ROBERT GORDON UNIVERSITY•ABERDEEN

REPORT:

EXPLORING AND EVALUATING PHARMACIST PRESCRIBING

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1495 UNIVERSITY OF ABERDEEN

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Summary

This report describes in detail the research conducted by the 'Prescribing Research Group', supported by NES funding. Members of the group are listed on the front cover. Since inception date, this group has been highly active in the field of pharmacy prescribing research with:

- 11 papers in peer-reviewed pharmacy and non-pharmacy journals
- Over 20 research abstracts presented at national and international research conferences
- Members invited to give key note presentations relating to pharmacist prescribing at leading conferences
- Influence of findings on undergraduate and postgraduate pharmacy education and training at RGU and wider afield
- Attraction of research monies to further explore areas of pharmacist prescribing

Each paper published since our last report (March 2007) is provided, highlighting key findings and future research direction.

Aim
The overarching aim of the research presented in this report was to explore and evaluate pharmacist prescribing from the perspectives of:

- Patients consulting a pharmacist prescriber
- Pharmacists as students and potential students on prescribing programmes
- Pharmacist prescribers
- Doctors (as independent prescribers and designated medical practitioners)
- Members of the general public

Methods
Mixed methods employing quantitative/qualitative designs have been used as appropriate to the specific research questions under investigation in each study. Key methodological approaches have involved the use of:

- Cross-sectional questionnaires
- Focus groups and one-to-one interviews
- Non-participant observation of prescribing practice using video recorded consultations
- Informal 'consensus methods'
- Development and validation of novel approaches in this field (e.g. assessing pharmacist prescribers' consultation skills)

As far as possible, we have taken every step to triangulate research findings, maximize validity and reliability and minimize inherent biases (including our own). All work was conducted in accordance with best practice in Research Governance and received all necessary Ethical and NHS Research and Development approvals.

Key Findings

In essence, and acknowledging limitations including sub-optimal response rates, small sample sizes and geographical foci, we have demonstrated that:

- Prescribing pharmacists perceived better patient management to be the key benefit of pharmacist prescribing with inadequate funding the main limitation. These data were collected several years ago (2005); we are now revisiting this area investigating changes and drivers for change

- Almost all pharmacist prescriber students highly valued the period of learning in practice (PLP) of their training programme. However, there was an expressed need to enhance the information provided to students and their designated medical practitioners (DMPs) about the PLP. This has been actioned utilising the Virtual Learning Environment at RGU. Planning the PLP in partnership with the DMP and academia was perceived to be crucial for optimal learning

- Although pharmacists throughout GB were aware of pharmacist prescribing, they had little awareness of educational and training requirements and few had plans to undertake such programmes. In addition, they expressed the view that their practice settings required attention to ensure readiness in terms of IT and administrative support

- Patients who have experienced a pharmacist prescribing service were highly satisfied and had positive attitudes to pharmacist prescribing consultations. However, given the choice, most patients would still elect to see their doctor

- Pharmacist prescribers, doctors and patients experiencing pharmacist prescribing services were supportive of developments in supplementary prescribing, although some doctors raised concerns around pharmacist independent prescribing

- Members of the Scottish general public were aware of the concept of non-medical prescribing; with a higher proportion more comfortable with prescribing by pharmacists and nurses rather than other healthcare professional

- In collaboration with a wide spectrum of colleagues, we have developed and validated PharmaCAT ('Pharmacist Consultation Assessment Tool'), based on a validated tool used extensively by the Royal College of General Practitioners during GP training. Further research and developments in this field are being undertaken in collaboration with NHS Education for Scotland

- In research recently completed, we conducted a GB-wide study of patients' views of their experiences of pharmacist prescribing services. Very disappointingly, uptake from pharmacist prescribers was extremely poor, with only 92 across GB participating. It was noteworthy that almost one third of pharmacist respondents had never prescribed. Although limited, patient responses clearly indicated the value patients placed on the services

Conclusions
Literature focusing on UK based pharmacist prescribing structures and processes continues to emerge. The work of our Prescribing Research Group is recognised and highly valued by policy makers, academics and practitioners nevertheless robust conclusions cannot always be drawn, due primarily to the methodological limitations described above.

We now need to produce robust evidence in terms of patient outcomes beyond patient and practitioner views i.e. a need for clinical, economic and humanistic foci. These elements are embraced within our plans for future research as described within the report. However, we also need to explore novel methodologies to enhance pharmacist prescriber participation in research.

Further Research Direction
Funding from NES continues until January 2012.

Strategic Aims
- To maintain our focus on all aspects of pharmacist prescribing implementation with increased emphasis on patient outcomes

- To maintain our Prescribing Research Group at the forefront of pharmacist prescribing related research

Our plans for research to January 2012 are as follows:

1. Preparation and submission of full paper manuscripts to the International Journal of Pharmacy Practice, relating to outputs 7 and 9 listed below.

2. Qualitative research focusing on the translation and adaptation from pharmacist supplementary to pharmacist independent prescribing. This research will be conducted with a purposive selection of pharmacist prescribers in various settings and practising within Scotland in key clinical conditions.

3. Repeat our 2005/2006 national survey of pharmacists' planned activities in relation to pharmacist prescribing training. As before, this will be a GB wide cross sectional survey of 10% of pharmacists. We are keen to investigate any changes in pharmacists' plans to undertake prescribing training and attitudes towards pharmacist prescribing.

4. Explore issues relating to registered pharmacist prescribers who have yet to use their prescribing skills and to compare these to those experienced by registered nurse prescribers who are not yet prescribing. Identifying, characterising and understanding these issues is the first key step in formulating potential solutions.

In addition, we are planning submission of grant applications to conduct research in the areas of:

- pharmacist prescribing consultation skills, with emphasis on the value of assessors' feedback in developing prescribing practice

- pharmacist prescriber management of patients with chronic obstructive pulmonary disease, focusing on impact on clinical outcomes.

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Research collaboration, especially with the Universities of Aberdeen and Monash, has been particularly fruitful and key to the number and quality of outputs.

Table of Contents

Paper 1

George J, McCaig D, Bond C, Cunningham S, Diack L, Stewart D

Benefits and challenges of prescribing training and implementation: perceptions and early experiences of RPSGB prescribers

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Benefits and challenges of prescribing training and implementation: perceptions and early experiences of RPSGB prescribers

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Abstract

Objective To investigate the challenges experienced by pharmacists in delivering supplementary prescribing (SP) services, to explore their perceptions of benefits of SP and to obtain feedback on both SP training and implementation.

Method A postal questionnaire focusing on prescribing training, early experiences of prescribing and general demographics was sent in September to November 2005 to all SP pharmacists (n = 488) in Great Britain after excluding a pilot sample (n = 30). The biggest benefits and challenges of SP, and reasons for not practising SP, were identified. Responses to a general open question were content analysed for major themes.

Key findings A total of 401 responses (82.2%) was received; 195 (48.6%) had started practising SP of which 154 (79%) had written at least one prescription. This paper focuses primarily on perceived benefits and challenges to the implementation of SP, and the responses to the open question. Better patient management (n = 58; 29.7%) was identified as the main benefit of SP and inadequate funding (n = 27; 13.8%) as the biggest challenge in delivering SP service. The main reasons for not commencing SP were: no organisational recognition of SP (n = 37; 18%); lack of funding (n = 33; 16%); non-availability of prescription pads (n = 22; 10.7%), and change of jobs (n = 18; 8.7%). The comments to the open question (n = 145; 36.2%) were regarding: SP training; perceived benefits of SP; and barriers to SP. Respondents highlighted the need for greater emphasis on clinical skills development as part of the SP course.

Conclusion Despite optimism among SP pharmacists, the need for support in terms of infrastructure and integration into the healthcare team has been identified. Our findings also inform the need for modifications in the structure, content and delivery of the prescribing course for pharmacists. Greater publicity of pharmacists' roles in medication management, support from the medical profession and healthcare organisations, and high standards by early practitioners are warranted for the success of SP by pharmacists.

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Introduction

In Great Britain, the skills and competencies of non-medical health professionals are increasingly being used to improve patient access to medicines and to reduce doctors' workload.[1–5] The final Crown Report in March 1999 proposed that non-medical health professionals should be permitted to take on additional prescribing responsibilities. The report defined two new types of prescribers: the independent prescriber and the dependent prescriber.[3] The Health and Social Care Act 2001 (Section 63) allowed for the introduction of dependent prescribing (implemented into practice as supplementary prescribing) status for non-medical health professionals, including pharmacists.[2]

Supplementary prescribing (SP) is defined as 'a voluntary partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient-specific clinical management plan (CMP) with the patient's agreement'.[3] Within this framework there are no legal restrictions on the clinical conditions that may be treated or drugs that can be prescribed by supplementary prescribers. Pharmacists with at least two years' experience as a pharmacist can undertake SP after training at a higher education institution

(200 h at the degree/masters level over 25 days) and completing a 'period of learning in practice' (PLP) (supervised training under a designated medical practitioner for a minimum of 12 days) in accordance with the curriculum and assessment methods specified by the Royal Pharmaceutical Society of Great Britain (RPSGB).[6,7]

Pharmacists working in various practice settings across Great Britain have been practising SP since March 2004.[8] Published research on pharmacist prescribing is limited to the views of pharmacists from various practice settings and anecdotal experiences of the SP course and the implementation of SP.[9–14] No national study has been published reporting the experiences of pharmacists relating to their SP course and implementation of SP. Such a study is critical to optimise future training programmes for pharmacist prescribing. Understanding perceived challenges to and benefits of SP implementation could inform policy makers, organisations considering implementation of SP service and pharmacists planning to undertake prescribing training.

Aims

The aims of this study were to investigate the challenges experienced by pharmacists in Great Britain in delivering SP services, to explore their perceptions of benefits of SP and to obtain feedback on both SP training and implementation.

Methods

Subjects were all supplementary prescribers registered with the RPSGB (n = 518). A self-completion questionnaire was developed. Four experts in non-medical prescribing reviewed the questionnaire for face and content validity. The questionnaire was pilot tested in 30 pharmacists randomly selected from the RPSGB list of SP pharmacists. Based on the pilot sample's responses (n = 17; 56.7%), the open questions on benefits and challenges were organised into themes which were presented as tick list options. The final questionnaire had four sections. These were pertaining to: SP training (10 items), activities as prescriber (4 items), first CMP (13 items), and demographics (5 items). Pharmacists who had started practising SP were asked to identify all the benefits and challenges of SP from the provided tick lists, based on their experiences. They were also asked to identify the main benefit and challenge. An open question seeking general comments on SP training and/or processes was also included. The final questionnaire was mailed to the remainder of the sample (n = 488) in June 2005. The questionnaire did not collect any personal information that could identify the respondent. Non-respondents (identified using a unique code printed on the questionnaire; only the first author had the key linking the codes and the names of the study subjects) were sent up to three reminders at 2-weekly intervals.

Data were managed and analysed using SPSS version 13.0 (SPSS Inc). Content analysis of the open questions was undertaken independently by two authors to identify major themes, and results compared to ensure reliability.[15] All emerging themes and illustrative quotes, including any disagreements, were discussed and finalised by the research team. This study was approved by the ethical review panel of the School of Pharmacy at The Robert Gordon University. Grampian Research Ethics Committee advised that this study did not require formal review by an NHS ethics committee.

Results

A total of 401 responses (82.2%) was received. The characteristics of the respondents are given in Table 1. The questionnaire contained a wider range of items regarding

Table 1 Characteristics of the respondents (n = 401)

Characteristic	n (%)
Sex	
male	131 (32.7)
female	270 (67.3)
Age (years)	
25–34	124 (30.9)
35–44	173 (43.1)
45–54	94 (23.4)
>54	10 (2.5)
Years since registration as pharmacist	
<6	13 (3.2)
6–10	97 (24.2)
11–15	83 (20.7)
16–20	85 (21.2)
>20	123 (30.7)
Main practice setting	
community pharmacy	80 (20.0)
primary care medical practice	119 (29.7)
hospital pharmacy	160 (39.9)
other	41 (10.2)
Postgraduate qualifications	
yes	314 (78.3)
no	78 (19.5)
Institution offering prescribing course	
English school	262 (65.3)
Scottish school	110 (27.4)
Welsh school	27 (6.7)
Time since completion of prescribing training (months)	
<4	3 (0.7)
4–6	23 (5.7)
7–9	51 (12.7)
10–12	85 (21.2)
>12	229 (57.1)
Post-course training	
yes	209 (52.1)
no	180 (44.9)
Conditions focused on during period of learning in practice	
cardiovascular	143 (35.7)
respiratory	31 (7.7)
endocrine	22 (5.5)
CNS	23 (5.7)
multiple conditions	82 (20.4)
other (malignant diseases; infections; musculoskeletal; obstetrics, gynaecology and urinary tract; eye; skin; etc)	94 (23.4)

Because some data are missing, some characteristics do not add up to 401.

SP training and implementation, but this paper focuses on perceived benefits and challenges to the implementation of SP and the responses to the open question on SP training and/or processes. The other findings have been reported elsewhere.[16] Of the respondents, 195 (48.6%) had started practising SP, of which 154 (79%) had written at least one prescription. The perceived benefits and challenges of prescribing in the views of those who had practised SP are given in Table 2. Inadequate funding was identified as the single biggest challenge (27 (13.8%)), and better patient management (58 (29.7%)) was identified as the single biggest benefit of SP. The main reasons given for not commencing SP by those who had not started practising were: no organisational recognition of SP (n = 37, 18%); lack of funding (n = 33, 16%); non-availability of prescription pads (n = 22, 10.7%); and change of jobs (n = 18, 8.7%). Graduates from 20 different higher education institutions offering the SP course responded to the questionnaire, and their perceptions about the SP course were diverse.

Of the respondents, 145 (36.2%) gave comments to the open question seeking general comments on SP training and/or implementation. The characteristics of these respondents are summarised in Table 3. The open comments varied in volume, with word counts between 4 and 156; the majority of open comments had between 40 and 50 words. Brief descriptions of the themes generated from these comments along with illustrative quotes are given below:

SP training

The comments on SP course reflected the diversity in the structure, content and delivery of courses offered in Great Britain.

Course content and delivery

The generic nature of the SP course, topics covered and overlaps with other postgraduate courses already completed, and tight deadlines were criticised by respondents across all practice settings.

> There is an enormous amount of work to fit into 6 months especially when you are working full time and/or have (other) family commitments. (respondent 228; hospital pharmacist; 11–15 years' experience; postgraduate; not started SP)

> Too much time was wasted on irrelevant topics like the molecular basis for drug action. (respondent 56; community pharmacist; >20 years' experience; no postgraduate qualifications; started SP)

Some, especially those working in hospitals, felt that their SP course was more community pharmacy/primary care oriented and the therapeutic modules were of little relevance to their clinical practice. However, some believed that it was the pharmacist's responsibility to acquire specialised skills during their PLP.

> The course at [school X] is very much orientated towards pharmacists working in primary care and retail. There was very little that we, as hospital pharmacists, could use from it and there was minimal support. (respondent 228; hospital pharmacist; 11–15 years' experience; postgraduate; not started SP)

> I would have appreciated more detailed therapeutics included in the course, but this was assumed to be covered in the time spent with the independent prescriber. (respondent 59; primary care pharmacist; >20 years' experience; postgraduate; started SP)

The respondents highlighted the importance of clinical skills development, especially in physical examination and consultation, as part of the SP course. They felt that they could have had more training in practical aspects of prescribing, such as physical examination, as part of the SP course.

> I feel it is important to include physical examination skills other than blood pressure monitoring and some other basic ones. (respondent 240; prescribing adviser; 11–15 years' experience; postgraduate; started SP)

> The training process was a big learning curve especially the counselling and consultation skills which enhance my knowledge and improved the way in which I interact with patients. (respondent 383; hospital pharmacist; >20 years' experience; postgraduate; started SP)

The responses indicated that some had completed a SP course with nurses, while others had undertaken a course only for pharmacists. The idea of a combined course for nurses and pharmacists was considered inappropriate by some respondents from primary care, though a few others recognised the

Table 2 Perceived benefits and challenges according to pharmacists practising SP (n = 195)

Perceived benefits	n (%)	Challenges experienced	n (%)
Better patient management	139 (71.3)	Inadequate funding	71 (36.4)
Job satisfaction	137 (70.3)	Inadequate IT support	54 (27.7)
Patient satisfaction	109 (55.9)	Difficulties in referral process/identification of suitable patients	53 (27.2)
Increased self-confidence	79 (40.5)		
Greater independence	75 (38.5)	Poor recognition of pharmacy role by other health professionals	51 (26.2)
Better recognition of pharmacy role by other health professionals	75 (38.5)		
Others (e.g. time saving)	19 (9.7)	Inadequate administrative support	45 (23.1)
		Others (e.g. CMP-related, lack of space/facilities, shortage of staff)	50 (25.6)

Responses add up to more than 195 as many respondents identified more than one benefit and/or challenge.

Table 3 Characteristics of the respondents to the open question (n = 145)

Characteristic	n (%)
Sex	
male	36 (24.8)
female	109 (75.2)
Age (years)	
25–34	36 (24.8)
35–44	64 (44.1)
45–54	41 (28.3)
>54	4 (2.8)
Years since registration as pharmacist	
<6	3 (2.1)
6–10	33 (22.8)
11–15	26 (17.9)
16–20	31 (21.4)
>20	52 (35.9)
Main practice setting	
community pharmacy	24 (16.6)
primary care medical practice	50 (34.5)
hospital pharmacy	50 (34.5)
other	21 (14.5)
Postgraduate qualifications	
yes	115 (79.3)
no	30 (20.7)
Institution offering prescribing course	
English school	97 (66.9)
Scottish school	37 (25.5)
Welsh school	11 (7.6)
Time since completion of prescribing training (months)	
<4	1 (0.7)
4–6	10 (6.9)
7–9	16 (11.0)
10–12	27 (18.6)
>12	91 (62.8)
Post-course training	
yes	85 (58.6)
no	58 (40.0)
Conditions focused on during period of learning in practice	
cardiovascular	52 (35.9)
respiratory	10 (6.9)
endocrine	9 (6.2)
CNS	6 (4.1)
multiple conditions	35 (24.1)
other (malignant diseases; infections; musculoskeletal; obstetrics, gynaecology and urinary tract; eye; skin; etc)	33 (22.8)

Because some data are missing, some characteristics do not add up to 145.

benefits. Some thought there should be separate courses even for pharmacists, based on their work experience and practice setting, again highlighting the varying needs of pharmacists which cannot be fulfilled by a single course.

Training nurses and pharmacists together may be politically correct but does not work, as the professions have very different background and training needs. (respondent 257; primary care pharmacist; 16–20 years' experience; no postgraduate qualification; not started SP)

Training was appalling – primary care and senior hospital pharmacists in group together with completely different learning needs. Course based on nurse prescribers course; our knowledge and learning requirements [are] totally different to nurses. (respondent 148; primary care pharmacist; >20 years' experience; postgraduate; started SP)

I did a joint course with nurses, which I found very beneficial [to pharmacists and nurses] we had different strengths to our practice which we all learnt from. (respondent 288; primary care pharmacist; 6–10 years' experience; no postgraduate qualification; not started SP)

Period of learning in practice

The majority of the participants, irrespective of their practice setting, appreciated the support they had received from their designated medical practitioners (DMPs) during the PLP. They regarded this experience to be more useful in developing their clinical skills than the SP course.

I felt that the course itself was not wholly satisfactory. I am confident in my competence but believe I can give most credit to my GP [general practitioner] mentor, who was very supportive throughout. (respondent 176; prescribing adviser; 11–15 years' experience; no postgraduate qualifications; not started SP)

I learnt the most useful information from working alongside my mentor. I did not find the study days as useful as I hoped they would be. (respondent 376; hospital pharmacist; 6–10 years' experience; postgraduate; started SP)

Although I found the university section useful, I learnt so much sitting in with the GP/nurse. I feel this experience with the GP has helped me a lot, even in working in the shops. (respondent 88; community/primary care pharmacist; 6–10 years' experience; postgraduate; not started SP)

Some respondents from primary care settings recommended that more time should be spent on PLP and that it should be made more diverse to increase the opportunities for learning.

It was a real rush with time being spent with my mentor in all his clinics to make sure we completed the hours rather than when it was relevant. (respondent 9; prescribing advisor; 16–20 years' experience; no postgraduate qualifications; started SP)

The need for greater communication and support during PLP with input from qualified SP pharmacists was highlighted by some respondents working in primary care.

Need more guidance of areas to look at during period of learning in practice. This could be achieved through a network of practising pharmacists linking in to those going through the course, relating their experiences of what may have helped them prepare better. (respondent 5; primary care pharmacist; 6–10 years' experience; postgraduate; started SP)

Need more forums to share ideas, CMP templates, clinic set-ups which work etc. (respondent 11; primary care pharmacist; 11–15 years' experience; postgraduate; not started SP)

I think GPs who have had a positive experience of working with pharmacist prescribers should be encouraged to discuss this with other GPs to encourage them to become mentors as this is a huge stumbling block to future students. (respondent 129; primary care pharmacist; 16–20 years' experience; postgraduate; started SP)

Many SP courses placed emphasis on reflective practice and used the National Prescribing Centre Competencies for Pharmacist SP

to aid learning during the PLP. This focus received both positive and negative comments. Pharmacists from hospital and primary care settings had concerns about the inequality between supplementary prescribers in their skills.

[The course] relies too heavily on trainee defining their own level of competence. This may lead to inequality between supplementary prescribers. [There] should be a recognised standard one should attain. (respondent 61; hospital pharmacist; >20 years' experience; postgraduate; started SP)

My training involved a great deal of reflective practice which was very demanding but I can really appreciate its benefit now. I use the techniques in my consultations and clinics. (respondent 186; primary care pharmacist; 6–10 years' experience; postgraduate; started SP)

I feel that the 83 competencies prescribed by the [National Prescribing Centre are] excessive and unnecessary. (respondent 178; primary care pharmacist; >20 years' experience; postgraduate; started SP)

Teething problems

Being a new course, participants from hospital and primary care settings highlighted the 'teething problems' in their prescribing course. Though some believed that these problems had since been rectified, others emphasised the need to use feedback from practising SP pharmacists in revising the SP curriculum.

I was in the very first group to undergo the SP course at [school Y] . . . I felt a bit of a 'guinea pig' on occasions. I understand the course has been refined and developed since this first cohort and subsequent students have benefited from the 'teething troubles' of the first course. (respondent 33; hospital pharmacist; >20 years' experience; postgraduate; not started SP)

The new course at [School Z] is apparently better and has more structure. Bit of a shambles when I did it as a lot of the other pharmacist agreed. (respondent 95; primary care pharmacist; 11–15 years' experience; postgraduate; started SP)

Society and the universities need to review the SP curriculum based on the experiences and reflection of practising supplementary prescribers. (respondent 131; hospital pharmacist: >20 years' experience; postgraduate; started SP)

Continuing professional development (CPD)

The need for inclusion of SP in continuing pharmacy education programmes and more opportunities for ongoing training for supplementary prescribers have been stressed by some of the respondents.

There should be special training days for supplementary prescribers within each area to update their knowledge and other training needs. (respondent 334; community pharmacist; 16–20 years' experience; postgraduate; not started SP)

I require to develop consultation, examination and monitoring skills, especially if I am involved in areas such as congestive heart failure. Nurses manage it. Not pleased with the support from the RPSGB. Recent [Centre for Pharmacy Postgraduate Education] workshops have not included SP. (respondent 127; primary care pharmacist; 16–20 years' experience; postgraduate; not started SP)

I have learnt a lot more about my chosen topic through personal CPD since I have completed the course. (respondent 59; primary care pharmacist; >20 years' experience; postgraduate; started SP)

Perceived benefits of SP

Respondents from all practice settings thought that SP offered better therapeutic management and resulted in greater patient satisfaction. Job satisfaction, increased self-confidence, greater independence, better recognition and time savings were regarded as the main benefits of SP to the prescribers. However, for some practitioners, especially for those working in hospital settings and primary care, SP has only been a minor extension of their existing role.

Patients [are] generally very appreciative of the service as I have more time with them and they do not feel inhibited by the time constraints of a GP appointment and ask more questions which I believe leads to better management. (respondent 2; primary care pharmacist; >20 years' experience; postgraduate; started SP)

I derive huge personal satisfaction from being a supplementary prescriber and have developed my role in new therapeutic areas at the request of the GPs with whom I work. It has helped me develop better working relationships with the GPs and nurses in the practice. (respondent 129; primary care pharmacist; 16–20 years' experience; postgraduate; started SP)

I believe supplementary prescribing allied to repeat dispensing by pharmacists is the single biggest weapon available to the NHS to combat long-term illness. (respondent 80; community pharmacist; 11–15 years' experience; no postgraduate qualifications; started SP)

Supplementary prescribing has little changed my practice – it has legalised what I did anyway. (respondent 109; hospital pharmacist; 6–10 years' experience; postgraduate; started SP)

Barriers to SP

Funding issues

Inadequate funding was mentioned by respondents as a major limitation for undergoing training and for setting up prescribing services, especially by community pharmacists. Even with funding, competition from nurse supplementary prescribers could reduce the opportunities for pharmacist prescribers.

For community pharmacists, it is difficult to practice as: first you have to pay for your locum; then after qualification, primary care does not support or subsidise you working; [the] GP does not want to pay you and there are not many PCTs who have protocols for SP pharmacists to practice. (respondent 333; community pharmacist; >20 years' experience; postgraduate; not started SP)

I did supplementary prescribing for approximately 5 months, but now the (Consultation and Negotiation Partnerships) don't want to spend 'limited' funding on pharmacist since nurses can do an almost similar job at a much reduced rate! (respondent 220; community pharmacist; 16–20 years' experience; postgraduate; practised SP)

Delay in getting prescription booklets

Delay in getting prescription booklets after qualification as a supplementary prescriber, and inability to print prescriptions

were frustrations for many respondents, especially for those working in primary care and community pharmacies.

Process once qualified is too complex. Practice computer systems not ready for scripts/CMP. (respondent 225; community pharmacist; 11–15 years' experience; no postgraduate qualification; not started SP)

I have spent 4 years persuading GPs to use the computer for scripts and then I have to write my own with no computer aids. (respondent 57; primary care pharmacist; >20 years' experience; postgraduate; started SP)

Lack of recognition

Lack of awareness of the pharmacist's role in medication management, especially as a prescriber, by health professionals and the public, and lack of organisational recognition were barriers to initiating prescribing services for many respondents, irrespective of their practice setting. Networking and publicity were regarded as the key by those who have been successful in initiating the services.

I would like to be able to use my SP in my job but find it very difficult to get GPs on board. (respondent 367; community pharmacist; <6 years' experience; no postgraduate qualification; not started SP)

[It was] difficult to implement as I was first to qualify as a SP in my trust. No one knew what it was about. But now that I am actually prescribing, other healthcare professionals think it's a great asset to enhance patient care. (respondent 219; hospital pharmacist; >20 years' experience; postgraduate; started SP)

Patients do not understand the role at all; nor do most GPs! We need far more publicity. The best thing for me was the networking. I have made many new friends/contacts which have really helped in my role as prescribing advisor. (respondent 9; prescribing advisor; 16–20 years' experience; no postgraduate qualification; started SP)

Restrictions due to CMP

Respondents from all practice settings mentioned many practical difficulties caused by CMPs, despite appreciating its importance. CMPs were considered restrictive as they were time consuming to complete and unsuitable in getting agreement from the independent prescriber, especially when patients have multiple medical conditions. Independent prescribing rights for pharmacists, generic CMPs and alternative methods of getting approval from the independent prescriber were recommended as solutions to overcome these barriers.

CMPs are useful to ensure patients have a documented therapeutic plan for medicines use but they're time consuming to prepare and can be restrictive if new conditions appear and aren't added. I would value independent prescribing for minor, transient conditions in my patients. (respondent 141; hospital/nursing home pharmacist; 16–20 years' experience; postgraduate; started SP)

[I] have developed an approach which uses an overall care plan for an individual that specifies the CMPs for that person under it and the care that the independent prescriber will deliver. (respondent 147; primary care pharmacist; >20 years' experience; postgraduate; practised SP)

I find it a lot easier to use the GP's prescription pad when writing prescriptions and getting him to sign it and therefore did not have to develop individual CMPs! (respondent 247; community pharmacist; 11–15 years' experience; postgraduate; started SP)

Discussion

In this first national survey of all SP pharmacists in Great Britain, SP has been perceived by pharmacists across all practice settings to be highly beneficial for both patients and the pharmacists. The study also gave us an insight of the issues surrounding SP training and implementation. Modifications in the content, delivery and assessment of the SP course for pharmacists, based on feedback from practising SP pharmacists and more CPD opportunities for practising SP, were recommended by some of the respondents. The need for greater publicity of pharmacists' role in medication management and support from the medical profession and healthcare organisations in implementing SP services were recognised by the study participants as key factors for the success of SP by pharmacists.

This was the first major study of experiences of SP pharmacists in Great Britain. Our findings could inform current and prospective pharmacist prescribers, policy makers, providers of the prescribing course and organisations considering implementation of prescribing services by pharmacists in Great Britain and overseas. Our study has a few limitations. The response rate for the survey was high, but only just over one-third of the respondents answered the general open question. The study was exploratory in nature, and the method of data generation did not allow further exploration of the themes or issues identified. However, those who gave open comments were similar to those who did not in terms of demographics. Despite differences in the views of practitioners from different practice settings, there were minimal differences in the views of respondents from the same setting, supporting the reliability of our findings. There is a need for more in-depth qualitative investigation of our findings. In addition, more practice-based research for establishing the safety and value of SP by pharmacists in terms of clinical outcomes and patient satisfaction is warranted, to win the confidence of other health professionals and the general public.

