

Attitudes towards, and information needs in relation to, supplementary nurse prescribing in the UK: an empirical study

Dianne Berry BSc, DPhil

Professor of Psychology and Pro-Vice-Chancellor for Research, University of Reading, Reading, UK

Molly Courtenay PhD, Cert Ed

Reader in Prescribing and Medicines Management, University of Reading, Reading, UK

Elisabetta Bersellini MSc

Research Fellow in Psychology, University of Reading, Reading, UK

Submitted for publication: 30 April 2004

Accepted for publication: 6 May 2005

Correspondence:

Professor Dianne Berry
Pro-Vice-Chancellor's Office
Whiteknights House
University of Reading
Whiteknights
Reading
RG6 6AH
UK
E-mail: d.c.berry@reading.ac.uk

BERRY D, COURTENAY M & BERSELLINI E (2006) *Journal of Clinical Nursing* 15, 22–28

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Aims and objectives. The main aim of the study is to assess the views of people, who have not yet experienced nurse prescribing, to determine their level of confidence in nurse as opposed to doctor prescribing, effects on likely adherence and concerns that they might have. Additionally, the extent to which people would want nurses to provide an explanation for medicine choice and the type of information wanted was examined.

Background. Nurse prescribing has been successfully implemented in the UK in a number of healthcare settings. Existing research has not addressed effects on people's confidence and likely adherence, nor have people's information needs been established. However, we know that inadequate medicines information provision by health professionals is one of the largest causes of patient dissatisfaction.

Methods. A convenience sample of 74 members of the general population self-completed a written questionnaire.

Results. In general, people would have confidence in the nurse having prescribed the best medicine and say that they would be very likely to take the medicine. Concerns identified did not specifically relate to the nurses' status. Support is provided for the importance of nurses providing a full explanation about medicines, and some indication about which categories of information should be included. Information about medication side effects was most wanted by participants.

Conclusions. Independent and Supplementary Prescribing are pivotal to modernizing the NHS. The current study establishes people's initial views and concerns about nurse prescribing and assesses information needs. Support for initiating follow-on studies with particular patient groups is also provided.

Implications for clinical practice. People who have not yet experienced nurse prescribing are, in general, positive about nurses adopting this role. It is important that nurses provide appropriate information about the prescribed medicines, in a form that can be understood. This should include information about medication side effects.

Key words: confidence, information needs, medicines adherence, nurses, nursing, prescribing

Introduction

The role that nurses play in the management of medicines has undergone a major transformation over the past decade, particularly in the UK. Since primary legislation permitting nurses to prescribe a limited range of drugs was passed (Medicinal Products: Prescribing by Nurses Act 1992 (Nursing & Midwifery Council 2004)) over 28 000 district nurses and health visitors have become qualified to prescribe independently from a list of appliances, dressings, Pharmacy (P), General Sales List (GSL) items and some Prescription Only Medicines (POMs) included in the Nurse Prescribers' Formulary (NPF) for district nurses and health visitors.

More recently, the introduction of extended independent prescribing in 2002 (DoH 2001) and supplementary prescribing in 2003 (DoH 2002) has expanded the prescribing powers of nurses further to include any first level registered nurse (as well as district nurses and health visitors). Extended independent nurse prescribers (including nurse practitioners, practice nurses and nurses in walk-in-centres and minor injury units) are able to prescribe independently from a list of 180 POMs, GSL and P medicines for a range of 80 medical conditions listed in the Nurse Prescribers' Extended Formulary (NPEF). There are now over 3800 qualified extended independent nurse prescribers. In contrast to extended independent prescribing, supplementary prescribing takes place only after a diagnosis has been made by a doctor and a Clinical Management Plan (CMP) has been drawn up for the patient. In this case there are no legal restrictions on the conditions for which appropriately trained nurses can prescribe and very few on the drugs that they are able to prescribe. Supplementary prescribing is particularly suited to the care of patients with chronic conditions (such as asthma, diabetes and heart disease). The intention is to roll out both extended and supplementary nurse prescribing so that, by the end of 2006, there are 10 000 trained nurse prescribers (as well as a 1000 pharmacist prescribers).

