

The willingness of community pharmacists to participate in a practice-based research network

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Although pharmacy practice research is essential in evaluating the impact of and promoting advanced clinical practices, it has proven to be challenging. There is a need to develop strategies to optimize the conduct of such studies. One option may be to establish a common network for pharmacists, researchers and decision-makers engaged in pharmacy practice studies.

La recherche en pratique pharmaceutique est essentielle afin d'évaluer l'incidence des pratiques cliniques avancées et de les promouvoir, mais ce n'est pas une tâche facile. On a besoin de mettre au point des stratégies afin d'optimiser la réalisation des études dans ce domaine. On pourrait par exemple créer un réseau commun auquel participeraient les pharmaciens, les chercheurs et les décideurs qui interviennent dans le cadre d'études sur la pratique pharmaceutique.

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DOI: 10.1177/1715163512473240

ABSTRACT



Background: Practice-based research networks (PBRNs) are groups of practitioners and researchers with an interest in designing, evaluating and disseminating solutions to the real-world problems of clinical practices.

Objective: To evaluate the level of interest of community pharmacists in participating in a PBRN and to document the services such a network should offer.

Method: In a survey of community pharmacists in Montreal, Quebec, and surrounding areas, a questionnaire was mailed to a random sample of 1250 pharmacists. Two of the 28 questions were related to PBRNs: one assessed the pharmacists' interest in participating in a PBRN; the other sought their

views on which services and activities this network should offer.

Results: In total, 571 (45.7%) pharmacists completed the questionnaire, but 6 did not answer the questions about the PBRN. Of the respondents, 58.9% indicated they were "very interested" or "interested" in joining a PBRN, while 41.1% reported little or no interest. The most popular potential services identified were access to clinical tools developed in research projects (77.0%), access to continuing education training programs developed in research projects (75.9%), information about conferences on pharmacy practice research (64.1%) and participation in the development of new pharmaceutical practices (56.1%).

Conclusion: This study suggests that the level of interest that community pharmacists have in PBRNs is sufficient to further evaluate how such networks may optimize and facilitate pharmacy practice research. *Can Pharm J* 2013;146:47-54.

Introduction

Pharmacy practice has evolved substantially in recent years in the face of a high prevalence of chronic diseases and the shortage of primary care clinicians. Pharmacists are now more often engaged in health education and disease prevention¹ and assume a more active role as primary care clinicians in the management of chronic diseases.² Pharmacy practice research is necessary to evaluate the impact of these new services and promote advanced practices.

Since the participation of pharmacists in such investigations is essential, but recruitment of primary care pharmacists has proven to be a challenge, there is a need for strategies to be developed to facilitate pharmacists' involvement in pharmacy practice research. One option might be to establish a common network for pharmacists and researchers engaged in pharmacy practice studies. An Internet-based network is defined as a group of individuals who interact through specific media, potentially across geographic

KNOWLEDGE INTO PRACTICE



- Most pharmacists surveyed reported being “very interested” or “interested” in joining a practice-based research network.
- Getting access to clinical tools and continuing education training programs developed in research projects represents a major incentive for participation.
- These results suggest it would be relevant to further evaluate how such networks might optimize and facilitate pharmacy practice research.

boundaries, to pursue mutual interests or goals.³ The objective would be to bring together community pharmacists and researchers and enable them to share ideas and work together.

Existing networks for health professionals, often called practice-based research networks (PBRNs), are groups of primary care practitioners and researchers who are principally concerned with primary care for patients and are interested in designing, evaluating and disseminating solutions to the real-world problems of clinical practice.⁴ Research by the Agency for Healthcare Research and Quality identified more than 100 primary-care PBRNs across the United States and Canada.⁵ Some are discipline based (e.g., primary care providers, nurses, dentists, pharmacists), some are geographically defined (e.g., national, province- or state-wide, regional) and some are disease specific (e.g., HIV, diabetes, paediatrics).⁶ Many PBRNs are affiliated with academic institutions.⁷ PBRNs geared specifically to pharmacy practice often include hospital pharmacists, primary care physicians, nurses and researchers; they less commonly include community pharmacists.⁶ In most cases, interested participants can join the networks online (usually free of charge).⁵ Members often sign on to a list-serve to receive communications about research projects that are being conducted and invitations to complete surveys.⁸ Members can also usually interact with primary care researchers through discussion groups and forums.⁹ Pharmacists who are members can benefit from research findings that promote safe, efficacious, cost-effective clinical pharmacy services.⁵ Researchers who are members can enjoy access to a comprehensive database of pharmacists interested in research and obtain feedback from practitioners. PBRNs furthermore make it possible to link discovery and practice. Indeed, they show that knowledge