Respondents thought that SP would lead to better patient management, job satisfaction for pharmacists and greater patient satisfaction, These are similar to those reported by early nurse prescribers in Great Britain.[17–20] SP pharmacists in secondary care thought that SP had made little change in their day-to-day practice, as it only legitimised some of the services that they were already providing. Similar views have been reported elsewhere.[9] Financial and logistical challenges to the implementation of SP were perceived to be more in primary care and community pharmacy settings. However, lack of recognition as a prescriber, and practical difficulties in completing patient-specific CMPs were found to be challenges across all practice settings. Lack of time, insufficient staff and lack of awareness among other health professionals and the general public about the pharmacists' skills and attributes are known to be the major obstacles in expanding pharmacists' professional role, especially in the community setting.[21] Financial and logistical barriers in the implementation of prescription monitoring and review services in the community setting have also been reported earlier.[22] Specific

funding and support services directed at SP are essential for pharmacists to set up clinics and focus on prescribing responsibilities, especially in those settings where such services are non-existent. The Scottish Executive has recently made available funding to allow community pharmacists to set up or continue to run supplementary prescribing clinics.[23] Access to electronic health records and ability to generate electronic prescriptions are also critical in ensuring optimal outcomes when prescribing responsibilities are undertaken by pharmacists.[24,25]

The respondents' views about their SP course reflected the diversity in the structure, content and delivery of courses offered in Great Britain. The range of course satisfaction scores among SP pharmacists from various higher education institutions (HEIs) complement these findings.[16] The respondents emphasised the importance of training focused on clinical and consultation skills as part of the SP course. The need for revisions in the SP curriculum based on feedback from practising supplementary prescribers, independent prescribers and policy makers was also highlighted. Many respondents acknowledged that the SP course at their HEI had been adapted since they completed their training. It is critical that by the end of their SP course all SP pharmacists achieve competencies in accordance with the framework set by the National Prescribing Centre.[26]

The medical profession has voiced concerns about pharmacists' proficiency in diagnosis, awareness of clinical and patient details and the likely communication problems when they take up prescribing responsibilities.[27–29] Some universities in Great Britain have already introduced topics relevant to prescribing in the undergraduate pharmacy degree course, whereby students get familiarised with the legal and psychological aspects of prescribing and auditing, monitoring and evaluation of prescribing practice.[30] Students also work on case studies to make use of their problem-solving skills and gain hands-on experience in monitoring outcomes from drug treatment. To better prepare students for a possible prescribing role, it is likely that most universities in Great Britain will include elements of the prescribing curriculum within the undergraduate pharmacy course. Universities could use the recommendations for teaching safe and effective prescribing in medical schools as a guideline to ensure that all pharmacy graduates are prepared to undertake additional prescribing responsibilities, with minimal training during the PLP.[31] This is crucial, especially when a majority of the primary and secondary care trusts are intending to implement SP by pharmacists.[9]

Independent prescribing by pharmacists will commence in the near future.[32,33] Pharmacist independent prescribers will be able to prescribe any licensed medicine (with the exception of controlled drugs) for any medical condition (diagnosed or undiagnosed) within their clinical competence, after successful completion of an independent prescribing course for pharmacists.[32,33] The Department of Health is working with RPSGB and other stakeholders to confirm the education and training requirements for pharmacist independent prescribers. In the early phases of independent prescribing, its uptake may be more likely by those with previous training in SP.[11] Clinical training focusing on disease conditions and drugs, ability to communicate prescribing actions to GP practice, and gaining improved patient consultation skills were regarded to be important prior to implementation of independent prescribing by community pharmacists.[11] The need for CPD was stressed in a national survey of nurse prescribers in England.[19] Opportunities for supplementary prescribers to further develop clinical and consultation skills through CPD would ensure ongoing quality in SP and prepare them to undertake independent prescribing responsibilities in the future.

Conclusion

This study has explored the experiences and perceptions of early pharmacist supplementary prescribers in Great Britain. SP has been regarded to be highly beneficial for both patients and pharmacists. Several logistical and financial barriers hindering the implementation of SP have been identified. Modifications should be made in the content, delivery and assessment of the SP course for pharmacists, based on feedback from practising SP pharmacists. Greater publicity of pharmacists' role in medication management, support from the medical profession and healthcare organisations, and high standards by early practitioners are essential for the success of SP by pharmacists.

References

1 Avery AJ, Pringle M. Extended prescribing by UK nurses and pharmacists. BMJ 2005;331:1154–5.
2 The Health and Social Care Act 2001. London: Stationery Office; 2001.
3 Crown J. Review of prescribing, supply and administration of medicines. Final report. London: Department of Health; 1999.
4 Department of Health. Groundbreaking new consultation aims to extend prescribing powers for pharmacists and nurses. London: HMSO; 2002.
5 Foster A, Redmond S, Morgan G et al. Guidance on working patterns for junior doctors. London: Department of Health, National Assembly for Wales, NHS Confederation, British Medical Association; 2002.
6 Department of Health. Supplementary prescribing by nurses, pharmacists, chiropodists/podiatrists, physiotherapists and radiographers within the NHS in England: a guide for implementation. London: HMSO; 2005. www.dh.gov.uk/assetRoot/04/11/00/33/04110033.pdf (accessed October 4, 2006).
7 Outline curriculum for training programmes to prepare pharmacist supplementary prescribers. London: RPSGB; 2002.
8 Bellingham C. How supplementary prescribing is working for pharmacists in practice. Pharm J 2004:273:PM2–PM3.
9 Hobson RJ, Sewell GJ. Supplementary prescribing by pharmacists in England. Am J Health-Syst Pharm 2006;63:244–53.
10 Hobson RJ, Sewell GJ. Risks and concerns about supplementary prescribing: survey of primary and secondary care pharmacists. Pharm World Sci 2006;28:76–90.
11 George J, Pfleger D, McCaig D et al. Independent prescribing by pharmacists: a study of the awareness, views and attitudes of Scottish community pharmacists. Pharm World Sci 2006;28:45–53.
12 Tomlin M. A year in the life of a supplementary prescriber. Pharm J 2005;12:182–3.
13 Warchal S, Brown D, Tomlin M et al. Attitudes of successful candidates of supplementary prescribing courses to their training and their extended roles. Pharm J 2006;276:348–52.
14 Shulman R, Jani Y. Comparison of supplementary prescribers' and doctors' compliance with guidelines for drug dosing in

haemofiltration on an intensive care unit. Pharm J 2005;274:492–3.
15 Eysenbach G, Kohler C. How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. BMJ 2002;324:573–7.
16 George J, McCaig D, Bond C et al. Supplementary prescribing: early experiences of pharmacists in Great Britain. Ann Pharmacother 2006;40:1843–50.
17 Luker KA, McHugh GA. Nurse prescribing from the community nurse's perspective. Int J Pharm Pract 2002;10:273–80.
18 Lewis-Evans A, Jester R. Nurse prescribers' experiences of prescribing. J Clin Nurs 2004;13:796–805.
19 Latter S, Maben J, Myall M et al. An evaluation of extended formulary independent nurse prescribing: executive summary of final report. Southampton: University of Southampton; 2005. www.nursingandmidwifery.soton.ac.uk/research/docs/EFINPExecutiveSummary240605.pdf (accessed October 4, 2006).
20 While AE, Biggs KS. Benefits and challenges of nurse prescribing. J Adv Nurs 2004;45:559–67.
21 Rutter PR, Hunt AJ, Jones IF. Exploring the gap: community pharmacists' perceptions of their current role compared with their aspirations. Int J Pharm Pract 2000;8:204–8.
22 Tully MP, Seston EM, Cantrill JA. Motivators and barriers to the implementation of pharmacist-run prescription monitoring and review services in two settings. Int J Pharm Pract 2000;8:188–97.
23 Scottish supplementary prescribers get clinic funds (news). Pharm J 2005;275:73.
24 Papshev D, Peterson AM. Electronic prescribing in ambulatory practice: promises, pitfalls, and potential solutions. Am J Manag Care 2001;7:725–36.
25 Baron RJ, Fabens EL, Schiffman M, et al. Electronic health records: just around the corner? Or over the cliff? Ann Intern Med 2005;143:222–6.
26 Granby T, Picton C. Maintaining competency in prescribing: an outline framework to help allied health professional supplementary prescribers. Liverpool: National Prescribing Centre, 2004; 11–18.
27 Child D, Hirsch C, Berry M. Health care professionals' views on hospital pharmacist prescribing in the United Kingdom. Int J Pharm Pract 1998;6:159–69.
28 Child D, Cantrill JA. Hospital doctors' perceived barriers to pharmacist prescribing. Int J Pharm Pract 1999;7:230–7.
29 Day M. UK doctors protest at extension to nurses' prescribing powers. BMJ 2005;331:1159.
30 Hall J, Ashcroft D. Learning about prescribing in the undergraduate pharmacy degree course: the Manchester experience. Pharm J 2005;274:799–800.
31 Maxwell S, Walley T. Teaching safe and effective prescribing in UK medical schools: a core curriculum for tomorrow's doctors. Br J Clin Pharmacol 2003;55:496–503.
32 The Medicines for Human Use (Prescribing) (Miscellaneous Amendments) Order 2006, www.opsi.gov.uk /si/si2006/20060915.htm (accessed October 4, 2006).
33 Improving patients' access to medicines: a guide to implementing nurse and pharmacist independent prescribing within the nhs in England. London: Department of Health; 2006. www.dh.gov.uk/assetRoot/04/13/37/47/04133747.pdf (accessed October 4, 2006).

Paper 2

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Experiential learning as part of pharmacist supplementary prescribing training: feedback from trainees and their mentors

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An abstract of selected findings was also presented at the European Society for Clinical Pharmacy Conference 2007

Experiential Learning as Part of Pharmacist Supplementary Prescribing Training: Feedback from Trainees and Their Mentors

Johnson George, Christine M Bond, Dorothy J McCaig, Jennifer Cleland, IT Scott Cunningham, H Lesley Diack, and Derek C Stewart

BACKGROUND: A period of learning in practice (PLP) is an integral part of supplementary prescribing training for pharmacists in Great Britain. During the PLP, a designated medical practitioner (DMP) supervises and supports the trainee to develop competence in prescribing.

OBJECTIVE: To evaluate the views and experiences of supplementary prescribing pharmacists and DMPs regarding the PLP and identify their perceived support needs during the PLP.

METHODS: Prepiloted questionnaires were mailed in September 2006 to all pharmacists who had started their supplementary prescribing training at The Robert Gordon University, Aberdeen, Scotland (n = 242) and their DMPs (n = 232). Nonrespondents were sent up to 2 reminders. Responses were analyzed using descriptive and comparative statistics; responses to open questions were analyzed thematically.

RESULTS: Responses were received from 186 (76.9%) pharmacists and 144 (62.1%) DMPs. Just over half of the pharmacists agreed/strongly agreed that they knew what was expected of them and their DMPs during the PLP, but less than half agreed/strongly agreed that it was important to communicate with pharmacist colleagues in the prescribing course. One hundred twelve (60.2%) pharmacists had their consultation skills reviewed by their DMPs during the PLP. Opportunities for professional development and teamwork were regarded as major positive experiences by both pharmacists and DMPs. Organizational, attitudinal, and time barriers were also reported. There was considerable interest among both pharmacists and DMPs for an Internet-based support network during the PLP.

CONCLUSIONS: Information on the roles and responsibilities of pharmacists and DMPs during the PLP should be enhanced. The Internet could be a useful medium for communication during the PLP. Input from a multidisciplinary team of healthcare professionals and review of consultation videos could further enhance the PLP experience.

KEY WORDS: experiential learning, mentors, pharmacists, supplementary prescribing.

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Supplementary prescribing is defined as "a voluntary partnership between an independent prescriber (ie, physician, dentist) and a supplementary prescriber to implement an agreed patient-specific clinical management plan (CMP) with the patient's agreement."[1] Training for pharmacists to become supplementary prescribers in Great Britain involves at least 25 days (200 h) of university tuition at the degree or master's level. In addition, there are 12 days of experiential learning under medical supervision, termed the Period of Learning in Practice (PLP).[2,3] On successful completion of supplementary prescribing training and registration with the Royal Pharmaceutical Society of Great Britain (RPSGB) as a prescriber, supplementary prescribing pharmacists may prescribe for the full range of medical conditions. However, they must be practicing within their professional competence and under the terms of a patient-specific CMP. Before supplementary prescribing can begin, it is obligatory that an agreed paper-based or electronic CMP relating to a named patient and that patient's specific conditions be in place, to be managed by the supplementary prescriber. Both independent and supplementary prescribers must formally agree on the CMP before supplementary prescribing can begin. The patient's agreement also needs to be obtained by either the independent or the supplementary prescriber before supplementary prescribing can proceed. In addition to patient details, the CMP must include reference to the class or description of drugs that may be prescribed or administered under the plan and any restrictions or limitations as to the strength or dose of any drug that may be prescribed.[2]

Author information provided at the end of the text.

Pharmacists from various practice settings in Great Britain have been practicing supplementary prescribing for a range of conditions since 2004.[4,5] The Robert Gordon University in Aberdeen, Scotland, is a major provider of supplementary prescribing training for pharmacists in Great Britain, with more than one-fifth of RPSGB prescribers completing their supplementary prescribing training there.[4]

The main purposes of the PLP are to enable pharmacists to transfer academic knowledge to practice; acquire and practice skills, including communication with patients, caregivers, and other prescribers; develop clinical knowledge and skills necessary for the diagnosis, treatment, and monitoring of the condition(s) for which they intend to prescribe; and maintain accurate and timely records of their prescribing practice.[3] The National Prescribing Centre, which promotes and supports high quality, cost-effective prescribing and medicines management across the National Health Service, has produced a framework of 9 competencies covering 3 main areas—consultation, prescribing effectively, and prescribing in context. The goal is to ensure quality of care and patient safety when prescribing responsibilities are undertaken by pharmacists.[6,7] The individual competencies are listed in Table 1. During the PLP, a supervising physician, known as the designated medical practitioner (DMP), provides the trainee with supervision, support, and opportunities to develop competence in prescribing practice. The focus is on one or more therapeutic areas and concentrates on the group of patients for whom the pharmacist will prescribe initially.[2,3] The PLP is planned by the candidate, in collaboration with the DMP, after agreeing on the clinical area(s) and the competencies relevant to the individual. Aspects of training can be delegated as appropriate. The PLP may be extended beyond the recommended 12 days, if necessary. Candidates are required to submit a portfolio to the university, providing evidence of achievement of relevant competencies.[6,7] This portfolio was first developed as a paper-based tool, but by 2005 had become an online portfolio. Finally, the DMP must sign a declaration that the pharmacist is suitable for registration as a prescriber with RPSGB.

Supplementary prescribing training at The Robert Gordon University is at Scottish master's level, and the modules in the academic portion of the course are delivered by distance learning, supplemented by a 5 day residential period at the university. Various assessment methods are used, including analysis of case studies, reports, thematic and reflective practice essays, and objective structured clinical examinations. There is no set format for the PLP, and it may be undertaken concurrently or subsequent to the university-based training. All of the relevant competencies must be achieved; however, the training need not be completed in 12 consecutive days. Trainees and DMPs are provided separate handbooks that detail their roles and responsibilities, as well as the required NPC competencies. The DMP's handbook also describes the background of the supplementary prescribing course and details of the university-based training including the aims, learning outcomes, indicative content, and assessment methods. This affords the DMPs the opportunity to put the PLP into context with the entire supplementary prescribing course. The DMPs are also given a point of contact at the university.

Many supplementary prescribing pharmacists who participated in a national survey regarded their PLP experience as more valuable in developing their clinical skills than the university training.[4,8] Therefore, it is crucial that the PLP provides an optimal learning experience, leading to safe and appropriate prescribing. The PLP is an integral part of prescribing training for pharmacists, yet there had been no publicized, formal research evaluation of trainee and DMP needs in relation to the PLP.

The primary objective of our study was to evaluate the views and experiences of pharmacist supplementary pre-

Table 1. Competencies for Pharmacist Supplementary Prescribers[6]

Competency Area	Overarching Competency
Consultation	clinical and pharmaceutical knowledge: has up-to-date clinical and pharmaceutical knowledge relevant to own area of practice
	establishing options: reviews diagnosis and generates treatment options for pt. within the clinical management plan; always follows up treatment
	communicating with pts.: establishes a relationship based on trust and mutual respect; sees pts. as partners in the consultation; applies principles of concordance
Prescribing effectively	prescribing safely: is aware of own limitations; does not compromise pt. safety; justifies prescribing decisions
	prescribing professionally: works within professional and organizational standards
	improving prescribing practice: actively participates in review and development of prescribing practice to improve pt. care
Prescribing in context	information in context: knows how to access relevant information; can critically appraise and apply information in practice
	the NHS in context: understands and works with local and national policies and services that impact wider NHS prescribing practice; sees how own practice impacts the wider NHS
	team and individual context: works in partnership with colleagues for the benefit of pts.; is self aware and confident in own ability as a prescriber

NHS = National Health Service.

scribing trainees and DMPs about the PLP as part of pharmacists' supplementary prescribing training. The secondary objective was to explore both the trainees' and DMPs' perceived need for additional support during the PLP.

Methods

Postal questionnaires for supplementary prescribing pharmacists and DMPs were developed (Appendices I and II, www.hwbooks.com/pdf/appendices/H6501.pdf and www.hwbooks.com/pdf/appendices/H6502.pdf), using information gathered from 2 focus groups with supplementary prescribing pharmacists (n = 5 and 7) and one-to-one telephone interviews with DMPs (n = 13), conducted by the research team.[9] Both questionnaires had 2 sections of open and closed questions that focused on general demographics (7 items for pharmacists, 6 items for DMPs) and experiences during the PLP (18 items for pharmacists, 16 items for DMPs). The section on the PLP included items about the setting, patient groups/therapeutic areas, others involved in training, and activities relating to consultations. Details of contact with the university during the PLP, attitudes toward the PLP (5 point Likert scales), positive and negative experiences, and recommendations to improve the PLP experience were also sought. The research team, which had expertise in a range of disciplines within the fields of pharmacy, psychology, and education, including e-learning, tested the content validity of the questionnaires. Piloting of the questionnaires followed, with 20 randomly selected pharmacist supplementary prescribing trainees and DMPs each. After minimal changes, the questionnaires were mailed in September 2006 to all pharmacists who had started their supplementary prescribing training through the Robert Gordon University before March 2006 (n = 242) and their DMPs (n = 232), excluding the pilot samples. DMPs were fewer in number than the supplementary prescribing pharmacists because some had retired or had mentored multiple pharmacists. Nonresponders received 2 follow-up reminders at 2 week intervals.

Responses were entered into an SPSS database (version 13.0) and analyzed using descriptive statistics. Responses to open questions were analyzed for content and classified into broad themes to facilitate descriptive statistical analysis. The reliability of attitudinal items was tested using split sample method[10]; internal consistencies (Cronbach's α) were compared after reverse scoring the negatively worded items. Differences in responses to the attitudinal items, between pharmacists in different sectors of practice, were explored using the Kruskal–Wallis test, and the Mann–Whitney U test was used for differences between pharmacists and DMPs. A p value less than 0.05 was considered statistically significant. The study had approval from the Multi-centre Research Ethics Committee (MREC) for Scotland.

Results

Responses were received from 186 of 242 (76.9%) pharmacists and 144 of 232 (62.1%) DMPs. Respondents' characteristics are summarized in Table 2. Input from medical and nonmedical professionals, other than DMPs, including multiple sources to improve clinical, diagnostic, consultation, and management skills, was described by 123 (66.1%) pharmacists. Training from a practicing supplementary prescribing pharmacist during the PLP would be valuable, according to 148 (80.0%) pharmacists. However, only 12 (8.3%) DMPs reported discussing the PLP with other medical practitioners or healthcare professionals.

One hundred twelve (60.2%) pharmacists reported having their consultation skills reviewed by their DMPs during the PLP, using the following review methods: face to face (78; 69.6%), consultation videos (17; 15.2%), written reports (3; 2.7%), tape recordings (2; 1.8%), face to face/consultation videos (7; 6.3%), and face to face/written reports (4; 3.6%). Pharmacists reported the frequency of reviewing of consultations by their DMPs as some consultations (70; 62.5%), most consultations (26; 23.2%), and every consultation (12; 10.7%). DMPs similarly reported a high level of consultation-skills activity during the PLP. Eighty-seven (60.4%) reported reviewing pharmacist consultation skills, with methods and frequencies similar to those reported by the pharmacists.

Responses to the attitudinal items on experiential learning from supplementary prescribing pharmacists and DMPs are presented in Table 3. Using a split sample method, the internal consistencies of the attitudinal items for community pharmacists (n = 94) and other pharmacists (n = 92) were 0.64 and 0.61, respectively. DMPs with clinical experience up to 20 years (n = 60) and those with more than 20 years of clinical experience (n = 84) had internal consistencies of 0.55 and 0.49, respectively, for the attitudinal items.

Just over half of the pharmacists agreed/strongly agreed that they knew what was expected of themselves and their DMPs during the PLP, but less than half agreed/strongly agreed that it was important to communicate with pharmacist colleagues in the prescribing course. Some significant differences were observed between DMP and pharmacist responses, with DMPs agreeing that they were more aware of the DMP role than the pharmacists had perceived. Pharmacists, more than DMPs, agreed that it was easy to communicate with the university and their peers during the PLP. There was considerable support among both pharmacists and DMPs for an Internet-based network during the PLP. No significant differences in responses were observed for pharmacists working in different sectors of practice.

Pharmacists and DMPs cited many positive experiences that occurred during the PLP (Table 4). Both groups recognized opportunities for professional development as well

as teamwork. Some challenges and/or negative experiences, mainly time barriers, were also experienced by both pharmacists and DMPs (Table 4). Pharmacists reported contacting the university at some time during their PLP to inquire about deadlines for submitting portfolios or to inform the university about delays in submitting portfolios (10; 5.4%), to clarify the types of clinical experiences acceptable for PLP (8; 4.3%), for information on completing portfolios (6; 3.2%), to clarify the responsibilities of the DMP or discuss DMP-related difficulties (5; 2.7%), and other queries (administrative, course work related) (3; 1.6%).

Recommendations made by pharmacists to improve the PLP experience include the following: more opportunities for information sharing and clearer, more structured information on PLP for DMPs and pharmacists (44; 23.7%); allowing trainees to undertake whole or part of supplementary prescribing training with a supplementary prescribing pharmacist or a medical practitioner with experience in mentoring for supplementary prescribing (14; 7.5%); structural changes in the supplementary prescribing course or the PLP to suit the experience and knowledge of individuals (12; 6.5%); remuneration for DMPs and greater awareness of the benefits of supplementary prescribing (9; 4.8%); and other (organizational support; multiple DMPs, better preparation for PLP during university training) (3; 1.6%).

DMPs' suggestions for improving the PLP experience included clearer information on the objectives of the PLP and the role of DMPs (9; 6.3%), remuneration for DMPs (8; 5.6%), training programs to prepare mentors for undertaking responsibility for PLP (7; 4.9%), and communication and feedback between mentors and academia throughout the PLP (4; 2.8%).

Discussion

This is the first major study of experiences of pharmacists during the experiential learning phase of supplementary prescribing training. Just over half the pharmacists and just under half the DMPs knew what was expected of them and their partners at the start of the PLP. For many pharmacists and DMPs, the PLP provided an opportunity for professional development and teamwork. Some attitudinal, organizational, and time barriers during the PLP were identified. A mechanism to allow pharmacists to maintain contact with their peers in the supplementary prescribing course was regarded as helpful by the majority of pharmacists and DMPs, although, interestingly, most DMPs did not recognize the need for any communication with their medical colleagues mentoring other pharmacists. The Internet was perceived as a useful resource to provide further information from the university and for communication among pharmacists and DMPs during the PLP.

Table 2. Characteristics of Survey Respondents[a]

Characteristic	Pharmacists n (%)	DMPs n (%)
Sex		
male	57 (30.6)	109 (75.7)
female	128 (68.8)	34 (23.6)
Age, y		
25–34	51 (27.4)	5 (3.5)
35–44	73 (39.2)	53 (36.8)
45–54	53 (28.5)	62 (43.1)
>54	8 (4.3)	23 (16.0)
Experience as a practitioner, y		
<6	14 (7.5)	0
6–10	33 (17.7)	3 (2.0)
11–15	39 (21.0)	19 (13.2)
16–20	27 (14.5)	38 (26.4)
>20	73 (39.2)	84 (58.4)
Practice setting		
community pharmacy	94 (50.5)	NA
primary care medical practice	48 (25.8)	113 (78.5)
secondary care	42 (22.6)	29 (20.1)
tertiary care	0	1 (0.7)
other (eg, academia, hospice, service)	6 (3.2)	1 (0.7)
Patient groups/therapeutic areas of focus during PLP		
cardiovascular	92 (49.5)	
respiratory	25 (13.4)	
endocrinology	22 (11.8)	
mental health	9 (4.8)	
substance misuse	8 (4.3)	
other (eg, musculoskeletal, oncology, pain, geriatrics)	44 (23.7)	
Training status, pharmacists		
registered prescriber	115 (61.8)	
practicing supplementary prescriber	53 (28.5)	
completed training; not registered	10 (5.4)	
experiential learning ongoing	46 (24.7)	
experiential learning not started	13 (7.0)	
Training status, DMPs, previous experience training health professionals		
yes		124 (86.1)
no		20 (13.9)
Involvement of health professionals other than DMP in training		
nurses (practice, prescriber, specialist)	89 (47.8)	
physicians, non-DMP (GPs, consultants, registrars)	58 (31.2)	
pharmacists (clinical, SP, practice)	45 (24.2)	
technical staff (phlebotomists, respiratory technicians)	12 (6.5)	
practice managers	7 (3.8)	
other (allied health, administrative)	12 (6.5)	
Consultation reviews, frequency		
none		50 (34.7)
some		45 (31.3)
most		30 (20.8)
every		10 (6.9)

DMP = designated medical practitioner; NA = not applicable; PLP = period of learning in practice; SP = supplementary prescribing.

[a]Number of respondents = 186 pharmacists, 144 DMPs; responses do not total 186 and 144 for pharmacists and DMPs, respectively, due to missing data; some respondents were practicing in more than one setting.

(continued on page 1035)

Despite provision of detailed information about the PLP in separate handbooks for pharmacist trainees and DMPs, many in both groups did not feel fully informed about the program. Consideration needs to be given to providing clearer and more structured information to both groups, especially before the start of the PLP. They should have information on their roles and responsibilities, and it could be provided through other media such as the Internet and/or group meetings. Greater opportunities for communication among pharmacists, DMPs, and academia are also warranted. Such needs might be more critical for pharmacists who do not have input from a practicing supplementary prescribing pharmacist during the PLP and for those DMPs without prior experience in training healthcare professionals.

Many of the negative experiences and challenges during the PLP were attitudinal and organizational. Outcomes-based research and high standards by early supplementary prescribing pharmacists are essential for winning the confidence of medical practitioners and patients and for sustaining the role of pharmacists in prescribing. Interprofessional education at an undergraduate level might help to alleviate some of the attitudinal barriers toward teamwork and undertaking of cross-professional responsibilities among health professionals from different backgrounds. Remuneration was mentioned by only a few responding pharmacists as a crucial factor for the future viability of the PLP. However, financial barriers to training of junior physicians has been reported[11] and should be resolved at the policy level.

Our study demonstrated some of the positive effects of multidisciplinary teamwork on health professionals and patients. Approximately half of the pharmacist respondents worked with nurses during their PLP. The willingness of

Table 2. Characteristics of Survey Respondents[a] (continued)

Characteristic	Pharmacists n (%)	DMPs n (%)
Consultation reviews, method		
face to face		68 (47.2)
consultation videos		6 (4.2)
report and discussion		4 (2.8)
consultation video/face to face		5 (3.5)
report and discussion/face to face		4 (2.8)

DMP = designated medical practitioner.
[a]Number of respondents = 186 pharmacists, 144 DMPs; responses do not total 186 and 144 for pharmacists and DMPs, respectively, due to missing data; some respondents were practicing in more than one setting.

