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What Affects Family Physicians' Participation in Research: Outcomes from a Depression Self-Care Study

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Abstract

Background: To describe factors associated with family physicians (FPs) recruitment and participation in a mental health research project.

Methods: 400 FPs were randomly approached for a feasibility study of telephone-supported self-care for depression in adults with chronic physical diseases. FP participation included (1) completing questionnaires at study enrolment and termination to identify personal characteristics, attitudes to patient self-care, and aspects of study implementation; and (2) encouraging patient self-completion of screening forms on depression and comorbid chronic disease in order to assess study eligibility. Outcome measures were the number of FPs who adhered to these tasks, as well as the number of eligible patients recruited from each practice. Chi square and Fisher's Exact Tests permitted comparison of binary or categorical values, while the Kruskal-Wallis non-parametric test was used for continuous scales.

Results: Of the 400 FPs randomly selected, 29.8% (119/400) were not reachable by telephone; 42.8% (171/400) were assessed as not meeting eligibility criteria; and 59 (53.6%) of the remaining 110 met eligibility criteria, consented, and participated. Predominant reasons for participation were past experience with research projects, interest in the specific topic of mental health care, enthusiasm about self-care, and sense of collegiality. 86.4% (51/59) completed the study entry questionnaire, and 62.7% (37/59) the end of study questionnaire. 66.1% (39/59) submitted at least one positive screening form (range 1-43), with such participation occurring more often amongst FPs in solo practice or with previous research experience.

Conclusion: Recruiting FPs to participate in mental health research and adhere to protocols is challenging and time intensive. To optimize such involvement researchers may need to employ creative strategies unique to study sites, idiosyncrasies of the doctors, and the nature of the topic undergoing study.

Keywords: Family physicians; Research; Depression; Self-care; Implementation; Participation

Introduction

Research is designed to provide evidence to improve health care [1]. As 95% of health care occurs in the community, research should strive to include family physicians (FPs) and their patients [2]. Members of our research team have recently reported on a mixed literature review of family physicians' participation in research and observed that such involvement may depend on a complex interplay amongst FPs' personal and professional characteristics, patient-related factors, and study protocol issues [3].

Herber et al. have shown that reporting on study recruitment rates and non-participation of physicians for a specific problem (leg ulceration) can contribute to the overall understanding of physician involvement in research [4]. We therefore opted to explore what factors influence FPs' decisions to be recruited to and participate in mental health research. More specifically, we chose to focus on depression since it is a common illness in primary care, is frequently associated with chronic physical diseases and disability [5], and recruiting FPs into related studies has been described as difficult [2]. Indeed, for some mental health projects FPs have been reported to be not only protective of their patients, but also of their professional relationships with them [6].

Our examination of these issues was conducted in the context of the first phase of Project DIRECT-sc (Depression Intervention via Referral, Education and Collaborative Treatment – Self-Care), a Montreal-based, interdisciplinary research program on depression

self-care interventions in primary care for adults with chronic physical diseases [7]. This feasibility project was designed to (a)explore the degree a random sample of FPs could be recruited to a study on depression self-care; (b) examine the potential to recruit patients with depressive symptoms and co-morbid physical illness from FPs' offices; (c) administer baseline and end of study questionnaires to FPs on practice variables, including attitudes to self-care; (d) create a package of self-care tools for depression symptom management based on cognitive behavioral techniques; (e) explore utilization of such tools when supported by a telephone-based lay coach; and (f) examine depression outcome when the tools were used. This paper reports on outcomes of the first three objectives.

Methods

Family physician recruitment and follow-up

The protocol received approval by the St. Mary's Hospital Research Ethics Committee [7]. Given that this was a feasibility study, it was judged that participation of 50 randomly selected FPs would suffice to achieve the stated objectives. In anticipation of an attrition rate of 20% during the study, we set our recruitment goal at 60 FPs. Since the literature on FP rates of recruitment and participation in studies ranges from 2-81% [3,8], we conservatively projected a recruitment rate of 15%, which implied that we would need to approach 400 FPs in order to obtain our desired 60 FPs.

