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Fifteen years' experience from Sweden and Denmark

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CONTINUOUS MEDICAL EDUCATION

Research methods courses as a means of developing academic general practice

Fifteen years' experience from Sweden and Denmark

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Abstract

Since 1989, the authors have given courses in research methodology, and these courses are now given at six venues in southern Sweden, as well as in Denmark. The course corresponds to half a year's full-time study, with half the time devoted to lectures and studies of literature, while the rest is spent on an individual project under supervision. To enable part-time study, the course extends over 1½ years. In 15 years roughly 1000 people, mainly physicians, have been given training in basic research methods. The course model has been appreciated by clinically active colleagues, who have been able to attend a course and simultaneously work with patients. Among the GPs in the region, one in five has taken this course, and one in five has then gone on to start formal PhD studies. The authors have thus succeeded in their goal of giving basic scientific schooling to many physicians and recruiting some for further research.

Key Words: *Research training, medical education, general practice, primary care*

Academic general practice has emerged in the last few decades, and the amount of scholarly publications in the field has increased from virtually none to a considerable number [1,2]. Despite this favourable development, at least in terms of quantity, many people have been doubtful about the future of research in general practice, which has been described in editorials as everything from “murky” to “bright” [3–6].

One way to ensure a brighter future for academic general practice is to invest in education in research methods for clinically active GPs, with the aim of giving basic training to many, some of whom can be recruited to formal postgraduate education and a continued academic career [2,7].

Already in 1989 the Department of Community Medicine (from January 2005 Department of Clinical Sciences in Malmö) at Lund University began to give broadly based courses in research methods for GPs in our healthcare region [8]. We

have since extended the target group to include hospital physicians, as well as other staff categories in healthcare.

Through the years we have continuously evaluated and developed the courses, and we have presented our course and its development, chiefly in Swedish

One way to ensure a brighter future for academic general practice is to invest in education; therefore we have given courses in research methodology since 1989.

- Roughly 1000 people, mainly physicians, have attended our courses.
- Among GPs one in five has gone on to start formal PhD studies.
- Our courses have increased cooperation between university and healthcare, and thus helped to revitalize academic general practice in the Öresund region.

[8–11] but also in Danish [12,13] and English [14]. Since our course has not only survived for 15 years, but has also steadily been improved, we now want to share our long-term experience with a broader circle of readers.

Current organization and structure

The course in basic research methodology is now given at six different places in southern Sweden, and also in Denmark. The distance between the university and other course sites is between 50 and 200 km. The course is given by Lund University's Department of Clinical Sciences, located in Malmö. The central leadership of the course is also there, while each place where tuition is given has its own local management. Apart from coordination, our department is responsible for course development and examination, while the running administration of the course is handled locally.

The course is equivalent to half a year's full-time university study. Half the time is devoted to lectures and study of literature, while the rest is spent on an individual project under supervision. To enable part-time study, combined with continued clinical work, the course extends over 1½ years (Table I).

In the first term students attend introductory lectures in general research methodology, as an aid to formulating their own questions, writing an individual project plan, and starting their own project. In the second term the lectures chiefly concern quantitative and qualitative research methods, and students then continue work on their project and start analysing their data. The third term's lectures deal with written and oral presentation and the projects then have to be completed, each student writing a report/article and preparing a presentation for the other course participants.

Theoretical knowledge is examined by means of a written examination, while the practical project is examined in seminar form on two occasions: the project plan after one term and the final report/article after three terms.

Published results

A couple of years ago 560 people had completed the course, and a further 140 were taking it [11]. We are now approaching the figure of 1000. Of all the GPs in southern Sweden, one in five has taken the course [11,12,14]. Three out of four students have achieved a pass grade [9,11,12,14], and a quarter of the articles have been written in English [11–14]. Our course model has spread not only within Sweden but also to Denmark [13].

When course participants are asked about further education in questionnaires, one-third say they would like to take a doctorate, and roughly as many are interested in taking the lower degree of licentiate [9,11]. One GP in 5 who has passed the course is formally registered as a doctoral student [11,12,14], as is 1 physician in 10 who has taken the course [11,13]. Among the GPs, 17 have achieved a doctorate, almost all of them in our department.

During the last five years, this journal only has published 11 original articles written by former course participants as part of their scientific schooling [15–17 are the most recent examples].

Recent years' course evaluation

The target group for our course evaluation comprised those who took the examination in the period 1998–2002. We received 180 responses, a participation rate of 85%. Of the 163 physicians, two-thirds were undergoing training while the remainder were

Table I. Outline of the course in basic research methodology.

Term	Theory (Lectures/group work)	Practice (Research project)
I	Research methods (4 h) Project plan & grant applications (4 h) Library knowledge (4 h) Literature search (8 h) Theory of science (4 h) Research ethics (4 h) Computer knowledge (4 h)	Part-time project work Project plan examination (8 h)
II	Biostatistics (16 h) Epidemiology (8 h) Interview and questionnaire (4 h) Qualitative methods (12 h) Written methods examination (4 h)	Part-time project work Project seminar (8 h)
III	Scientific article (4 h) Oral presentation (4 h)	Part-time project work Project report examination (16 h)

fully trained specialists. Just under half were would-be or finished specialists in general practice.

