family medicine graduates to psychosocial factors tended to be reflected in their clinical practices: their scores on this scale were higher than those of practitioners with internship training, although not significantly so.

In the CLSC group more physicians with residency training than those with internship training reported being involved in medical teaching ($p = 0.02$). Slightly more physicians in the latter group reported being involved in community health ($p = 0.01$), whereas slightly more of those with residency training reported caring for patients in the emergency department ($p = 0.04$) (Table 3). Few differences were documented between the two groups in attitudes and clinical practices. A significant interaction was noted between sex and type of postgraduate training with regard to attitudes toward informing chronically ill patients about useful materials and resources. Whereas men with residency training had higher scores on this scale than men with internship training ($p = 0.02$), women had comparable attitudes regardless of their postgraduate training. Physicians with residency training had higher scores than their colleagues with internship training for practices involving psychosocial factors ($p = 0.05$), which suggests that family medicine graduates are more likely to attend to psychosocial factors in caring for patients.

Discussion

Our findings show that the practice patterns of general practitioners in Quebec differ according to type of postgraduate training. Physicians with residency training are more likely than those with internship training to work in an institutional setting, such as a CLSC or hospital, and to be involved in medical education. These results corroborate those of a previous study¹¹ and show that family medicine graduates tend to adopt a model of medical practice that in some ways resembles the one that characterizes specialized practice.

It is particularly interesting to note the interest that physicians with residency training appear to have in practice settings that facilitate interdisciplinary work and collaboration with others. The greater interest in CLSC practice observed in this group may be explained by their greater exposure to this type of practice as residents in family medicine. Several

family medicine teaching units in Quebec are established in CLSCs, providing residents with an opportunity to be exposed to what was until recently a marginal type of medical practice. Our findings thus suggest that physicians' decisions about choice of specialty and type of practice are influenced by their experiences during medical training.

Also worth noting is the greater willingness of family medicine graduates, particularly fee-for-service practitioners, to provide hospital care to their patients. This finding should be encouraging to medical educators in family medicine, for it suggests that their message about the importance of continuity of care is not emphasized in vain.

Physicians with residency training were more likely to favour attending to the psychosocial aspects of patient care (particularly fee-for-service practitioners) and to take psychosocial factors into account when caring for their patients (particularly physicians working in CLSCs) than were physicians with internship training. These findings provide additional evidence of the greater concern of family medicine graduates for the psychosocial factors that may influence the occurrence and evolution of disease.^{7,11} They indicate that physicians with residency training understand better the importance of knowing what it means for the patient to be ill. Although more definite studies are needed, these results suggest that it is possible to halt the erosion of humanism that has been documented as students progress in their medical training,²⁰⁻²³ provided that medical educators place proper emphasis on human concerns in patient care.

It is interesting to note that CLSC physicians scored higher than fee-for-service physicians on several attitude and practice scales, including attending to psychosocial factors and patient education. Such results tend to indicate, as suggested by Freidson,²⁴ that practice setting is a potent predictor of physicians' attitudes and practices.

Our study was conducted when senior medical students in Quebec interested in general practice could still choose between an internship and a residency in family medicine to obtain their medical licensure. It is possible, even likely, that those who chose to do a residency were more sensitive than those who opted for an internship program to the biopsychosocial approach to care that is emphasized in family medicine, thereby facilitating in a way the work of teachers and supervisors in family medicine. Now that there is only one route for obtaining medical licensure in general practice in Quebec (the 2-year residency in family medicine, in effect since July 1989) it would be interesting to assess the effect of the residency in family medicine on entering residents, who may have a different philosophy of patient care than the one valued in family medicine.

The evidence for a beneficial effect of residency training in family medicine on patient education in our study is not as clear as has been reported.^{11,14} Our results show a tendency among physicians with residency training to place more value than physicians with internship training on informing chroni-

cally ill patients about useful materials and resources concerning their health problems. The difference between the two groups came close to statistical significance among fee-for-service physicians and was significant for male physicians working in CLSCs.

Table 3: Characteristics of the salaried general practitioners by type of postgraduate training

Characteristic	Type of training		p value*
	Mixed or rotating internship (n = 143)	Residency (n = 149)	
Practice setting, % of respondents			
Private office	24	19	NS
Hospital	18	27	NS
Emergency department	18	23	0.04
Outpatient department	8	18	NS
Patient's home	45	46	NS
Geriatric hospital	15	21	NS
Professional activities, % of respondents			
Patient care	100	98	NS
Administration	43	46	NS
Teaching	30	44	0.02
Community health	74	69	0.01
Size of community, % of respondents			
< 20 000	45	56	
20 000-99 999	31	27	NS
≥ 100 000	24	17	
Type of practice, % of respondents			
Solo	22	16	
Group	78	84	NS
Clinical attitudes, mean score†			
Attending to psychosocial factors in patient care	0.36	0.48	NS
Informing patient about health problem	0.30	0.27	NS
Informing patient about useful materials and resources‡	0.37	0.51	0.02 (men) NS (women)
Counselling obese patients	-0.02	0.08	NS
Counselling patients who smoke	0.18	0.17	NS
Clinical practices, mean score†			
Attending to psychosocial factors in patient care	0.05	0.22	0.05
Informing patient about health problem	0.10	0.12	NS
Informing patient about useful materials and resources	-0.09	0.04	NS
Counselling obese patients	-0.30	-0.24	NS
Counselling patients who smoke	-0.09	-0.06	NS

*As in Table 2. NS = not significant.

†As in Table 2.

‡Because of an interaction between type of postgraduate training and sex, analyses were performed separately for men and women.

Finally, our study provides no evidence that residency training in family medicine better prepares practitioners for their role in disease prevention and health counselling. We found no differences between the two groups in their attitudes and practices regarding two indicators of health counselling, namely, counselling obese patients and counselling patients who smoke. These results are consistent with those obtained in other studies.^{15,16}

Some methodologic limitations must be pointed out. Our study is based on self-reported measures. Although other means, such as direct observation, examination of patients' records and patient surveys, can be used to measure physicians' practices, none is error free. To ensure the validity and reliability of our measures we pretested the questionnaire in the field so as to make sure the items were easily understood by physicians, did not lead to confusion and were not threatening in any way. Multi-item scales that were derived from physicians' answers were found to be highly reliable, most having reliability coefficients above 0.80. Nevertheless, they may have been too general and not sensitive enough to detect differences between the two study groups, particularly with regard to patient education and health counselling. It should also be noted that the response rate was lower for physicians with internship training than for those with residency training (79% v. 90%). This suggests that the former may have been less interested in aspects of medical practice measured by the questionnaire, in which case the differences observed could represent conservative estimates.

In conclusion, our findings indicate that physicians with residency training in family medicine show greater concern for psychosocial aspects of patient care than do their colleagues with internship training. These results should be encouraging to medical educators in family medicine given their efforts to foster among residents a more global approach to patient care, one that focuses on the patient as a whole. We also identified, however, two areas in which improvement is needed: patient education and health counselling. Given the importance placed in recent years on better informing patients about their health problems and on providing health counselling adapted to patients' needs, we recommend that medical educators in family medicine review their training programs to determine what should be improved to help physicians integrate patient education and prevention into their practices.

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