FPs were therefore recruited by randomizing names of all Montreal FPs found in the Quebec College of Physicians registry of FPs (Figure 1). The first 400 random names were sent a letter signed by the FP investigator providing a study overview, and indicating that a study recruiter would be calling the office in anticipation of meeting to provide more details of the study. A $50 gift certificate was offered for that meeting, irrespective of whether they agreed to study participation. Eligibility criteria were French or English speaking, and practice in Montreal primary care offices or clinics within an approximate thirty minute urban commute from the study site.

Interested and eligible FPs underwent informed consent, agreeing to participate in a study in which they would themselves or with the help of office staff, distribute to English or French speaking patients aged 40 and over, a screening form for study eligibility to be completed by the patients. This screener was comprised of the PHQ-2 [9], a brief multipurpose tool with a sensitivity of 79% and a specificity of 86% for any depressive disorder; a binary (yes/no) question enquiring as to the presence of at least one of six targeted common chronic physical illnesses diagnosed and followed by a doctor for at least the six preceding months; a query as to patient interest in learning about participation in a study on self-care for problems in mood; and place for the respondent to provide contact telephone numbers if they were interested in the project. The FPs were also expected to complete a study entry self-administered baseline questionnaire that explored aspects of their practice, recorded their demographics, and queried attitudes to patients' self-care. As well, at study termination they were to self-administer a second questionnaire that explored experiences with the study.

The FPs were paid ten dollars for each screener they faxed to the research office that helped identify patients with symptoms of depression (positive PHQ-2) and presence of chronic illness. Those respondents were contacted by telephone by a research assistant to verify the information, perform a more comprehensive depression screen using the PHQ-9, a tool well-validated in clinical and research contexts to detect depression and changes over time [10,11], and to initiate an informed consent to those interested in study participation.

The FPs were requested to provide usual care to enrolled patients. Throughout the study the FP recruiter attempted to maintain FPs' interest by regular telephone contact with them and their office staff (secretaries, receptionists, and nurses), and through motivational newsletters, and face-to-face encounters. The recruiter also logged the content and outcomes of such interactions in order to better understand reasons for varying FP participation.

Measures

FP baseline measures included two probable proxies for less or and greater practice experience, namely the dichotomization of age (<50 vs. ≥50) and years in practice (<20 vs. ≥20). Other measures included FP gender; previous research experience (yes, no); practice organizational models (solo vs. group); levels of provincial government involvement in practice operations or policy (none, some, high); confidence in chronic disease management in patients aged 65+ (none, a little, moderate, a lot); patterns of managing patients who present with depressive symptoms (assess and treat; assess, refer for consultation, and follow-up; refer to mental health services for all assessments and care); and familiarity with and belief in the effectiveness of self-care for chronic physical disease and depression management (not at all, somewhat, moderately, very, don't know).

Outcome measures assessed the rate of FP recruitment to the study and the extent of their adherence to the protocol by their involvement with: (1) patient screening, defined as the total number of returned positive screening forms (continuous); (2) completion of the study entry questionnaire (binary); and (3) completion of the end of study questionnaire (binary). These included questions about factors influencing FPs' approach to depression care, interest in and attitudes to self-care, decision to meet the study recruiter, perceptions of accuracy of information provided by the recruiter, satisfaction with financial recognition for screening, methods used to distribute and collect screening forms, and office issues regarding screening.

Statistical analyses

Frequency distributions of FP demographics and attitudes were calculated for categorical and ordinal variables. We performed bivariate statistical tests for descriptive purposes. We used Chi-square tests to compare binary or categorical variables, the Fisher's Exact test when at least one of the expected cells counts had less than five observations [12]. The Kruskal-Wallis non-parametric test was employed for the continuous scale [13]. Based on two-tailed tests, a p-value of less than 0.05 was considered to be statistically significant. We neither corrected for multiple testing nor performed multivariate analysis because of the small sample size. Calculations were carried out using SAS, Version 9.3.