In one question we presented the goals of the course as stated in the curriculum, asking whether they had been relevant, and whether the student had achieved them during the course. In general the participants thought that the goals had been highly relevant, and a slightly lower proportion of respondents thought that they had achieved them (Table II).

Perhaps it is in the nature of things that one cannot get as far as one would like during a relatively short course in basic research methods, but in the future we should probably place further emphasis on the competence goals, where the discrepancy between relevance and goal fulfilment was felt to be greatest.

Finally, as many as 89% thought that the course would be useful in their everyday clinical work, helping them to practise evidence-based medicine [18].

Firm foundation and continuous development

The course has always been characterized by both constancy and development. In the first three points below we present the important pillars of the course, which have stood virtually unchanged over time, and the subsequent five points are things that we have changed and improved over the years.

Firm foundation

- The fundamental aim of the course: We want to give basic training in research methodology to many colleagues in healthcare, with the aim of improving clinical work and recruiting some

colleagues to formal postgraduate education, with a PhD as a goal.

- The basic pedagogical concept: We want to provide an optimum mixture of theory and practice, with the theoretical tuition following the practical work on the project, from literature search to oral and written presentation, and with the intention that the knowledge gained from the lectures can be directly applied in the student's own project.
- The model for adult education: We want to give an education that is geared to colleagues working clinically, with half a year's full-time education extended over 1½ years, to enable continued clinical work parallel to fairly long-term work on a research project.

We believe that these unchanged pillars have been extremely important for the survival and success of the course. Through them we have engendered motivation in clinically active colleagues to continue their education and also given them the practical conditions to enable the course to be pursued.

Continuous development

- Increased decentralization: We have deliberately worked through the years towards steadily increased decentralization. The course has gone from central steering to central coordination, from central course management with tuition in two places to tuition in six places within the region and local course leadership at each of them.
- Extended target group: At the beginning we recruited only GPs, then hospital physicians as well, and in recent years also other staff in the

Table II. Do you think that the goals of the course were relevant to you, and do you think that you achieved these goals during the course?¹.

Competence goals	Percentage (n = 180)				Difference between first and third column
	Relevance		Achievement		
	Very high/high	Low/very low	Very good/good	Bad/very bad	
To be able to:					
– search medical literature	92	1	68	5	24
– draw up a project plan	88	2	79	1	9
– collect data	79	2	73	3	6
– analyse the data	82	3	57	6	25
– write an article of scholarly character	84	2	62	9	22
– present project results orally	80	2	69	6	11
– defend and explain choice of methods	80	2	54	7	26
– critically scrutinize an article	90	6	60	8	30
– act as oral examiner of a project	68	4	57	9	11

¹Of the five alternative responses, the two positive and the two negative ones have been amalgamated, while the indifferent response between these has been omitted.

health service. This has naturally increased the number of potential course participants and thereby facilitated decentralization. The age of the participants has gradually decreased, so that now the majority are physicians undergoing their specialist training.

- Broadened tuition: For many years we have mostly focused on quantitative research methods, with the emphasis on statistics and epidemiology, but now we give lectures in qualitative research methods as well [19]. This change has been hastened and facilitated by the fact that many non-doctors choose to work qualitatively in their projects.
- Improved supervision: At first we were obliged to work solely with group supervision, because of a shortage of competent supervisors, but we have gradually been able to switch to individual supervision for all projects. At the same time we have added a couple of seminars in small groups, where we course leaders have been able to follow and stimulate the individual projects.
- Developed examination: We have gradually made our examination more all-embracing, mixing both formative and summative elements. From just one final examination we have switched to an examination divided into three parts. We now have a written examination on the method section, combined with two oral examinations; after one term there is an examination of the project plan, and the course ends with the examination of the project report. In forms resembling the examination of a doctoral dissertation, the candidate presents his or her plan/report, after which a fellow student acts as examiner, scrutinizing it critically.

We believe that these changes have helped to create better conditions for the practical implementation of the course, and also to improve its quality. Thus, the participants now become acquainted with the entire spectrum of research methods. They also receive personal project supervision with guaranteed competence, supplemented with follow-up group discussions. By means of the tripartite examination, finally, we make sure that no participant leaves the course with an unacceptable level of knowledge; at the same time, the oral examinations provide good opportunities for continued learning.

Summing up

During the last 15 years we have given almost 1000 people, mainly physicians, education in basic research methodology and among the GPs in the

region one-fifth have taken the course. Depending on their speciality, between one-tenth and one-fifth of the physicians have then started formal doctoral education. We have thus succeeded in our aim of giving basic scholarly training to many people and recruiting some to continue advanced research.

Through the combination of central coordination and local management, the course has helped to increase cooperation between the university and the healthcare service, between our department and the region's GPs, leading to greater understanding and knowledge of the conditions of academic general practice [20]. Our model has also spread to two other regions in Sweden and to two regions in Denmark [13].

There is thus a great deal to suggest that our course has contributed to brighter prospects for academic general practice, at least in our region [5]. As a sign of this we have been able to note a great increase in the number of doctoral dissertations in general practice in our department [21]. As regards the scholarly development of other specialities, it is reasonable to claim that we have made a contribution, helping to improve the conditions for all clinical research within the region. Thus, our course seems to have revitalized academic medicine outside the tertiary hospitals [22].

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