Table 3. Pharmacists' and DMPs' Responses to Attitudinal Items[a]

Item	n (%)					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	p Value[b]
Pharmacists: When I started the PLP, I knew what was expected of me	10 (5.4)	28 (15.1)	27 (14.5)	88 (47.3)	19 (10.2)	0.395
DMPs: When the pharmacist started the PLP, I knew what was expected of him/her	2 (1.4)	28 (19.4)	25 (17.4)	77 (53.5)	5 (3.5)	
Pharmacists: When I started the PLP, I knew what was expected of my DMP	7 (3.8)	30 (16.1)	36 (19.4)	84 (45.2)	15 (8.1)	0.882
DMPs: When the pharmacist started the PLP, I knew what was expected of me	3 (2.1)	30 (20.8)	37 (25.7)	64 (44.4)	4 (2.8)	
Pharmacists: When I started the PLP, I felt my DMP was fully aware of his/her role	24 (12.9)	54 (29.0)	42 (22.6)	39 (21.0)	12 (6.5)	<0.001
DMPs: When the pharmacist started the PLP, I was fully aware of my role	5 (3.5)	38 (26.4)	28 (19.4)	61 (42.4)	6 (4.2)	
Pharmacists/DMPs: It is/was easy for me to get in touch with the university during the PLP	1 (0.5) 1 (0.7)	5 (2.7) 10 (6.9)	66 (35.5) 96 (66.7)	68 (36.6) 15 (10.4)	26 (14.0) 1 (0.7)	<0.001
Pharmacists: It is/was difficult for me to get in touch with my colleagues in the prescribing course during the PLP	14 (7.5)	71 (38.2)	55 (29.6)	22 (11.8)	6 (3.2)	<0.001
DMPs: It is/was difficult for me to get in touch with other medical practitioners mentoring pharmacists	2 (1.4)	22 (15.3)	78 (54.2)	22 (15.3)	3 (2.1)	
Pharmacists/DMPs: It is/was important to communicate with colleagues in the prescribing course during the PLP	6 (3.2) 3 (2.1)	21 (11.3) 44 (30.6)	61 (32.8) 65 (45.1)	64 (34.4) 19 (13.2)	18 (9.7) 2 (1.4)	<0.001
DMPs: It is/was important for pharmacists to communicate with their colleagues in the prescribing course during the PLP	1 (0.7)	1 (0.7)	24 (16.7)	87 (60.4)	22 (15.3)	
Pharmacists/DMPs: Internet-based network could be/is an efficient way of interacting during the PLP	4 (2.2) 2 (1.4)	11 (5.9) 3 (2.1)	48 (25.8) 34 (23.6)	89 (47.8) 87 (60.4)	20 (10.8) 8 (5.6)	0.479

DMP = designated medical practitioner; PLP = period of learning in practice.
[a]Pharmacists = 186, DMPs = 144; responses do not total 186 and 144 for pharmacists and DMPs, respectively, due to missing data.
[b]Mann–Whitney U test.

community pharmacists to work collaboratively with nurses has been reported.[12] Learning and practicing in multidisciplinary teams provides opportunities for healthcare professionals to learn from each other and should result in better patient outcomes. A study exploring the views of community pharmacists regarding nurse prescribing and interdisciplinary working in primary care concluded that increased contact with other health professionals and greater understanding of roles are necessary to achieve the potential of teamwork.[12] Socialization to an immediate work group could override professional or hierarchical differences among health professionals, and effective interprofessional working could lead to more effective service delivery and user outcomes.[13] The input that trainees received from medical and/or nonmedical professionals during their PLP and their positive feedback suggest that a multidisciplinary training team would be ideal for mentoring pharmacists during their PLP, especially for those without team working experience prior to their PLP. Community pharmacists are known to have several challenges to practicing supplementary prescribing[4,8]; a PLP provides an ideal opportunity for them to foster professional relationships, which is the key for practicing as a prescriber after qualification.

Nearly two-thirds of pharmacists in our study received feedback on their consultation skills, but this was largely face to face; only a minority experienced video-based feedback. The advantages of video-based feedback training over conventional teaching in improving interviewing skills of medical graduates is well documented.[14] The ability of videotaped consultations to identify medical trainees who are not competent to undertake independent practice has also been established.[15] The RPSGB has recognized the importance of video feedback training and has included it in recent guidelines for prescribing training for pharmacists.[16] Perhaps this should become a mandatory element of the PLP.

Our study has some limitations. First, all participants were pharmacists who had started prescribing training through our university only. It is possible that their responses were biased, especially based on their experiences during the PLP. Those who had negative experiences and/or attitudes might not have completed the questionnaires. The extent to which the views and attitudes identified in this study are held by the entire population of supplementary prescribing pharmacists and DMPs is unknown. Some of the supplementary prescribing pharmacists continue as students at the university, and this may have influenced their responses. Second, we relied on self-reports, and the findings were not evaluated objectively. However, the study was anonymous in nature, and we had responses from more than three-quarters of pharmacists and two-thirds of mentors involved in the PLP, including those with negative experiences. The questionnaire also had several limitations. For ethical reasons and to maintain anonymity, we did not attempt to link and compare pharmacists with their DMPs. Such comparisons would have provided interesting data on different professional perspectives within the same setting. Although we inquired about pharmacist and DMP contacts with the university and with other colleagues, this issue was not quantified or explored further.

Table 4. Positive and Negative Experiences During PLP[a]

Positive, Pharmacists	n (%)	Positive, DMPs	n (%)
Opportunity for developing and testing communication and/or diagnostic skills	36 (19.4)	Professional development	29 (20.1)
		Greater collaboration with pharmacists	26 (18.1)
Working with medical practitioners/supplementary prescribing pharmacists/other healthcare professionals	34 (18.3)	Professional satisfaction	26 (18.1)
		Better understanding of pharmacist's role	11 (7.6)
Building interprofessional relationships	29 (15.6)	Benefit to pts.	10 (6.9)
Interaction with pts./achieving pt. outcomes	28 (15.1)		
Professional recognition	14 (7.5)		
Other (doing consultations, using prescribing software, improving knowledge)	21 (11.3)		
Challenges/Negative, Pharmacists		**Challenges/ Negative, DMPs**	
Inadequate information given regarding the PLP	17 (9.1)	Time constraints/complexity of paper work	11 (7.6)
Physicians'/other health professionals' attitudes toward pharmacist prescribing	16 (8.6)	Poor information regarding mentor's role	8 (5.6)
		Other (lack of remuneration, concerns regarding pharmacist's role as prescriber, lack of feedback)	5 (3.5)
Time barriers for pharmacists to undertake PLP	15 (8.1)		
Organizational barriers for pharmacists to undertake prescribing	14 (7.5)		
Pts.' perceptions of pharmacist prescribing	10 (5.4)		
Lack of available time with DMPs	8 (4.3)		
Acquiring diagnostic/consultation skills	6 (3.2)		
Other (record keeping, structure of PLP)	4 (2.2)		

DMP = designated medical practitioner; PLP = period of learning in practice.
[a]Reported by pharmacists (n = 188) and DMPs (n = 144); not all respondents reported positive/negative experiences; some respondents reported more than one positive/negative experience.

Additional information in this area would further inform the development of a communication network to support PLP. Despite these limitations, demographics of the pharmacists who responded to the questionnaire were comparable with the rest of supplementary prescribing pharmacists in Great Britain, with the exception of their practice settings.[4] Due to the differences between Scotland and the rest of Great Britain with regard to pharmacist and general practitioner contracts, interpretation of the financial barriers reported in our study should be used with caution. Due to the larger proportion of community pharmacists among our respondents, compared with the national survey,[4] the reports of positive and negative experiences or challenges during the PLP might be skewed. The significance of these factors might have been different for pharmacists from other practice settings, especially pharmacists who already work in multidisciplinary teams and/or are involved in disease management. Further research is needed to evaluate the efficacy of an Internet-based network of pharmacists and their mentors for information sharing during the PLP.

Pharmacists in Great Britain have recently been given rights for independent prescribing,[17] defined as, "prescribing by a practitioner (eg, physician, nurse, pharmacist) responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the clinical management required, including prescribing."[18] RPSGB has specified the curriculum for the training program for pharmacists to undertake independent prescribing.[16] Many higher education institutions in Great Britain are preparing for independent prescribing training. Our findings could inform not only pharmacists undertaking the conversion course for practicing supplementary prescribing pharmacists and those undertaking the new prescribing course, but also mentors and policy makers.

Conclusions

The PLP provided an opportunity for professional development and team working for many pharmacists and DMPs. More structured and clearer information on roles and responsibilities of pharmacists and DMPs during the PLP are warranted, as are greater opportunities for communication among pharmacists, DMPs, and academia. Input from a multidisciplinary team of healthcare professionals, including a practicing supplementary prescribing pharmacist, and review of consultation videos could further enhance the PLP experience.

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References

1. Crown J. Review of prescribing, supply & administration of medicines. Final report. London: Department of Health, 1999. www.dh.gov.uk/assetRoot/04/07/71/53/04077153.pdf (accessed 2006 Nov 28).
2. Department of Health. Supplementary prescribing by nurses, pharmacists, chiropodists/podiatrists, physiotherapists and radiographers within the NHS in England: a guide for implementation. London: HMSO, 2005. www.dh.gov.uk/assetRoot/04/11/00/33/04110033.pdf (accessed 2006 Nov 28).
3. Royal Pharmaceutical Society of Great Britain. Outline curriculum for training programmes to prepare pharmacist supplementary prescribers. London: 2002. www.rpsgb.org.uk/pdfs/supplprescphoutlcurric.pdf (accessed 2006 Jun 6).
4. George J, McCaig DJ, Bond CM, et al. Supplementary prescribing: early experiences of pharmacists in Great Britain. Ann Pharmacother 2006; 40:1843-50. Epub 12 Sept 2006. DOI 10.1345/aph.1H227
5. Bellingham C. How supplementary prescribing is working for pharmacists in practice. Pharm J 2004:PM2-3.
6. Granby T, Picton C. Maintaining competency in prescribing: an outline framework to help pharmacist supplementary prescribers. Liverpool: National Prescribing Centre, 2003. www.npc.co.uk/publications/maint_compt_presc/outline_framework.pdf (accessed 2006 Nov 28).
7. Granby T, Picton C. Maintaining competency in prescribing: an outline framework to help pharmacist prescribers. Liverpool: National Prescribing Centre, 2006. www.npc.co.uk/pdf/pharmacist_comp_framework_Oct06.pdf (accessed 2006 Nov 28).
8. George J, McCaig D, Bond C, Cunningham S, Diack H, Stewart D. Benefits and challenges in delivering supplementary prescribing: perceptions of early pharmacist prescribers in Great Britain. Int J Pharm Pract 2006;14:PPA21-2.
9. Stewart D, George J, Bond C, et al. Developing and evaluating an e-network of pharmacists undertaking supplementary prescribing training and their linked designated medical practitioners, which is supported by academia, aiming to enhance the period of learning in practice. London: Pharmacy Practice Research Trust, RPSGB, 2006.
10. DeVellis RF. Scale development: theory and applications. Newbury Park, CA: SAGE Publications, 1991:121.
11. Williams C, Cantillon P, Cochrane M. Pre-registration house officers in general practice: the views of GP trainers. Fam Pract 2001;18:619-21.
12. While A, Shah R, Nathan A. Interdisciplinary working between community pharmacists and community nurses: the views of community pharmacists. J Interprof Care 2005;19:164-70.

13. Hudson B. Interprofessionality in health and social care: the Achilles' heel of partnership? J Interprof Care 2002;16:7-17.
14. Maguire P, Fairbairn S, Fletcher C. Consultation skills of young doctors: I—Benefits of feedback training in interviewing as students persist. Br Med J (Clin Res Ed) 1986;292:1573-6.
15. Campbell LM, Murray TS. Summative assessment of vocational trainees: results of a 3-year study. Br J Gen Pract 1996;46:411-4.
16. Royal Pharmaceutical Society of Great Britain. Outline curriculum for training programmes to prepare pharmacist prescribers. London: 2006. www.rpsgb.org/pdfs/indprescconvprog.pdf (accessed 2006 Nov 28).
17. The medicines for human use (prescribing) (miscellaneous amendments) order. British Parliament: 2006. ISBN 0110743989 www.opsi.gov.uk/si/si2006/20060915.htm (accessed 2006 Nov 28).
18. Department of Health. Improving patients' access to medicines: a guide to implementing nurse and pharmacist independent prescribing within the NHS in England. Leeds: HMSO, 2006. www.dh.gov.uk/assetRoot/04/13/37/47/04133747.pdf (accessed 2006 Nov 28).

EXTRACTO

TRASFONDO: Un período de aprendizaje en la práctica (PAP) es parte integral del adiestramiento de prescripción suplementaria (PS) para farmacéuticos en Gran Bretaña. Durante el PAP, un profesional médico designado (PMD) supervisa y ofrece apoyo a la persona que se adiestra para desarrollar la facultad de prescribir.

OBJETIVO: Evaluar la visión y las experiencias de los farmacéuticos en PS y de los PMD respecto al PAP e identificar las necesidades de apoyo percibidas durante el PAP.

MÉTODOS: En septiembre de 2006, se enviaron por correo cuestionarios prepiloto a todos los farmacéuticos que comenzaron el adiestramiento de PS en Robert Gordon University, Aberdeen, Escocia (n = 242) y a sus PMD (n = 232). A los que no respondieron, se les envió hasta 2 recordatorios. Las respuestas se analizaron utilizando estadísticas descriptivas y comparativas; las respuestas a las preguntas abiertas se analizaron según el tema.

RESULTADOS: Se recibieron respuestas de 186/242 (76.9%) farmacéuticos y 144/232 (62.1%) PMD. Sobre la mitad de los farmacéuticos estuvieron de acuerdo/muy de acuerdo en que conocían qué se esperaba de ellos y sus PMD durante el PAP, pero menos de la mitad estuvo de acuerdo/muy de acuerdo en que era importante comunicarse con colegas farmacéuticos durante el curso de la prescripción. Ciento doce (60.2%) farmacéuticos fueron evaluados por sus PMD en cuanto a sus destrezas de consulta durante el PAP. Las oportunidades de desarrollo profesional y trabajo en equipo se consideraron como experiencias positivas principales durante el PAP tanto por el farmacéutico como por el PMD. También, se informaron barreras organizacionales, actitudinales y temporales. Hubo un interés considerable entre los farmacéuticos y los PMD por una red de apoyo en internet para el PAP.

CONCLUSIONES: Se debe aumentar la información sobre los roles y las responsabilidades de los farmacéuticos y los PMD durante el PAP. El internet puede ser un medio de comunicación útil durante el PAP. La información ofrecida por un equipo interdisciplinario de profesionales de la salud y la revisión de vídeos sobre consultas pudieran reforzar la experiencia del PAP.

Rafaela Mena

RÉSUMÉ

OBJECTIF: Évaluer les opinions et les expériences des pharmaciens prescripteurs et des praticiens médicaux désignés suite au programme de Période d'apprentissage dans la pratique (PLP) et identifier leurs perceptions quant au soutien accordé durant ce programme.

MÉTHODES: Des questionnaires ont été postés en septembre 2006 à tous les pharmaciens qui ont débuté le programme d'entraînement à l'université Robert Gordon d'Aberdeen en Écosse (n = 242) ainsi qu'aux praticiens médicaux désignés (n = 232). Les non-répondants ont reçu au moins 2 avis de rappel. Les réponses ont été analysées en utilisant des statistiques descriptives et comparatives. Les réponses aux questions ouvertes ont été analysées selon les différents thèmes.

RÉSULTATS: Le taux de réponse était de 76.9% (186/242) pour les pharmaciens et de 62.1% (144/232) pour les praticiens médicaux délégués. Plus de la moitié des pharmaciens ont répondu qu'ils étaient fortement en accord concernant le fait qu'ils étaient au courant des attentes durant la PLP mais moins de la moitié étaient fortement en accord qu'il était important de communiquer avec les autres collègues pharmaciens durant la période du cours. Chez 112 pharmaciens (60.2%), les habiletés de consultation ont été évaluées par les praticiens médicaux délégués. Des possibilités de développement professionnel et de travail d'équipe ont été présentés comme des expériences positives durant la PLP tant au niveau des pharmaciens que des praticiens médicaux délégués. Des barrières organisationnelles, psychologiques et au niveau du temps ont été rapportées. Un intérêt a été manifesté par les pharmaciens et les praticiens médicaux délégués quant à la mise en place d'un support internet.

CONCLUSIONS: Les rôles et les responsabilités des pharmaciens et des praticiens médicaux délégués durant le programme de PLP devraient être améliorés. L'utilisation de l'internet pourrait être un medium utile pour communiquer durant le cours de PLP. Les commentaires des membres de l'équipe multidisciplinaire et la révision des consultations par vidéo pourraient améliorer l'expérience de PLP.

Louise Mallet

Paper 3

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Pharmacist supplementary prescribing training: a study of pharmacists' perceptions and planned participation

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Pharmacist supplementary prescribing training: a study of pharmacists' perceptions and planned participation

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Abstract

Objective The aim of this research was to investigate in a national sample of pharmacists, who have not yet applied for a supplementary prescribing (SP) course, their planned participation in training, and attitudes towards pharmacist SP.

Setting Great Britain.

Method A postal questionnaire was sent to 4300 pharmacists (approximately 10% of all Great Britain registered pharmacists). The questionnaire had five sections: awareness of SP training; perceptions of aspects of SP training; actions taken relating to SP training based on 'stage of change' model; attitudes towards implementing SP into practice; and demographics. Within demographics, respondents were asked to denote themselves as innovators, early adopters, early majority, late majority and laggards, based on receptivity to change. Non-respondents were mailed up to two reminders.

Key findings The response rate was 55.1% (2371/4300). Of the 1707 with patient contact but who had not commenced training, almost all (1668, 97.7%) were aware of pharmacist SP. A minority had taken any significant SP training action, with most being at the precontemplation/contemplation stage of change. However, most respondents either strongly agreed/agreed that practising SP would improve patient care, but strongly disagreed/disagreed that they had sufficient pharmacist/technical support. Two-hundred and forty-three (73.0%) of the 'venturesome' pharmacists (the innovators) and 291 (79.5%) of the 'role models' (the role models) had either never thought about training or had not yet explored training options further. Following logistic regression, predictors of prescribing training actions were: awareness of local networks for SP; receptivity to change; knowledge of colleagues who had undertaken or were currently undertaking SP training; postgraduate qualifications; intrinsic (professional) factors such as professional duty to become a prescriber; and extrinsic (infrastructure) factors such as sufficient IT support.

Conclusion We have demonstrated that pharmacists are aware of SP courses and that certain factors are associated with actions relating to prescribing training. However, the practice setting(s) require(s) attention to ensure readiness to support such innovations in areas such as IT and administrative support. These issues have implications for education providers, the NHS and policy makers; and the extension into independent prescribing. Issues based on receptivity to change and models of change require further investigation.

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Introduction

Improving patient access to medicines and making best use of the clinical skills of non-medical health professionals, particularly pharmacists and nurses, are among the aims of recent changes in prescribing legislation in Great Britain.[1–5] Supplementary prescribing (SP), one such innovation, has been undertaken by pharmacists working in various practice settings across Great Britain since March 2000,[6] and is a key development for pharmacy practice.

Supplementary prescribing (SP) is defined as 'a voluntary partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient-specific clinical management plan (CMP) with the patient's agreement'.[7] There are no restrictions on the conditions that may be managed or drugs that can be prescribed. Before SP can begin, it is obligatory for the CMP to be in place (paper-based or

electronic) relating to a named patient and to that patient's specific conditions to be managed by the supplementary prescriber.[5]

Background information on pharmacist SP training courses has been published elsewhere.[8,9] Essentially, training for pharmacists with a minimum of 2 year's post registration experience comprises at least 25 days (200 hours equivalent) of university tuition at the degree/masters level and a period of learning in practice (PLP) of at least 12 days, under the supervision of a designated medical practitioner (DMP). During the PLP the DMP will provide the pharmacist with opportunities to develop competence in prescribing practice.

It is key to study the awareness and perceptions of the members of a profession regarding any new developments within that profession. In addition, there should also be a focus on the appropriateness, effectiveness and outcomes of associated training. Findings can then inform further course development and implementation into practice. This is of prime importance for SP, given the recent extension to independent prescribing. As independent prescribers, defined as 'practitioners responsible for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the clinical management, including prescribing', they will be able to prescribe any licensed medicine (other than controlled drugs) within their competence.[2] Despite these innovations, few national studies with any emphasis on pharmacist prescribing training have been published to date.

A survey of pharmacists who would oversee the implementation of SP in primary (n = 271) and secondary care (n = 143) in England found that 56% of primary care trusts and 57% of secondary care trusts were intending to implement SP by the end of 2005.[10] Time commitments and workload were perceived to be the major factors that would affect the recruitment of DMPs. These barriers were perceived to be greater in primary care than other settings. Factor analysis of questionnaire data gave three factors describing concerns relating to pharmacist SP.[11] One factor, labelled as 'limitations of the SP training model', related specifically to training. Scores in primary and secondary care indicated that respondents agreed that there were limitations to the training model. However, no further information relating to this aspect was provided by the authors. It should also be borne in mind that NHS trust strategies relating to the implementation of pharmacist prescribing may have altered significantly since the study was conducted.

All Royal Pharmaceutical Society of Great Britain (RPSGB)-registered pharmacy prescribers were surveyed in June 2005 (n = 518) to explore their early experiences of prescribing and perceptions of the prescribing course.[8] The response rate was 82%, with respondents giving a median 'course satisfaction score' on a scale of 3–15 (lowest to highest) of 10. Content analysis of responses to open questions provided further insight into views of the training course and the PLP.[12] Findings highlighted the diversity of courses on offer in Great Britain in terms of content and delivery. Most participants, irrespective of their practice setting, appreciated the support received from their DMPs.

One key limitation of these studies in prescribing initiatives by pharmacists is that they have focused either on pharmacists in a strategic position or on those who have completed the SP course. To inform further the implementation of SP and ensure capacity for future supplementary and independent prescribing delivery, the views of pharmacists who are yet to apply for a SP course need to be ascertained, and any factors that could act as drivers or barriers to participation need to be identified. This information could be a reflection of priorities for the provision of prescribing services by pharmacists working in various practice settings. The aim of this research was to investigate in a national sample of pharmacists, who have not yet applied for an SP course, their planned participation in SP training and attitudes towards pharmacist SP.

Methods

A postal questionnaire was developed by eight experienced pharmacy practitioners and/or researchers. A random sample of 4500 registered pharmacists was obtained from the RPSGB, approximately 10% of all registered pharmacists.[13] The pilot questionnaire was mailed to a sample of 200 pharmacists randomly selected from the RPSGB list, along with a letter describing the aim of the study. Piloting resulted in minimal changes to the wording and sequencing of some questions.

The final questionnaire had five sections of open and closed questions, which focused on: awareness of SP and training (10 items); perceptions of aspects of SP training programmes such as appropriateness of course content, duration, level of difficulty measured using five-point semantic differentials with an additional response option of 'unable to rate' (11 items); actions taken relating to SP training (six items) based on the 'stage of change' model which describes stages of precontemplation, contemplation, preparation and action;[14] five-point Likert scales measuring attitudes towards implementing SP into practice (11 items); and demographics (8 items). The attitudinal statements were adapted from previous work of the research team investigating community pharmacists' attitudes towards independent prescribing and the implementation of pharmacist supplementary prescribing into practice.[8,15] In the demographics section, respondents were asked to denote themselves as innovators, early adopters, early majority, late majority and laggards based on receptivity to change as described by Rogers.[16] Although largely derived from the domains of business and marketing, receptivity to change is considered appropriate to healthcare organisation and was included as a measure of how quickly individuals change their behaviour. Descriptors for each of these were selected from the literature as being most appropriate for a prescribing training context.[16]

The questionnaire was mailed to the remainder of the RPSGB list (4300) in November 2005 along with a covering letter and a reply-paid envelope. Non-respondents were sent up to two reminders at four-weekly intervals. Responses from registered supplementary prescribers or those undertaking the course were excluded from analysis.

Data were analysed using SPSS for Windows version 13.0 (SPSS Inc), using descriptive statistics. The items regarding pharmacists' attitudes measured on five-point Likert scales were subjected to principal components analysis (PCA) – a

statistical technique used to reduce a large number of items or variables to a smaller, more manageable number of components (domains).[17] Orthogonal (Varimax) rotation was performed initially to aid in the interpretation of the components, and the results were compared to oblique (Promax) rotation. Total scores were obtained by assigning scores of 1 (strongly disagree) to 5 (strongly agree) to each of the Likert statement responses. Internal consistencies of the resulting components were tested using Cronbach's alpha. Alpha internal consistencies greater than 0.60 are regarded as desirable for psychometric scales.[17] One-way analysis of variance (ANOVA) was used to compare any differences in scores between individuals based on receptivity to change for both components. P values <0.05 were considered statistically significant.

Prescribing training actions were summarised into two: those taking very little action ('I have never thought about training as a supplementary prescriber'/'I have thought about training but have not yet explored this further') and the remainder, taking some action. Factors associated with these prescribing training actions were identified using Chi-square/Student's t test. Variables identified as significant in univariate analysis (P <0.005 after applying a Bonferroni correction to reduce the risk of type 1 errors[18]) were further analysed in a logistic regression model.

This study was approved by the Ethical Review Panel of the School of Pharmacy at The Robert Gordon University. Grampian Research Ethics Committee advised that this study did not require formal review by an NHS ethics committee.

Results

The response rate was 55.1% (2371/4300). Two-hundred and thirty-five respondents (9.9%) were either non-practising or about to retire, and were thus excluded from further analysis. Also excluded from analysis were 305 (12.9%) respondents with no patient contact (15 missing responses), 63 (2.7%) registered supplementary prescribers and 46 (1.9%) undertaking SP training at the time of the study.

Of the remaining 1707 respondents, the majority was female (1030, 60.3%), had been registered >15 years (853, 50.0%), and worked within community pharmacy (1190, 69.7%). Less than half described themselves as innovators or early adopters. Details of demographics and characteristics are given in Table 1.

Almost all (1668, 97.7%) were aware of SP by pharmacists, but fewer (1274, 74.6%) were aware of SP training courses for pharmacists. Sources of awareness of pharmacist SP training courses are given in Table 2. Very few were able to rate their perceptions of aspects of pharmacist SP training courses such as content, level of difficulty and duration, as given in Table 3.

Less than half claimed to be aware of the legal requirements of CMPs (498, 29.2%), while 780 (45.7%) were not aware and 382 (22.4%) were unsure. Similar findings were obtained for restrictions on conditions that could be managed by a supplementary prescriber (544 aware, 31.9%; 643 not aware, 38.3%; and 458 unsure, 26.8%) and for restrictions on drugs that could be prescribed by a supplementary prescriber (698 aware, 40.9%; 527 not aware, 30.9%; and 430 unsure, 25.2%).

Only a minority had taken any significant action in terms of SP training, with most being at the precontemplation/

Table 1 Respondent demographics and characteristics, n = 1707[a]

Characteristic	n (%)
Sex	
Male	673 (39.4)
Female	1030 (60.3)
Age in years	
<25	91 (5.3)
25–34	525 (30.8)
35–44	422 (24.7)
45–54	377 (22.1)
>54	286 (16.8)
Years since registration as pharmacist	
<6	390 (22.8)
6–10	245 (14.4)
11–15	212 (12.4)
16–20	178 (10.4)
>20	675 (39.5)
Main practice setting	
Community pharmacy	1190 (69.7)
Primary care medical practice	51 (3.0)
Hospital pharmacy	384 (22.5)
Other	79 (4.6)
Postgraduate qualifications	
Yes	518 (30.3)
No	1189 (69.7)
Hours with patient contact per week	
<10	240 (14.1)
10–19	249 (14.6)
20–29	268 (15.7)
30–39	495 (29.0)
>39	439 (25.7)
Hours of continuing education in last 12 months	
<6	123 (7.2)
6–10	133 (7.8)
11–15	133 (7.8)
16–20	170 (10.0)
21–25	168 (9.8)
26–30	257 (15.1)
>30	703 (41.2)
Respondent classification based on receptivity to change	
'Venturesome and willing to take risks in relation to new ways of working'	333 (19.5)
'Serve as a role model for others in relation to new ways of working'	366 (21.4)
'Deliberate for some time before adopting new ways of working'	775 (45.4)
'Caution in relation to new ways of working and tend to change once most peers have done so'	180 (10.5)
'Resist new ways of working'	13 (0.8)
Knowledge of colleagues who have completed/undertaking supplementary prescribing training	
Yes	612 (35.9)
No	1050 (61.5)

[a]Percentages do not total to 100 due to missing responses.

Table 2 Source of awareness of pharmacist SP training course, n = 1274

Source of awareness	n (%)
Pharmaceutical Journal	845 (66.3)
Centre for Pharmacy Postgraduate Education (England)/ NHS Education for Scotland (Pharmacy)/ Welsh Centre for Postgraduate Pharmaceutical Education	311 (24.4)
Higher Education Institutions	265 (20.8)
Health authority/primary care trust/health board	243 (19.1)
RPSGB	220 (17.3)
Chemist and Druggist	171 (13.4)
Conference	82 (6.4)
Departments of Health (England/ Scotland/ Wales)	81(6.4)

contemplation stage of change (Table 4). Two-hundred and forty-three (73.0%) of the 'venturesome' pharmacists and 291 (79.5%) of the 'role models' had either never thought about training or had not yet explored training options further. Six-hundred and forty-five (37.8%) stated that they would be more likely to undertake prescribing training once the programme covered both supplementary and independent prescribing.

Attitudes towards implementing SP into practice are given in Table 5. Most strongly agreed or agreed that practising SP would improve the care of their patients and that SP would enhance their professional standing, but strongly disagreed or disagreed that they had sufficient pharmacist and technical support for SP. When these 11 items were subjected to PCA, the correlation matrix contained multiple coefficients above 0.3. The Kaiser–Meyer–Olkin measure of sampling adequacy (0.843) and Bartlett's test of sphericity (significance < 0.001) confirmed the factorability of the items. Two components had eigenvalues exceeding 1.0, for which Varimax rotation was used. The two-factor solution explained 56.7% of the variance. The items in the two components pertained to intrinsic (professional) factors and extrinsic (infrastructure) factors, respectively (Table 6).

