

Lieke Franke

MD, is a PhD student and general practice registrar, Department of General Practice, Radboud University Nijmegen Medical Centre, The Netherlands. l.franke@hag.umcn.nl

Thijs Kommers

MD, is House Officer in Internal Medicine, Department of General Practice, Radboud University Nijmegen Medical Centre, The Netherlands.

Evelyn Van Weel

MD, PhD, is Associate Professor, Department of General Practice, Radboud University Nijmegen Medical Centre, The Netherlands.

General practice registrars and research

Attitudes toward participation

Background

Early exposure of general practitioners to research is recommended to increase family medicine research capacity. However, vocational training programs encounter difficulties in engaging general practice registrars in research projects. The authors investigated registrars' opinions of research and their participation in research in daily practice.

Methods

Sixty-seven Dutch general practice registrars participated in a trial concerning patients with emotional symptoms. The authors assessed the registrars' participation and opinions through observation and a questionnaire.

Results

Response rate was 82%. Registrars recruited 208 patients. The participants liked learning a new skill and participating in research. Obligatory participation, lack of time and difficulties with patient recruitment were important barriers to participation.

Discussion

Registrars report that participation in research during vocational training is interesting but that it should not be compulsory, and that they prefer to choose their own research subjects. The authors recommend implementing an attractive research program during vocational training.

■ **Primary care research is important¹ but there is general concern about the difficulty of linking research to patient care.^{2,3} Research development is even more problematic in primary care than in other disciplines.⁴ Policies to enhance general practice research include the creation of research networks,⁵ collaborations with research institutes,⁶ and early exposure to research during undergraduate teaching and specialty training.⁷ Early exposure prompts students to consider research as part of their future career, and better equips future practitioners to deliver evidence based patient care.⁸**

The importance of early exposure to research is generally accepted by both general practice registrars and directors of vocational training programs.^{7,9} Most programs include research curricula or related activities, including training in knowledge and skills, conducting research projects, or participation in research in daily practice.^{8,10} Although research curricula create more positive attitudes toward research,¹¹ there are no indications that more registrars are participating in research,¹² and we still know little about the long term effects of such curricula.^{8,12} Furthermore, most studies have assessed changes in registrars' attitudes toward performing a research project or undertaking education in research skills during vocational training, rather than assessing registrars' participation in research during daily practice.^{9,11}

This study analyses registrars' participation in research tasks during their daily work with patients. The aim was to assess patient recruitment, factors influencing recruitment, and registrars' views and suggestions with regard to participation.

Methods

Setting and design

Dutch general practice registrars undertake a 3 year specialty training program. They spend the first and third year in a training practice in the community, and in the second year they rotate between hospital posts.

Peter Lucasson

MD, PhD, is Senior Researcher, Department of General Practice, Radboud University Nijmegen Medical Centre, The Netherlands.

Mechtild Beek

MSc, PhD, is Senior Teacher, Vocational Training Programme, Radboud University Nijmegen Medical Centre, The Netherlands.

Henk Van den Hoogen

is a statistical advisor, Department of General Practice, Radboud University Nijmegen Medical Centre, The Netherlands.

Chris Van Weel

MD, PhD, is Professor of General Practice and Head, Department of General Practice, Radboud University Nijmegen Medical Centre, The Netherlands.

In 2003 and 2004 our training program included participation of all third year registrars (70) in a controlled clinical trial as part of their core program.

The trial

A controlled clinical trial of the effectiveness of registrars using problem solving treatment (PST) – a brief psychological treatment to teach patients how to use their own skills to cope with problems – for patients with emotional symptoms. It is theoretically assumed that symptoms are reduced if problems can be resolved.¹³

Registrars were randomly allocated to either the intervention group or the control group. Both groups recruited patients with emotional symptoms during their regular clinical work. We asked each registrar to recruit 4–6 patients who had presented for three or more consultations in the past 6 months, had a score of four or more on the 12 item general health questionnaire (GHQ-12), and who experienced emotional symptoms.

Exclusion criteria were severe medical illness, current contact with psychiatric services (or contact in the past year), current psychological treatment or past cognitive behavioral therapy, severe mental disorder, organic psychiatric disorder or substance misuse, active suicidal ideas, and lack of sufficient Dutch language to participate.

Registrars in the intervention group received a 2 day training course in PST¹⁴ and provided the psychological treatment to the patients they had recruited within 8 months. Registrars in the control group provided 'care as usual' and were asked to complete their patient recruitment within 4 months. The trial design was approved by the Medical Ethics Committee of the Radboud University Nijmegen Medical Centre, The Netherlands.

Outcomes and analysis

The authors administered a self developed questionnaire to explore registrars' opinions about their participation in the trial, barriers they experienced in patient recruitment, and their opinions and suggestions

with regard to enhancing research participation. Recruitment data were obtained from the trial records.

Recruitment data and scaled answers from the questionnaire were analysed with descriptive statistics and independent sample t-tests using SPSS statistical analysis software. The answers to open ended questions were independently ordered into categories.

Results

Sixty-seven of the 70 registrars participated in the trial (37 in intervention group [27 women] and 30 as controls [18 women]).

