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# Recruitment of general practices: Is a standardised approach helpful in the involvement of healthcare professionals in research?

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## Abstract

**Introduction:** Health service research often involves the active participation of healthcare professionals. However, their ability and commitment to research varies. This can cause recruitment difficulties and thereby prolong the study period and inflate budgets. Solberg has identified seven R-factors as determinants for successfully recruiting healthcare professionals: relationships, reputation, requirements, rewards, reciprocity, resolution, and respect.

**Method:** This is a process evaluation of the seven R-factors. We applied these factors to guide the design of our recruitment strategy as well as to make adjustments when recruiting general practices in a guideline implementation study. In the guideline implementation study, we studied the effect of outreach visits, quality reports, and new patient stratification tools for low back pain patients.

**Results:** During a period of 15 months, we recruited 60 practices, which was fewer than planned (100 practices). In this evaluation, five of Solberg's seven R-factors were successfully addressed and two factors were not. The need to involve (reciprocity) end users in the development of new software and the amount of time needed to conduct recruitment (resolution) were underestimated.

**Conclusion:** The framework of the seven R-factors was a feasible tool in our recruitment process. However, we suggest further investigation in developing systematic approaches to support the recruitment of healthcare professionals to research.

## Keywords

Research methods, research subject recruitment, general practice, low back pain, process evaluation

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## Introduction

In health research, the field of implementation science seeks to study the process of carrying out an intention to change behaviour.<sup>1</sup> Acceptance of an invitation to participate in implementation research may be considered the first step in the process of change. However, recruiting healthcare professionals as research subjects can be challenging, as study participation often requires changes in clinical procedures and a substantial investment of time and effort. Insufficient recruitment may extend the originally proposed time schedule, inflate the budget, reduce the power of the study, and reduce the generalisability of studies.<sup>2,3</sup> Ultimately, insufficient recruitment may lead to unfinished or inconclusive studies and wasted funding. In

the United Kingdom, less than one-third of primary care studies successfully recruit healthcare professionals within the original time schedule.<sup>4</sup> This calls for guidance on how

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to recruit healthcare professionals. As such, we identified Solberg's seven R-factors as the only general framework available to guide recruitment.<sup>5</sup> Our interpretation of each of the seven R-factors is as follows: (1) relationship: recruiters need to be known for their involvement in the local medical community and for doing practical research, (2) reputation: recruiters need to be known for doing research. Participants need to believe that the relationship and information will not be abused, (3) requirements: resource demands for participants in study-related activities need to be minimised, (4) rewards: nominal recognition for participating and the reward of learning new knowledge are important in recognising the participant's effort, (5) reciprocity: mutual obligation should be negotiated for what is to be provided by recruiters and what is to be expected from participants, (6) resolution: recruitment persistence and a willingness to repeatedly make contact are needed until agreement to participate is eventually reached, and (7) respect: recruiters need to genuinely respect participants, their work, and their constraints. Participation should never be taken for granted.

Solberg's seven R-factors are based on the recruitment literature, 15 years of general experience in conducting clinical studies with the recruitment of healthcare professionals, and experience from a specific study. In the specific study, Solberg successfully recruited all 41 eligible groups of healthcare professionals in Minnesota, where most groups consisted of 10–200 physicians. The healthcare professionals were expected to fill out questionnaires and participate in telephone interviews lasting 15–30 min. Subsequently, Solberg grouped determinants for successful recruitment into seven factors, making it possible to apply a systematic approach in order to obtain participation.<sup>5</sup>

The active participation of healthcare professionals in both the design of recruitment procedures and as a source of feedback in the process of recruitment helps to identify suitable strategies to obtain participation. Furthermore, tailoring recruitment strategies to specific settings is more likely to be effective than strategies that are not tailored.<sup>6,7</sup> Thus, to maximise the participation rate of healthcare professionals, we developed a multi-faceted recruitment strategy, which addressed all seven of Solberg's factors and allowed adjustment depending on the experience gained during recruiting.<sup>8</sup> The purpose of this research was to evaluate the feasibility of the seven R-factors in guiding recruitment to a study on the implementation of low back pain (LBP) guidelines.

## Methods

This evaluation was based on a systematic monitoring procedure for the recruitment of general practices in a cluster randomised controlled trial on the implementation of LBP guidelines. The trial studied whether guideline implementation could be supported by offering outreach visits, new patient

stratification tools, and the opportunity to access quality reports on the treatment of LBP patients. The additional opportunities were hypothesised to decrease referral of patients to hospital care and to improve patients' functional levels, pain, life quality, and satisfaction with care.<sup>8</sup> Most Danish practices have one or two general practitioners (GPs) as well as nurses and medical secretaries. GPs in Denmark are self-employed and work on contract for the tax-funded regional health service.<sup>9</sup> Differences between participating general practices and non-participating general practices were tested using Mann–Whitney's test for practice size, and Fisher's exact test for proportions of practices which had received an outreach visit from the North Denmark Region prior to the study.