The total scores (mean ± standard deviation (SD)) for these components were: 21.4 ± 4.50 (minimum possible = 6, maximum = 36, with a higher score indicating more agreement with the statements) for intrinsic (professional) factors; and 11.8 ± 3.52 (minimum possible = 5, maximum = 30) for extrinsic (infrastructure) factors. The alpha internal consistencies of these domains were 0.84 and 0.75 respectively. Respondents who regarded themselves to be more 'venturesome' had significantly higher scores for both these domains than those who were more 'cautious' (P <0.001).

In univariate analysis, the following factors were significantly associated with prescribing training actions: knowledge of colleagues who had undertaken/were undertaking SP training (P <0.001); awareness of local networks for SP (P <0.001); practice setting (P <0.001); possession of a postgraduate qualification (P <0.001); classification based on receptivity to change (P <0.001); intrinsic (professional) factors (P <0.001); and extrinsic (infrastructure) factors (P <0.001).

In logistic regression, the following factors were retained as independent predictors of prescribing training actions: awareness of local networks for SP (more likely to have taken some action, odds ratio (OR) = 2.994, 95% confidence interval (CI) 1.705–5.259, P <0.001); classification based

Table 3 Pharmacists' perceptions of aspects of pharmacist SP training courses, n = 1707

Aspect of course	Description of '1'	1 n (%)	2 n (%)	3 n (%)	4 n (%)	5 n (%)	Description of '5'	Unable to rate
Course content	Appropriate for prescribing pharmacists	124(7.3)	98(5.7)	71(4.2)	31(1.8)	7(0.4)	Inappropriate for prescribing pharmacists	1244(72.9)
Level of difficulty	Too easy	7(0.4)	38(2.2)	173(10.1)	84(4.9)	9(0.5)	Too difficult	1258(73.7)
Duration	Too short	14(0.8)	47(2.8)	220(12.9)	65(3.8)	29(1.7)	Too long	1196(70.1)
Relevance to my practice	Highly relevant	129(7.6)	155(9.1)	155(9.1)	105(6.2)	71(4.2)	Highly irrelevant	954(55.9)
Attendance at a higher education institution	Too little attendance required	16(0.9)	56(3.3)	199(11.7)	76(4.5)	43(2.5)	Too much attendance required	1182(69.2)
Self-study	Too little emphasis on self-study	16(0.9)	44(2.6)	181(10.6)	85(5.0)	30(1.8)	Too much emphasis on self-study	1214(71.1)
Tutor support	Insufficient tutor support	22(1.3)	70(4.1)	127(7.4)	28(1.6)	7(0.4)	Excessive tutor support	1317(77.2)
Course location	Accessible	118(6.9)	99(5.8)	113(6.6)	84(4.9)	53(3.1)	Inaccessible	1105(64.7)
Online delivery	Too little emphasis on online delivery	28(1.6)	59(3.5)	101(5.9)	24(1.4)	14(0.8)	Too much emphasis on online delivery	1346(78.9)
Interaction with other health professions on course	Too little interaction with other health professions	31(1.8)	60(3.5)	157(9.2)	53(3.1)	6(0.4)	Too much interaction with other health professions	1263(74.0)
Period of learning in practice	Difficult to arrange doctor support	129(7.6)	117(6.9)	74(4.3)	42(2.5)	19(1.1)	Easy to arrange doctor support	1191(69.8)

Table 4 Pharmacists' actions (based on the stage model of change) in terms of SP training, n = 1707[a]

Action	n (%)
I have never thought about training as a supplementary prescriber	413 (24.2)
I have thought about training but have not yet explored this further	1028 (60.2)
I have investigated training options	143 (8.4)
I now have a plan to undertake training	29 (1.7)
I have arrangements in place to support my training (e.g. locum cover, doctor support for the period of learning in practice etc)	4 (0.2)
I have applied for a course in supplementary prescribing	11(0.6)

[a]Percentages do not total to 100 due to missing responses.

on receptivity to change (venturesome/role model, more likely to have taken some action, OR = 2.678, 95% CI 1.809–3.966, P <0.001); knowledge of colleagues who had undertaken/were undertaking SP training (more likely to have taken some action, OR = 2.429, 95% CI 1.662–3.549, P <0.001); possession of a postgraduate qualification (more likely to have taken some action, OR = 1.700, 95% CI 1.144–2.527, P = 0.009); intrinsic (professional) factors (higher score more likely to have taken some action, OR = 1.131, 95% CI 1.078–1.188, P < 0.001); and extrinsic (infrastructure) factors (higher score more likely to have taken some action, OR = 1.062, 95% CI 1.004–1.122, P = 0.034). These six variables explained 22% of the variance.

Discussion

This is the first national study of views and attitudes of pharmacists to prescribing training among those yet to register for any prescribing course. Although respondents were generally aware of SP by pharmacists and the pharmacist SP course, very few were able to rate detailed elements of the course such as content and duration. Although most had taken very little action in terms of prescribing training, they demonstrated positive attitudes in terms of intrinsic (professional) factors, while indicating issues or challenges to be overcome relating to extrinsic (infrastructure) factors. Awareness of local networks, being more venturesome or a role model, knowledge of colleagues undertaking prescribing training, possession of postgraduate qualifications, intrinsic (professional) factors, and extrinsic (infrastructure) factors were independent predictors of prescribing training action.

Our study has several strengths. We sampled a considerable proportion of the profession and had responses from a range of pharmacists in terms of age, experience and practice setting. To our knowledge this is the first study that has related classification of individuals based on receptivity to change to pharmacists' actions. Nevertheless, our study had some limitations. Almost 10% of our respondents were inactive members of the RPSGB, and perhaps should have been excluded. Our findings are limited by the response rate, which reduces the generalisability of our findings; there is a possibility of non-respondent bias in that non-respondents may have had little interest in the topic of pharmacist prescribing. We were unable to compare the characteristics of respondents and non-respondents due to the lack of available information relating to the non-respondents. However, our respondents are similar in age and sex to national pharmacist statistics.[13] In addition,

Table 5 Attitudes towards implementing SP into practice, n = 1707

Item (n)	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Practising as a supplementary prescriber would inprove the care of my patients (n=1601)	369 (21.6)	746 (43.7)	357 (20.9)	107 (6.3)	22 (1.3)
I already have access to all of the patient information I need to practise as a supplementary prescriber (n = 1596)	125 (7.3)	208 (12.2)	398 (23.3)	561 (32.9)	304 (17.8)
Supplementary prescribing would be a major change to my day-to-day practice (n = 1593)	517 (30.3)	752 (44.1)	230 (13.5)	84 (4.9)	10 (0.6)
A supplementary prescribing role would enhance my professional standing (n = 1597)	572 (33.5)	718 (42.1)	216 (12.7)	64 (3.7)	27 (1.6)
I already have sufficient administrative support to implement supplementary prescribing (n = 1585)	36 (2.1)	118 (6.9)	530 (31.0)	583 (34.2)	318 (18.6)
I already have sufficient IT support to implement supplementary prescribing (n = 1586)	44 (2.6)	196 (11.5)	537 (31.5)	534 (31.3)	274 (16.1)
Supplementary prescribing would work well in my practice setting (n = 1588)	157 (9.2)	465 (27.2)	657 (38.5)	226 (13.2)	83 (4.9)
I would be happy to become a supplementary prescriber (n = 1596)	359 (21.0)	597 (35.0)	424 (24.8)	143 (8.4)	73 (4.3)
I feel confident in my ability to become a supplementary prescriber (n = 1595)	320 (18.7)	584 (34.2)	470 (27.5)	168 (9.8)	53 (3.1)
I feel it is my professional duty to become a supplementary prescriber (n = 1599)	143 (8.4)	388 (22.7)	463 (27.1)	457 (26.8)	148 (8.7)
I already have sufficient pharmacist and technical support to implement supplementary prescribing (n = 1592)	51 (3.0)	160 (9.4)	543 (31.8)	584 (34.2)	254(14.9)

Table 6 Rotated component matrix relating to implementation of supplementary prescribing into practice

Item	Component	
	Intrinsic (professional) factors	Extrinsic (infrastructure) factors
I would be happy to become a supplementary prescriber	0.823	
Practising as a supplementary prescriber would improve the care of my patients	0.815	
I feel it is my professional duty to become a supplementary prescriber	0.765	
A supplementary prescribing role would enhance my professional standing	0.744	
Supplementary prescribing would work well in my practice setting	0.650	[0.353]
I feel confident in my ability to become a supplementary prescriber	0.555	[0.324]
I have sufficient administrative support to implement supplementary prescribing		0.797
I have sufficient IT support to implement supplementary prescribing		0.797
I have sufficient pharmacist and technical support to implement supplementary prescribing		0.745
I already have access to all of the patient information I need to practise as a supplementary prescriber		0.688
Supplementary prescribing would be a major change to my day-to-day practice	[0.348]	0.427

Extraction method, principal component analysis; rotation method: Varimax with Kaiser normalisation. Rotation converged in three iterations.

the attitudinal items were developed by the research team around issues considered relevant by the team, which may have introduced an element of bias.

Pharmacists in this study were clearly aware of training courses, largely from published sources, education providers and policy makers. However, the lack of awareness of CMPs, conditions that could be managed and drugs that could be prescribed, together with the lack of detailed knowledge of aspects of the prescribing course such as content, duration and difficulty may be reducing the uptake of training. Policy makers and education providers may wish to revise their marketing and recruitment strategies to ensure that information provided meets pharmacists' needs. Of note, almost 40% stated that they would be more likely to undertake prescribing training once programmes covered both supplementary and independent prescribing. This will be tested in the near future as the curricula for the conversion course from supplementary to independent prescribing and the full independent prescribing course have now been published.[19] Encouraging pharmacists to apply for prescribing training is therefore even more important to fulfil the profession's aspirations. A recent survey of Scottish community pharmacists' awareness, views and attitudes of independent prescribing by pharmacists showed high awareness and perceived competence in selecting appropriate drugs for many common conditions.[15] Most respondents expressed an interest in training prior to any service development. This is consistent with our finding of interest in independent prescribing training. A further study in Scotland determined community pharmacists' involvement with extended service provision, including the minor ailment scheme, supplementary and independent prescribing.[20] Prescribing was noted as the ninth most popular extended service.

It is perhaps not surprising that many pharmacists, even those who were venturesome or considering themselves as role models, appeared reluctant to commit to prescribing training. Prescribing is a very new development for the profession, with models of practice and adequate administration just beginning to emerge.[8] As part of the national survey, a number of barriers and challenges to the implementation of pharmacist SP were cited by many pharmacist supplementary prescribers in all healthcare settings.[12] Once these initial issues have been resolved, models may be disseminated as good practice to inform further implementation. Other factors may also act as stimuli; the new community pharmacy contracts have a clear emphasis on chronic disease management and medication review,[21,22] processes that dovetail very well with prescribing and may provide further motivation to consider prescribing training. In addition, the minor ailments schemes allow pharmacists to prescribe certain medicines for those normally exempt from prescription charges.[23] This may increase pharmacists' confidence around processes of prescribing.

Several factors were found to be independent predictors of prescribing training action. The positive influence of colleagues and peers has been demonstrated in many health professional groupings,[24–29] and has also been shown to be important to models of change.[30] This, combined with the importance of local SP networks, should be used by policy makers to consider the setting up of local peer support groups and engaging leading-edge practitioners with SP qualifications in encouraging non-SP colleagues to get involved.

The fact that different classifications of individuals based on receptivity to change were evident in this research may mean that different strategies are required to encourage uptake of prescribing training.[30] PCA of the attitudinal data revealed two components: intrinsic (professional) factors and extrinsic (infrastructure) factors. Generally, scores were high for the intrinsic factors indicating a very positive attitude professionally, while the extrinsic scores were much lower. These findings indicate that although pharmacists are clearly interested in implementing SP into their practice, the practice environment is not yet ready for such a development. Pharmacist, technical, administration and IT support are required along with access to patient information. These findings concur with other research we have conducted on supplementary

pharmacist prescribing.[8] While developments such as the NHSnet will facilitate access, there are still many aspects to be carefully considered.

Further work in this area is required. Qualitative exploration of pharmacists' attitudes and beliefs may provide some of the explanations around the lack of prescribing training action. This would also help to validate and possibly expand the attitudinal items explored in this research. Explanation could provide the stimulus for targeted interventions aiming to increase motivation to participate in prescribing training. The classification of individuals according to receptivity to change requires further testing and validation, to determine the usefulness of this system to predict those more likely to be leading-edge practitioners and its ability to predict changing behaviour. It may be worthwhile applying this classification to those who are already registered pharmacist prescribers. On a policy and organisational level, we also need to consider the numbers of pharmacist prescribers required to meet the needs of patients and the healthcare system. This would then facilitate targeting training to those areas and individuals of need.

In conclusion, this research has demonstrated that pharmacists are aware of SP courses from a variety of sources, but that they lack detailed knowledge of the courses and also of the legal and professional frameworks of SP. In addition, the practice setting(s) require close attention to ensure that they are ready to support such innovations. These issues have important implications for education providers, the NHS, and policy makers, and urgent attention is required with the extension into independent prescribing. Issues based on receptivity to change and models of change require further investigation.

References

1 Avery AJ, Pringle M. Extended prescribing by UK nurses and pharmacists. BMJ 2005;331:1154–5.
2 Improving patients' access to medicines: a guide to implementing nurse and pharmacist independent prescribing within the NHS in England. London: Department of Health; 2006.
3 Department of Health. Nurse and pharmacist prescribing powers extended 2005. London: HMSO; 2005.
4 Consultations on proposals to introduce independent prescribing by pharmacists. London: Medicines and Healthcare products Regulatory Agency; 2005.
5 Supplementary prescribing, pharmacist practitioners: a guide for implementation within NHS Scotland. Edinburgh: Scottish Executive Health Department; 2004.
6 Bellingham C. How supplementary prescribing is working for pharmacists in practice. Pharm J 2004;273:2–3.
7 Medicines Control Agency. Proposals for supplementary prescribing and pharmacists and proposed amendments to the prescription only medicines (human use) order 1997. Consultation Paper MLX284. London: Medicines Control Agency; 2002.
8 George J, McCaig D, Bond C et al. Supplementary prescribing: early experiences of pharmacists in Great Britain. Ann Pharmacother 2006;40:1843–50.
9 Outline curriculum for training programmes to prepare pharmacist prescribers. www.rpsgb.org/pdfs/indprescoutlcurric.pdf (accessed August 8, 2007).
10 Hobson RJ, Sewell GJ. Supplementary prescribing by pharmacists in England. Am J Health-Syst Pharm 2006;63:244–53.
11 Hobson RJ, Sewell GJ. Risks and concerns about supplementary prescribing: survey of primary and secondary care pharmacists. Pharm World Sci 2006;28:76–90.
12 George J, McCaig D, Bond CM et al. Benefits and challenges of prescribing training and implementation: perceptions and early experiences of RPSGB prescribers. Int J Pharm Pract 2007;15:23–30.
13 Hassell K, Eden M. Workforce update—joiners, leavers, and practising and non-practising pharmacists on the 2005 Register. Pharm J 2006;276:40–2.
14 Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: toward an integrative model of change. J Consult Clin Psychol 1983;51:390–5.
15 George J, Pfleger D, McCaig D, Bond C, Stewart D. Independent prescribing by pharmacists: a study of the awareness, views and attitudes of Scottish community pharmacists. Pharm World Sci 2006;28:45–53.
16 Rogers EM. Diffusion of innovations. New York: Free Press; 1995.
17 DeVellis RF. Scale development: theory and applications. California: Sage Publications; 1991.
18 Miller R. Simultaneous Statistical Inference. New York: Springer-Verlag Inc; 1981.
19 Curriculum for the education and training of pharmacist supplementary prescribers to become independent prescribers. London: Royal Pharmaceutical Society of Great Britain; 2006.
20 Inch J, Bond CM, Lee AJ, Scott A, Grant AM. Scottish community pharmacists' current involvement in and attitudes towards 'extended-service' provision: a national survey. Int J Pharm Pract 2005;13:289–301.
21 The Pharmaceutical Services (Advanced and Enhanced Services) (England) (Amendment Directions) 2006. London: Department of Health; 2006.
22 New community pharmacy contract: implementation. NHS Circular PCA(P) (2006) 2. Edinburgh: Scottish Executive Health Department; 2006.
23 RPS e-PIC references on: pharmacists and minor ailment schemes. London: Royal Pharmaceutical Society of Great Britain; 2006.
24 Austin Z, Marini A, Croteau D, Violato C. Assessment of pharmacists' patient care competencies: validity evidence from Ontario (Canada)'s quality assurance and peer review process. Pharm Educ 2004;4:23–32.
25 Clifford RM, Plumridge RJ. Developing key competencies for a clinical pharmacy education and peer review program. J Pharm Pract Res 2003;33:208–11.
26 Maidment Y. A comparison of the perceived effects on Scottish general dental practitioners of peer review and other continuing professional development. Br Dent J 2006;200:581–4.
27 Piper H, Hassell AB, Rowe IF, Delamere J. Experience of six years of a regional peer review scheme in rheumatology. Rheumatology 2006;45:1110–15.
28 Ram P, Grol R, Rethans JJ, Schouten B, Vleuten C, Kester A. Assessment of general practitioners by video observation of communicative and medical performance in daily practice: issues of validity, reliability and feasibility. Med Educ 1999;33:447–54.
29 Prins FJ, Sluijsmans DMA, Kirschner PA. Feedback for general practitioners in training: quality, styles, and preferences. Adv Health Sci Educ Theory Pract 2006;11:289–303.
30 Effective Health Care Bulletin: getting evidence into practice. 1999;5(1). York: Centre for Reviews and Dissemination. www.york.ac.uk/inst/crd/ehc51.pdf (accessed 8 August 2007).

Paper 4

George J, Cleland J, Bond C, McCaig D, Cunningham ITS, Diack L, Stewart D

Views of pharmacists and mentors on experiential learning for pharmacist supplementary prescribing trainees

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RESEARCH ARTICLE

Views of pharmacists and mentors on experiential learning for pharmacist supplementary prescribing trainees

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Abstract *Objective* To explore the views and experiences of pharmacists and their mentoring designated medical practitioners (DMPs) about the 'period of learning in practice' (PLP) as part of supplementary prescribing (SP) training. *Method* Two focus groups (n = 5 and 7) of SP pharmacists were organised in Scotland. The experiences and views of DMPs (n = 13) were explored using one-to-one telephone interviews. The focus groups and interviews were transcribed verbatim and analysed using the framework approach. *Main outcome measures* Views and experiences of pharmacists and DMPs about the PLP. *Results* Planning the PLP in consultation with the DMP was found to be crucial for an optimal learning experience. Pharmacists who did not have a close working relationship with the medical team had difficulties in identifying a DMP and organising their PLP. Participants stressed the importance of focusing on and achieving the core competencies for prescribers during the PLP. Input from doctors involved in the training of others, review of consultation videos, and formal independent assessment including clinical assessment at the end of the PLP might improve the quality of the PLP. Forums for discussing experiences during the PLP and gathering information might be valuable. *Conclusion* Our findings have implications for prescribing training for pharmacists in the future. The PLP should focus on core competencies with input from doctors involved in the training of others and have a formal assessment of consultation skills. Support for pharmacists in organising the PLP and forums for discussing experiences during the PLP would be valuable.

Keywords Competency · Great Britain · Medical practitioner · Period of learning in practice · Pharmacists · Scotland · Supplementary prescribing

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Impact of findings on practice

- Planning a period of learning in practice (PLP) in consultation with a mentoring designated medical practitioner (DMP) is crucial for an optimal learning experience.
- The input from doctors involved in the training of others, review of consultation videos, and formal independent assessment including clinical assessment at the end of the PLP might improve the quality of the PLP.
- Forums (especially Internet based) for discussing experiences during the PLP might be valuable.

Introduction

Supplementary prescribing (SP)—a voluntary partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient-

specific clinical management plan, with the patient's agreement [1]—by pharmacists has recently been introduced in the UK [2, 3]. SP training for pharmacists should involve at least 25 days (200 h) of university tuition at the degree/masters level and a 'period of learning in practice' (PLP) of at least 12 days [4]. During the PLP, a mentoring designated medical practitioner (DMP) provides the student with supervision, support and opportunities to develop competence in prescribing practice focusing on one or more therapeutic areas and concentrating on the group of patients for whom he/she will initially prescribe [4, 5]. The PLP may be undertaken at the same time as or after the university based training. There is no set format for these 12 days and there is no need for these to be consecutive days of training. Universities offering SP courses provide pharmacists and DMPs with handbooks describing the background to the SP course and their respective roles during the PLP. They are also provided with a point of contact at the university.

The National Prescribing Centre has produced a competency framework to ensure quality of care and patient safety when prescribing responsibilities are undertaken by non-medical health professionals [6]. The 75 competencies listed in this framework cover three main areas—the consultation, prescribing effectively and prescribing in context. The DMP and the candidate agree which competencies are relevant to the individual and the clinical area, and use this as a basis for planning the PLP. Events are based around relevant competencies and, for example, could include: patient consultations, multidisciplinary meetings, patient review, monitoring and follow-up. The DMP is responsible for assessing the candidate but can delegate aspects of training to appropriate personnel. All relevant competencies must be achieved—if necessary, the PLP may be extended beyond 12 days. Candidates are required to submit a portfolio to the university providing evidence of achievement of relevant competencies. Finally, the DMP must sign off the pharmacist as suitable for registration as a supplementary prescriber. Upon successful completion of SP training and registration with the Royal Pharmaceutical Society of Great Britain (RPSGB) as a prescriber, SP pharmacists may prescribe for the full range of medical conditions, provided that they are within their professional competence and do so under the terms of a patient-specific clinical management plan agreed by both the patient and the independent prescriber(s) [4].

The PLP is an integral part of SP training and it is crucial that it provides an optimal learning experience leading to safe and appropriate prescribing by SP pharmacists. Many SP pharmacists regard their PLP experience as more useful in developing their clinical skills than the university component of the training [3, 7]. However, the need for greater communication and support during the PLP and standardised methods of assessment have been stressed by many SP pharmacists [3, 7].

Aim of the study

The aims of this research were to explore the views and experiences of SP pharmacists and DMPs about the PLP and to evaluate the extent to which the PLP had prepared the SP pharmacists to undertake prescribing.

Methods

Focus groups were conducted with the SP pharmacists and semi-structured telephone interviews were conducted with the DMPs. The focus groups were moderated by members of the research team (JG and LD) and a note taker was present. All the telephone interviews were conducted by JG. Invitations to participate in a focus group were sent to 75 SP pharmacists trained through The Robert Gordon University (RGU) before June 2005. RGU has the highest number of SP completions ($n = 85$; 21.2% of registered prescribers; data based on responses to a national survey) [3]. Pharmacists distant from the two focus group sites were not invited ($n = 10$). Twenty-five were unavailable due to lack of time and other commitments and four did not respond. For the 21/75 who expressed interest in participating, the choice of either of the two focus groups at two central locations in Scotland at different times was offered. Only 12 were available, but they represented a range of practice settings, therapeutic areas covered during the PLP and geographic location. Two 90-min focus groups, comprising five and seven participants, were held. Findings from the national survey of SP pharmacists [3, 7] were used as stimuli for discussion. The topic guide centred around PLP activities, pharmacists' perceptions of the DMP role, professional relationships, competencies, major experiences, markers of good practice and recommendations to enhance the PLP.

Focus groups were not feasible for DMPs due to their geographical distribution and busy work schedules; instead one-to-one telephone interviews were conducted. Invitations to participate were sent to 140 DMPs who had mentored pharmacists up to March 2006. The time frame was larger than used for the SP pharmacists due to initial poor response rate. Eighty-three DMPs did not respond; 39 could not take part due to lack of time. Of the 18 DMPs who consented to take part, 13 were selected for interview (15–20 min) to represent a range of practice settings, clinical specialities and locations. The interview schedule was similar to the focus group topic guide but also included awareness of SP legal frameworks, previous professional

relationships with the SP pharmacist and usefulness of the university handbook.

The interview schedule was largely based on the findings of the pharmacist interviews since the aim of the research was to explore the views of pharmacists and mentors on the PLP and issues arising for the pharmacists were likely to also be issues for the mentors. The schedule did, however, allow for exploration of issues specific to the mentors.

As saturation of data was thought to have occurred after interview 13, it was felt that additional interviews were unlikely to generate new themes and hence no more interviews took place.

The focus groups and interviews were transcribed verbatim and data analysis was based on the framework approach, a method widely used in applied or policy relevant qualitative research in which the objectives of the investigation are typically set in advance and shaped by the study objectives [8]. After familiarisation with the data by repeated reading of the transcripts (JG), emerging themes were identified and the data was coded supported by NVivo®. Two of the authors (JC and DS) independently verified the themes. Saturation of themes was reached after two focus groups and 13 telephone interviews.

Ethics permission for this study was granted by the Multicentre Research Ethics Committee (MREC) for Scotland. All participants provided written informed consent.

Results

Twenty-one (28.0%) SP pharmacists and 18 DMPs (12.9%) were interested in participating in the study, of which 12 and 13 respectively were included. Of the 18 DMPs who consented to take part, initially 13 were selected. Characteristics of the pharmacists and DMPs are summarised in Tables 1 and 2.

The major themes emerging from the data plus supporting quotes are presented below. These are organised around the PLP organisation and delivery.

Major theme I PLP organisation

Pharmacist selection of the DMP

In the absence of clear guidelines, the main criterion for choosing a DMP was prior working relationship rather than earlier mentoring experience or the practice setting:

> There wasn't much guidance given choosing a mentor... Because there was a shortage of numbers and it was all very new, people just ran to the GPs that they

Table 1 Characteristics of pharmacists participated in focus groups (n = 12)

Characteristic	*N*
Sex of the pharmacist	
Male	3
Female	9
Practice setting	
Community pharmacy	5
Primary care	4
Secondary care	2
Community pharmacy and primary care	1
Practice setting where PLP was undertaken	
Primary care	5
Secondary care	2
Primary and secondary care	5
DMP in-charge of PLP	
General practitioner	10
Hospital consultant	2
Therapeutic area focused during PLP	
Cardiovascular	6
Respiratory	3
Other (diabetes; geriatrics; rehabilitation)	3

Table 2 Characteristics of medical practitioners interviewed (n = 13)

Characteristic	*N*
Sex of the DMP	
Male	11
Female	2
Practice setting	
Primary care	10
Secondary care	1
Tertiary care	2
Clinical speciality/area of interest[a]	
Obstetrics & gynaecology/women's health	4
Respiratory	4
Cardiovascular	3
Endocrine	3
Psychiatry	2
Other (headache, oncology)	2
Clinical experience in years	
<10 years	1
11–20 years	6
21–30 years	6
Experience in training	
Medical students	12
Non-medical health professionals	6

[a] Some DMPs had multiple areas of interest

knew of and used their relationship. But they may not necessarily have been the best mentors. (Primary care pharmacist)

DMPs too preferred pharmacists whom they knew:

I think you need to know where their limitations are and what their experience is like—rather than just taking on somebody cold. (Hospital consultant)

Awareness of responsibilities during the PLP

Many pharmacists and DMPs felt that they were not adequately informed by the university about their respective roles and responsibilities during the PLP:

I went into the period in practice not really knowing what I was to do... So there's got to be some kind of guidance as far as what's expected. (Community pharmacist)
I just think that [DMPs] need a bit more guidance (Primary care pharmacist)
It was always presented to me like a 'fait-accompli'... I didn't really understand even at the end what was really expected of me. (General practitioner)

DMPs who were regularly involved in training of medical students were perceived to have better understanding of mentoring responsibilities, while those without such experience relied on the SP pharmacist to provide information on what was required to drive the PLP:

I was reasonably okay with what I was doing. I think that information would be much more important, again if you didn't have a background in some sort of training. (General practitioner)

It would appear from interviews that DMPs in all settings would appreciate concise, simplified and structured information, perhaps provided in non-paper based mode about their responsibilities before agreeing to the role of mentor:

It was almost too much information... I think it could have been simplified from a GPs point of view. (General practitioner)
I think written information should probably be kept to a relevant minimum. Really far more important was the discussion between myself and the pharmacist prior to taking it on. (Hospital consultant)

Balancing routine work and the PLP

While the PLP was simply an extension of their routine job for many of those pharmacists working in primary and secondary care NHS Trusts, planning and organising the PLP was much more of a challenge for some community pharmacists:

I found my period in practice quite difficult to define because really I felt everything I did in my job I was having to do again in this period in practice (Secondary care pharmacist)
I went and spoke to the doctor and found that... I couldn't go on a number of days that suited the locums and suited me. So I then had to go and book other locums... basically you just had to accept that you were neglecting your business. (Community pharmacist)

Some DMPs, particularly general practitioners, had difficulty fulfilling their everyday practice commitments during the PLP. This was not an issue in secondary and tertiary care settings where pharmacists were already working as a team with medics on a regular basis:

I had to reduce the number of patients that I saw while [the pharmacist] was sitting in with me, simply because you talk about the cases, you go over each one the sort of learning points so therefore it takes a lot more time than your normal 10 minute appointments. (General practitioner)
I guess the 12 days of experience was a continuation of our normal working patterns. (Hospital consultant)

Major theme II PLP delivery

Need for support during the PLP

Almost all SP pharmacists and DMPs, with the exception of those regularly involved in training, felt an information session on PLP or a network for discussing issues or asking questions would have been valuable. Recommendations on services, which could be made available through the support network were also made. However, it was also clear that the range of topics requested to be covered was very diverse:

This is a new area. I mean I'm doing it my way but it would be quite interesting to find out what other mentors are doing. (General practitioner)
Some sort of way of feedback or a forum type thing where people can ask more general questions and get answers would be handy. (General practitioner)
I think it should be like a quite a detailed website about—what is supplementary prescribing? What's the background? What's the course about? What's the period of learning in practice about? Case studies you've gone through, people who you could contact. (Primary care pharmacist)

Several indicated that time and not mentoring on a regular basis might discourage many doctors from contributing to such networks:

> I don't see myself using an e-network for mentors. I think quite simply time would prohibit me being a useful contributor to it and I think it's unlikely that I would use it. If I was perhaps regularly mentoring pharmacists 2 or 3 a year then perhaps it would be different. (Hospital consultant)

Adequacy of training

Participants (DMPs and SP pharmacists) were of the opinion that the duration and intensity of the PLP should be based on the knowledge and experience of the pharmacist. A longer, more structured, PLP was recommended by some DMPs, particularly if they did not know the pharmacist well:

> I don't think that 12 days in practice for someone who is newly qualified and who has really not had any hands on experience will be enough. (Community/primary care pharmacist)
> 12 days you know it's like a commitment, but it's still a relatively short period of time to cover...you know there is a long list of competencies to go through. (General practitioner)

However, time and lack of remuneration for mentors were voiced particularly by those in a primary care setting as barriers for longer training:

> I think you'd be lucky to get GPs to do it [for more than 12 days] without sort of paying them full rate and that would be prohibitive. (General practitioner)

Nevertheless, length of the PLP was, in some cases, not the real issue. Rather DMPs had reservations about pharmacists' prescribing authority after qualifying as a supplementary prescriber.