Results

Recruitment of physicians

Of the 400 randomly selected FPs (Figure 1), 171 (42.8%) did not meet inclusion criteria- 146 as a result of a telephone screen, and 25 known by chance to the research team to be ineligible. Of the remaining 229, 119 were not reachable by phone. Of the final 110

contactable and eligible FPs, 63 consented to study participation, with 59 actually taking part for a 53.6% (59/110) recruitment rate of eligible contacted FPs.

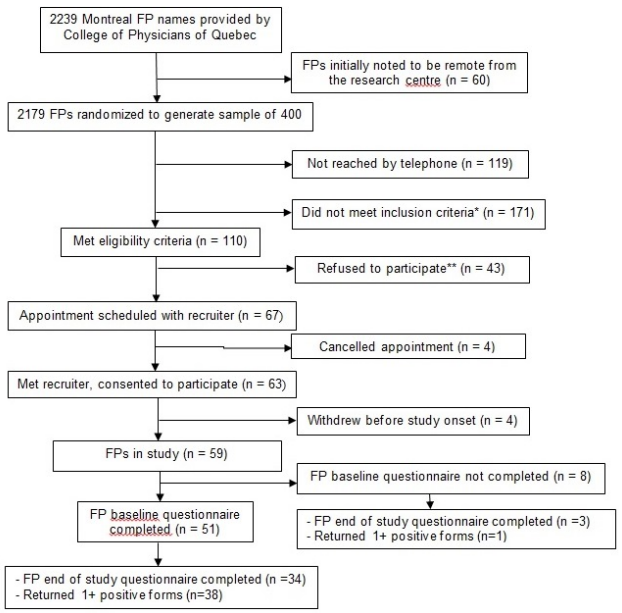

Figure 1: Family physician recruitment process and reasons for non-participation. FP: Family physician; * Not giving continuity care (38), not in office family practice (54), on leave (31), not actively practicing (31), did not have patients fitting study profile (13), remote from the research centre(3), for whom contact information was unavailable (1); ** No time (19), not interested in the project (9), never participate in research (5), finds remuneration for participation, insufficient (1), satisfied with present approach to care (1), patients with language barriers (1), no reasons given (7).

Characteristics of recruited FPs

86.4% (51/59) of FPs completed the baseline questionnaire. As summarized in Table 1, they were predominantly male, middle-aged, in practice greater than 20 years, paid on a fee for service basis, had research experience, in group practice, and their patients were predominantly middle-aged.

As shown in Table 2, the vast majority was actively engaged in depression assessment and treatment and strongly confident in their chronic disease management. They were somewhat to moderately familiar with patient self-care for chronic physical diseases; however, for depression, there was less familiarity with self-care and less certainty about its effectiveness.

Factors influencing recruitment

Table 3 summarizes FPs' self-report of factors that influenced their decisions to participate in the study, methods used to distribute screening forms to patients, and obstacles to performing the latter.

FPs indicated that the initial decision to meet with the recruiter was mostly influenced by their interest in depression care, credibility of the research team, and the study topic. Further, it would appear that FPs were satisfied with both the way the recruiter presented the study and the financial incentives given to the practice for the screening.

Adherence to screening

As also shown in Table 3, while in half of the practices secretaries helped distribute the screening forms, they were usually collected by the FPs. Predominant reasons for non-screening included FPs' forgetfulness, difficulty in introducing the study to patients, and FPs holding pre-determined opinions on patients' eligibility.

Characteristics	Frequency	Percentage
Physicians' characteristics		
Gender, male	29	56.9
Age, ≥50 years-old	28	54.9
Years in practice ≥20	33	64.7
Participated in research studies before	39	76.5
Remunerated solely by fee-for-service	39	76.5
Practice organization: Solo vs. Group		
Solo	18	36
Group	32	64
Government involvement into practices		
None (solo practice, group practices, polyclinics)	29	58
Some (FMU, FMG, Network Clinics)	15	30
High(CLSC)	6	12
Patient age groupings* (1 missing)		
Infants, children, and adolescents (0-17)	6	12
Young adults (18-35)	19	38
Middle aged adults (36-64)	34	68
Older adults (65+)	21	42
FMU: Family medicine units (academic clinical and teaching unit, partially government supported); **FMG:** Family medicine groups (government supported expanded primary care services); **Network Clinics:** Government supported expanded primary care services, with extended hours and diagnostic services); **CLSC:** Local community service centers (government- run multidisciplinary health care centre), *Multiple responses possible		