translation is easier when clinicians are involved in a study.^{9,10} One PBRN open to American pharmacists is the American College of Clinical Pharmacy Practice-Based Research Network (ACCP PBRN; University of Minnesota, USA). In Canada, the Canadian Pharmacy Practice Research Group has the mandate to facilitate the generation, dissemination and application of practice-based research evidence to optimize the role of the pharmacist in medication management and improved patient outcomes.¹¹

Since there is, as yet, no network for primary care pharmacists in Quebec, we conducted a survey to assess how interested they are in participating in a PBRN and to document the types of services and activities such a network might provide.

Methods

Study design

A survey on the role of community pharmacists in the prevention and management of chronic diseases was conducted in the Greater Montreal Area (Quebec) from December 8, 2010, to February 23, 2011. Two questions dealing with the creation of a PBRN were included at the end of the survey. Ethics approval was obtained from the Research Ethics Committee of the Centre de santé et de services sociaux de Laval. As an incentive, respondents were eligible to win 1 of 10 prizes of \$500.

Sampling procedures

The survey was mailed to a random sample of 1250 community pharmacists selected from the 2010 Ordre des pharmaciens du Québec's list of pharmacists practising in the regions of Montreal, Laval, Laurentides, Lanaudière, Montérégie, Estrie and Outaouais. Each pharmacist on the list ($n = 1887$) was assigned a number, and a list of 1250 random numbers was generated using a computer program. A modified version of Dillman's tailored design method¹² was followed. A personalized letter of invitation describing the study was sent to the selected pharmacists. One week later, they were mailed a self-administered questionnaire with a cover letter. Two weeks after the survey was mailed, participants were sent a postcard to remind them to complete and return the questionnaire. Two weeks after this, nonrespondents were sent a second questionnaire mailing. Three weeks after the second questionnaire mailing, participants who had still not responded were sent a third questionnaire mailing.

Survey

The questionnaire comprised 28 questions to document respondents' perceptions of the pharmacist's role in the prevention and management of chronic diseases, as well as their ideal and actual levels of involvement. The last 2 questions were related to PBRNs. One question assessed their level of interest in participating in a PBRN (with the following response choices: *very interested*, *interested*, *not very interested*, *not at all interested*); the second sought their views on the services and activities such a network might offer.

Data analyses and sample-size calculation

The characteristics of participants and their community pharmacies were described using means (with standard deviations) for continuous variables and frequencies (with proportions) for discrete variables. With an actual sample of 571 respondents, the margin of error is equal to $\pm 4\%$, 19 times out of 20, assuming 50% of pharmacists are interested and 50% are not interested in participating in a PBRN. This is a conservative approach, considering a probability of 50% is associated with the largest possible margin of error.

Results

Of the 1250 pharmacists who were mailed the questionnaire, 571 (45.7%) completed the survey. Six participants did not answer the questions about the PBRN. As Table 1 shows, the majority were women (63.2%), had practised for a mean (SD) of 15.8 (12.6) years and were salaried pharmacists (72.1%). The majority of pharmacists reported being involved in supervising pharmacy students (66.2%). Most pharmacists who completed the survey worked in pharmacies that were part of a chain or operated under a corporate banner (80.4%), were open an average of 80 hours per week and had a closed office available for private patient consultations (92.7%).