> I think pharmacists aren't doctors. That's the bottom line. I think it's all very well for pharmacists to prescribe as per protocols but they've not done medical training... You have to be very careful about what you are expecting pharmacists to actually be doing. (General practitioner)

National prescribing centre competencies

The number and nature of competencies, especially inclusion of some competencies any pharmacist would have, was criticised by many participants from all settings:

> I think initially we didn't know how much work was involved in those [75] competencies. They really are quite off putting. (Primary care pharmacist)
> I think there were some on there that essentially you shouldn't have qualified as a pharmacist unless you could have ticked those boxes already. (General practitioner)

Some DMPs recommended cutting down the number of competencies and focusing on a limited number of core competencies:

> I think it needs to try and both be a bit more limited in the number but also a bit more specific [about] the level of competencies that is required. (General practitioner)

Assessment

Assessment of competencies (and not just the number of competencies) was a challenge for many DMPs, especially for those with minimal training experience:

> I personally find it always quite hard to make those sort of assessments and judgements for that matter but then that may be me rather than anything else—but because I don't do it very often. (General practitioner)

Independent and formal assessment at the end of the PLP was recommended by some DMPs, especially when they knew the candidate well.

> It was quite difficult to do a sort of formal assessment on someone you know quite well. (General practitioner)
> As a mentor I would have preferred a bit more clinically orientated assessment than we had. (Hospital consultant)
> It would be useful to have like sort of structured case questions... I'm trying to think the equivalent of an OSCE [objective structured clinical examination] on paper. (General practitioner)

Review of video-recording of consultations was recognised to be an important aspect of training and assessment by both pharmacists and DMPs; however, time and availability of equipment were barriers to doing this in some practice settings both in primary and secondary care:

> I didn't do [videos] with prescribing because again that was a time issue. (General practitioner)

Experiences during the PLP

All DMPs reported that SP pharmacist training had been a positive experience for them. Many expressed interest in

undertaking mentoring for other pharmacists in the future although at the same time acknowledging that lack of time and remuneration issues may be potential impediments:

> [You] feel that you are working towards something that's new and you know that you feel is going to add to the range of health care that is available... and working with another professional I think you both learn a bit more about each other and your professions which is quite a positive thing. (General practitioner)
>
> I would do it again if it was somebody within the building. If it was somebody out with the building I would really think hard about that in terms of the fact that I think the time commitment would be much greater and I don't think we would get nearly so much out of it. (General practitioner)

Recommendations to improve the PLP experience

DMPs and SP pharmacists were able to reflect on possible ways to improve the PLP experience. For example, seeking advice and/or support from previous SP pharmacist trainees was viewed as one possible way of adding to the experience:

> I got advice from somebody else that had done the course before I did it. So I had a good idea what was needed in the twelve days in practice. (Primary care pharmacist)
>
> I would have liked to seen perhaps a pharmacist integrated [in the training]. (General practitioner)

Careful planning of the PLP in consultation with the DMP was seen as crucial:

> If you spend more time in planning and don't rush into it, then you are more likely to be successful. (Community pharmacist)
>
> I would want to know before I started what the aims were and how much teaching you wanted me to do. (General practitioner)

As was providing more information to DMPs on the pharmacist's role in medication management:

> It would be a bit more helpful if the GPs could have a bit more info particularly round about what the advantages are of having the pharmacist and helping the pharmacist. (Primary care pharmacist)

Discussion

As a new concept, the PLP has been a learning experience for both SP pharmacists and DMPs. Planning the PLP in consultation with the DMP is crucial for an optimal PLP experience. Pharmacists who do not have a close working relationship with the medical team might need support for identifying a DMP and organising the PLP. Participants stressed the importance of focusing on and achieving the core competencies for prescribers during the PLP. Input from doctors involved in the training of others, review of consultation videos, and formal independent assessment including clinical assessment at the end of the PLP might improve the quality of the PLP. Forums for discussing experiences during the PLP and gathering information might be valuable to SP pharmacists.

Our findings have implications for prescribing training for pharmacists in the future. Pharmacists working in primary care trusts in England thought it would be harder for them than nurses to recruit DMPs [9]. In our study, identification of DMP and organising the PLP were not problems for pharmacists employed by both primary and secondary care NHS Trusts, but were for community pharmacists who did not work closely with medical professionals on a daily basis. These findings suggest that prior working relationship with medical professionals is crucial in organising the PLP.

Remuneration of DMPs' time might encourage more doctors to undertake mentorship for pharmacists and devote specific time towards the PLP. In a study exploring the experiences of GPs involved in pilot pre-registration rotations in general practice for house officers, increased remuneration was mentioned as a key factor for the future viability of the scheme [10]. The Scottish Executive Health Department has recently made available funding to allow community pharmacists to set up or continue to run SP clinics [11]. Such initiatives might be essential to attract more pharmacists, especially community pharmacists, to undertake SP training and practice.

Data from our study suggest that some DMPs had reservations about pharmacists' prescribing authority due to their lack of medical training. Concerns among medical professionals about SP pharmacists' proficiency in diagnosis, awareness of clinical and patient details and the likely communication problems when they take up prescribing responsibilities have been reported [12, 13]. With the introduction of inter-professional undergraduate education, some of the competencies for health professionals are becoming cross-disciplinary [14]. These are essential for SP where the services offered cross professional boundaries. Independent prescribing (IP) rights for non-medical health professionals [15] would allow suitably trained pharmacists to undertake the assessment of patients with undiagnosed or diagnosed conditions and to make decisions about the clinical management required, including prescribing [16]. It is anticipated that many pharmacists practising SP will undertake IP in the future [17] after additional training as recommended by the RPSGB [18].

Research evidence to establish the value of pharmacists as prescribers might help to overcome some of the attitudinal barriers. While an enhanced PLP has obvious educational value, the ultimate test of the SP pharmacists is how they perform as prescribers. Further research on structures, processes and outcomes of pharmacist SP is warranted.

Our study has some limitations. The participants were purposively selected from SP pharmacists who had completed their SP training in only one of the accredited institutions in the UK and their DMPs. The extent to which the views and attitudes identified in this study are held by the whole population of SP pharmacists and DMPs is unknown. Those who had negative experiences and/or attitudes might not have participated or divulged their negative views and experiences. We relied on self-reports and the findings were not evaluated objectively. The views of pharmacists and DMPs were mutually supportive although the majority of SP pharmacists and DMPs participated in the study were not directly linked and confirm the reliability of our findings. Moreover, recruitment to the study and the interviews were conducted by a researcher independent of the SP training programme. Due to the differences in pharmacy and GP contracts in Scotland and the rest of the UK, extrapolation of our findings on reimbursement and time in other practice settings should be made with caution.

Conclusion

Planning the PLP in consultation with the DMP is crucial for a good learning experience. The PLP should focus on achieving the core competencies for prescribers. Input from doctors involved in the training of others, review of consultation videos, and formal independent assessment might ensure high standards in SP pharmacists at the completion of their PLP. Forums for discussing experiences during the PLP and support in organising the PLP for pharmacists who do not work with the medical team on a regular basis might be valuable.

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Conflict of Interest None declared.

References

1. Crown J. Review of prescribing, supply & administration of medicines. Final report. London: Department of Health, 1999.
2. The Health and Social Care Act 2001. 2000–2001 ed, 2001. ISBN 0105415014.
3. George J, McCaig DJ, Bond CM et al. Supplementary prescribing: early experiences of pharmacists in Great Britain. Ann Pharmacother 2006;40(10):1843–50.
4. Department of Health: Supplementary Prescribing by Nurses, Pharmacists, Chiropodists/Podiatrists, Physiotherapists and Radiographers within the NHS in England: A guide for implementation. London: HMSO, 2005.
5. Royal Pharmaceutical Society of Great Britain: Outline Curriculum for Training Programmes to prepare Pharmacist Supplementary Prescribers. London, 2002.
6. Granby T, Picton C. Maintaining competency in prescribing: an outline framework to help allied health professional supplementary prescribers. Liverpool: National Prescribing Centre, 2004.
7. George J, McCaig D, Bond C, Cunningham S, Diack H, Stewart D. Benefits and challenges in delivering supplementary prescribing: perceptions of early pharmacist prescribers in Great Britain. Int J Pharm Pract 2007;15:23–30.
8. Pope C, Ziebland S, Mays N. Qualitative research in health care: analysing qualitative data. BMJ 2000; 320(7227):114–116.
9. Hobson RJ, Sewell GJ. Supplementary prescribing by pharmacists in England. Am J Health Syst Pharm 2006;63(3):244–53.
10. Williams C, Cantillon P, Cochrane M. Pre-registration house officers in general practice: the views of GP trainers. Fam Pract 2001;18(6):619–21.
11. Scottish supplementary prescribers get clinic funds. Pharm J 2005;275:73.
12. Child D, Cantrill JA. Hospital doctors' perceived barriers to pharmacist prescribing. Int J Pharm Pract 1999;7:230–237.
13. Day M. UK doctors protest at extension to nurses' prescribing powers. BMJ 2005;331:1159.
14. Verma S, Paterson M, Medves J. Core competencies for health care professionals: what medicine, nursing, occupational therapy, and physiotherapy share. J Allied Health 2006;35(2):109–15.
15. The Medicines for Human Use (Prescribing) (Miscellaneous Amendments) Order. 2006.
16. Department of Health: Improving Patients' Access to Medicines: a Guide to Implementing Nurse and Pharmacist Independent Prescribing within the NHS in England. Leeds, 2006.
17. George J, Pfleger D, McCaig D, Bond C, Stewart D. Independent prescribing by pharmacists: a study of the awareness, views and attitudes of Scottish community pharmacists. Pharm World Sci 2006;28(2):45–53.
18. Royal Pharmaceutical Society of Great Britain: curriculum for the Education and Training of Pharmacist Supplementary Prescribers to become Independent Prescribers. London, 2006.

Paper 5

Stewart DC, George J, Bond CM, Cunningham ITS, Diack LH, McCaig DJ

Exploring patients' perspectives of pharmacist supplementary prescribing in Scotland

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RESEARCH ARTICLE

Exploring patients' perspectives of pharmacist supplementary prescribing in Scotland

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Abstract *Aim* The aim of this study was to explore patients' perspectives and experiences of pharmacist supplementary prescribing (SP) in Scotland. *Method* A survey in primary and secondary care in Scotland. Pharmacist supplementary prescribers ($n = 10$) were purposively selected across Scotland. All pharmacists distributed questionnaires to 20 consecutive patients as they attended appointments during October to December 2006. Reminders were mailed to all 20 patients by each pharmacist 2 weeks after initial distribution. *Main outcome measures* The questionnaire contained items on: attitudes towards pharmacist SP derived from earlier qualitative research; consultation satisfaction derived from a validated scale developed initially for general practitioners, with the term 'doctor' being replaced by 'pharmacist prescriber'; and demographics. Closed and Likert scales were used as response options. *Results* One pharmacist withdrew. The patient response rate was 57.2% (103/180). The median age was 67 years (interquartile range 56.5–73 years), with 53.4% being female. Most (76, 73.8%) consulted with the pharmacist in a general practice setting. Patients reported positive consultation experiences with 89.3% agreeing/strongly agreeing that they were satisfied with the consultation, 78.7% thought the pharmacist told them everything about their treatment and 72.9% felt the pharmacist was interested in them as a person. Most patients were positive in their attitudes, agreeing that they would recommend a pharmacist prescriber to others and that they had trust in the pharmacist. However, 65% would prefer to consult a doctor. *Conclusion* Most patient respondents were satisfied with, and had a positive attitude towards, pharmacist prescribing consultations. However, most patients would still elect to see a doctor given the choice.

Keywords Pharmacist prescribing · Supplementary prescribing · Patient satisfaction · Patient views · Scotland

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Impact of findings on practice

- This study provides evidence of high levels of patient satisfaction with the pharmacist consultation particularly concerning medication-related information.
- These findings, in a number of different clinical settings and disease states, might enhance confidence levels of pharmacist prescribers involved in patient care.
- Patient perspectives should be explored as a routine part of clinical practice and research.

Introduction

The prescribing roles and responsibilities of non-medical health professionals, primarily pharmacists and nurses, are

being redefined in the UK [1, 2]. Anticipated outcomes are an improvement in patients' convenient and safe access to medicines coupled with a reduction in doctors' workload. Supplementary prescribing (SP) is one such initiative. Supplementary prescribing (SP) is defined as 'a voluntary partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient-specific clinical management plan (CMP) with the patient's agreement' [2]. Within this framework there are no legal restrictions on the clinical conditions that may be treated or drugs that can be prescribed by supplementary prescribers.

The CMP is the foundation stone of SP. In addition to patient details, the CMP must include reference to the class or description of medicines which may be prescribed or administered under the plan and any restrictions or limitations as to the strength or dose of any medicine which may be prescribed. Situations warranting referral back to the independent prescriber must also be documented [2].

Since March 2004, pharmacists in the UK have been practising SP in various settings [3]. An overview of the historical developments around pharmacist prescribing in Scotland is summarised in Table 1. In June 2005, a survey of all pharmacist supplementary prescribers in Great Britain ($n = 518$) indicated that almost half the respondents had written a prescription within 6 months of registration as a prescriber [3]. The published literature to date focuses mainly on pharmacists' perspectives of training and service implementation [4–7]. As the end users of prescribing services, it is imperative that patients' views and experiences are sought. There is a paucity of such studies with those few published describing favourable comments in terms of patients' views and experiences [8, 9]. However, they are limited in terms of sample size and setting. Research focusing on patients' views of nurse prescribing is similarly limited [10]. Patient involvement and patient choice in health service planning and delivery are key elements of National Health Service (NHS) policy [11]. There have recently been conflicting research findings relating to pharmacists' roles in medication review, a role similar to SP. Several studies indicated positive clinical and patient outcomes but others reported increased hospital admissions and sub-optimal advice giving [12–17].

Aim of the study

The aim of the study was to explore patients' perspectives and experiences of pharmacist SP in Scotland.

Method

Pharmacist supplementary prescribers ($n = 10$) were purposively selected from a range of Scottish geographical regions, settings (community pharmacy, general practice and hospital) and fields of prescribing (respiratory, cardiovascular, diabetes, oncology and pain). We anticipated that a sample of ten pharmacist prescribers would allow inclusion of different care settings and patient groups most frequently being managed by pharmacists. To participate, each had to be have been managing at least 20 patients for the previous 3 months. Information on pharmacist prescribing activities was not readily available and was based on three sources: data of prescribing activities collected from a Great Britain wide survey [3]; Scottish prescribing data; and information from Chief Pharmacists/Directors of Pharmacy. Nineteen pharmacists were approached sequentially to recruit the sample of ten.

Table 1 Historical developments around pharmacist prescribing in Scotland

Date	Event
1999	Publication of the final report of the Government-led Review of Prescribing, Supply and Administration of Medicines
2001	Section 63 of the Health and Social Care Act enabled the Government to extend prescribing responsibilities to pharmacists (and nurses initially and then extended to chiropodists/podiatrists, physiotherapists and radiographers in 2005)
2003	Amendments to NHS regulations allowed supplementary prescribing by suitable trained pharmacists (and nurses)
2003	First pharmacist supplementary prescribing courses accredited by the Royal Pharmaceutical Society of Great Britain
2003	First pharmacists recruited onto courses in supplementary prescribing
2004	First pharmacists to complete courses and register as supplementary prescribers
2006	New category of prescriber, pharmacist (and nurse) independent prescriber created
2006	Amendments to NHS regulations to allow independent prescribing by pharmacists (and nurses)
2007	First conversion prescribing course accredited by the Royal Pharmaceutical Society of Great Britain, allowing registered pharmacist supplementary prescribers to train as independent prescribers
2007	First pharmacist independent prescribing conversion course completions and registration as independent prescribers
2007	First courses for pharmacist prescribing (supplementary and independent)

At the time of the study there were approximately 300 registered pharmacist prescribers in Scotland

A postal questionnaire was developed and piloted in 20 patients being managed by one of the study pharmacists. As no changes were made to the questionnaire post pilot, these pilot data were included in the overall results. The questionnaire contained items on: attitudes towards pharmacist SP (12 items) derived from our earlier qualitative research [18]; consultation satisfaction derived from a validated scale developed initially for general practitioners (9 items) [19], with the term 'doctor' being replaced by 'pharmacist prescriber'; and demographics. There were closed questions and Likert scale response options in the questionnaire.

Each of the pharmacists distributed questionnaires to 20 consecutive patients, who had been managed by them for at least 3 months, as they attended appointments in community or hospital settings during October to December 2006. There were no exclusion criteria. Reminders were mailed to all 20 patients by each pharmacist 2 weeks after initial distribution. Approval was obtained from the Multi-centre Research Ethics Committee for Scotland and the relevant Research and Development Committees in Scotland.

Data were entered into SPSSv13 (SPSS Inc.). Internal consistencies of the scales were tested using Cronbach's alpha. Negatively worded statements were reverse scored. Alpha internal consistencies greater than 0.60 are regarded as desirable for psychometric scales [20].

Results

Ten pharmacists were recruited from six geographical regions in the north, west, south and east of Scotland giving a variety of pharmacy settings and clinical areas. The geographical regions have been anonymised to protect the identity of the pharmacists. The pharmacists (see Table 2 for further details) were mostly female ($n = 8$) with between four and 25 years experience as a pharmacist. The nine who declined involvement were interested but unable to participate due to reasons of workload and/or still establishing prescribing systems.

The patient response rate was 57.2% (103/180). The median age was 67 years (interquartile range 56.5–73 years), with 53.4% female. Most (76, 73.8%) consulted with the pharmacist in a general practice setting, 15 (14.6%) in community pharmacy and one seen in both general practice and community pharmacy (there were 11 missing responses). The pharmacists were managing a range of medical conditions, most commonly hypertension (33 patients) and asthma (18 patients).

Patients reported positive experiences and high levels of satisfaction with the consultations (Table 3): 89.3% agreed/strongly agreed that they were totally satisfied; 78.7% agreed/strongly agreed that the pharmacist told them everything about their treatment; 72.9% agreed/strongly agreed that the pharmacist was interested in them as a person; 56.3% agreed/strongly agreed that the pharmacist really knew what they were thinking. Most patients were positive in their attitudes agreeing that they would recommend a pharmacist prescriber to others and that they had trust in the pharmacist (Table 4). However, 13.6% agreed/strongly agreed that some things about the consultation could be better; 49.5% disagreed/strongly disagreed that they would find it difficult to tell the pharmacist prescriber about some private things; and 65% would prefer to consult a doctor.

Discussion

Respondents were highly satisfied with the pharmacist consultations, and the medication-related information provided. They trusted the pharmacists, were comfortable during the consultations, and would recommend a pharmacist prescriber to a friend. However, most respondents would choose to see a doctor rather than a pharmacist

Table 2 Settings and clinical areas of the participating prescribing pharmacists

	Geographical region	Prescribing setting	Clinical area(s)
Pharmacist 1	1	General practice	Respiratory
Pharmacist 2	1	General practice	Respiratory
Pharmacist 3	1	General practice/community pharmacy	Cardiovascular
Pharmacist 4	2	General practice	Cardiovascular
Pharmacist 5	3	General practice/community pharmacy	Rheumatology/pain
Pharmacist 6	4	General practice	Cardiovascular/ diabetes
Pharmacist 7	4	General practice	Cardiovascular
Pharmacist 8	5	Community pharmacy	Respiratory
Pharmacist 9	6	Hospital (secondary care)	Oncology

Pharmacist ten withdrew from the study

Table 3 Patient responses to attitudinal statements relating to consultation satisfaction *n* (%) (*n* = 103) (some missing responses)

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am totally satisfied with my visit to this pharmacist prescriber	0	0	7 (6.8)	55 (53.4)	37 (35.9)
This pharmacist prescriber told me everything about my treatment	0	5 (4.9)	14 (13.6)	49 (47.6)	32 (31.1)
Some things about my consultation with the pharmacist prescriber could have been better	18 (17.5)	40 (38.8)	27 (26.2)	10 (9.7)	4 (3.9)
This pharmacist prescriber examined me very thoroughly	2 (1.9)	25 (24.3)	20 (19.4)	35 (34.0)	15 (14.6)
This pharmacist prescriber was interested in me as a person, not just my illness	1 (1.0)	6 (5.8)	17 (16.5)	53 (51.5)	22 (21.4)
I understand my illness much better after seeing this pharmacist prescriber	1 (1.0)	10 (9.7)	41 (39.8)	30 (29.1)	16 (15.5)
I felt this pharmacist prescriber really knew what I was thinking	0	9 (8.7)	32 (31.1)	44 (42.7)	14 (13.6)
I wish it had been possible to spend a little more time with the pharmacist prescriber	8 (7.8)	27 (26.2)	49 (47.6)	10 (9.7)	4 (3.9)
I would find it difficult to tell this pharmacist prescriber about some private things	17 (16.5)	34 (33.0)	19 (18.4)	25 (24.3)	4 (3.9)

Cronbach's alpha = 0.786

Table 4 Patient responses to attitudinal statements relating to experiences of pharmacist prescribing, *n* (%) (*n* = 103) (some missing responses)

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I trusted the pharmacist prescriber's ability to prescribe before I went to see him/her for the first time	1 (1.0)	8 (7.8)	15 (14.6)	49 (47.6)	24 (23.3)
I would rather see my doctor than the pharmacist prescriber if my medical conditions were to worsen	0	5 (4.9)	22 (21.4)	42 (40.8)	31 (30.1)
It is easier to get an appointment to see the pharmacist prescriber than the doctor	2 (1.9)	10 (9.7)	27 (26.2)	33 (32.0)	26 (25.2)
To make sure that the pharmacist prescriber is giving me the right treatment, I would like to see my doctor every now and then	2 (1.9)	7 (6.8)	19 (18.4)	42 (40.8)	27 (26.2)
If I had a choice between a doctor and the pharmacist prescriber, I would consult the doctor	2 (1.9)	7 (6.8)	23 (22.3)	44 (42.7)	23 (22.3)
I get more time with the pharmacist prescriber than my doctor(s) for discussing my health-related issues	3 (2.9)	17 (16.5)	29 (28.2)	29 (28.2)	21 (20.4)
I am more comfortable discussing medication-related issues with the pharmacist prescriber than my doctor	3 (2.9)	27 (26.2)	41 (39.8)	14 (13.6)	12 (11.7)
I am more likely to do what my doctor advises rather than the pharmacist prescriber	6 (5.8)	25 (24.3)	30 (29.1)	28 (27.2)	10 (9.7)
I am more interested in the quality of care than the profession of the person who provides it	3 (2.9)	5 (4.9)	7 (6.8)	51 (49.5)	35 (34.0)
If I had to pay for the service, I would pay pharmacist prescribers and doctors the same amount for the same care	3 (2.9)	17 (16.5)	29 (28.2)	39 (37.9)	12 (11.7)
Prescribing by pharmacists is a way for government to save money	1 (1.0)	14 (13.6)	32 (31.1)	30 (29.1)	22 (21.4)
I would recommend seeing a pharmacist prescriber to other people	3 (2.9)	3 (2.9)	22 (21.4)	53 (51.5)	19 (18.4)

Cronbach's alpha = 0.596

prescriber and some felt that their consultation with the pharmacist could have been better.

This research has strengths and weaknesses. Firstly, because there was no existing sampling frame of eligible pharmacists we used several sources to give an indication of those with greatest prescribing experience. We recognise we may have missed some people with this approach. However despite a relatively small sample size we achieved a range of pharmacists and patients across Scotland. The patients were from different settings and most

common therapeutic areas, potentially augmenting generalisability of findings. However, we acknowledge that only one hospital pharmacist was recruited. A strength was that our sampling strategy focused on those pharmacists with most experience of prescribing, recruiting only those with over 3 months prescribing experience and managing a prescribing case load of at least 20 patients. This meant that we were assessing a system in 'steady state'. The pharmacists were responsible for patient recruitment during their consultations which may have introduced an element of selection bias. However, we emphasised the need to recruit 20 consecutive patients. Participating pharmacists may also have been more motivated and confident than their peers about their clinical and consultation skills and enthusiastic, potentially introducing bias. The overall patient response rate was just under 60%; it is possible that those patients returning the questionnaire were more interested in and satisfied with pharmacist prescribing, and we had no data on non-respondents for comparison. One previously validated scale was used with minor adaptation to alter the focus from doctor to pharmacist prescriber consultations. In addition, our findings are based on self-reports and perceptions rather than objective clinical outcomes.

Most respondents were highly satisfied with the pharmacist consultations, the approach of the pharmacists and the extent of information given. These findings are in parallel with recently published research in which pharmacists cited their experience of patient care benefits [6–9]. Lloyd and Hughes have also demonstrated pharmacists' and designated medical practitioners' anticipation of improved patient care [7] and Smalley reported high levels of patient satisfaction in a study of hypertensive patients in one medical practice [8]. Perceived benefits are also similar to those reported for early nurse prescribers [21]. McCann and Clark reported satisfactory relationships between nurses prescribing antipsychotics for schizophrenia and patients [10]. In our study, respondents agreed that they trusted the pharmacist and would recommend others to see a pharmacist prescriber. Some, however, were unsure of the benefits of seeing a pharmacist rather than a doctor and most agreed that given the choice they would rather see their doctor than the pharmacist. This may reflect the long-term, established relationship and trust most patients with chronic conditions will have with or in their doctors rather than any particular issues with the pharmacists. These views may evolve over time as experience of non-medical prescribing increases.

Our findings contrast with those of Salter et al. who used qualitative discourse analysis of audio records of a small number of pharmacist consultations [17]. Their results highlighted the potential of pharmacists' advice to undermine and threaten patients' competence. There are key differences between these two studies. The pharmacists in our study were all registered SP and had completed an accredited University-based course which included consultation skills as a key component. Consultation skills were also a prescribed competency in the period of learning in practice supervised by medical practitioners [22]. We also focused on the patients' perspectives of the consultation process, which may be very different to the analytical context of Salter et al. [17].

Independent prescribing by pharmacists in the UK is now being implemented [2]. In this role, pharmacists will assess and manage patients with undiagnosed or diagnosed conditions without formal involvement of a doctor. They will be authorised to prescribe, within their competence, all licensed medicines other than controlled drugs. For this role to be a success high levels of patient acceptance are important and good consultation skills are essential.

Further larger scale research is required to study patients' views and experiences, ensuring proportional representation of the different settings in which pharmacist prescribers currently practice. In addition there should be focus on evaluating objectively prescribing pharmacists' consultation skills using validated criteria and observational methods, such as those of the Royal College of General Practitioners [23]. This could provide robust evidence of the quality of pharmacists' consultation skills compared to established prescribers, and permit exploration of areas about which patients were less positive such as clinical examination and privacy. Information about clinical outcomes as well as experiences is also required.

Conclusion

Most patients were satisfied with and had positive attitudes towards pharmacist prescribing consultations but most would still elect to see a doctor if given the choice.