Table 1: Characteristics of FPs and their practices (n=51)

The proportion of FPs that returned positive screening forms (at least one) was 66.1% (39/59) for all FPs in the study, and 74.5% (38/51) for those who completed the baseline questionnaire. Among all FPs in the study (n=59) the median (1st and 3rd quartiles) number of positive screening forms returned was 1.0 (0-8.0), with a range of 0-43.

Attitudes	Frequency	Percentage
Confidence in CPD management with patients above age 65 (1 missing)		
None	0	0
A little	0	0
Moderate	29	34
A lot	21	66
For patients who present with depressive symptoms, usually* (3 missing)		
Assess and treat	39	83
Assess, refer for consultation, follow-up	11	23.4
Refer to mental health services for all assessments and care	1	2.1
Familiar with concept of patient self-care for CPD management (1 missing)		
Not at all	6	12
Somewhat	23	46
Moderately	20	40
Very	1	2
Believe self-care options are effective for patients with CPD (1 missing)		
Not at all	1	2
Somewhat	9	18
Moderately	22	44
very	14	28
Don't know	4	8
Familiar with the concept of patient self-care for depression management		
Not at all	17	33.3
Somewhat	27	52.9
Moderately	6	11.8
Very	1	2
Believe self-care options are effective for depression		
Not at all	1	2
Somewhat	13	25.5
Moderately	16	31.4
Very	10	19.6
Don't know	11	21.5

Table 2: FPs' attitudes to chronic disease and depression care (n=51) CPD: Chronic physical diseases; * 2 FPs checked first two options and 1 FP checked all three options

Similar results are presented in Table 4 (left hand column) for the FPs who completed the baseline questionnaire (n=51) along with the results of bivariate analyses of relationships between adherence to screening and characteristics of FPs and their practices. A history of previous participation in research (p=0.015), and being in solo practice (p=0.024), were significantly associated with returning a greater number of positive screening forms. Patient screening was not

associated with FPs' age, gender, years in practice, nor extent of government involvement into practice activities.

Factors influencing FP participation	Frequency	Percentage
Factors influencing FPs' interest in meeting the study recruiter*		
Interest in ways of delivering care to patients with depression	21	56.8
Credibility of the research team	19	51.4
Interest in the research topic (self-care)	18	48.6
Follow-up calls from the study recruiter	17	46
Initial introductory letter about the study	16	43.2
Personal knowledge of one or more members of research team	4	10.8
Gift card	4	10.8
Encouragement from another health professional in the practice	2	5.4
Accurate information given by the study recruiter	21	58.3
Level of the satisfaction with the financial recognition for the screening (3 missing)		
Very satisfied to satisfied	25	73.5
Moderately to somewhat satisfied	9	26.5
Very dissatisfied	0	0
Methods used to distribute screening forms*		
Distributed by physician	20	54.1
Distributed by secretary	18	48.7
Others (nurse, receptionist, no distribution)	6	16.2
Methods to collect screening forms* (3 missing)		
Collected by physician	24	70.6
Collected by secretary	9	26.5
Others (nurse, Project DIRECT-sc box, don't know)	3	8.7
Problems within the office regarding screening* (2 missing)		
Forgetfulness	22	62.9
Difficulty in starting or maintaining momentum	13	37.1
Feeling the patient did not meet eligibility criteria	11	31.4
Limited opportunity due to doctors' changing schedules	7	20
Feeling the patient was not likely to be capable of self-care	6	17.1
Lose of interest in the study	5	14.3
Forms generated too many patient queries	4	11.4
Unavailability of forms on hand	4	11.4

Table 3: Factors involved in FP recruitment and handling of screening forms (end-of-study Questionnaire, N=37), *Multiple responses possible

Adherence to completion of the end of study questionnaire

Overall, 62.7% (37/59) of FPs returned end of study questionnaires (including 3 who never returned study entry baseline questionnaires). Table 4 (right-hand columns) shows the results for the sub-group of 51 FPs with baseline data: higher completion of the end of study

questionnaire was associated only with those aged less than 50 (p=0.029).