A total of 333 pharmacists said they were interested in a PBRN (very interested: 21.4%; interested: 37.5%), while 232 were not (not very interested: 30.1%; not at all interested: 11.0%). As Table 1 shows, very interested and interested pharmacists were more likely than those reporting little or no interest to have graduated in 2001 or later (50.6% [95% confidence interval (CI), 45.2%–56.0%] vs 32.3% [95% CI, 26.3%–38.4%]), to be associate pharmacists (39.8% [95% CI, 34.5%–45.1%] vs 15.7% [95% CI, 11.0%–20.4%]), to write more pharmaceutical opinions

MISE EN PRATIQUE DES CONNAISSANCES



- La plupart des pharmaciens interrogés se sont dits « très intéressés » ou « intéressés » concernant la perspective de se joindre à un réseau de recherche sur la pratique.
- L'une des motivations principales afin de participer à ce réseau est l'accès aux outils cliniques et aux programmes de formation continue élaborés dans le cadre des projets de recherche.
- D'après ces résultats, il serait utile d'étudier plus avant de quelle manière des réseaux de ce type pourraient optimiser et faciliter la recherche en pratique pharmaceutique.

(22.9 opinions/year [95% CI, 19.3–26.4] vs 11.6 opinions/year [95% CI 9.1–14.2]) and to supervise pharmacy students (70.2% [95% CI, 65.3%–75.1%] vs 60.4% [95% CI, 54.1%–66.8%]). Other pharmacy characteristics were similar for both groups.

As Table 2 indicates, the pharmacists surveyed think that the most important services a PBRN should offer are access to clinical tools developed for research projects (77.0%), access to continuing education training programs developed for research projects (75.9%), information about colloquiums/congresses/conferences about pharmacy practice research (64.1%) and participation in developing new pharmaceutical practices (56.1%).

Discussion

A majority of the pharmacists surveyed (58.9%) reported being interested in participating in a PBRN for pharmacists. Most of the interested pharmacists had graduated more recently and were more involved in clinical activities and teaching responsibilities. Respondents were mainly interested in services to support continuing education and more advanced clinical practices rather than in research-oriented activities.

Other studies have also reported pharmacists' support of PBRNs. In a 2009 online survey about pharmacy residency programs conducted by the American Pharmacists Association, 50% of pharmacists were "very interested" and 50% "somewhat interested" in participating in a PBRN.¹³ The participants stated further that the principal challenges keeping them from joining a research network were lack of time (54%), lack of awareness of opportunities to participate (39%) and lack of experience in practice-based research (36%).¹³ Another study reported the same barriers and cited developing a database/website

TABLE 1 Characteristics of pharmacists and pharmacies and level of interest in joining a pharmacy-based research network

Characteristics	All respondents (<i>n</i> = 565)	Respondents very interested or interested (<i>n</i> = 333)	Respondents not very interested or not at all interested (<i>n</i> = 232)
Sex, <i>n</i> (%)			
Men	208 (36.8)	120 (36.0)	88 (37.9)
Women	357 (63.2)	213 (64.0)	144 (62.1)
Year of graduation, <i>n</i> (%)*			
≥2001	241 (43.1)	167 (50.6)	74 (32.3)
1991–2000	135 (24.2)	81 (24.6)	54 (23.6)
<1990	183 (32.7)	82 (24.9)	101 (44.1)
Time since license to practise obtained (years), mean (SD) [†]	15.8 (12.6)	13.0 (10.9)	19.8 (13.8)
Region, <i>n</i> (%)			
Montreal	180 (31.9)	113 (33.9)	67 (28.9)
Laval	51 (9.0)	34 (10.2)	17 (7.3)
Laurentides	75 (13.3)	42 (12.6)	33 (14.2)
Lanaudière	57 (10.1)	34 (10.2)	23 (9.9)
Montérégie	149 (26.4)	79 (23.7)	70 (30.2)
Estrie	30 (5.3)	13 (3.9)	17 (7.3)
Outaouais	23 (4.1)	18 (5.4)	5 (2.2)
Pharmacist status, <i>n</i> (%)*			
Owner pharmacist	157 (27.9)	101 (30.5)	56 (24.2)
Salaried	405 (72.1)	230 (69.5)	175 (75.8)
Associate pharmacists[‡], <i>n</i> (%)*			
Yes	167 (29.9)	131 (39.8)	36 (15.7)
No	392 (70.1)	198 (60.2)	194 (84.3)
Number of hours of continuing education completed in past year, mean (SD) [†]	31.2 (37.4)	29.8 (25.6)	33.1 (49.4)
Number of pharmaceutical opinions issued annually [§] , mean (SD) [†]	18.3 (28.4)	22.9 (32.4)	11.6 (19.5)
Supervision of interns, students or residents in past years, <i>n</i> (%)*			
Yes	372 (66.2)	233 (70.2)	139 (60.4)
No	190 (33.8)	99 (29.8)	91 (39.6)
Characteristics of pharmacy, <i>n</i> (%)**			
Pharmacy adjacent to a medical clinic	162 (28.9)	91 (27.6)	71 (30.7)
Pharmacy related to a chain or corporate banner	451 (80.4)	266 (80.6)	185 (80.1)