Registrars randomly allocated to the intervention or control group in 2003 expressed resistance to obligatory participation. The authors modified the process for the 2004 cohort, offering registrars an individual choice to participate in the training. Registrars who participated in PST training comprised the intervention group (17); the others, providing usual care, were regarded as the control group. The registrars were also offered more research assistance, and both groups were given 8 months to recruit patients.

Patient recruitment

The registrars in the 2003 intervention group recruited 83 patients; the registrars in the control group recruited 11 patients. The registrars in the 2004 intervention group recruited 66 patients; the control group 48 (Table 1). The authors explicitly asked registrars in 2004 to describe the difficulties they had experienced recruiting patients (Table 2).

Registrars' opinions and suggestions

The questionnaire had a response rate of 84% (30 of 37 registrars in the intervention group, 26 of 30 registrars in the control group [$p=0.54$]).

Positive points reported by the registrars included the interesting and relevant nature of the topic, the opportunity to learn a new skill, becoming acquainted with and contributing to research and evidence based medicine, good research support, becoming more attentive

Table 1. Recruitment of patients

	2003		2004		p value
	Mean number of patients per registrar	Range	Mean number of patients per registrar	Range	
Intervention group	4.2	1–9	3.9	2–6	0.653
Control group*	1.0	0–3	2.5	0–5	0.007
Total	3.0		3.2		0.781

* Control group recruitment took 4 months in 2003 and 8 months in 2004 (intervention group recruitment took 8 months in both years)

Table 2. Important factors in the recruitment of patients (2004, 31 respondents)

Response to question 'Did the following reason play a role in the inclusion of patients?' in questionnaire	Numbers of residents (%)		
	Yes	No	Missing
Lack of patients who met inclusion criteria	18 (58)	12 (39)	1 (3)
Lack of time	16 (52)	14 (45)	1 (3)
Patients refusing to start the intervention*	10 (67)	4 (27)	1 (7)
Patients refusing to participate in research	12 (39)	18 (58)	1 (3)
Too many administrative actions	12 (39)	17 (55)	2 (6)
Difficulties in explaining the research	8 (26)	23 (74)	
Difficulties leaving the role as a GP and asking patients for research participation	8 (26)	22 (71)	1 (3)
Lack of patients with emotional symptoms	3 (10)	28 (90)	
* Intervention group (15 respondents)			

to diagnosing and treating emotional problems, and developing a critical view.

Negative points included the time investment required (this was especially mentioned by intervention group registrars). All registrars in 2003 criticised obligatory participation; only control group registrars were negative about obligatory participation in the 2004 cohort.

To improve participation, registrars suggested they be allowed to choose between several research projects to better match the research topic with their personal interests. They felt they needed to spend enough time in clinical practice training, early and good information about a research project, and involvement of their general practitioner tutors in patient recruitment.

In 2003, all respondents said that they wanted to be involved in research in the future; in 2004 this was the case for 14 of 15 intervention group respondents and nine of 13 control group respondents (Table 3).

Discussion

Sixty-seven registrars recruited 208 patients in total. Registrars expressed an interest in participation and appreciated contributing to research. They enjoyed learning a new skill and being more attentive to a particular disease and/or symptoms. Nevertheless, their patient recruitment rate was below the authors' expectations.

Initially the obligatory nature of participation was considered to be an important barrier. Engaging registrars by offering the choice to voluntarily take part in the training did not however, result in major improvements in recruitment: the doubled patient recruitment rate in the control group can be attributed to the doubled recruitment period.

Registrars suggested that the option to choose an interesting and relevant research topic, the opportunity to learn new skills and a report of the research results would make participation in research projects more attractive.

The recruitment rate in this trial does

not differ from the moderate recruitment rates recorded by GPs: Peto et al,¹⁵ for instance, found an average rate of 3.7 patients recruited per GP per annum. Registrars' barriers and wishes are also comparable with those of GPs: moderate patient recruitment because of time pressures, the need for interesting, practice oriented and relevant projects, personal support, good information, and good feedback about the research results.^{3,15-17}

Strengths and limitations

As far as the authors are aware, this is the first study exploring general practice registrars' actual performance in research. The study explored the attitudes of registrars toward research rather than opinions of GPs or directors of vocational training programs. Furthermore, it studies registrars' opinions about participation in a trial within their routine practice rather than requiring them to conduct a research project themselves.

The study is limited however, by the modest sample of registrars, all of whom belonged to the same training program and who participated in a single trial alone. However, the findings are similar to those of other studies concerning registrars' appreciation of research experience.^{7,11}

The study was compromised by the change made in 2004 to select registrars on the basis of their motivation. In 2003, however, the authors

Table 3. Requirements that make research projects attractive for participation during vocational training (2004, 31 respondents)

Requirements of research project		Mean score on 5 point scale*
Most important	The topic should be interesting	4.7
	The topic should be relevant to general practice	4.7
	There should be a report of the research results	4.6
Less important	I should have enough time	4.4
	I should learn something (eg. a skill)	4.2
	The project should be well adapted to the practice	4.0
	There should be feedback on my own performance	4.0
Least important	Participation should contribute to my own career	3.2
	I should have a say in the project	2.8
	There should be financial reward	2.4

* 1 = very unimportant, 5 = very important

observed variation in the registrars' selection and recruitment of patients, which was related to their individual motivation as expressed during supervision sessions. For this reason the authors believe the actual effects of the change were limited.