Discussion

With a goal of better understanding the complex interplay affecting FPs' differential involvement in various aspects of a mental health research project, we have described factors related to the participation of FPs in a feasibility study of a depression self-care intervention. Participating FPs were generally interested in mental health issues and/or the specific topic of self-care. Their recruitment was positively influenced by that interest, previous research experience, and sense of collegiality. Adherence to the study protocol for patient screening was 66.1%, and 86.4% and 62.7% for completion of baseline and end of study questionnaires, respectively. Whereas past research experience was associated with commitment to patient screening, younger physicians were more likely to complete end of study questionnaires.

Recruitment of Physicians

The difficulty we encountered making initial telephone contact with prospective FP participants may reflect conscious gate-keeping by FPs and/or their office staff. Our introductory letters influenced less than half of questionnaire respondents to meet the recruiter face-to-face. However the FPs' positive report on the accuracy of information provided by the recruiter highlights the need in research to find or intensively train skilled physician recruiters who understand physicians' work issues and expectations.

Our ultimate recruitment rate appeared relatively low when compared to studies reporting rates on the basis of the number of FPs targeted and contacted (2%-81%) [3,8]. However, when compared to other studies in which recruitment was based on eligibility,

Characteristics		Patient screening		Completion of ESQ	
	N	Median (Q1-Q3)	KW p-value	%	Chi-square P-value
Overall	51	2.0 (0.0-8.0)	-	66.7	-
Gender					
Male	29	2.0 (0.0-6.0)	0.475	58.6	0.162
Female	22	2.5 (1.0-9.0)		77.3	
Age					
< 50 years-old	23	1.0 (0.0-3.0)	0.093	82.6	0.029
≥ 50 years-old	28	4.0 (1.0-9.0)		53.6	
Years in practice					
<20	18	1.0 (0.0-3.0)	0.076	83.3	0.062
≥ 20	33	3.0 (1.0-8.0)		57.6	
Previous research experience					
No	12	0.5 (0.0-2.0)	0.015	66.7	1.000
Yes	39	3.0 (1.0-8.0)		66.7	
Practice organization: Solo vs. Group (1 missing)					
Solo	18	7.5 (1.0-11.0)	0.024	50.0	0.073
Group	32	1.0 (0.0-4.0)		75.8	
Government involvement into practices (1 missing)					
None	29	2.0 (1.0-8.0)	0.656	55.2	0.077*
Some	15	2.0 (0.0-5.0)		73.3	
High	6	2.5 (1.0-3.0)		100.0	

Table 4: Relationships between baseline FP and practice characteristics and 1) patient screening and 2) completion of end-of study questionnaire (N=51) Patient Screening: Total number of positive screening forms; ESQ: End of study questionnaire; Q1: First Quartile; Q3: Third Quartile; KW: Kruskal - Wallis nonparametric test, **Fisher's exact test

our recruitment rate was at the upper limits of other studies (19%-63%) [14,15]. Nonetheless, we do believe that a limiting factor for the study was the high number of ineligible FPs', likely resulting from the Quebec physician resource directory which does not differentiate office and clinic-based FPs from those working in a broad range of other FP activities (e.g. emergency departments, hospitalists, occupational health, sports medicine). Based on this experience, we believe that research might be facilitated if national, state, or provincial medical organizations or licensing bodies maintained registries that clearly identified doctors not only as FPs, but also by the nature of their primary practice (e.g. office, hospital, emergency room, military, etc).

Amongst those FPs who met the recruiter, the predominant explanation for refusal was lack of time, a reason commonly cited in the literature [8,16-22]. In other studies remuneration has been shown to play a positive role in physician recruitment; however, it was not reported as a factor influencing our FP sample [15,22-28].