Elsewhere in the world, prescribing powers for nurses have similarly evolved. In countries where there are well developed education systems in place for nurses, there are opportunities to obtain advanced practice training and graduate education. In the United States, for example, Advanced Practice Nurses (APNs) are registered nurses with advanced knowledge and skills who are also authorized to prescribe medicines. However, requirements, standards and level of prescribing ability vary between states and a lack of acceptance of nurse

prescribing by doctors has meant its evolution has been protracted (Plonczynski *et al.* 2003). In other countries, such as Sweden or Australia, where the population live in remote rural areas, nurses have also adopted the prescribing role. For example, district nurses in Sweden have been able to prescribe medicines from a limited formulary since 1994. However, this has been out of necessity, as there is a shortage of doctors able to care for such a widely dispersed patient group. Although prescribing has been viewed positively by nurses in these countries, as in North America, these reforms have been met with resistance from doctors (Wilhelmsson & Foldevi 2003).

Given the planned growth in nurse prescribing in the UK, it is important to evaluate the success or otherwise of early experiences of the process and also to identify key issues that are likely to arise. Little, if any, attention to date has focused on assessing the views of people who have not yet experienced nurse prescribing.

Background

A small number of studies to date have been carried out to evaluate patient experiences of extended nurse prescribing in some of the initial landmark sites (see Latter & Courtenay 2004, for a relatively recent review). Luker *et al.* (1997, 1998), for example, carried out a national evaluation of the first eight district nurse/health visitor prescribing pilot sites, interviewing 148 patients. The researchers reported that the majority of patients interviewed postprescribing were in favour of nurse prescribing. In some cases, patients thought that nurses would be in a better position to prescribe than the GP because they had a better understanding of either the patient or the product. Aspects patients viewed positively included the length of the relationship and regularity of contact with the nurse, accessibility and approachability, the nurses' style of consultation and information provision and the specialist expertise of the nurses in some areas. Convenience and speed of access to prescriptions were other advantages identified by patients. One limitation of the study, however, is that the patients interviewed were high users of nursing services and most had developed some sort of 'relationship' with the nurse or nurse team.

Similar positive support for nurse prescribing was reported by Brooks *et al.* (2001), who interviewed 50 patients in a primary care group in Leicestershire. Again, the quality of the relationship between the nurse and the patient was cited

positively as part of the patients' prescribing evaluation. The provision of reassurance by the nurse, continuity of care, information and health promotion details and approachability of the nurse were all aspects of nurse prescribing viewed positively by patients. As in Luker *et al.*'s work (1997, 1998) further benefits included timely, convenient, practical and successful treatment and the expertise of the nurse. Additionally, more effective use of both nurse and doctor time and awareness by the nurse of his/her professional limitations were also reported by patients. The patients in the Brooks *et al.* study were new, low and intermittent users of the service and reflect a range of patient views (from those who use the nurse prescribing service to a lesser or greater extent). However, all of the nurses were experienced nurse prescribers, and so this may account for the positive findings. A further limitation of the study is that the nurses 'selected' the patients to be recruited, and this needs to be borne in mind in interpreting the positive findings.

Finally, a more recent study by Harrison (2003) aimed to explore the views and experiences of nurse prescribing within the mental health setting, by use of a focus group methodology. Although participants perceived nurse prescribing to be a valuable service, they were cautious about introducing this initiative in the mental health setting. Concerns included the limitations of nurses' pharmacological knowledge base, erosion of the traditional nursing role and overall benefits of nurse prescribing to the patient.

The main themes emerging from the literature indicate that patients are in favour of nurses adopting the role of prescriber. Aspects patients view positively include the length of relationship and regularity of contact with the nurse, accessibility, approachability, consultation style and information provision. However, little, if any, attention to date has focused on the confidence patients have in nurse prescribing and the effects on likely adherence. Although information provision by nurses has been identified as a potential benefit of nurse prescribing (e.g. Brooks *et al.* 2001, Luker *et al.* 1997, 1998), the extent to which people would want an explanation/rationale for the selected medicine, as well as which particular types of information should be included, have not yet been addressed. This is important given that inadequate information provision by health professionals has been cited as a major cause of patient dissatisfaction, and is one of the largest causes of untoward incidents in the health service (Berry 2004a).

Aims

The main aim of the study was to assess the level of confidence that possible future patients would have in nurse

prescribing, the effects on likely adherence and particular concerns that people would have. In addition, given that information provision by nurses has been cited as a potential benefit of nurse prescribing, the present study assessed the extent to which people would want an explanation/rationale for the selected medicine, as well as which types of information should be included in such an explanation. The study was specifically oriented towards supplementary rather than extended prescribing and to a long term chronic condition (coronary heart disease), given that this form of prescribing is designed to assist with continuing care rather than one-off episodes of care (e.g. treatment of minor injuries) and has a strong focus on medicines concordance (Courtenay 2004).