TABLE 1 (continued)

Characteristics	All respondents (<i>n</i> = 565)	Respondents very interested or interested (<i>n</i> = 333)	Respondents not very interested or not at all interested (<i>n</i> = 232)
Independent pharmacy	16 (2.9)	9 (2.7)	7 (3.0)
Pharmacy associated with a grocery store or supermarket	39 (7.0)	24 (7.3)	15 (6.5)
Pharmacy in a residence for elderly	20 (3.6)	9 (2.7)	11 (4.8)
Floor area, <i>n</i> (%)*			
<1000 ft ²	63 (11.7)	35 (10.9)	28 (12.7)
1000–2499 ft ²	111 (20.6)	64 (20.0)	47 (21.4)
2500–4999 ft ²	142 (26.3)	80 (25.0)	62 (28.2)
≥5000 ft ²	224 (41.5)	141 (44.1)	83 (37.7)
Opening hours per week, mean (SD) [†]	79.6 (16.9)	81.0 (16.7)	77.5 (16.9)
Number of prescriptions per day, <i>n</i> (%)*			
<250	147 (26.1)	84 (25.2)	63 (27.3)
250–500	196 (34.8)	116 (34.8)	80 (34.6)
>500	221 (39.2)	133 (39.9)	88 (38.1)
Availability of health professionals in the pharmacy, <i>n</i> (%)**			
Nurse	286 (53.4)	177 (55.7)	109 (50.0)
Dietitian	69 (12.9)	54 (17.0)	15 (6.9)
Other	9 (1.7)	7 (2.2)	2 (0.9)
None	228 (42.5)	124 (39.0)	104 (47.7)
Availability of a closed office for private consultations, <i>n</i> (%)*			
Yes	522 (92.7)	311 (93.4)	211 (91.7)
No	41 (7.3)	22 (6.6)	19 (8.3)

*Total number of participants in column 1 does not equal 565 due to missing data.

[†]Participants who did not answer the question on: time since license (*n* = 6), hours of continuing education (*n* = 39), number of pharmaceutical opinions (*n* = 22) and opening hours (*n* = 16).

[‡]Associate pharmacists are those qualified by the Faculty of Pharmacy of the Université de Montréal and involved in the supervision of pharmacy students.

[§]Pharmaceutical opinions are written advice pharmacists send physicians to suggest changes in pharmacotherapy or drug monitoring.

**More than 1 item could be checked.

where pharmacists could read about upcoming research projects and sign up to receive e-mails on research topics of interest as one possible way of raising awareness and promoting participation.¹⁴ An Internet-based network for pharmacists interested in research might address some of the barriers preventing pharmacists from becoming involved in research and make them more willing to take part in research projects.

The literature indicates that pharmacists who are members of PBRNs are often asked to exchange ideas with researchers in order to propose research projects that could be immediately relevant to clinicians.^{8,9} However, our survey suggests that pharmacists do not consider the possibility of such exchanges as the most attractive aspect of membership in a network; only 34.7% indicated that “exchanges between pharmacists

TABLE 2 Pharmacists' opinions on services that should be offered by a practice-based research network (PBRN)

Possible PBRN services	Positive response rate, n (%) [*] n = 565
Access to continuing education training programs developed for research projects	429 (75.9)
Access to clinical tools developed for research projects	435 (77.0)
Participation in research projects	221 (39.1)
Participation in developing new pharmaceutical practices	317 (56.1)
Exchanges between pharmacists and researchers about proposed research projects	196 (34.7)
Information about colloquiums/congresses/conferences about pharmacy practice research	362 (64.1)
Organization of an annual colloquium bringing together members of the PBRN	160 (28.3)
Other [†]	8 (1.4)

*More than 1 item could be checked.

