How do French GPs consider participating in primary care research: the DRIM study

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**Background.** Recruiting GPs is an issue faced by most research teams in primary care.

**Objectives.** To assess GPs’ willingness and expectations with regard to research in French primary care and to identify factors that may increase their participation in research projects.

**Methods.** Cross-sectional study conducted with a representative sample of 452 GPs from the Rhone-Alpes region in France.

**Results.** Among 284 GPs (63%) who participated, 85 [29.9%, 95% confidence interval (CI) = 26.4–35.3%] were willing to participate in research as investigators and 83 (29.2%, 95% CI: 23.9–34.5%) had already participated in research projects. Multivariate analysis showed that an earlier participation in research projects [odds ratio (OR) = 3.3], a training practice (OR = 2.3), membership in a research network (OR = 2.1) and younger age (OR = 1.9 for 10 years less) were associated with the willingness to participate in future research projects. Whereas 55% of practitioners who already had an experience in research had participated in a therapeutic trial, those willing to participate in the future preferred to participate in descriptive (26%) or etiologic (22%) studies. Preventive, diagnostic and therapeutic procedures and quality of care were the domains, which interested GPs most. The most expected clinical themes concerned cardiovascular, metabolic, musculoskeletal and respiratory problems.

**Conclusions.** To meet the expectations of French GPs willing to participate in primary care research, it is advisable to diversify studies with respect to their types, domains and themes. Linkage to universities and research networks should also be encouraged.

**Keywords.** Clinical investigator, family practice, primary care, research design.

**Introduction**

The need for research in primary care has been scientifically underpinned through the ecology of medical care model designed by White: ‘any balanced health care system that purports to respond to all of the peoples’ health problems (...) requires rational distribution of energy and resources in education, services and research’. The importance of investing in primary care research has been stressed internationally at a political level since the Alma-Ata conference in 1978 and renewed in the latest World Health Report in 2008. According to De Maeseneer et al., three sources of evidence are expected from primary care research: medical evidence to prevent, cure and care for diseases; contextual evidence to make medical research work in daily practice and policy evidence to contribute to equity on a worldwide scale.

In spite of the development of primary care research internationally, research projects are frequently hampered by poor recruitment (and retention) of both practitioners and patients. Recruiting for science is difficult and not supported by a science of recruitment. As part of the recruitment procedure, the interest of GPs in the area of the study has been constantly highlighted as a factor associated with successful recruitment in observational or qualitative studies. However, most studies on recruitment were conducted among primary care trials focused specifically on the interest in the trial subject rather than on a variety of subjects.

We therefore conducted the ‘Disposition à la Recherche dans l’Interrégion Rhône-Alpes des Médecins généralistes’ study, the main objective of which was to assess the willingness of French GPs to participate in primary care research and their expectations.
in this regard. Our hypothesis was that a substantial proportion of them was willing to participate in primary care research projects. The secondary objective was to identify factors that determine their participation in future research projects.

Methods

Physicians sampling
We conducted this cross-sectional study in the French Rhône-Alpes region between March and September 2009. Practically, using an unpublished French estimate of 46% for willingness to participate in general practice research, with a confidence interval (CI) of ±6% and assuming a response rate of 60%, we calculated that the required sample size was 449 GPs.12 Using Excel 2007, we first randomly selected a sample of 700 out of 5925 individual GPs registered in the list of the Regional Union of Private Practitioners. After exclusion of 28 misclassified specialists, 49 retired practitioners and 171 physicians initially qualified as GPs but with a specific practice (like homeopathy, acupuncture, nutrition, sport or vascular medicine), our working sample finally included 452 GPs.

Data collection
Data were collected using a questionnaire with 32 questions. Its first section elicited data on GPs’ characteristics (personal and demographic information, type of practice, membership in professional organizations and academic activities). Its second section looked at their experience in research (previous participation and for the last study, if any: type, theme, domain, eventual funding, feedback, incentive, computerization, integration in a research network, training and publication of results). Its third section explored their willingness to participate in future studies, their view on research priorities, with regards to types, domains and clinical themes and their conditions or barriers for participating. The questionnaire had been pilot-tested with 10 GPs and consequently improved. The questionnaire was displayed online on a dedicated website using LimeSurvey software.13 The physicians could either respond online or on the paper questionnaire. The data collection process is summarized in Figure 1. The second and third mails were followed by a phone call to the non-responders. The GPs received a promise of information feedback but no compensation for participating.