A high proportion of recruited FPs had been previously engaged in other research projects, confirming a finding reported by others [22,29,30]. This would seem to support the research culture and activity currently being promoted in family medicine residency programs [31].

The literature suggests the relevance of a research question is an important motivator to participate in particular projects [8,15,16,22,23,28,32-35]. Our finding that the FPs were giving comprehensive care to depressed patients suggests a commitment to the topic. This observation is further strengthened by our finding that the first and third most common reasons for FPs meeting the study recruiter was respectively interest in finding ways to deliver depression care and the option of self-care. The second commonest reason for meeting the recruiter was the credibility of the research team. The importance of researchers being known to prospective FP participants has been cited by others, even to the point of personal contact and friendship networks [36,37]. Some have suggested that research teams might foster and capitalize on this by using researchers and physicians to do the recruiting [14,36], but the practicality of this from a time or financial compensation point of view has been well noted [4,36]. On the other hand, research funding agencies might need to reconsider their common predominant practice of not providing some financial compensation for researchers' time spent attempting to recruit.

Extent of family physicians' involvement

Patient screening: FPs' adherence with patient screening was higher amongst those with past involvement in research projects. The latter may have sensitized FPs to the requirements and obligations of research participation, as well as to creativity and flexibility necessary to operationalize protocols.

Staff accountability within a practice was another factor contributing to higher levels of patient screening. Hence when a physician commits his or her involvement to a research project there needs to be a priori "buy-in" from office staff. As well, the approach and support provided by a research team may differ depending on whether it involves a group or solo practice.

Despite our attempt to optimize practice study involvement through telephone reminders, newsletters, and site visits by the recruiter to troubleshoot screening problems, the most common reason for non-screening was FP forgetfulness. Most of the FPs reported that they were satisfied with the payment for the screening. Nonetheless, the literature does suggest that restricted forms of payment to physicians may be useful to recognize achievement of pre-agreed targets [15,32]. Such an approach would borrow from community-based participatory research [35,38] in which each physician becomes an active "partner" by setting out, in advance, his or her goals for what will be achieved. Once again research funding agencies might consider reasonable budget line items to compensate FPs for their time and practice disruption.

Study follow-up: About 1/3 of FPs did not complete the end of study questionnaire. While screening of patients at study onset may have been seen by FPs as worthwhile because of possible contribution to their care, the end of study questionnaire may have carried less obvious importance or relevance. Interestingly this non-adherence to end of study questionnaire completion occurred more often with older physicians. Perhaps this group, when faced with the prioritization that accompanies practice multi-tasking, has acquired comfort in ignoring certain obligations. Research coordinators may want to provide particular support and attention to such participants.

Limitations: We have reported on findings that were obtained in the context of a successful feasibility study designed to explore coach-supported self-care of depression [7]. While the FP sample was randomly selected, its small size should suggest caution about generalizability, as it does for representativeness, since we were not able to compare characteristics of FP participants and non-participants. Despite our success in recruiting the desired sample size, we learned how difficult it is to get participating doctors to adhere to a study protocol, in particular the returning of both negative and positive screeners. This depended not only on the FPs, but also on their staff, the prevalence of depression in the practice and the cooperation of patients to complete the screener. Since this was a feasibility study we were testing those realities. Under such difficult to control conditions, the finding that many FPs returned only positive screeners created an inexact proxy for protocol adherence for completed screeners. Given these limitations, some of our findings may need to be further confirmed.

Conclusions

Previous research experience, interest in the study topic and positive professional relationships appear to have promoted office-based FPs' participation in a depression self-care study. This speaks to the need for family medicine departments to encourage a collegial culture and one that is supportive of research. This might occur via research interest groups, journal clubs, evidence-based case discussions, research update newsletters, and show-casing of locally produced research. National, regional, and local colleges and academies of family/general practice can also play facilitative roles through continuing medical education events that focus on research skill acquisition. Additionally, rosters of physicians' clinical interests might be created regionally in order that researchers might more easily access potential research collaborators for studies on specific topics. Finally, in this era of evidence-based practice, a study evaluating the cost / benefit of paying physicians to recruit physicians to participate in research would seem to have merit.

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