[†]"Other" includes access to the tools and training that have yielded good results and improved pharmacy practice; exchanges between pharmacists and physicians to develop projects for their community; exchanges between nurses, physicians and pharmacists; virtual forum to exchange knowledge; involvement of interested physicians; information about seminars outside the country; and section for tips that pharmacists can give one another.

and researchers about proposals for research projects" were services they would be interested in. A small number of PBRNs, though, offer testing and development of clinical instruments and privileged access to them once their benefits have been proven. Such access was one of the most popular services among the pharmacists we surveyed: 77.0% reported that "access to clinical tools developed in research projects" is a service they thought would be valuable for an Internet-based network to offer. A few research networks offer peer learning groups, continuing education and annual meetings.^{9,15} The respondents to our survey also liked and selected these services.

The relative lack of interest in services directly associated with research activities may not be surprising, considering pharmacy practice research is relatively new. In a separate Australian survey, only about one-third of pharmacists had research experience and very few possessed a good understanding of key terms related to research; however, they recognized the value of research to the pharmacy profession.¹⁶ Earlier findings suggest that participation in research projects is known to be one of the best ways of increasing clinical expertise and keeping up-to-date with current and emergent clinical tools.¹⁷ There is, therefore,

a need to develop a real culture of research among community pharmacists and promote, in a more effective way, the importance of such research and the essential role of community pharmacists in the generation of new knowledge related to their practice.

To sum up, the interests of Quebec's pharmacists seem, for the most part, to be in line with the services presently offered by successful practice-based research networks in the United States and Canada. Further investigation is needed to determine whether the introduction of such a network for Quebec community pharmacists would actually elicit as much interest and commitment as the survey suggests.

Strengths and limitations of the study

The relatively high response rate from a random sample of pharmacists is a clear strength of this study; however, there are some limitations. Like all exploratory studies, this one has limited external validity. The use of self-administered questionnaires provides no mechanism for independently verifying the validity of the data gathered. Responses may have been skewed by a social desirability bias (pharmacists may have been reluctant to report not being interested).

It is also important to take into consideration that the main topic of the survey was about the prevention and management of chronic diseases. Pharmacists were self-selected and, therefore, respondents may have been those actively involved or more interested in chronic disease management. As an example, survey respondents reported issuing a mean 18 pharmaceutical opinions per year. According to the Régie de l'assurance maladie du Québec, in 2010, a total of 43,189 pharmaceutical opinions were reimbursed by a total of about 5000 community pharmacists (an average of about 9 opinions per pharmacist).¹⁸ The questions about PBRNs were asked at the end of a long questionnaire; this may also have influenced their answers. Finally, stated interest does not necessarily mean they would actually take part in a PBRN.

Conclusion

A majority of pharmacists reported being interested in participating in PBRNs linking community pharmacists and researchers. Gaining access to innovative continuing education programs and clinical tools was perceived as beneficial by most pharmacists. In theory, such networks have the potential to alleviate significant barriers to the conduct of pharmacy practice research: the lack of awareness about opportunities for participation, the challenges of recruiting pharmacists and the lack of communication between pharmacists and researchers. Whether such networks become an engine of innovation in pharmacy practice research may depend on the level of commitment of each network's creators and the engagement of community pharmacists. Further evaluation of the impact of PBRNs on pharmacy practice research is warranted. ■

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Acknowledgements: *Our thanks to Chantal Legris for her help in preparing and submitting this article. Dr. Lalonde is a scientist supported by the Fonds de recherche du Québec—Santé.*

Financial disclosure: *This study was funded by a research grant from the Réseau québécois de recherche sur l'usage des médicaments and the Agence de la santé et des services sociaux de Laval.*

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