All GPs in the North Denmark region were invited to participate in our trial.<sup>8</sup> We aimed to include 100 of 189 eligible practices. All GPs in a practice could participate, but only one was required for the practice to be included. Participating GPs were expected to fill out a questionnaire at baseline and again after 6 months. In addition, GPs were expected to include 14 patients over 6 months. Furthermore, all LBP patients had to be coded with an International Classification of Primary Care code (ICPC-2). Coding with L02, L03, L84, or L86 elicited an electronic pop-up with questions regarding the patient's symptoms and treatments.<sup>8</sup> In the recruitment strategy, the seven R-factors were applied as determinants that needed to be addressed.

In the design stage, four senior researchers and two PhD students developed the recruitment strategy in meetings (Table 1). Three GPs from the quality unit for General Practice in the North Denmark Region, assisted in brainstorming sessions on barriers and enablers for successful recruitment. The GPs were experts in working with quality work in general practice and assisted in the development of the strategy as well as being consulted during the recruitment stage. Furthermore, these three GPs were involved in promoting participation at regional meetings with other regional GPs. Among the regional GPs, 94% considered the regional quality unit for general practice as an important stakeholder for general practice.<sup>10</sup> During recruitment, the recruitment group consisted of one GP, one sociologist, and two PhD students. The main recruiter was the head of the regional research unit, the chairman of the regional inter-sectorial planning committee for musculoskeletal disorders, and worked part-time as a GP. During 14 months, the main recruiter made personal contacts to possible participants and spend half a day weekly on recruitment issues. The sociologist was experienced in collecting information via phone. The sociologist spend 1 day per week on both announced and unannounced phone calls to the general practices, promoting study participation.

Recruiting initiatives were planned for each R-factor (Table 1). During the recruitment stage, the recruiters actively collected information on barriers for participation, mainly done via phone. Weekly meetings on the progress of recruitment were held and depending on the barriers experienced during the process of recruitment, adjustments to the recruitment strategy were implemented. After the first

**Table 1.** Application of the seven R-factors to the guideline implementation study on low back pain.

Design stage		Recruitment stage	
Components (R-factors)	Planned recruitment components	Barriers identified <sup>a</sup>	Adaptive changes to the recruitment strategy <sup>a</sup>
Relationship	This study was conducted in co-operation with the regional quality unit	Lack of contact information for the main recruiter	Include all contact information in postal and e-mail correspondence
Reputation	The main recruiter was head of the general practice research unit. Participation was recommended by the Committee of Multi-practice Studies in General Practice		
Requirements	General practitioners had to enter a project database and fill out an online questionnaire to register as participants. Intervention group practices had to receive an outreach visit, use patient stratification tools, and access treatment quality reports	Problems with the login to the project database to sign up for participation	E-mails containing a link to the project database replaced postal letters
Rewards	Participation was an opportunity to get updated with the low back pain guidelines. Incentive: 200–333€ per general practitioner. New opportunity to refer patients to The Department of Social Medicine		
Reciprocity	Information on what was expected from participants and what participants could expect in return was provided During the study, diagnosis coding would automatically trigger pop-ups. Pop-ups included questions relevant for evidence-based treatment	Problems with installing the pop-up software <i>Worries about the extra work related to pop-up usage.</i> <i>Technical problems with pop-ups</i>	Contact information for free technical support was provided <i>A brief pop-up guide was sent to all practices and a more detailed explanation was delivered upon request</i> <i>Potential participants were given the opportunity to contact the main recruiter at any time</i>
Resolution	Repeated project advocating through personal e-mails, postal letters, regional meetings with general practitioners, regional newsletters, local newspapers, and television	<i>Difficulties with establishing the first contact with the general practices</i> <i>More time than expected was needed to decide on participation</i>	<i>Advocating phone calls to potential participants were planned at weekly meetings of the recruitment group</i> <i>During the initial contact, a follow-up appointment was made with a contact person in the practice</i>
Respect	We were aware of communicating our respect for all arguments against participation and acknowledging the high workload in general practice. If the practice was to receive an outreach visit, the form and content should be established in co-operation between the outreach visitor and the practice		

<sup>a</sup>Empty boxes indicate absence of barriers and the specific R-factors were considered to be properly addressed in the planning stage. Boxes with normal text indicate barriers that were identified during recruitment but were successfully addressed by the end of recruitment, and boxes with text in italics indicate identified barriers that were not fully addressed by the end of recruitment.

contact was established and the practice had received project information, the recruitment group aimed to contact the practice at least every fortnight. The purpose of making regular contacts was to reach potential participants using different types of media as well as to establish mutual respect and understanding.<sup>5</sup>

### Ethics

This article does not contain patient data. The LBP guideline implementation study was registered at the Danish Data Protection Agency, The Danish College of General

Practitioners, and at ClinicalTrials.gov (registration number NCT01699256).