Data entry and analyses
Data entry was done on the website, either directly by the participating GPs or secondarily by the coordinator of the study, when a paper questionnaire had been used. The clinical themes were classified using the International Classification of Primary Care (ICPC-2).14

Data were stored in an SQL database and analysed with SPSS software, version 17. Univariate analyses were performed using Pearson’s chi-square or Fischer’s exact test. The multivariate assessment of the factors associated with the willingness to participate in research was based on a forward stepwise logistic regression model, after adjustment for age. We included in the multivariate model all the variables associated with a P value inferior to 0.10 in univariate analyses.

Ethical issues
Confidentiality was preserved by means of an invitation code, which was required to fill in the questionnaire online. This study was covered by a general agreement obtained from the French Committee for Informatics and Freedom (CNIL, record number 1089806).

Results
Finally, 284 GPs participated in the study, resulting in an effective response rate of 62.8%. Their characteristics are detailed in Table 1.

Research experience
Among them, 83 (29.2%, 95% CI = 23.9–34.5%) had already participated at least once in a research project. These physicians mostly had participated in therapeutic trials (55%) or in descriptive studies (18%). About half of them had participated in a study on a treatment procedure (51%) and 15% on a preventive procedure, whereas no physician reported any experience in the domains of ethics, forensic issues, alternative medicines or teaching (Fig. 2). They had mainly experienced the following clinical themes: circulatory
neurological (8%), endocrine/metabolic/nutritional (8%) and respiratory problems (7%) (Fig. 3).

Most research projects had been funded by pharmaceutical companies (63%), far before professional organizations (10%) or public institutions (7%). Few physicians had received any formal training (18%) and only a minority had participated as principal investigators, i.e. researcher (7%). One-third of studies had been performed within structured networks (30%). Only 21 respondents (25%) reported that the (last) study had been published, but 69% had received some feedback on the results. Participants had been financially compensated in 71% of the studies. Computer assistance had been provided in 13% of these studies.

Research expectations

A number of 85 GPs (29.9%, 95% CI = 24.6–35.3%) were willing to participate actively in primary care research projects as investigators and 12.0% (95% CI = 8.2–15.7%) as researchers. Among them, 39 (46%) had already experienced research. Only 20% of those willing to participate in the future were interested in therapeutic trials, while other expectations concerned descriptive (26%), etiologic (22%) and interventional studies (20%). Preventive (13%), diagnostic (11%) and therapeutic procedures (11%) and quality of care issues (10%) were the domains, which most interested GPs in the future (Fig. 2). Although 51% of them had participated in a study on a therapeutic procedure, only 11% reported being interested in this domain of research.

The following clinical themes were considered as of prominent interest for the future: cardiovascular (17%), endocrine/metabolic/nutritional (9%), musculoskeletal (9%) and respiratory problems (8%) (Fig. 3). In particular, diabetes, hypertension and asthma were reported as the top three specific clinical topics of interest.

According to the results of the multivariate analysis, an earlier participation in research projects (OR = 3.4),

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Characteristics of the participating GPs (N = 284)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
<td>n (%)</td>
</tr>
<tr>
<td>Mean age (SD)</td>
<td>51.2 (8.0)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>85 (29.9)</td>
</tr>
<tr>
<td>Male</td>
<td>199 (70.1)</td>
</tr>
<tr>
<td>Practice location</td>
<td></td>
</tr>
<tr>
<td>Urban area</td>
<td>119 (42.0)</td>
</tr>
<tr>
<td>Semi-rural area</td>
<td>114 (40.3)</td>
</tr>
<tr>
<td>Rural area</td>
<td>50 (17.7)</td>
</tr>
<tr>
<td>Type of practice</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>146 (52.0)</td>
</tr>
<tr>
<td>Solo</td>
<td>135 (48.0)</td>
</tr>
<tr>
<td>Mean number of patients per week (SD)</td>
<td>110.0 (38.9)</td>
</tr>
<tr>
<td>Reception of medical visitors</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>226 (80.7)</td>
</tr>
<tr>
<td>No</td>
<td>54 (19.3)</td>
</tr>
<tr>
<td>Training practice</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>40 (14.1)</td>
</tr>
<tr>
<td>No</td>
<td>244 (85.9)</td>
</tr>
<tr>
<td>Teacher in continuous education</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>20 (7.0)</td>
</tr>
<tr>
<td>No</td>
<td>264 (93.0)</td>
</tr>
<tr>
<td>Member of scientific organization</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27 (9.5)</td>
</tr>
<tr>
<td>No</td>
<td>257 (90.5)</td>
</tr>
<tr>
<td>Member of a research network</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13 (4.6)</td>
</tr>
<tr>
<td>No</td>
<td>271 (95.4)</td>
</tr>
</tbody>
</table>
a training practice (OR = 2.3), a membership in a research network (OR = 2.1) and a younger age (OR = 1.9 every 10 years less) were associated to the willingness to participate in future research projects (Table 2).