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Conflicts of Interest None

References

1. Avery AJ, Pringle M. Extended prescribing by UK nurses and pharmacists. BMJ. 2005;331:1154–5. doi:10.1136/bmj.331.7526.1154.
2. Department of Health. Improving patients' access to medicines: a guide to implementing nurse and pharmacist independent

prescribing within the NHS in England. London: Department of Health; 2006.
3. George J, McCaig D, Bond C, Cunningham ITS, Diack HL, Watson AM, et al. Supplementary prescribing: early experiences of pharmacists in Great Britain. Ann Pharmacother. 2006;40: 1843–50. doi:10.1345/aph.1H227.
4. Hobson RJ, Sewell GJ. Supplementary prescribing by pharmacists in England. Am J Health Syst Pharm. 2006;63(3):244–53. doi:10.2146/ajhp050178.
5. Hobson RJ, Sewell GJ. Risks and concerns about supplementary prescribing: survey of primary and secondary care pharmacists. Pharm World Sci. 2006;28(2):76–90. doi:10.1007/s11096-006-9004-z.
6. George J, McCaig D, Bond CM, Cunningham ITS, Diack HL, Stewart DC. Benefits and challenges of prescribing training and implementation: perceptions and early experiences of RPSGB prescribers. Int J Pharm Pract. 2007;15:23–30. doi:10.1211/ijpp.15.1.0005.
7. Lloyd F, Hughes C. Pharmacists' and mentors' views on the introduction of pharmacist supplementary prescribing: a qualitative evaluation of views and context. Int J Pharm Pract. 2005;15: 31–7. doi:10.1211/ijpp.15.1.0006.
8. Smalley L. Patients' experience of pharmacist-led supplementary prescribing in primary care. Pharm J. 2006;276:567–9.
9. Reid F, Murray P, Storrie M. Implementation of a pharmacist-led clinic for hypertensive patients in primary care—a pilot study. Pharm World Sci. 2005;27(3):202–7. doi:10.1007/s11096-004-2563-y.
10. McCann TV, Clark E. Attitudes of patients towards mental health nurse prescribing of antipsychotic agents. Int J Nurs Pract. 2008;14(2):115–21. doi:10.1111/j.1440-172X.2008.00674.x.
11. Department of Health. Creating a patient-led NHS: delivering the NHS improvement plan. NHS Crown Copyright; 2005.
12. Zermansky AG, Petty DR, Raynor DK, Freemantle N, Vail A, Lowe C. Randomised controlled trial of clinical medication review by a pharmacist of elderly patients receiving repeat prescriptions in general practice. BMJ. 2001;323:1–5. doi:10.1136/bmj.323.7325.1340.
13. Krska J, Cromarty JA, Arris F, Jamieson D, Hansford D, Duffus PRS, et al. Pharmacist-led medication review in patients over 65: a randomised control trial in primary care. Age Ageing. 2001;30:205–11. doi:10.1093/ageing/30.3.205.
14. Zermansky AG, Alldred DP, Petty DR, Raynor DK, Freemantle N, Eastaugh J, et al. Clinical medication review by a pharmacists of elderly people living in care homes—randomised controlled trial. Age Ageing. 2006;35(6):586–91. doi:10.1093/ageing/afl075.
15. Holland R, Lenaghan E, Harvey I, Smith R, Shepstone L, Lipp A, et al. Does home based medication review keep older people out of hospital? The HOMER randomised controlled trial. BMJ. 2005;330(7486):293–7. doi:10.1136/bmj.38338.674583.AE.
16. Holland R, Smith R, Harvey I. Where now for pharmacist led medication review? J Epidemiol Community Health. 2006;60(2): 92–3. doi:10.1136/jech.2005.035188.
17. Salter C, Holland R, Harvey I, Henwood K. "I haven't even phoned my doctor yet." The advice giving role of the pharmacist during consultations for medication review with patients aged 80 or more: qualitative discourse analysis. BMJ. 2007;334(7603): 1101–8. doi:10.1136/bmj.39171.577106.55.
18. Stewart D, George J, Bond C, Cunningham S, Diack L, McCaig D. Evaluating supplementary prescribing by pharmacists in Scotland. Report submitted to NHS Education for Scotland, 2007.
19. Baker R. Development of a questionnaire to assess patients' satisfaction with consultations in general practice. Br J Gen Pract. 1990;40:487–90.
20. DeVellis RF. Scale development: theory and applications. California: Sage Publications; 1991.
21. While AE, Biggs KS. Benefits and challenges of nurse prescribing. J Adv Nurs. 2004;45(6):559–67. doi:10.1046/j.1365-2648.2003.02948.x.
22. Outline curriculum for training programmes to prepare pharmacist supplementary prescribers. http://www.rpsgb.org.uk/pdfs/supplprescphoutlcurric.pdf. Accessed 21 July 2006.
23. National Office for Summative Assessment. http://www.nosa.org.uk/information/video/introduction.htm. Accessed 14 November 2007.

Paper 6

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Views of pharmacist prescribers, doctors and patients on pharmacist prescribing implementation

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Research Paper

Views of pharmacist prescribers, doctors and patients on pharmacist prescribing implementation

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Abstract

Aim The aim of this study was to explore the perspectives of pharmacist supplementary prescribers, their linked independent prescribers and patients, across a range of settings, in Scotland, towards pharmacist prescribing.

Method Telephone interviews were conducted with nine pharmacist prescribers, eight linked independent prescribers (doctors) and 18 patients. The setting was primary and secondary care settings in six NHS Health Board areas in Scotland.

Key findings In general, all stakeholders were supportive of pharmacists as supplementary prescribers, identifying benefits for patients and the wider health care team. Although patients raised no concerns, they had little idea of what to expect on their first visit, leading initially to feelings of apprehension. Pharmacists and doctors voiced concerns around a potential lack of continued funding, inadequate support networks and continuing professional development. Pharmacists were keen to undertake independent prescribing, although doctors were less supportive, citing issues around inadequate clinical examination skills.

Conclusions Pharmacists, doctors and patients were all supportive of developments in pharmacist supplementary prescribing, although doctors raised concerns around independent prescribing by pharmacists. The ability of pharmacists to demonstrate competence, to be aware of levels of competence and to identify learning needs requires further exploration.

Keywords independent prescriber; interview; patient view; pharmacist prescribing; stakeholder view; supplementary prescriber

Introduction

Pharmacists in the UK with at least 2 years' post-registration professional experience can now qualify and register as independent prescribers, allowing them to practise as supplementary and independent prescribers. Supplementary prescribing, introduced in 2003, requires collaborative working with an independent prescriber (a doctor or dentist) and patient to prescribe any medicine(s) for any diagnosed condition(s), within the boundaries of a named patient's clinical management plan.[1] Independent prescribing for pharmacists is a more recent development and permits the management of diagnosed and undiagnosed conditions, prescribing any licensed medicine (other than controlled drugs) within the pharmacist's competence, with no need for formal medical collaboration.[2] The successful implementation of pharmacist independent prescribing services will be enhanced by rigorous evaluation of pharmacist supplementary prescribing in terms of structures, processes and outcomes.

The stated aims of pharmacist prescribing are to improve patient access to medicines, making the best use of pharmacists' clinical skills.[3,4] Supplementary prescribing has been undertaken by pharmacists in various settings across the UK since March 2004.[5] Most of the published literature has reported pharmacists' perspectives of supplementary prescribing training and/or initial practice.[5–9]

While acknowledging limitations of respondent bias and sample size, findings have been generally positive. Any negative views reported were around service implementation, particularly financial and organisational issues; some concerns about training were also

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identified. Similar findings were reported in a smaller study combining questionnaire and telephone interview methods.[9] Lloyd and Hughes used a qualitative approach to extend the research perspective to medical mentors involved in training for pharmacist supplementary prescribing.[10] General support for supplementary prescribing was reported, but doctors were less supportive of an independent prescribing role for pharmacists. Buckley *et al*.[11] interviewed health-related stakeholders, finding broad support for non-medical prescribing but concern that pharmacists lacked in-depth knowledge of patient medical histories. Pharmacist prescribing is still only being practised by a minority of pharmacists working under different funding models depending on their home country or health-service setting. It is anticipated that, ultimately, in the community pharmacy setting in Scotland, core funding will be made available through the chronic medicines service component of the community pharmacy contract.

Only one published study has focused on the views of patients, all of whom were attending a single hypertension clinic; most patients viewed the standard of care as better than before.[12] None of the research published to date has explored concurrently the views and experiences of all three partners of the supplementary prescribing model: patient, independent prescriber and supplementary prescriber. It is also fundamental to research different and diverse settings and therapeutic areas to fully inform practice developments. The aim of this study was to explore the perspectives of pharmacist supplementary prescribers, their linked independent prescribers and patients towards pharmacist prescribing across a range of settings in Scotland.

Methods

Design

A qualitative case-study approach, including interviews, video recording and a questionnaire, was utilised to generate data from different professional and patient groups in various settings. Only the findings from the interviews are reported here.

Sampling of case-study sites

Data collected from a Great Britain-wide survey of pharmacist supplementary prescribers[5] were used along with Scottish prescribing data and information from the Chief Pharmacists/Directors of Pharmacy in each Health Board area in Scotland as a basis for purposive sampling to identify 10 case-study sites. We aimed to provide maximum variation in terms of therapeutic areas/patient groups, geographical regions and care settings and to include those with more prescribing experience. Inclusion criteria were that the pharmacist prescribers had a current case load of at least 20 patients, had more than 3 months' prescribing experience and would be able to recruit one of their independent prescribers and up to three of their current patients for a telephone interview. No attempt was made to identify a statistically representative sample. Eighteen pharmacists were approached to generate the sample of 10.

Participants identified for telephone interview were sent an information letter and participant information sheet. Interviews were conducted by two researchers (JG and BA) and lasted 10–30 min. Topic areas for pharmacist and doctor interviews included perceived benefits and challenges of supplementary prescribing, perceived changes in pharmacist roles since becoming prescribers, relationships with the rest of the care team, support structures for prescribers, continuing professional development (CPD) and independent prescribing. These areas were based on published research of benefits and challenges of pharmacist supplementary prescribing.[5,6] The topic guide for the patients focused on patient understanding of supplementary prescribing, their expectations of a pharmacist prescriber, issues of access to medicines, and satisfaction. The interview guides were reviewed by an expert panel for face and content validity and developed further through an iterative process as the interviews progressed and new themes or concepts emerged. Interviews were audio-recorded and transcribed verbatim.

Data management and analysis

Data management was supported by NVivo software. Data were analysed for recurring themes using the 'framework' approach.[13] After familiarisation with the data by repeated reading of the transcripts (DS), emerging themes were identified and the data coded, supported by NVivo. Two researchers (BA and DS) independently verified the themes, with any disagreement being reviewed by other members of the research team.

Ethical approval

The research was approved by the NHS Multi-centre Research Ethics Committee for Scotland. Research and development approval was also obtained from each of the NHS areas involved. All participants provided written, informed consent.

Results

Case-study recruitment

Of the eighteen pharmacists originally approached eight felt unable to participate due to reasons that included workload or only recent delivery of a prescribing service. The 10 participating pharmacists were recruited from six NHS organisational areas in the north, west, south and east of Scotland, giving a spectrum of pharmacy settings and clinical areas. Case-study sites have been anonymised to protect the identity of the small number of pharmacists. The pharmacists (see Table 1 for further details) were mostly female ($n = 8$) with between four and 25 years' experience as a pharmacist. Of those unable to participate, four were male and four female. One female pharmacist later withdrew for workload reasons prior to any data collection, giving a final sample size of nine.

Eight out of nine doctors, having between four and 20 years of clinical experience, agreed to be interviewed. The remaining doctor, from a single-handed practice, expressed interest in the research but was busy with practice restructuring.

Table 1 Settings and clinical areas of the participating prescribing pharmacists

Pharmacist	Geographical region	Prescribing setting	Clinical area(s)	Number of patients interviewed
1	1	GP practice	Respiratory	3
2	1	GP practice/communitypharmacy	Respiratory	3
3	1	GP practice	Cardiovascular	1
4	2	GP practice	Cardiovascular	3
5	3	GP practice/communitypharmacy	Rheumatology/pain	3
6	4	GP practice	Cardiovascular/diabetes	1
7	4	GP practice	Cardiovascular	2
8*	4	GP practice	Cardiovascular	0
9	5	Community pharmacy	Respiratory	2
10	6	Hospital (secondary care)	Oncology	0

*Pharmacist 8 was one of the first recruits but decided to withdraw from the research in the later stages. Hence the research provides case-study data on nine pharmacists.

Eighteen patients covering most geographical regions and prescribing pharmacists agreed to be interviewed. The mean patient age was 64 years (range 28–85 years). Patients consulted the pharmacists at clinics for chronic diseases.

The major themes plus supporting quotes are presented below. Interviewee type, setting and management area are identified in parentheses below each quote.

Development of prescribing role

Pharmacists described some of the key motivating factors which led to them undertaking supplementary prescribing. For some, this was an opportunity to improve patient care, complementing the functions of other members of the health care team. 'We have a visiting oncologist here who comes once a fortnight .... As I developed more expertise in the area it became quite apparent that having a pharmacist as a supplementary prescriber would be really useful in our situation.' (Pharmacist 10, hospital, oncology)

Many others, in both primary and secondary care, described supplementary prescribing as a natural extension to their advisory role, almost legalising their current practice. 'Within the [medical] practice we are almost doing a prescribing role anyway .... So you are kind of doing [prescribing] ... going through the motions almost anyway so this was just a natural next step to do the qualification.' (Pharmacist 4, GP practice, cardiovascular)

Despite pharmacist motivation to improve care, patients were somewhat confused of what to expect from their first visit to the pharmacist prescriber. Some were apprehensive but accepted that the pharmacist was a trained professional and that if they were unhappy they could see the doctor. Following the consultation they reflected positively on the treatment they had received. 'Well that was the thing really I didn't know what to expect. I just had to trust the [medical] practice knew what they were doing and actually when I met him it was fine and that put my mind at ease.' (Patient 1 (of pharmacist 9), community pharmacy, respiratory)

Patient benefits

Patient benefits of pharmacist supplementary prescribing were acknowledged by all. Pharmacists expressed a desire to provide good patient services and perceived that patients were given quicker access and longer appointments, in turn reducing doctor waiting times. 'They were really happy that they have got someone who they can just walk in to and talk to instead of having to make appointments and things .... Oh definitely I think that's made a big difference to them.' (Pharmacist 9, community pharmacy, respiratory)

These benefits were reiterated by the doctors who praised the improvement in patient care. Pharmacists were viewed as having expertise in all aspects of pharmacotherapy. 'It can simplify the process in that the pharmacist often has more expertise and knowledge in actual drug interactions, side effects, contra-indications; so they can provide that information for the patient.' (GP (of pharmacist 3), cardiovascular) 'The main benefit for me is that it's good for the patients. Patients get a more detailed look at all their medication ... pharmacists discuss the side effects of drugs better with patients. We should be able to as well but pharmacists have a better knowledge of drugs and this can only benefit the patient.' (GP (of pharmacist 4), cardiovascular)

Patients also noted the benefits of consulting a pharmacist prescriber. They praised the quality and extent of discussion relating to their medicines. All were satisfied with the service and trusted the pharmacist. 'I'm very happy with the pharmacist and how carefully he managed my condition and keeps an eye on me. I would say I get better care for my condition by the pharmacist when it comes to my prescriptions and reviewing my prescriptions.' (Patient 2 (of pharmacist 9), community pharmacy, respiratory) 'I have been on my medication for a long time now and sort of know what works with me. But I did get more information, I felt, about how each drug worked and understand a bit more of why some things work and some don't.' (Patient 1 (of pharmacist 6), GP practice, cardiovascular/diabetes)

Health care team benefits

Pharmacists noted benefits of their enhanced job satisfaction, responsibility and autonomy. 'I mean taking clinical responsibility rather than just putting referrals to doctors saying 'could you change this?' or 'could you do that?'... you are actually able to do it yourself and carry it through and see the patient.' (Pharmacist 1, GP practice, respiratory)

In addition, many felt more integrated into the health care team. 'I think I work more closely with the GPs and nurses now that I am doing the prescribing than before just because

you have to communicate more about what you are doing.' (Pharmacist 1, GP practice, respiratory)

This aspect of enhanced teamwork was also noted by many doctors. In particular some felt that having a pharmacist prescriber allowed them more time to spend on patients with acute conditions. 'From our point of view it means that we can free up doctor time to do the front-end stuff with initial diagnosis and then we can refer them on to clinics.' (GP (of pharmacist 3), cardiovascular)

One doctor described a model of care where the pharmacist managed patients in the absence of any medical colleagues. 'Well I think the main strength is that … is where the doctor in, for example, our outreach clinics can't always be there as I'm only there twice a week then in between times the pharmacy prescriber can prescribe drugs related to the side effects of radiotherapy.' (Hospital consultant (of pharmacist 10), oncology)

Challenges for pharmacist supplementary prescribing

Several challenges were raised by all parties. Funding was a key area of discussion for pharmacists, and it was evident that there were different funding arrangements for supplementary prescribing services depending on the practice setting. One key issue was that most pharmacists felt a lack of any formal support networks and often relied informally on other trained colleagues for advice. Some sought help from line managers but felt that there was a need for a more formal support structure. Various solutions were offered including local, organised support, message boards, contact lists and a directory of clinical management plans. Some felt there were no problems at all. 'There is not much support structures. I mean we have a lead pharmacist if we need support and I actually support some of the ones that are doing their prescribing just now.' (Pharmacist 3, GP practice, cardiovascular)

A lack of appropriate CPD to meet pharmacist prescribers' needs also emerged as a key theme. 'There is nothing as far as I'm aware specific at the moment that I can sign up to … I'm not aware of where I can go to get free 'up to date' stuff.' (Pharmacist 2, GP practice/community pharmacy, respiratory)

The importance of CPD, particularly with regard to changes in clinical pharmacology, was also noted by the doctors. 'The challenge will be to keep up with which ones [drugs] work better for patients on chemotherapy and radiotherapy. With proper training and CPD this should be manageable and experience with working with patients will also help.' (Hospital consultant (of pharmacist 10), oncology)

Other potential challenges for pharmacists described by the doctors included balancing patient demand while working within their limits of competence. 'Patients can be very demanding and put pressure on us and other professionals to do more. So it's definitely a question of knowing your limitations and not letting patients dictate what they take and not take.' (GP (of pharmacist 4), cardiovascular)

No major concerns were voiced by the patients. Some had slight reservations but once they had attended their initial consultation, they were reassured that the pharmacists were very capable. One patient felt that she also needed to see the doctor just in case things went wrong.

Independent prescribing

Pharmacists and doctors had strongly opposing views on pharmacist independent prescribing. Pharmacists were eager to undertake independent prescribing after further training. One felt that independent prescribing would be more beneficial within community pharmacy settings, allowing the delivery of a stand-alone service, as well as benefiting travel and family planning clinics. Independent prescribing was considered by all to be the obvious next stage in their development. 'It'll be of great benefit and it will be easier for me to give out any prescription in the area that I'm competent in and confident.' (Pharmacist 6, GP practice, cardiovascular/diabetes)

Overall pharmacists felt their doctors would support them if they intended to extend their role to independent prescribing. One pharmacist expressed reservations about prescribing outwith her areas of competence. 'No, well, I've chatted to a few of them and they are very enthusiastic for me to do the independent prescribing. There are certain areas they actually wouldn't want me to do … outwith my competence … but no, for the areas which I am doing the cardiac areas and some asthma things like that they were more than happy.' (Pharmacist 3, GP practice, cardiovascular)

Issues relating to competence were voiced by all pharmacists. 'You sometimes don't realise what you don't know and you can genuinely think that you are doing something that is OK but just because your knowledge isn't as good as it should be, you can make maybe an error that way and that is my main concern.' (Pharmacist 1, GP practice, respiratory)

Despite the perceived support from their independent prescribers, all doctors expressed concern about the implementation of independent prescribing by pharmacists. The major area of concern related to pharmacists' competence in diagnosis. 'Well my concerns with independent prescribing is that obviously you need to be in a position to make a diagnosis – an appropriate diagnosis – and not to miss the problems that may be going on which takes all of us a long period of time to gain the kind of knowledge and then the experience.' (GP (of pharmacist 5), GP practice/community pharmacy, rheumatology/pain)

One, however, did indicate support for a wider role in secondary care. 'No I think most doctors would welcome this initiative and realise that this additional service can provide more help for them.' (Hospital consultant (of pharmacist 10), oncology)

Discussion

This study has considered the views of pharmacists, doctors and patients on the implementation of pharmacy prescribing. All were supportive of pharmacists as supplementary prescribers, identifying benefits for patients and the wider health care team. Although patients raised no concerns, they had little idea of what to expect on their first visit leading initially to feelings of apprehension. Pharmacists and doctors

voiced concerns around a potential lack of funding, support networks and CPD. Pharmacists were keen to undertake independent prescribing, although doctors were less supportive, citing issues around pharmacists' inadequate clinical examination skills. Although this study was carried out in the UK, the findings may also be relevant to pharmacists, doctors, patients and policy makers on a global level, especially when other countries such as Australia, The Netherlands and USA are also developing models for expanding the roles of non-medical professionals such as nurses and pharmacists in medication management.[14]

To our knowledge this is the first study conducted at a national level which has taken this approach. Purposive sampling resulted in a range of pharmacists, doctors and patients across Scotland. Nevertheless, our study had some limitations. The sampling strategy focused on experienced pharmacist prescribers who in turn recruited the independent prescribers and patients, introducing selection bias. Some pharmacists would have recruited their designated medical practitioner (mentor) during their prescribing training, introducing a potential bias in their views expressed. Some pharmacists approached were unable to participate despite expressing initial interest and only one hospital pharmacist was recruited. It is likely that those who agreed were highly motivated, interested in pharmacist prescribing, confident about their prescribing skills, had experience in pharmacist prescribing and had already met and overcome many challenges. Their views may not be representative of pharmacist prescribers in general. However, these are the individuals who are likely to lead developments and hence their inclusion is justified and can provide valuable information to the others. Due to the inclusion criteria, purposive sampling and small sample size it is possible that not all relevant themes emerged from the interviews so saturation of themes may not have been achieved. Telephone interviewing was used on the basis of logistics (mainly geography) and convenience for participants (especially doctors). However, this is not unusual as comprehensive phone interviews are increasingly used in multi-stage research and results have been found to be as reliable and as representative as face-to-face interviews.[15–17]

Pharmacist prescribing is only evolving and hence some of the challenges are unsurprising. Issues around funding, support and CPD have been noted by others.[6,10] Focus on funding is essential to any contractual discussions for community pharmacy[18] and for strategic planning within the managed service spanning general practice and hospital. Similar issues of organisations and infrastructure have also been noted in qualitative and quantitative research into pharmacist and nurse prescribing.[19–21] Given the steady increase in non-medical prescribers other than pharmacists, and existing long-held concerns about the quality of medical prescribing, interprofessional CPD might be a good opportunity to support consistent, efficient and effective prescribing practices across all proponents. The doctor–patient relationship has been shown to be the key to positive prescribing and thus optimal health outcomes.[22] In our study, patients were rather anxious about their first consultation but rapidly gained confidence thereafter. These changes to patient perceptions are not unexpected, and are likely to alter further with time and experience. Although teamwork is fundamental to supplementary prescribing, there is very little knowledge of how health care teams work in practice.[23] Our data would suggest that the prescribing pharmacist has made a positive contribution to the team in terms of patient care and role clarity.

The supplementary pharmacist prescribers were keen to undertake the independent prescribing conversion course. They were clearly aware of the need to practice within defined areas of competence. However, the doctors had reservations, mostly noting issues around clinical examination skills. Such issues have also been noted by others[3,10] and may not be resolved until robust, evidence-based data on safe practice are available. There may also be a need to inform the medical professionals of the scope of independent prescribing as some respondents incorrectly assumed this to be associated with clinical diagnosis on every occasion.

There are many parallels between our findings and those of an overview of systematic reviews of dissemination and implementation of interventions.[24] Many elements of professional change observed in our study can be compared to theoretical models of change. The social condition model stresses the importance of environment (practice setting for prescribing), beliefs, attitudes and intentions of those involved (pharmacist, doctors and patients) as central influences in successful models of change. The staged change of behaviour suggests stages of *precontemplation*, *contemplation*, *preparation*, *action* and *maintenance*.[25] The pharmacists and independent prescribers in our study are likely to be in the more advanced stages, which may not necessarily be generalised to all pharmacist prescribers and their linked independent prescribers. Rogers has classified individuals into *innovators*, *early adopters*, *early majority*, *late majority* and *laggards* depending upon how quickly they change behaviour.[26] In terms of the pharmacists, it is likely that this research has captured either the innovators or early adopters. This is an important point with clear implications for wide-scale service developments. It is likely that the doctors were of similar classification and that the 'best' patients were selected for interview.

This research is part of a larger study providing detailed contextual analysis of pharmacist supplementary prescribing in Scotland in terms of structures and processes. There remains an urgent need to provide evidence of patient outcomes (economic, clinical and humanistic) of pharmacist prescribing in large numbers of patients. The translation from models of supplementary to independent prescribing by pharmacists should also be researched.

Conclusions

All partners in the supplementary prescribing model (supplementary prescribers, independent prescribers and patients) were supportive of pharmacist supplementary prescribing developments, particularly in relation to the impact on patient care. Concerns around pharmacist independent prescribing and lack of skills in diagnosis were raised by the doctors.

Declarations

Conflict of interest

The Author(s) declare(s) that they have no conflicts of interest to disclose.

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References

1. Medicines Control Agency. *Proposals for Supplementary Prescribing and Pharmacists and Proposed Amendments to the Prescription Only Medicines (Human Use) Order 1997*. Consultation paper MLX284. London: Medicines Control Agency, 2002.
2. Department of Health. *Improving Patients' Access to Medicines: a guide to implementing nurse and pharmacist independent prescribing within the NHS in England*. London: Department of Health, 2006.
3. Avery AJ, Pringle M. Extended prescribing by UK nurses and pharmacists. *Br Med J* 2005; 331: 1154–1155.
4. Crown J. *Review of Prescribing, Supply & Administration of Medicines. Final report*. London: Department of Health, 1999.
5. George J *et al.* Supplementary prescribing: early experiences of pharmacists in Great Britain. *Ann Pharmacother* 2006; 40: 1843–1850.
6. George J *et al.* Benefits and challenges of prescribing training and implementation: perceptions and early experiences of RPSGB prescribers. *Int J Pharm Pract* 2007; 15: 23–30.
7. Hobson RJ, Sewell GJ. Supplementary prescribing by pharmacists in England. *Am J Health-Syst Pharm* 2006; 63(3): 244–253.
8. Hobson RJ, Sewell GJ. Risks and concerns about supplementary prescribing: survey of primary and secondary care pharmacists. *Pharm World Sci* 2006; 28(2): 76–90.
9. Warchal S *et al.* Attitudes of successful candidates of supplementary prescribing courses to their training and their extended roles. *Pharm J* 2006; 276: 348–352.
10. Lloyd F, Hughes C. Pharmacists' and mentors' views on the introduction of pharmacist supplementary prescribing: a qualitative evaluation of views and context. *Int J Pharm Pract* 2005; 15: 31–37.
11. Buckley P *et al.* Inter-and intra-professional perspectives on non-medical prescribing in an NHS trust. *Pharm J* 2006; 277: 394–398.
12. Smalley L. Patients' experiences of pharmacist-led supplementary prescribing in primary care. *Pharm J* 2006; 276: 567–569.
13. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: Bryman A, Burgess R, eds. *Analysing Qualitative Data*. London: Routledge, 1993.
14. Emmerton L *et al.* Pharmacists and prescribing rights: review of international developments. *J Pharm Pharm Sci* 2005; 8: 217–225.
15. Bonnel P, Le Nir M. The quality of survey data: telephone versus face to face interviews. *Transportation* 1998; 25(2): 147–167.
16. Burke LA, Miller MK. Phone interviewing as a means of data collection: Lessons learned and practical recommendations. *Forum: Qual Soc Res* 2001; 2(2): 1–8.
17. Sturges JE, Hanrahan KJ. Comparing telephone and face-to-face qualitative interviewing: a research note. *Qual Res* 2004; 4(1): 107.
18. Bellingham C. Scottish contract 2006. Introducing the new Scottish contract. *Pharm J* 2005; 275: 637.
19. Cooper R *et al.* Stakeholders' views of UK nurse and pharmacist supplementary prescribing. *J Health-Serv Res Policy* 2008; 13: 215–221.
20. While AE, Biggs KS. Benefits and challenges of nurse prescribing. *J Adv Nurs* 2004; 45: 559–567.
21. Bradley E, Nolan P. Impact of nurse prescribing: a qualitative study. *J Adv Nurs* 2007; 59: 120–128.
22. Little P *et al.* Open randomised trial of prescribing strategies in managing sore throat. *Br Med J* 1997; 314(7082): 722–727.
23. Snelgrove S, Hughes D. Interprofessional relations between doctors and nurses: perspectives from South Wales. *J Adv Nurs* 2000; 31(3): 661–667.
24. Grimshaw J *et al.* NHS Centre for Reviews and Dissemination: getting evidence into practice. *Eff Health Care* 1999; 5: 1–16.
25. Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: toward an integrative model of change. *J Consult Clin Psychol* 1983; 51(3): 390–395.
26. Rogers EM. *Diffusion of Innovations*. New York: Free Press, 1995.

Paper 7

Stewart DC, George J, Diack LH, Bond CM, McCaig DJ, Cunningham ITS, Munro K, Pfleger D

A cross sectional survey of the Scottish general public's awareness of, views on, and attitudes toward nonmedical prescribing

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Abstracts of selected findings were also presented at the British Pharmaceutical Conference 2007 and the Health Services Research and Pharmacy Practice Conference 2010.

One related paper is being drafted with the aim of submitting to the International Journal of Pharmacy Practice by Autumn 2010.

Cross Sectional Survey of the Scottish General Public's Awareness of, Views on, and Attitudes Toward Nonmedical Prescribing

Derek C Stewart, Johnson George, H Lesley Diack, Christine M Bond, Dorothy J McCaig, IT Scott Cunningham, Kim Munro, and David Pfleger

BACKGROUND: Nonmedical (ie, nonphysician) prescribing is a key development in the UK that has brought about many changes in prescribing policy and practice. Systematic research into the views of the general public toward such developments is limited.

OBJECTIVE: To determine the awareness of, views on, and attitudes of members of the Scottish general public toward nonmedical prescribing, with an emphasis on pharmacist prescribing.