Implications for general practice

Research experience during medical school is associated with postgraduate research involvement.¹⁸ Assuming that this applies to registrars too – and assuming a desire for research to be part of the culture of family medicine – the authors suggest that researchers and training programs should offer research in such a way that registrars will find it an attractive activity in which to participate.

This requires attention to the wishes of registrars and availability of resources,¹¹ and the development of a culture that motivates registrars to prioritise research rather than a culture that views research as 'unnecessary'.¹⁹

The way in which the training environment values research is an important factor in how registrars respond to participation. This environment includes both the training program, training practice and the profession at large. Faculty play an important role in this.⁷ With their expertise and experience, enthusiastic faculty could successfully integrate research into vocational training.²⁰ Finally, registrars might be motivated by colleague peers, namely registrars actively involved in research such as those with an academic registrar position.²¹

Creating attractive research programs should motivate registrars to voluntarily participate in research. Research networks, departments of family medicine, and residency training programs must collaborate to develop programs that offer registrars the opportunity to participate in distinct research projects. Whether this increases registrars' participation in research activities is a question for further study.

Conflict of interest: none declared.

Acknowledgments

We thank ZonMw, the Netherlands organisation for health research and development, which funded our study, and we kindly thank all the registrars who participated.

References

1. De Maeseneer JM, van Driel ML, Green LA, van Weel C. The need for research in primary care. *Lancet* 2003;362:1314–19.
2. Clark J, Smith R. BMJ Publishing Group to launch an international campaign to promote academic medicine. *BMJ* 2003;327:1001–2.
3. Rosemann T, Szecsenyi J. General practitioners' attitudes towards research in primary care: qualitative results of a cross sectional study. *BMC Fam Pract* 2004;5:31.
4. Mendis K, Solangaarachchi I. PubMed perspective of family medicine research: where does it stand? *Fam Pract* 2005;22:570–5.
5. Sullivan F, Butler C, Cupples M, Kinmonth AL. Primary care research networks in the United Kingdom. *BMJ* 2007;334:1093–4.
6. van Weel C, Rosser WW. Improving health care globally: a critical review of the necessity of family medicine research and recommendations to build research capacity. *Ann Fam Med* 2004;2:S5–16.
7. Temte JL, Hunter PH, Beasley JW. Factors associated with research interest and activity during family practice residency. *Fam Med* 1994;26:93–7.
8. Hebert RS, Levine RB, Smith CG, Wright SM. A systematic review of resident research curricula. *Acad Med* 2003;78:61–8.
9. DeHaven MJ, Wilson GR, Murphree DD, Grundig JP. Family practice residency program directors' views on research. *Fam Med* 1997;29:33–7.
10. American Academy of Family Physicians Recommended core educational guidelines for family practice residents. Research and scholarly activity. *Am Fam Physician* 1992;46:1564–66.

11. DeHaven MJ, Wilson GR, O'Connor-Kettlestrings P. Creating a research culture: what we can learn from residencies that are successful in research. *Fam Med* 1998;30:501–7.
12. Smith M. Research in residency: do research curricula impact post-residency practice? *Fam Med* 2005;37:322–7.
13. Mynors-Wallis LM, Gath DH, Day A, Baker F. Randomised controlled trial of problem solving treatment, antidepressant medication, and combined treatment for major depression in primary care. *BMJ* 2000;320:26–30.
14. Franke L, van Weel-Baumgarten E, Lucassen P, Beek M, Mynors-Wallis L, van Weel C. Feasibility of training in problem solving treatment for general practice registrars. *European Journal of General Practice* 2007. DOI: 10.1080/13814780701814770
15. Peto V, Coulter A, Bond A. Factors affecting general practitioners' recruitment of patients into a prospective study. *Fam Pract* 1993;10:207–11.
16. Levinson W, Dull VT, Roter DL, Chaumeton N, Frankel RM. Recruiting physicians for office-based research. *Med Care* 1998;36:934–7.
17. Huibers MJH, van der Windt DAWM, Boeke AJP. The participation of general practitioners in scientific research [De deelname van huisartsen aan wetenschappelijk onderzoek]. *Huisarts en Wetenschap* 2002;45:454–8.
18. Segal S, Lloyd T, Houts PS, Stillman PL, Jungas RL, Greer RB 3rd. The association between students' research involvement in medical school and their postgraduate medical activities. *Acad Med* 1990;65:530–3.
19. Neale AV. A national survey of research requirements for family practice residents and faculty. *Fam Med* 2002;34:262–7.
20. Carek PJ, Araujo D, Nalin PM. Scholarly activity and residency training: seeking strategic partnerships. *Ann Fam Med* 2005;3:560–1.
21. olde Hartman TC, Franke LJ, Borghuis MS, Lucassen PL. Becoming a research-oriented family physician. *Fam Med* 2005;37:686–7.