### Conditions to participate and reasons for refusal

The main conditions for participating in research reported by the interested physicians were getting financial compensation (19%) and a feedback on the results (19%), and being proposed a research topic.

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**Figure 3**  Themes of studies experienced (n = 83) and expected (n = 85, overall number of responses: 291)

**Table 2**  Factors associated with the willingness to participate in future research

<table>
<thead>
<tr>
<th>Variable</th>
<th>Univariate analyses</th>
<th>Multivariate analysisa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ORb 95%CI</td>
<td>P</td>
</tr>
<tr>
<td>Female gender</td>
<td>0.7 (0.4–1.3)</td>
<td>0.27</td>
</tr>
<tr>
<td>Group practice</td>
<td>0.7 (0.4–1.3)</td>
<td>0.33</td>
</tr>
<tr>
<td>Reception of medical visitors</td>
<td>0.8 (0.4–1.6)</td>
<td>0.67</td>
</tr>
<tr>
<td>Urban practice</td>
<td>1.0 (0.6–1.7)</td>
<td>0.99</td>
</tr>
<tr>
<td>Member of a scientific association</td>
<td>1.3 (0.6–3.0)</td>
<td>0.73</td>
</tr>
<tr>
<td>Activity &gt;100 patients/week</td>
<td>1.4 (0.8–2.7)</td>
<td>0.32</td>
</tr>
<tr>
<td>Age (10 years decrease)</td>
<td>1.5 (1.1–2.1)</td>
<td>0.01</td>
</tr>
<tr>
<td>Teacher in continuous education</td>
<td>1.9 (0.7–5.1)</td>
<td>0.33</td>
</tr>
<tr>
<td>Member of a research network</td>
<td>3.2 (1.0–10.6)</td>
<td>0.09</td>
</tr>
<tr>
<td>Training practice</td>
<td>3.4 (1.2–4.9)</td>
<td>0.03</td>
</tr>
<tr>
<td>Earlier participation in research</td>
<td>3.8 (2.1–7.0)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

a Multivariate analyses were performed with data from 281 physicians due to some data missing for three physicians.
b All variables were adjusted on age (apart from the effect of age itself).
relevant for daily practice (18%) (Fig. 4). Time (40%) and administrative constraints (25%) were the main reported barriers for the physicians declining to participate in the future (Fig. 4).

Discussion

Research as a challenge for GPs

In this French cross-sectional study, we observed a relatively stable and encouraging proportion of GPs who either have already been involved in research (29.2%) or are willing to participate in future research projects (29.9%). The proportion of GPs willing to get involved in research is consistent with estimates of 29% and 33.7% from Australia.15,16

The main reported barriers impeding GPs to participate are consistent with other studies.17,18 Taking them into account would help the GPs to feel involved and recognized in the research process.19 Physician compensation implies that primary care research projects are funded adequately.20 The importance of appropriate electronic information systems has already been raised as one answer to alleviate the research workload.20 Previous qualitative studies also showed that some GPs can view research as lacking intrinsic, clinical or professional value, or as being incompatible with person-centred care.21 Motivating GPs to participate could be facilitated by their inclusion from the start of a study, ideally at the time of the definition of the research question and by the consideration of their specific expectations, using at least partly a bottom up approach.22,23 In countries like France, the recent institutional recognition of research, along teaching, in the discipline of general practice at the University may contribute to positively alter negative perceptions of the physicians.19