METHODS: A questionnaire was mailed in November 2006 to a random sample of 5000 members of the general public in Scotland aged 18 and over, obtained from the UK electoral roll. The questionnaire contained items on awareness of nonmedical prescribing, levels of comfort with specific health professionals, and attitudes toward pharmacist prescribing.

RESULTS: Response rate was 37.1%. More than half of the individuals who responded were taking prescribed drugs. Nine hundred and seventy-eight (56.6%) were aware that trained health professionals could write prescriptions for medicines previously only prescribed by physicians. Awareness was associated with: increasing age ($p < 0.001$), having a health professional in their immediate family ($p < 0.001$), self-rated general health ($p < 0.005$), and a higher education level ($p < 0.01$). In logistic regression, all factors were retained as independent predictors of awareness ($p < 0.001$). Comfort levels for nonmedical prescribing were highest for pharmacists (median 4, IQR 3–5 [1 = low, 5 = high]), closely followed by nurses, and lowest for radiographers (median 2, IQR 1–4) ($p < 0.001$). While more than half of the respondents supported pharmacists having a prescribing role, fewer felt that pharmacists should prescribe the same range of drugs as physicians. There were concerns about lack of privacy in a pharmacy, despite acknowledging its enhanced convenience.

CONCLUSIONS: Our results indicate that more than half of the respondents were aware of nonmedical prescribing. A higher proportion was more comfortable with prescribing by pharmacists and nurses than with other healthcare professionals. Several issues relating to aspects of clinical governance were highlighted, specifically education and data handling.

KEY WORDS: general public, nonmedical prescribing, Scotland, survey.

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The last few years have seen developments in prescribing policy and practice in the UK, with the initial introduction of supplementary prescribing (SP) rights for pharmacists, nurses, and other health professionals in 2003 and, subsequently, independent prescribing (IP) rights for pharmacists and nurses in 2006.[1] SP describes "a voluntary partnership between an independent prescriber (a doctor or dentist) and a supplementary prescriber to implement an agreed patient-specific clinical management plan (CMP) with the patient's agreement."[2] SP can be used to manage any diagnosed condition and allows use of any drug within the competence of the prescriber and as defined by the CMP. IP is a more recent development, described as "prescribing by a practitioner responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the clinical management required, including prescribing." All licensed medicines (other than controlled drugs) can be prescribed within the independent prescriber's competence; there is no need for a formal, written agreement with a medical practitioner or patient.[3,4] SP has

Author information provided at the end of the text.

now been extended to cover most health professionals, including nurses, pharmacists, physiotherapists, radiographers, and optometrists, but IP remains the preserve of only pharmacists and nurses. These nonmedical prescribers are regulated by their professional bodies (eg, pharmacist prescribers are regulated by the Royal Pharmaceutical Society of Great Britain). Most of their prescribing activities are conducted within the National Health Service.

Anticipated outcomes of nonmedical prescribing are patient centered and focus on providing safe, quicker, more efficient, and easier access to medicines with overall improved patient care. In addition, it promotes better use of the skills of a wide range of health professionals, introduction of more flexible teamwork, and a reduction in physicians' workloads.[3,5,6]

Developments in pharmacist prescribing are not restricted to the UK. Indeed, there have been several recent, comprehensive international literature reviews of pharmacist prescribing focusing on Great Britain, the US, Canada, and Australia.[7-9] Most primary literature focuses on aspects of prescribing training and professional development from the perspective of the health professional. There is a clear lack of robust research seeking patients' experiences and views relating to nonmedical prescribing. Smalley[10] reported the views of 127 patients attending one pharmacist-led hypertension clinic in England and Stewart et al.[11] described the perspectives and experiences of 180 patients attending a pharmacist prescriber in 9 different Scottish settings.

Almost all of the published literature on medicines involving the general public relates to nonprescription drugs, particularly analgesics and emergency hormonal contraception.[12-14] Obtaining the views, experiences, and issues of concern to patients and members of the general public is clearly important given the strategic objectives of nonmedical prescribing. There is a paucity of information relating to the views of the general public about the extension of prescribing rights, despite the importance of this perspective. Only one study reported the general public's attitudes to nurse supplementary prescribing. Berry et al.[15] recruited a convenience sample of 74 members of the general public at a London railway station. Those who had any experience of nurse prescribing were excluded. Participants expressed confidence in nurses' abilities to prescribe the best medication. No similar work on pharmacist prescribing has been reported.

The aim of the work reported here was to determine the awareness of, views on, and attitudes of members of the Scottish general public toward nonmedical prescribing, with a particular emphasis on pharmacist prescribing.

Methods

A postal questionnaire was developed, based on the published literature on nonmedical prescribing[3,5,9] and with demographic definitions and labels informed by Scotland's Census 2001.[16] The questionnaire contained items on awareness of nonmedical prescribing (3 items); levels of comfort associated with specific health professionals undertaking prescribing responsibilities, measured on 5-point Likert scales (very uncomfortable to very comfortable; 8 items); 5-point Likert scales (strongly agree to strongly disagree) measuring attitudes toward pharmacist prescribing (10 items); and demographics, including self-reported general health (16 items). A final open question invited any comments on issues or concerns related to nonmedical prescribing. The questionnaire was reviewed for face and content validity by an expert panel of 8 experienced academic pharmacy practitioners and researchers. The prepilot questionnaire was tested on a convenience sample of 10 lay individuals, which resulted in minor modifications to question wording and formatting. The pilot questionnaire was mailed in August 2006 to 500 members of the general public in Scotland, aged 18 and over, obtained from the UK electoral roll. A letter inviting participation and stating the research background and aims was included with each questionnaire. Piloting resulted in further minimal changes.

The final questionnaire was mailed in November 2006 to a random sample of 5000 members of the general public in Scotland, aged 18 and over, obtained from the UK electoral roll. The same commercial company supplied contact details for both the pilot and full study samples; individuals in the pilot sample were excluded from the main study. The electoral roll is a listing of individuals registered to vote and includes the names and addresses of almost every UK citizen over 18 years of age. There were no other exclusions.

Personally addressed envelopes containing the questionnaire, cover letter, and postage-paid return envelope were sent, with 2 reminders being sent to nonrespondents at 4-week intervals.

This study was approved by the Ethical Review Panel of the School of Pharmacy at The Robert Gordon University. The North of Scotland Research Ethics Committee advised that this study did not require formal review by a National Health Service Ethics Committee.

STATISTICAL ANALYSIS

Data were coded and entered into SPSS for Windows version 13 (SPSS Inc., Cary, NC) and analyzed using descriptive statistics. The χ^2 test, Student's *t*-test, Wilcoxon signed-rank test, analysis of variance (ANOVA), and Kruskal-Wallis test were used to test for factors associated with awareness of nonmedical prescribing and higher comfort levels for pharmacist prescribing. Variables identified as significant in univariate analysis were further analyzed in binary logistic regression models, with comfort levels being classified as above/equal or below the median

comfort level. A p value less than 0.05 was considered statistically significant a priori. Internal consistencies of the scales were tested using Cronbach's α, with negatively worded statements being reverse scored. Content analysis was performed on the responses to the open question relating to comments, issues, or concerns regarding nonmedical prescribing[17] and grouped into major themes.

Results

The response rate was 34.6% (1728/5000). A further 343 questionnaires (6.9%) were returned undelivered, mainly due to the addressee having recently moved. The adjusted response rate was therefore 37.1% (1728/4657).

Respondents' demographics are provided in Table 1 and their utilization of health services is shown in Table 2. More than half of the respondents were over 50 years of age, female, working full-time or part-time, and living with spouse or partner. The majority had seen their general practitioner or visited a pharmacy in the previous 12 months. The median self-reported general health rating was 4 (interquartile range [IQR], 3–5), on a scale of 1 (as bad as it can be) to 5 (as good as it can be). More than half (1025, 59.3%) were taking prescribed medicines (median 3, IQR 2–5). Almost a quarter of respondents (384, 22.2%) had a health professional in their immediate family.

More than half (978, 56.6%) were aware that adequately trained health professionals could prescribe drugs that previously were prescribed only by physicians. Of these, there was greatest awareness of the pharmacists' new roles, followed closely by nurses (Table 3). The main sources of awareness were television (322, 33%), newspapers (302, 31%), and pharmacists (201, 21%).

Awareness of nonmedical prescribing in general was associated with increasing participant age ($p < 0.001$, Student's *t*-test), having a health professional in the immediate family ($p < 0.001$, χ^2 test), higher self-rated general health scores ($p < 0.005$, Wilcoxon signed-rank test), and a higher level of education ($p < 0.01$, χ^2 test). In logistic regression analysis, all of these factors were retained as independent predictors of awareness of nonmedical prescribing: age, $p < 0.001$; health professional in family, $p < 0.001$; general health score, $p = 0.002$; and education, $p < 0.001$. Whether or not the respondents were prescribed regular medicines had no significant association ($p > 0.5$, χ^2 test) on their awareness.

The general public's comfort levels associated with prescribing by different health professional groups are given in Table 4. Ratings were highest for pharmacists (median 4, IQR 3–5), followed closely by nurses and lowest for radiographers and occupational therapists (median 2, IQR 1–3) ($p < 0.001$, Wilcoxon signed-rank test). A large number of respondents felt that they did not know enough to provide an answer in relation to several of the health professions. In terms of comfort levels for pharmacists, higher levels were associated with increasing participant age ($p < 0.01$, ANOVA), having a health professional in their immediate family ($p < 0.05$, χ^2 test), higher self-reported general health scores ($p < 0.005$, Kruskal-Wallis test), and a higher level of education ($p < 0.05$, χ^2 test). In logistic regression, only general health score was retained as an independent predictor of comfort levels for pharmacist prescribing ($p < 0.001$).

Attitudinal responses relating specifically to pharmacist prescribing are given in Table 5. While well over half of the respondents supported pharmacists having a prescribing role, just under a third felt that pharmacists were as knowledgeable as physicians to prescribe medicines, and

Table 1. Respondent Demographics[a]

Age, y (mean ± SD)	54.0 ± 16.3
Sex, n (%)	
female	974 (56.4)
male	754 (43.6)
Employment status, n (%)	
full-time	685 (39.6)
part-time	220 (12.7)
retired	519 (30.0)
unemployed	76 (4.4)
housewife	118 (6.8)
other	86 (5.0)
Living arrangements, n (%)	
with spouse or partner	1003 (58.0)
alone	332 (19.2)
with family	322 (18.6)
with friends	20 (1.2)
other	34 (2.0)
Education level, n (%)	
secondary school	889 (51.4)
college	390 (22.6)
university	389 (22.5)

[a]N = 1728 (some responses missing).

Table 2. Use of Health Services in the Past Twelve Months[a]

Had an appointment or home visit with a general practitioner	1229 (71.1)
Visited a pharmacy to get medicines and/or advice	815 (47.2)
Had an appointment or home visit with a nurse from medical practice	833 (48.2)
Had an appointment at a hospital outpatient clinic	771 (44.6)
Been admitted to a hospital	308 (17.8)
Been seen at an accident and emergency	295 (17.1)
Had an appointment or home visit with a pharmacist	98 (5.7)

[a]N = 1728; all data shown as n (%).

Table 3. Awareness of Specific Health Professionals' Right to Prescribe[a]

Pharmacist	727 (74.3)
Nurse	702 (71.8)
Optometrist	187 (19.1)
Psychologist	115 (11.8)
Dietician	70 (7.2)
Physiotherapist	63 (6.4)
Occupational therapist	27 (2.8)
Radiographer	23 (2.4)
Cannot remember	36 (3.7)
Other	52 (5.3)

[a]N = 978; all data shown as n (%).

only a quarter felt that pharmacists should be able to prescribe the same range of drugs as physicians. Less than one fifth of respondents agreed that pharmacists were as knowledgeable as physicians when it came to diagnosing disease or illness. More than half of the respondents had concerns about the lack of privacy in a pharmacy, despite acknowledging the enhanced convenience of the pharmacy setting.

Five hundred and five respondents (29.2%) gave open comments. Several key themes were identified. In particular, respondents described issues relating to prescriber education in terms of knowledge and skills, often commenting on the difference in practice for diagnosis and prescribing. Diagnosis was often seen as being a role solely of the med-

Table 4. Comfort Level of Respondents Regarding Receiving a Prescription for Drugs Previously Prescribed Only by a Physician[a]

	Comfort Level, n (%)					
Professional Group	Very Uncomfortable 1	2	3	4	Very Comfortable 5	Do Not Know
Pharmacists	105 (6.1)	99 (5.7)	278 (16.1)	458 (26.5)	588 (34.0)	155 (9.0)
Nurses	136 (7.9)	148 (8.6)	365 (21.1)	437 (25.3)	424 (24.5)	184 (10.6)
Optometrists	232 (13.4)	137 (7.9)	277 (16.0)	267 (15.5)	229 (13.3)	456 (26.4)
Physiotherapists	294 (17.0)	218 (12.6)	291 (16.8)	222 (12.8)	146 (8.4)	435 (25.2)
Psychologists	281 (16.3)	183 (10.6)	242 (14.0)	197 (11.4)	167 (9.7)	524 (30.3)
Occupational therapists	375 (21.7)	224 (13.0)	245 (14.2)	156 (9.0)	95 (5.5)	506 (29.3)
Radiographers	355 (20.5)	208 (12.0)	239 (13.8)	137 (7.9)	115 (6.7)	544 (31.5)

[a]N = 1728.

Table 5. Responses to Attitudinal Statements Relating to Pharmacists' Prescribing[a]

	Response, n (%)					
Statement	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree	Missing
Pharmacists should have a prescribing role	321 (18.6)	883 (51.1)	318 (18.4)	118 (6.8)	57 (3.3)	31 (1.8)
A pharmacist is equally knowledgeable as a doctor to diagnose a disease or illness	41 (2.4)	272 (15.7)	572 (33.1)	586 (33.9)	227 (13.1)	30 (1.7)
Pharmacists should be able to prescribe the same range of medicines as doctors	86 (5.0)	346 (20.0)	473 (27.4)	555 (32.1)	228 (13.2)	38 (2.2)
It would be convenient for patients to get these medicines prescribed in a pharmacy	264 (15.3)	876 (50.7)	292 (16.9)	157 (9.1)	72 (4.2)	66 (3.8)
A pharmacist is equally knowledgeable as a doctor to prescribe these medicines	130 (7.5)	412 (23.8)	563 (32.6)	420 (24.3)	163 (9.4)	40 (2.3)
I feel confident in pharmacists' abilities to prescribe these medicines	144 (8.3)	556 (32.2)	600 (34.7)	270 (15.6)	113 (6.5)	45 (2.6)
Pharmacists would prescribe these medicines as safely as doctors	138 (8.0)	546 (31.6)	589 (34.1)	286 (16.6)	124 (7.2)	45 (2.6)
A doctor should be involved whenever a pharmacist prescribes these medicines	341 (19.7)	632 (36.6)	400 (23.1)	278 (16.1)	34 (2.0)	43 (2.5)
Pharmacists should have access to patients' medical notes before prescribing these medicines	296 (17.1)	588 (34.0)	316 (18.3)	278 (16.1)	215 (12.4)	35 (2.0)
I would be concerned about the lack of privacy in a pharmacy for consultation	512 (29.6)	623 (36.1)	258 (14.9)	231 (13.4)	79 (4.6)	25 (1.4)

[a]N = 1728; all responses, Cronbach's $\alpha = 0.784$.

ical profession; indeed, many did differentiate between the processes of diagnosing and prescribing. Some acknowledged that pharmacists may be more knowledgeable than the physician in terms of drugs, but that physicians would apply a more holistic approach to patient care. Many expressed trust and confidence in the prescribing role of the medical profession, explaining this in terms of the social standing of physicians in society, particularly when compared with the standing of other health professions. Pharmacists were also highly valued in relation to more traditional advisory roles. There were key issues relating to access to medical records and the necessity of being able to record prescribing actions in medical notes. Respondents expressed concern about privacy and confidentiality of health information and, specifically, how this could be achieved in the community pharmacy setting.

Generally, there was little support for nonmedical professionals to be able to prescribe the same range of drugs as physicians. Nonmedical prescribing was seen as being appropriate for "repeat medicines," "minor ailments," and "low-risk medicines," but that physicians would have to be involved for "new conditions" and "rarer conditions" requiring "stronger medicines." Some commented on nonmedical prescribers operating within their competence. Nonmedical prescribing was often seen as a way of saving the physician's time, reducing waiting lists, and enhancing convenience for the patient. However, the issue of potentially compromising patient safety was raised as well as the consequential increase in workload for the nonmedical prescriber.

Discussion

Our research shows that more than half of the respondents in this Scottish study had an awareness of nonmedical prescribing. Factors associated with awareness were increasing age of the participants, level of education, self-rated general health, and having a health professional in the immediate family. Respondents were most aware of pharmacist and nurse prescribing and most comfortable with these 2 groups of professionals prescribing medicines that were previously prescribed only by physicians. It is of paramount importance that policymakers and researchers consider involving the general public as part of any service development. Despite the study being conducted in Scotland, many of the findings may be relevant on an international scale, given the global developments in nonmedical prescribing.[7]

This research has several strengths and some weaknesses that should be borne in mind. To our knowledge, this is the first published study focusing on the perspectives of the general public and aspects of prescribing by a range of health professionals. We surveyed a large, random sample of 5000 members of the general public over 18 years of age residing in Scotland, with no exclusions other than participation in the pilot study. While this may enhance the generalizability of the findings to the whole Scottish population (5.1 million), this is limited by the low response rate.

In addition, there is the possibility that nonrespondents had little interest in the topic. Also, we did not ask respondents whether or not they had experienced nonmedical prescribing. National Health Service employment figures for Scotland as a whole are 6.2%, compared with the 22.2% of respondents in our study who reported that there was a health professional in their immediate family; this knowledge could have contributed to an overestimated awareness of the developments and bias in opinions/views.[18] However, our respondents were similar in many respects to the Scottish population, as per Scotland's Census conducted in April 2001, in terms of sex distribution, age range, employment status, and health score.[16] The Census data did not permit comparison of numbers of regular drugs or health professionals in immediate family, and it is possible that our data are biased regarding these 2 variables.

Although the questionnaire was developed and fully tested in a series of stages of prepiloting and piloting, there was no measure of test–retest reliability. We relied upon the general public's interpretation of the terms "adequately trained health professional" and "medicines that only doctors could prescribe in the past." Indeed, many respondents felt unable to answer questions relating to levels of comfort of a range of health professionals prescribing, possibly because of lack of knowledge about the training for those health professionals, as shown in Table 4 and the open question responses. The issue of respondent recall bias may have affected findings, as some items in the questionnaire (eg, visits to general practitioner) related to the past 12 months. There may also have been an element of social desirability bias with the questionnaire being distributed by a school of pharmacy.

There has been limited research in this field. Qureshi et al.[19] studied patients' perceptions toward nurse and pharmacist prescribing using a very specific subset of 400 patients attending an eye hospital. Berry et al.[15] specifically surveyed attitudes to nurse prescribing, and there are other key differences compared with our research design in terms of sampling technique, sample size, and method of recruitment. However, both studies were positive in terms of the general support for nonmedical prescribing. In our study, a reasonably high proportion (56.6%) of respondents claimed to be aware of nonmedical prescribing, largely via the media and health professionals. There is a case for public awareness in healthcare generally, but also specifically in terms of changing prescribing roles. Surveys of health professionals have, not surprisingly, shown high levels of awareness of the concept of nonmedical prescribing, but much lower awareness of the content, duration, and level of prescribing training courses.[20-22]

Comfort levels with different health professionals varied, demonstrating a higher rating for pharmacists and nurses as compared with other healthcare professionals. This is not surprising, given the likelihood of general public contact with these 2 professional groups compared with others such as occupational therapists and radiographers. In terms of pharmacists, respondents were supportive of a prescribing role but had concerns about complete access to all drugs, diagnosis, and lack of any medical input. Previous studies have reported that in general, privacy and confidentiality were concerns that patients had in regard to pharmacist nonmedical prescribing in the community setting.[23]

While comfort levels may change with time as patients and the general public experience nonmedical prescribing, there is still a need to publicize these changing responsibilities. Our research shows that reassurance for the public is necessary in terms of clinical governance. Areas highlighted were those of education and training and data handling. There were also concerns relating to appropriateness of nonmedical professionals' prescribing. A model similar to supplementary prescribing, with the physician diagnosing and the nonmedical professional prescribing or solely prescribing chronic drug therapy would be more acceptable for some of the respondents. Robust research measuring patients' or service users' views and experiences of extended prescribing services should be conducted to support further developments in nonmedical prescribing. The benefits of robust research have been clearly demonstrated in terms of pharmacists' roles in preventing drug-related problems.[24]

In conclusion, our results indicate that more than half of the respondents were aware of nonmedical prescribing initiatives. The respondents also demonstrated higher levels of comfort for pharmacist prescribing versus prescribing by other healthcare professionals. However, several issues relating to aspects of clinical governance were highlighted, specifically, education and training and data handling.

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References

1. Avery AJ, Pringle M. Extended prescribing by UK nurses and pharmacists. BMJ 2005;331:1154-5. DOI 10.1136/bmj.331.7526.1154
2. Medicines Control Agency. Proposals for supplementary prescribing and pharmacists and proposed amendments to the Prescription Only Medicines (Human Use) Order 1997. Consultation Paper MLX284. London: Medicines Control Agency, 2002.
3. Department of Health. Improving patients' access to medicines: a guide to implementing nurse and pharmacist independent prescribing within the NHS in England. London: Department of Health, 2006.
4. Department of Health. Nurse and pharmacist prescribing powers extended. London: Department of Health, 2005.
5. Crown J. Review of prescribing, supply & administration of medicines. Final report. London: Department of Health, 1999.
6. Scottish Executive Health Department. Supplementary prescribing, pharmacist practitioners: a guide for implementation within NHS Scotland. Edinburgh: Scottish Executive Health Department, 2004.
7. Emmerton L, Marriott J, Bessell T, Nissen L, Dean L. Pharmacists and prescribing rights: review of international developments. J Pharm Pharmaceut Sci 2005;8:217-25.
8. Tonna AP, Stewart D, West B, McCaig D. Pharmacist prescribing in the UK—a literature review of current practice and research. J Clin Pharm Ther 2007;32:545-56.
9. Cooper RJ, Anderson C, Avery T, et al. Nurse and pharmacist supplementary prescribing in the UK—a thematic review of the literature. Health Policy 2008;85:277-92. DOI 10.1016/j.healthpol.2007.07.016
10. Smalley L. Patients' experiences of pharmacist-led supplementary prescribing in primary care. Pharm J 2006;276:567-9.
11. Stewart D, Cunningham ITS, Diack HL, George J, McCaig D, Bond CM. Evaluating supplementary prescribing by pharmacists in Scotland: Final report, NHS Education for Scotland:Glasgow, 2007.
12. Porteous T, Bond C, Hannaford P, Sinclair H. How and why are nonprescription analgesics used in Scotland? Fam Pract 2005; 22:78-85. DOI 10.1093/fampra%2Fcmh719
13. Lewington G, Marshall K. Access to emergency hormonal contraception from community pharmacies and family planning clinics. Br J Clin Pharmacol 2006;61:605-8. DOI 10.1111/j.1365-2125.2006.02623.x
14. Black KI, Mercer CH, Johnson AM, Wellings K. Sociodemographic and sexual health profile of users of emergency hormonal contraception: data from a British probability sample survey. Contraception 2006;74:309-12. DOI 10.1016/j.contraception.2006.05.067
15. Berry D, Courtenay M, Bersellini E. Attitudes towards, and information needs in relation to, supplementary nurse prescribing in the UK: an empirical study. J Clin Nurs 2006;15:22-8. DOI 10.1111/j.1365-2702.2005.01258.x
16. Scotland's Census results online. www.scrol.gov.uk/scrol/common/home.jsp (accessed 2008 Aug 31).
17. Neuendorf KA. The content analysis guidebook. Cleveland, OH: Cleveland State University Sage Publications, 2002.
18. The Scottish Government Statistics. www.scotland.gov.uk/Topics/Statistics/Browse/Labour-Market (accessed 2008 Aug 31).
19. Qureshi K, Kashani S, Robbie S, Malik N. Perceptions of patients to extended prescribing to nurses and pharmacists. Eye 2007;21:1005-6.
20. George J, McCaig D, Bond C, et al. Supplementary prescribing: early experiences of pharmacists in Great Britain. Ann Pharmacother 2006;40:1843-50. Epub 12 Sept 2006. DOI 10.1345/aph.1H227
21. George J, Bond CM, McCaig DJ, et al. Experiential learning as part of pharmacist supplementary prescribing training: feedback from trainees

and their mentors. Ann Pharmacother 2007;41:1031-8. Epub 8 May 2007. DOI 10.1345/aph.1H650

22. Stewart DC, George J, Pfleger DE, et al. Pharmacist supplementary prescribing training: a study of pharmacists' perceptions and planned participation. Int J Pharm Pract 2007;15:319-25. DOI 10.1211/ijpp.15.4.0011
23. Anderson C, Blenkinsopp A, Armstrong M. Feedback from community pharmacy users on the contribution of community pharmacy to improving the public's health: a systematic review of the peer reviewed and non-peer reviewed literature 1990–2002. Health Expect 2004;09:7191-202. DOI 10.1111/j.1369-7625.2004.00274.x
24. Viktil KK, Blix HS. The impact of clinical pharmacists on drug-related problems and clinical outcomes. Basic Clin Pharmacol Toxicol 2008; 102:275-80. DOI 10.1111/j.1742-7843.2007.00206.x

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Una Encuesta Cruzada Sobre el Conocimiento, los Puntos de Vista y las Actitudes del Público General Escocés Hacia la Prescripción por Profesionales no Médicos

DC Stewart, J George, HL Diack, CM Bond, DJ McCaig, ITS Cunningham, K Munro, y D Pfleger

Ann Pharmacother 2009;43:1115-21.

EXTRACTO

TRASFONDO: La prescripción por profesionales no médicos es un desarrollo clave en el Reino Unido (RU) que ha traído muchos cambios en la política y la práctica de prescribir. Es limitada la investigación sistemática sobre la visión del público general hacia dicho desarrollo.

OBJETIVO: Determinar el conocimiento, el punto de vista y las actitudes del público general escocés hacia la prescripción por parte de profesionales no médicos, con énfasis en la prescripción por parte del farmacéutico.

MÉTODOS: Previo a un piloto, se envió por correo un cuestionario a una muestra al azar de 5000 miembros del público general de Escocia de 18 años en adelante, obtenida de la lista electoral del RU en noviembre de 2006. El cuestionario contenía ítems sobre: niveles de comodidad con específicos profesionales de la salud y las actitudes en torno a la prescripción por parte del farmacéutico.

RESULTADOS: La tasa de respuesta fue de un 37.1%. Más de la mitad tomaba medicamentos recetados. Novecientos setentiocho (56.6%) conocían que los profesionales de la salud adiestrados podían hacer recetas de medicamentos que previamente sólo los médicos podían hacer. Conocer sobre esta práctica estuvo relacionado con tener más edad ($p < 0.001$), tener un profesional de la salud en la familia inmediata ($p < 0.001$), poder auto clasificarse el estado de salud general ($p < 0.005$) y un nivel educativo más alto ($p < 0.01$). En regresión logística, todos fueron retenidos como factores independientes de predicción del conocimiento ($p < 0.001$).

El nivel de comodidad respecto a la prescripción por profesionales no médicos fue más alto para los farmacéuticos (mediana 4, IQR 3–5, 1 bajo a 5 alto) muy seguido por el profesional de enfermería y más bajo para el personal de radiógrafía (mediana 2, IQR 1–4; $p < 0.001$). Mientras que más de la mitad apoyaba a que el farmacéutico tuviera el rol de prescribir, un menor número entendía que el farmacéutico debe prescribir igual gama de medicamentos que los médicos. Existía la preocupación en cuanto a la falta de privacidad en la farmacia a pesar de reconocer una mayor conveniencia.

CONCLUSIONES: Nuestros resultados indican que más de la mitad de los que respondieron conocía sobre la prescripción por parte del profesional no médico. Una proporción mayor se sentía más cómoda con la prescripción por parte del farmacéutico y el profesional de enfermería que por otros profesionales de la salud. Se resaltaron varios asuntos relacionados a aspectos clínicos, específicamente la educación, y el manejo de los datos.

Traducido por Rafaela Mena

Un Sondage Transversal sur le Niveau de Connaissance, les Opinions et les Attitudes du Grand Public Écossais face au Droit de Prescription Accordé aux Professionnels de la Santé Non-Médecins

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Ann Pharmacother 2009;43:1115-21.

RÉSUMÉ

OBJECTIF: Le droit de prescrire par des professionnels de la santé non-médecins a été un tournant majeur dans le milieu de la santé au Royaume-Uni et a nécessité plusieurs changements de politiques et de pratiques. Peu de données quant à l'opinion du grand public face à de tels changements ont été colligées. L'objectif de cette étude est d'identifier le niveau de connaissance, les opinions et les attitudes du grand public quant au droit de prescription accordé aux professionnels de la santé non-médecins, en mettant une emphase particulière sur le droit de prescription des pharmaciens.

MÉTHODOLOGIE: Un questionnaire ayant fait l'objet d'une validation a été posté en novembre 2006 à un échantillon aléatoire de 5000 personnes âgées de 18 ans et plus, résidant en Écosse et faisant partie de la liste électorale officielle du Royaume-Uni. Le questionnaire couvrait les thèmes suivants: le niveau de connaissance quant au droit de prescription accordé aux professionnels de la santé qui ne sont pas médecins, le niveau de confort du public face aux différents professionnels de la santé non-médecins détenant un tel droit, et les opinions sur le droit de prescription accordé aux pharmaciens.