### Results

Recruitment was performed from January 2013 to March 2014, during this time each of the four recruiters spent an average of one working day per week with recruitment-related activities. Eligible practices had received approximately a median of six contacts, ranging from 2 to 12 personal contacts in addition to study promotion at regional meetings with GPs, regional newsletters, local newspapers,

and television. In total, 60 general practices were recruited. We had contacted all eligible practices during the recruitment stage and got reply from approximately 85%. There was no statistical difference in practice size between participants and non-participants (median 2061.5 patients (1636, 3876) vs 2227 patients (1642; 3888),  $p=0.957$ ). The proportion of practices with an outreach visit in 2011 in connection with another regional project, with inclusion of acceptance of an outreach visit, was 42 (70%) among participants and 72 (55%) among non-participants ( $p=0.057$ ). We considered earlier acceptance of an outreach visitor as an indicator for the practices' willingness to change behaviour. In the initiation of the recruitment stage, the main problem was to establish the first contact with a new practice. At the end of the recruitment stage, the barriers were mostly related to GPs' final decision to participate and to persuade GPs to login to the database successfully. The seven R-factors helped to clarify which determinants were properly addressed in the design stage, which barriers were successfully addressed during the recruitment stage, and identifying reciprocity and resolution as not properly addressed in either the design or the recruitment stage (Table 1).

## Discussion

In this process evaluation, the application of a known framework to support the recruitment of healthcare professionals to research was evaluated. The seven R-factors provided us with a useful framework, both in the design stage and in recruiting healthcare professionals for a LBP guideline implementation study. This evaluation was performed alongside a randomised trial. Therefore, the results from this evaluation have to be interpreted as secondary to the main trial. The evaluation was based on feedback from possible participants during the recruitment process. However, the evaluation could have been strengthened by adding interviews from targeted practices on their impressions on how well the seven R-factors were met. We recruited general practices from one of five Danish regions. Generalisability of this evaluation could have been strengthened by recruiting from all five regions.

We aimed to recruit 100 practices, but succeeded in recruiting 60 practices. We had underestimated the need to involve end users (reciprocity) in the development of new software as well as the amount of time needed to conduct recruitment (resolution). Hence, five of the seven R-factors were successfully addressed, whereas the reciprocity and the resolution factors were not (Table 1). The reciprocity factor could be addressed by more proactively addressing some of the barriers that could have been anticipated, such as the problems related to the automatic pop-ups in the electronic medical record. The resolution factor could have been addressed by more extensive recruitment efforts. Reasons for a long period of time before signing up for the project or rejecting study participation were mainly related to the high

workload in general practice. Practices often wanted to wait before deciding to participate in research. The contact person in the practice was often keen on research participation, but needed time to discuss this with their practice colleagues. In some cases, practices had decided to participate, but had not yet filled in an online questionnaire and formally signed up for the study. If practices had received a similar intervention in 2011, they would have had a tendency towards faster accepting participation. Maybe they did not consider the resources for this project as demanding as practices not familiar with a similar intervention, or they might generally be more willing to participate in research and quality development projects. The practices received a combination of contact forms: postal letters, e-mails, phone calls, personal contacts, and so on. It is not possible to state which contact form was most likely to result in participation. Even though practices were informed about the trial using multiple methods, some practices may still have been unaware of the project. Hence, lack of subject knowledge could be a potential barrier for recruitment. The listed barriers (Table 1) are the barriers experienced more than once. Examples of barriers only experienced on one occasion were the planned closing of a practice, selling of a practice, and one practice had a policy against participating in more than one project at a time.

Besides Solberg's framework, other studies on recruitment have underlined the importance of targeted contacts to leaders of practices, followed by on-site meetings and an emphasis on the importance of resolution in recruitment.<sup>11–13</sup> Recruitment consists of many activities and having more than one recruiter can be important for keeping a record of appointments, names, and other information from potential participants.<sup>14</sup> Moreover, other recruiters have pointed to the importance of building personal contacts, offering incentives, and choosing flexible recruitment strategies.<sup>15</sup> Friendship networks have also been reported as powerful tools in recruiting groups of healthcare professionals.<sup>16</sup> Conversely, previous participation in irrelevant studies and the lack of rewards and recognition might be barriers to participate in future studies.<sup>17</sup> Carey et al.<sup>18</sup> have summarised four important characteristics for successful recruitment: direct recruitment of clinicians by clinicians, co-operation with local medical organisations, on-going personal contact with practices, and recognition of the GP's time. These summarised points are all included in the seven R-factors. Researchers may consider using alternative actions to support the recruitment of healthcare professionals and patients, for example, open-trial designs and opt-out recruitment strategies. However, these actions may introduce methodological challenges as well as ethical problems.<sup>19</sup> If replicating our recruitment, we would recommend a closer co-operation between researchers and general practices on issues requiring a change in clinical routine procedures like pop-up usage and recruiters should be prepared to contact general practices between 2 and 20 times during a period of a year.



## Conclusion

The framework of the seven R-factors was a feasible tool for planning and conducting our recruitment, and we found a standardised approach helpful in the recruitment of health-care professionals for research. However, we recommend further investigation for the development of systematic recruitment approaches or even the development of detailed checklists on the basis of the recruitment literature.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Ethical approval

Ethical approval for this study was waived by The North Denmark Regional Committee because this trial did not need approval.

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## Informed consent

Verbal informed consent was obtained from all subjects before the study.

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