A need for diversification of research protocols

Whereas therapeutic trials represented 55% of the studies experienced by French GPs, the most expected designs corresponded to observational studies (48%), including descriptive and etiological studies, before experimental studies (40%), including therapeutic and intervention studies. GPs are not willing to do as many therapeutic trials as before. These evolving expectations may be influenced by the feeling that randomized control trials do not always contribute to the reduction of the global burden of disease,24,25 especially in the area of drug evaluation.16 This is consistent with the findings that most unanswered questions on patient care deal with undiagnosed findings or complex therapeutic issues.26 Moreover, observational research should not be neglected, particularly to produce applicable knowledge on clinical diagnosis or prognosis.27,28 Eight per cent of GPs had participated in a qualitative study and 12% were willing to participate in such studies. This trend towards diversification of types of studies expected in primary care is consistent with the recommendation of basing this research on a wide range of methodologies,29,30 sometimes using mixed methods, especially by integrating quantitative and qualitative approaches.31,32 Mendis and Solangaarachchi33 already observed a trend towards the diversification of study designs in family medicine research in the last decades, thus increasing the visibility of our discipline in the literature. Taking into account GP’s interests should further reinforce this dynamic.

Research on clinical procedures, including preventive, diagnostic and therapeutic procedures, which is intended to bring medical evidence, was the first domain of interest cited (35%). Various other issues, supporting contextual evidence, were also largely expected, like quality of care, organization of practice...
and relationship with patients. And research on health services and economics, needed to provide policy evidence, was a domain completely inexperienced albeit expected. The priority given to clinical issues is consistent with the core content proposed by Lionis et al.\textsuperscript{20} for general practice research, which further includes primary care-based morbidity registration, education and teaching. These results call, however, for a better integration of these three types of evidence in order to gain efficiency, as stressed by De Maeseneer et al.\textsuperscript{5}

The diversification should also apply to the themes of studies. For example, musculoskeletal and gynecology-obstetrics themes have been poorly studied in French primary care, in contrast with physicians' expectations. Previous studies have already shown that hormone replacement therapy and contraception were major topics of interest to British GPs.\textsuperscript{34}

\textit{A need for structuration of research capacity}

We found a higher interest in younger GPs for participating in research, which was already identified in Australia.\textsuperscript{15} Belonging to a research network or being a clinical teacher predicted an interest in research,\textsuperscript{18} as opposed to the frequent geographic and professional isolation of the GPs within the French health care system.\textsuperscript{19} Willingness to participate in research was also linked to an earlier research experience, which supports the importance of research education. Associating practical experience with theoretical knowledge by the means of research methods courses can help recruiting investigators and contribute to the development of more professional and academic research projects.\textsuperscript{35} Primary care research networks can increase research capacity and productivity and facilitate the implementation of relevant research evidence.\textsuperscript{23} These networks can enable multidisciplinary coalitions of researchers to address diverse research agendas.\textsuperscript{22}

Our study confirmed previous results showing that the willingness to participate is not related to gender.\textsuperscript{15,16} We found no association with the practice location, contrary to one Australian study, in which doctors working in outer suburban or rural practices had higher levels of interest in research than their inner suburban and provincial city counterparts.\textsuperscript{16} Absence of influence of gender or practice location can be rather reassuring about the representativeness to be expected from research conducted by voluntary GPs.\textsuperscript{18}

\textit{Validity of the study}

Because of the randomization process and the relatively high response rate, the participating GPs in this study are assumed to be representative of GPs in the Rhône-Alpes region. In addition, we found no difference between the GPs in our sample and all French GPs regarding gender, age and financial agreement with the Sick Fund (fixed fees as opposed to free fees). We cannot exclude, however, that the responding GPs could be more interested in research and that research interest could have been overestimated. Under the hypothesis that all non-respondents were actually not interested in research projects, the minimal proportion of GPs willing to participate would still be 18.8% (85/452).

Nevertheless, our study was declarative and probably not all GPs stating interest in research would actually participate, if asked to, and even less would recruit patients in the end.\textsuperscript{36,37}

\textbf{Conclusions}

About one-third of French GPs are willing to participate in primary care research projects. To meet their expectations, it appears necessary to diversify the studies with respect to their types, themes and domains. Research regarding general practice should be based on a large range of qualitative and quantitative methods and cover the broad spectrum of clinical, contextual and cost-effectiveness issues. Linkage to universities and research networks should also be encouraged.

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\textbf{Declaration}

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Ethical approval: French Committee for Informatics and Freedom (record number 1089806).

Conflict of interest: none.

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