RÉSULTATS: Le taux de réponse au sondage a été de 37.1%. Plus de la moitié des répondants (56%, n = 978) savaient que des professionnels de la santé non-médecins avaient le droit de prescrire des médicaments. Ce niveau de connaissance augmentait avec l'âge des répondants ($p < 0.001$), la présence d'un professionnel de la santé dans la famille immédiate ($p < 0.001$), un niveau élevé de scolarité ($p < 0.01$), et une auto-évaluation satisfaisante de l'état de santé générale ($p < 0.05$). Selon une analyse logistique, tous ces facteurs ont été identifiés comme des éléments pouvant prédire de façon indépendante, ce niveau de connaissance. Le niveau de confort du public face au droit de prescription accordé aux non-médecins était le plus élevé pour les pharmaciens [médiane de 4, écart interquartile (EIQ) variant entre 3 et 5 sur une échelle où 1 est la valeur la plus faible et 5, la plus élevée] suivi par les infirmières et atteignant les plus faibles valeurs pour les techniciens en radiologie et les ergothérapeutes (médiane de 2, EIQ 1–4). Bien que plus de la moitié des répondants supportaient le concept de prescription par les pharmaciens, bien peu étaient d'accord à ce que les pharmaciens puissent prescrire autant de médicaments que leurs collègues médecins. Ce sondage a aussi permis de soulever certaines inquiétudes quant à un manque possible d'espace en pharmacie permettant un échange de données en toute confidentialité; ces soucis étant toutefois contrebalancés par une accessibilité accrue du pharmacien par rapport à d'autres professionnels de la santé.

CONCLUSIONS: Les résultats de cette étude indiquent que plus de la moitié des répondants était au courant du droit de prescription accordé aux professionnels de la santé qui ne sont pas médecins. Une grande proportion de ces répondants était confortable avec le droit de prescription accordé aux pharmaciens et aux infirmières. Plusieurs enjeux relatifs aux aspects de gouvernance clinique ont toutefois été identifiés, notamment quant à la gestion des données cliniques et quant à la formation continue.

Traduit par Sylvie Robert

Paper 8

Stewart D, George J, Bond C, Diack L, Cleland J, McCaig D, Cunningham S, MacLure K, Harkness S

Developing and validating a tool for assessment of pharmacist prescribers' consultations

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Developing and validating a tool for assessment of pharmacist prescribers' consultations

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Objective. To develop and validate an assessment tool, based on the 'Royal College of General Practitioners' (RCGP) Video Assessment Tool', for assessment of pharmacist prescribers' consultation skills.

Methods. Competency areas of the RCGP tool were left unchanged but performance criteria for each were modified to reflect pharmacist prescribing. Each criterion and the overall consultation were rated from 1 (poor) to 5 (excellent).

A purposive sample of 10 experienced prescribing pharmacists was selected. Each pharmacist identified, recruited and consented two patients. Video recordings of consultations were assessed independently by two randomly assigned GPs, experienced in the use of the RCGP tool, using the newly developed scale. Inter-rater reliability was assessed. Construct validity was assessed by comparing the assessor score with a patient satisfaction score. Spearman's rho was used to test the correlation between the two scores.

Results. The RCGP tool was modified to give the 'Pharmacist Consultation Assessment Tool' (PharmaCAT). The median overall PharmaCAT consultation rating was 3. There was good agreement between the two assessors for total scores (intraclass correlation coefficient = 0.694).

Fourteen (78%) patient satisfaction questionnaires were returned; most (n = 13, 93%) agreed/strongly agreed that they were entirely satisfied with the consultation. Correlations between average total scores on PharmaCAT and the patient satisfaction questionnaire were weak (Spearman's rho = 0.142 and 0.242 for both assessors).

Conclusions. The PharmaCAT has been tested in the pharmacist prescriber setting. The tool had discriminatory power across different domains and inter-rater reliability. The PharmaCAT has potential to be used as a formative and/or summative assessment tool.

Keywords. Communication skills, consultation, pharmacy, prescribing.

Introduction

Many developments in pharmacy practice in the UK have taken place recently. Pharmacist prescribing, initially introduced as supplementary prescribing in 2003, followed by independent prescribing in 2006,[1,2] is one of the most notable developments.

The scope of independent prescribing, described as 'prescribing by a practitioner responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the clinical management required, including prescribing', is wide ranging. All licensed medicines (other than controlled drugs) can be prescribed within the independent prescriber's competence with no need for any overarching endorsement by a medical practitioner.[3]

Qualification as an independent pharmacist prescriber requires completion of a short postgraduate course. This comprises 26 days of university delivered training, with an additional 12 days in practice under the guidance of a designated medical practitioner.[4] To date, ~1600 pharmacists in Great Britain have completed their prescribing training and are registered with

the Royal Pharmaceutical Society of Great Britain as prescribers.

Consultation skills are a key element of this training, aiming to further develop effective relationships and communication strategies and to demonstrate a shared approach to decision making.[4]

Despite the emphasis placed on consultation skills during training, the published literature on pharmacist prescribers' consultation skills training or practice is sparse. Cleland *et al.* used semi-structured interviews with a purposive sample of nine prescribers to explore views of consultation skills training and impact on practice. While participants were positive about their enhanced skills, some practical difficulties were highlighted.[5] Most patient-focused research relates to patients' perspectives of pharmacist prescribing or their satisfaction with prescribing services, rather than consultation skills.[6–8]

Consultation skills are recognized as a central component of the clinical encounter. A recent patient survey reported by the General Medical Council identified communication skills as the second most influential factor (after giving good advice and treatment) in patients' confidence in their doctors.[9] Studies involving doctors have also demonstrated key benefits, including enhanced working relationships, increased patient satisfaction and improved health outcomes.[10–12]

Several consultation skills assessment tools are available for medical consultations, including the 'Segue framework',[13] 'Henbest and Stewart rating scale'[14] and the 'Royal College of General Practitioners' (RCGP) summative assessment single route video assessment.[15] Of these, the latter has contributed both formatively and summatively to the assessment process for membership of the RCGP. Each consultation is assessed around five broad areas of discovering the reason for the patient's attendance, defining the clinical problem(s), explaining the problem(s) to the patient, addressing the patient's problem(s) and making effective use of the consultation. The application and concurrent validity of this tool have been previously described.[16,17]

As with the medical consultation, evaluation of pharmacist prescribers' consultation skills is critical. However, there is no validated tool for either formative or summative assessment of pharmacist prescribers' consultation skills. Greenwood *et al.*[18] reported one study in which they used the Henbest and Stewart rating scale (assesses patient-centredness)[14] and the Segue framework (assesses content of the consultation).[13] Salter *et al.*[19] have used discourse analysis to research pharmacist consultations. Both studies had limitations and neither validated an evaluation tool or approach.

Thus, the aim of our study was to develop and validate a tool based on the RCGP video assessment tool for assessment of pharmacist prescribers' consultations.

Methods

Development of the scale

The five competency areas of the RCGP video assessment tool were left unchanged. Performance criteria (PC) for each of the competency areas were modified to reflect the pharmacist prescribing context by replacing the term 'doctor' with 'pharmacist prescriber' and placing less emphasis on physical and mental examination and clinical diagnosis. Each criterion was rated on a scale of 1 (poor) to 5 (excellent) with the option of scoring 'not observed'. In addition, there was an overall rating for the consultation and space for free text comments on specific strengths, weaknesses and serious concerns.

The tool was further refined by a panel of four GP assessors with extensive training and experience in video assessment of medical consultations and six academics with expertize in medical and pharmacy education. The panel communicated by email apart from one face to face meeting when face and content validity of the tool were established by consensus.

Sample of pharmacist prescribers and recruitment

A purposive sample of 10 study sites was identified. These were selected to provide a range of geographical regions, practice settings (community pharmacy, general practice and hospital) and therapeutic areas of prescribing (cardiovascular, diabetes, oncology, pain and respiratory). To participate, each pharmacist had to have been prescribing for at least 20 patients in the previous 3 months. Pharmacists were approached sequentially to recruit the sample of 10. Written informed consent was obtained from each pharmacist. Each pharmacist identified, recruited and consented two patients. There were no exclusion criteria.

Data collection

One consultation between each of the recruited patients and their pharmacist prescriber was video recorded. The Guidance of the General Medical Council on video recording was followed. Video recording was undertaken by a researcher, except in three cases where pharmacists undertook the recording themselves, following detailed verbal and written instructions. The pharmacists were informed that the video recordings would be reviewed by experts but were not given any details regarding the content of the assessment tool.

Each recording was assessed independently by two randomly assigned GP assessors (from the panel of four who had contributed to tool development) using the new scale. Data were analysed for completeness, and inter-rater reliability (agreement between assessors) was tested using intraclass correlation coefficient (ICC).

Construct validity was assessed by comparing assessor scores with a patient satisfaction score based on a validated scale,[20] which had been adapted and used previously for pharmacist prescriber consultations.[7] Questions relating to in-depth examination and long-term professional relationships were removed from Baker's scale leaving nine statements rated on a 5-point Likert scale. The scale was completed by each patient immediately after the consultation. Spearman's rho was used to test the correlations between the two assessor scores and the patient satisfaction score.

Approval for the research was obtained from the Multi-Centre Research Ethics Committee for Scotland and the relevant Research and Development committees in Scotland.

Results

The RCGP tool was modified to give the Pharmacist Consultation Assessment Tool (PharmaCAT). The RCGP tool and PharmaCAT are compared in Table 1.

TABLE 1 *Comparison between PharmaCAT and RCGP*

PharmaCAT	RCGP
PharmaCAT 1. The pharmacist is seen to encourage the patient's contribution at appropriate points in the consultation	The doctor is seen to encourage the patient's contribution at appropriate points in the consultation
	The doctor is seen to respond to signals (cues) that lead to a deeper understanding of the problem
PharmaCAT 2. The pharmacist uses appropriate psychological and social information to place the patient's health/medical conditions in context	The doctor uses appropriate psychological and social information to place the complaint(s) in context
PharmaCAT 3. The pharmacist explores the patient's health understanding	The doctor explores the patient's health understanding
PharmaCAT 4. The pharmacist establishes the clinical reason leading to attendance and . . .	Grouping of 1, 2, 3 and 4
PharmaCAT 4. . . . and undertakes appropriate assessment of the patient's condition systematically	6. The physical/mental examination chosen is likely to confirm or disprove hypotheses that could reasonably have been formed; Or is designed to address a patient's concern
PharmaCAT 5. The pharmacist obtains sufficient information to be aware of other/suspected new diagnoses beyond the scope of management, or diagnosis, and refers to appropriate medical professional or other health professional, if necessary	5. The doctor obtains sufficient information to include or exclude likely relevant significant conditions
	7. The doctor appears to make a clinically appropriate working diagnosis
PharmaCAT 6. The pharmacist explains the clinical condition in appropriate language	8. The doctor explains the problem or diagnosis in appropriate language
PharmaCAT 7. The pharmacist explanation incorporates some or all of the patient's health beliefs	9. The doctor specifically seeks to confirm the patient's understanding of the diagnosis
PharmaCAT 10. The pharmacist specifically seeks to confirm the patient's understanding of any newly diagnosed conditions and management	
PharmaCAT 8. The management plan (including any prescription) is appropriate for the clinical reason/working diagnosis, reflecting a good understanding of modern accepted clinical practice	10. The management plan (including any prescription) is appropriate for the working diagnosis, reflecting a good understanding of modern accepted medical practice
PharmaCAT 9. The patient is given the opportunity to be involved in significant management decisions to enhance concordance	11. The patient is given the opportunity to be involved in significant management decisions
PharmaCAT 11. The pharmacist takes steps to enhance compliance/adherence, by exploring and responding to the patient's understanding of treatment	
PharmaCAT 12. The pharmacist specifies the conditions and interval for follow-up or review, appropriately ensuring a safety net	13. The doctor specifies the conditions and interval for follow-up or review
PharmaCAT. Overall rating	Overall assessment
	12. Makes effective use of resources

Nineteen pharmacists were approached to recruit the sample of 10. These 10 were from six National Health Service (NHS) organizational areas in Scotland (see Table 2). Pharmacists' performances on each of the 12 criteria are given in Table 3. The median overall rating was 3 (range 1–4) on a scale of 1 (poor) to 5 (excellent). There was good agreement between the two assessors for the total PharmaCAT (sum of scores of PC1–PC12) scores (ICC = 0.694).

Pharmacists performed best in PC1 (encourage the patient's contribution at appropriate points in the consultation), PC9 (management plan is appropriate for the clinical reason/working diagnosis) and PC12 (specifies the conditions and interval for follow-up or review).

Lower scores were obtained for PC5 (obtains sufficient information to rule out any medical condition beyond their scope of management), PC7 (explanation incorporates some or all of the patient's health beliefs), PC8 (specifically seeks to confirm the patient's understanding of the clinical condition/diagnosis) and PC10 (specifically seeks to confirm the patient's understanding of the clinical condition/diagnosis). There were 10 occurrences of 'not observed' for PC 7 (patient's health beliefs).

Fourteen patient satisfaction questionnaires were returned (see Table 4) and almost all (n = 13, 93%) agreed or strongly agreed that they were entirely satisfied with the consultation.

Spearman's rho, measuring correlation between total PharmaCAT scores for the two assessors and total patient satisfaction scores, indicated little correlation (rho = 0.142 and 0.242).

Discussion

In this study, we developed and tested PharmaCAT, modified from the RCGP video assessment tool. The tool had discriminatory power between pharmacist prescribers and the different competency areas and inter-rater reliability. However, there was little correlation between assessors' total PharmaCAT scores and patients' ratings of consultation satisfaction. Similarly, McKinstry *et al.*[21] showed little correlation between the RCGP tool and patients' scores on a consultation satisfaction questionnaire. While patients' views on satisfaction are valuable, they may be measuring something different and additional to the skills of the practitioner linked to other competencies. They may also be a poor measure of discrimination.

Our research has strengths and weaknesses. To our knowledge, this is the first study assessing pharmacist consultations using a set of criteria covering specific competency areas. We studied a range of settings and specialities and importantly benchmarked pharmacist prescribing consultations using a tool modified from one developed for trainee GP. We used experienced RCGP consultation skills assessors with many years of experience for testing the reliability of the PharmaCAT. Our consultations were video recorded rather than audio taped in order to examine nonverbal as well as verbal communication. Limitations included the small sample numbers of pharmacists and patients and the lack of representation from secondary care settings. There was potential for selection bias as the participating pharmacists recruited the patients; however, this is similar to the process used by the RCGP.

Pharmacists' performances varied across the criteria. Higher scores were obtained in relation to encouraging the patient's contribution and aspects of clinical management with lower scores for achieving concordance and exploring patient health beliefs. Areas of lower scores and omissions may reflect the pharmacists' prior knowledge and management of the patient

TABLE 2 *Settings and clinical areas of the participating prescribing pharmacists*

	Geographical region	Prescribing setting	Clinical area(s)	Number of consultations recorded
Pharmacist 1	1	GP practice	Respiratory	2
Pharmacist 2	1	GP practice/community pharmacy	Respiratory	2
Pharmacist 3	1	GP practice	Cardiovascular	2
Pharmacist 4	2	GP practice	Cardiovascular	2
Pharmacist 5	3	GP practice/community pharmacy	Rheumatology/pain	2
Pharmacist 6	4	GP practice	Cardiovascular/diabetes	2
Pharmacist 7	4	GP practice	Cardiovascular	2
Pharmacist 8[a]	4	GP practice	Cardiovascular	0
Pharmacist 9[b]	5	Community pharmacy	Respiratory	0
Pharmacist 10[c]	6	Hospital (secondary care)	Oncology	0

[a]Pharmacist 8 was one of the first recruits but decided to withdraw from the research in the later stages.
[b]Pharmacist 9 had problems with the technology.
[c]Pharmacist 10 was unable to recruit any patients (working in oncology in secondary care).

TABLE 3 *Pharmacists' performances in each of the 12 criteria and overall scores*

PC	Median Score [range: 1 (poor) to 5 (excellent)]	Number of times rated 'not observed'
1 The pharmacist prescriber is seen to encourage the patient's contribution at appropriate points in the consultation	4 (1–5)	1
2 The pharmacist prescriber uses appropriate psychological and social information to place the patient's health/medical conditions in context	3 (1–5)	2
3 The pharmacist prescriber explores the patient's health understanding	3 (1–4)	6
4 The pharmacist prescriber establishes the clinical reason/diagnosis leading to attendance and undertakes appropriate assessment of the patient's condition systematically	3 (1–5)	0
5 The pharmacist prescriber obtains sufficient information to rule out any medical condition beyond their scope of management, or diagnosis, and refers to appropriate medical professional or other health professional, if necessary	2 (1–5)	9
6 The pharmacist prescriber explains the clinical condition/diagnosis in appropriate language	3 (1–5)	2
7 The pharmacist prescriber's explanation incorporates some or all of the patient's health beliefs	1–2 (1–4)	10
8 The pharmacist prescriber specifically seeks to confirm the patient's understanding of the clinical condition/diagnosis	2 (1–3)	8
9 The management plan (including any prescription) is appropriate for the clinical reason/working diagnosis, reflecting a good understanding of modern accepted clinical practice	3.5 (1–5)	1
10 The pharmacist specifically seeks to confirm the patient's understanding of the clinical condition/diagnosis	2 (1–5)	5
11 The pharmacist prescriber takes steps to enhance concordance, by exploring and responding to the patient's understanding of the treatment	3 (1–5)	5
12 The pharmacist prescriber specifies the conditions and interval for follow-up or review, appropriately ensuring a safety net	3.5 (1–4)	1
Overall (sum of 1–12)	3 (1–4)	—

TABLE 4 *Patient ratings of their consultation with the pharmacist prescriber, n (%)*

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I am totally satisfied with my visit to this pharmacist prescriber	12 (85.7)	1 (7.1)	0	0	1 (7.1)
This pharmacist prescriber told me everything about my treatment	12 (85.7)	1 (7.1)	0	0	1 (7.1)
Some things about my consultation with the pharmacist prescriber could have been better	3 (21.4)	0	2 (14.3)	5 (35.7)	4 (28.6)
This pharmacist prescriber examined me very thoroughly	10 (71.4)	1 (7.1)	2 (14.3)	0	0
This pharmacist prescriber was interested in me as a person, not just my illness	8 (57.1)	4 (28.6)	0	1 (7.1)	1 (7.1)
I understand my illness much better after seeing this pharmacist prescriber	9 (64.3)	4 (28.6)	1 (7.1)	0	0
I felt this pharmacist prescriber really knew what I was thinking	9 (64.3)	3 (21.4)	2 (14.3)	0	0
I wish it had been possible to spend a little more time with the pharmacist prescriber	3 (21.4)	2 (14.3)	4 (28.6)	4 (28.6)	1 (7.1)
I would find it difficult to tell this pharmacist prescriber about some private things	2 (14.3)	0	1 (7.1)	5 (35.7)	6 (42.9)

or their lack of familiarity with the assessment tool. In future, the assessment criteria should be embedded in the training programme and pharmacists made aware of the need to focus on all aspects of the consultation assessment criteria, regardless of their familiarity with the patient.

The development of PharmaCAT using video recordings is a clear advance. Previous studies from Greenwood *et al.*[18] and Salter et *al.*[19] were based on audio recordings. Greenwood studied six pharmacists' interactions with 18 congestive cardiac failure patients. Although none of the pharmacists were registered prescribers, they were expected to explore patients' understanding of heart failure, strategies for self-management, undertake a medication review and provide lifestyle advice. The authors concluded that the Henbest and Stewart rating scale (assesses patient-centredness)[14] and the Segue framework (assesses content of the consultation)[13] were appropriate for assessing audio recording of pharmacist consultations. However, they also noted the limitations of audio recording including the inability to record visual information.

Salter *et al.*[19] used discourse analysis to explore the advice giving role of pharmacists (non-prescribers) during consultation for medication review with patients aged 80 years and above. One researcher observed, taped and transcribed a total of 29 consultations with seven pharmacists. Although the pharmacists provided advice, this was rarely initiated by the patients and often resisted or rejected.

The RCGP video assessment tool has recently been modified to be used in a more formative way as part of work-based assessment, the 'Consultation Observation Tool'.[22] This has the same competency areas as before but each is now graded on a four-point scale of 'insufficient evidence', 'needs further development', 'competent' and 'excellent'. We now note that the potential of adopting this scale for PharmaCAT, subject to confirmation of validity and reliability.

Further work is required to test PharmaCAT with a greater number of pharmacists in more diverse therapeutic areas. There may also be a role for a summative assessment tool for pharmacist prescribers based on PharmaCAT. PharmaCAT was developed for pharmacist prescribers but we suggest that with a similar process of modification and validation, a further modified tool may be applicable to all non-medical prescribers, including nurses, physiotherapists and optometrists.

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Declaration

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Ethical approval: Multi-Centre Research Ethics Committee for Scotland and the relevant Research and Development committees in Scotland (05/MRE00/113).
Conflict of interest: none.

References

1 Cooper R, Anderson C, Avery T *et al*. Nurse and pharmacist supplementary prescribing in the UK—a thematic review of the literature. *Health Policy* 2008; **85:** 277–92.
2 Tonna A, Stewart D, West B, McCaig D. Pharmacist prescribing in the UK—a literature review of current practice and research. *J Clin Pharm Ther* 2007; **32:** 545–56.
3 Department of Health. *Improving Patients' Access to Medicines: a Guide to Implementing Nurse and Pharmacist Independent Prescribing Within the NHS in England.* London: Department of Health, 2006.
4 Royal Pharmaceutical Society of Great Britain. *Indicative curriculum for the education and training of Pharmacist Independent Prescribers.* http://www.rpsgb.org/pdfs/indprescfaq.pdf (accessed on 2 March 2009).
5 Cleland J, Bailey K, McLachlan S, McVey L, Edwards RM. Supplementary pharmacist prescribers' views about communication skills teaching and learning, and applying these new skills in practice. *Int J Pharm Pract* 2007; **15:** 101–4.
6 Smalley L. Patients' experience of pharmacist-led supplementary prescribing in primary care. *Pharm J* 2006; **276:** 567–9.
7 Stewart DC, George J, Bond CM *et al*. Exploring patients' perspectives of pharmacist supplementary prescribing in Scotland. *Pharm World Sci* 2008; **30:** 892–7.
8 Stewart DC, George J, Bond CM *et al*. Views of pharmacist prescribers, doctors and patients on pharmacist prescribing implementation. *Int J Pharm Pract* 2009; **17:** 89–94.
9 Coulter A. Can patients assess the quality of health care? *BMJ* 2006; **333:** 1–2.
10 Little P, Williamson I, Warner G *et al*. Open randomised trial of prescribing strategies in managing sore throat. *BMJ* 1997; **314:** 722–7.
11 Bertakis KD, Roter D, Putman SM. The relationship of physician medical interview style to patient satisfaction. *J Fam Pract* 1991; **32:** 175–81.
12 Hall JA, Harrigan JA, Rosenthal R. Non-verbal behaviour in clinician-patient interaction. *Appl Prev Psychol* 1995; **4:** 21–35.
13 Makoil G. *SEGUE: A Framework for Teaching and Evaluating Communication in Medical Encounters.* San Francisco: Division 1 of the American Educational Research Association, 1995.
14 Henbest RJ, Stewart M. Patient centredness in the consultation: does it make a difference? *Fam Pract* 1990; **7:** 28–33.
15 *Royal College of General Practitioners' (RCGP) Summative Assessment Single Route Video Assessment.* www.rcgp.org.uk/gp_training/mrcgp/video_workbook.aspx (accessed on 2 March 2009).
16 Campion P, Foulkes J, Neighbour R, Tate P. Patient centredness in the MRCGP video examination: analysis of a large cohort. *BMJ* 2002; **325:** 691–692.
17 Sirwardena AN, Edwards A, Campion P, Freeman AC, Elwyn G. Involve the patient and pass the MRCGP: investigating shared decision making in a consulting skills examination using a validated instrument. *Br J Gen Pract* 2006; **56:** 857–62.
18 Greenwood K, Howe A, Holland R. The use of consultation skills assessment tools in pharmacist-patient consultations. *Int J Pharm Pract* 2006; **14:** 277–82.

[19] Salter C, Holland R, Harvey I, Henwood K. ''I haven't even phoned my doctor yet.'' The advice giving role of the pharmacist during consultations for medication review with patients aged 80 or more. *BMJ* 2007; **334:** 1101–6.

[20] Baker R. Development of a questionnaire to assess patients' satisfaction with consultations in general practice. *Br J Gen Pract* 1990; **40:** 487–90.

[21] McKinstry B, Walker J, Blaney D, Heaney D, Begg D. Do patients and expert doctors agree on the assessment of consultation skills. *Fam Pract* 2004; **21:** 75–80.

[22] *Royal College of General Practitioners, Consultation Observation Tool, Detailed Guide to the Performance Criteria.* http://www.rcgp.org.uk/docs/nMRCGP_COT_Guide_to_Performance_Criteria.doc (accessed on 2 March 2009).

Paper 9

Stewart D, MacLure K, Bond C, George J, Diack L, McCaig D, Cunningham S

Pharmacist prescribing in primary care: the views of nominated patients across Great Britain who had experienced the service

Abstract accepted for Royal Pharmaceutical Conference 2010

An abstract of selected findings was also presented at the Celtic Pharmacy Festival 2010.

One related paper is being drafted with the aim of submitting to the International Journal of Pharmacy Practice by Autumn 2010. As this paper is still being written, we have included a copy of the accepted abstract.

Title:

Pharmacist prescribing in primary care: the views of nominated patients across Great Britain who had experienced the service

Abstract:

Focal points

- Views of pharmacist prescribing across Great Britain were explored in a group of nominated patients who had experienced the service
- Pharmacist response rate was low, but patient response was higher and highlighted positive views. However, these may not be generalisable
- Further research on patient views about pharmacist prescribing is warranted but may require novel methodological approaches

Introduction

Seven years after the introduction of pharmacist prescribing, the views of patients who have experienced the service remain limited. Published research has described settings, clinical conditions and patient numbers[1-3]. The aim was to explore patients' views of pharmacist prescribing in primary care settings across Great Britain.

Method

All pharmacist prescribers (n=1622, October 2008) were identified from the register of the Royal Pharmaceutical Society of Great Britain, and sent information, consent form and two reminders. Consenting pharmacists were asked to invite consecutive patients using standard study documentation and send the contact details of five consenting patients to the researchers. Participating patients were mailed a questionnaire and reminder containing: Section 1 (demographics) - you and your health; Section 2 - you and your pharmacist prescriber; Section 3 - you and your general practitioner; Section 4 - your most recent pharmacist prescriber consultation. The research had approval from the relevant review boards. Data were analysed using SPSS version 17.0.

Results

Of the 482 (29.7%) pharmacists who responded only 92 (19.1%) were eligible to participate. Pharmacists prescribing in secondary care (n=194), those not prescribing (n=171), not contactable (n=13), having insufficient patients (n=11), not able to assist (n=1) were excluded. Of those eligible, only 49 consented. By the end of March 2010, 30 log sheets had been returned by pharmacists practicing as independent (21) or supplementary (9) prescribers recruiting 143 patients. The patient response rate was 71.3% (n=102) with the majority (79.4%) aged 55 and over.

	Examples	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
Section 2	I get more time to discuss my health issues with a pharmacist prescriber than a GP (n=102)	23	48	12	16	3
	I am more comfortable discussing medication-related issues with a GP than with a pharmacist prescriber (n=99)	3	25	21	39	11
	I am confident that a pharmacist prescriber will prescribe as safely as a GP (n=101)	32	57	11	0	1
Section 3	If I thought my medical condition was getting worse, I'd rather consult a GP than a pharmacist prescriber (n=102)	24	47	19	11	1
	I do not expect a GP to review the treatment prescribed by a pharmacist prescriber (n=98)	10	42	18	25	3
	Given the choice, I prefer to consult a GP rather than a pharmacist prescriber (n=100)	12	31	28	28	1
Section 4	The pharmacist prescriber was interested in me as a person, not just my illness (n=102)	44	50	5	3	0
	I understand my medical condition after consulting the pharmacist prescriber (n=94)	24	58	9	2	1
	I am more interested in the quality of care I receive than the profession of the person I consult (n=100)	31	50	12	6	1
	I was totally satisfied with this visit to the pharmacist prescriber (n=100)	56	43	1	0	0

Table 1 – patient responses (n=102) to attitudinal statements on aspects of pharmacist prescribing

Conclusions

Pharmacist responses were low with a significant proportion of respondents not using their prescribing qualification despite the resources invested in education and training. Although the patient response rate was high and patients valued the pharmacist prescribing service, these findings may be heavily biased and lack generalisability. Further research on views of patients who have experienced pharmacist prescribing is warranted but this may require novel methodological approaches.

References

1 Smalley L. Patients' experience of pharmacist-led supplementary prescribing in primary care. Pharm J 2006;276:567-569

2 Reid F, Murray P, Storrie M. Implementation of a Pharmacist-Led Clinic for Hypertensive Patients in Primary Care – A Pilot Study. Pharm World Sci 2005;27(3):202-207

3 Stewart DC, George J, Bond CM, Cunningham ITS, Diack LH, McCaig DJ. Exploring patients' perspectives of pharmacist supplementary prescribing in Scotland. Pharmacy World & Science 2008;30:892-897

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