Methodology

A survey design was used, in which participants were required to self-complete a short written questionnaire, administered by a research worker who was not familiar with the aims of the study.

Sample

A convenience sample of 74 volunteers from the general population participated in the study. There were 38 males and 36 females, and they were aged between 20 and 85 years (mean = 49). They had a range of educational backgrounds, from having no qualifications to having degrees. They also had a wide range of occupations (including clerical, shop, technical, and manual workers, teachers and students, as well as some being retired or unemployed). People who were under 18, those who did not have sufficient mastery of English to complete the questionnaire, or who had already experienced nurse prescribing were excluded (<10 in total). Previous research by Berry *et al.* (e.g. Berry *et al.* 1997, Berry 2004a,b), using a similar methodology, has shown that a minimum of 50 participants would be required to produce meaningful data, with the current design.

Data collection

Participants were recruited from a London Railway Station. Previous studies by our group have shown that this setting is appropriate for recruiting a diverse sample of people, broadly representative of the general population. Participants were approached in waiting areas. They were asked if they would be willing to take part in a study looking at how best to support nurses in relation to prescribing medicines. Five people declined to take part due to lack of time. Data

collection took two days to complete (Tuesday and Thursday of the same week) and took place in September 2004.

Questionnaire

A five page questionnaire booklet was developed for the purpose of this study, with its structure and format being based on similar questionnaires used by Berry *et al.* (e.g. Berry *et al.* 1997, Berry *et al.* 2002, Berry 2004b). This methodology has proved to be effective and reliable, and is particularly suited to use with general population samples. To pilot the questionnaire, 10 members of the general public were asked to complete it. After completion, they were asked if they had found it easy to complete and whether they had difficulty understanding what was required of them at any point. No points of concern were raised, and it was clear from the completed questionnaires that the format and content of the questions were appropriate.

The first page of the booklet contained some information about the study and simple instructions, followed by, 'Now please imagine yourself in the following situation. You have been diagnosed as being at "high risk" of developing coronary heart disease. You go to your local medical practice, where you see the specialist nurse. The nurse initiates medicine to lower your blood cholesterol level'. Participants were then asked to answer the questions on the remaining pages.

The questions were divided into four sections. The first section contained five questions, which assessed attitudes towards nurse prescribing (all but one measured on six-point unipolar Likert scales). These assessed degree of confidence in the nurse prescribing the best medicine for them, likelihood of taking the medicine, concern about taking the medicine (and what their main concerns would be) and extent to which they would want the nurse to provide an explanation or rationale. The next section asked them to rate how important it was for each of 10 different types of information (shown in Table 1) to be included in an explanation by a nurse about the recommended medicine (again, all on six-point unipolar Likert scales). The third section contained four questions asking participants to imagine that they had seen a doctor rather than a nurse at the practice, and that the doctor had prescribed the medicine. The questions assessed confidence in the doctor having prescribed the best medicine, likelihood of taking the medicine, concern about taking the medicine and wish for the doctor to provide an explanation/rationale. In each case, they were asked to make their judgements in comparison with the 'nurse' situation, and were given three response options (less, same, more). The final section assessed various demographic details, including whether or not they

Table 1 Mean importance ratings (with SDs) for the 10 information categories (max = 6), listed in ranked order of importance

Importance of information	Ranking	Mean rating (SD in brackets)
Possible side effects	1	5.76 (0.66)
What the medicine does/how it works	2	5.73 (0.75)
Probability medicine will be effective	3.5	5.49 (0.85)
Risks of not taking medicine	3.5	5.49 (0.82)
Interactions with other medicines	5	5.45 (1.11)
Questions about taking medicine (e.g. dosage)	6	5.42 (0.94)
What the medicine is (drug type, etc.)	7	5.41 (1.12)
What to do if take too much or forget to take	8	5.28 (1.07)
How you will know if medicine is working	9	5.26 (1.1)
Alternatives to medicine	10	5.05 (1.05)

had suffered from raised blood cholesterol, and whether or not they had experienced nurse prescribing to date.

Procedure and ethical considerations

Approval for the study was granted by the University of Reading Ethics Committee, as part of a generic approval granted to first author for studies using the current methodology and participant population. Participants who agreed to take part were given a short information sheet, which they were asked to read and sign if they were still willing to participate. The information sheet included a brief description of the aims of the study and what participants would be required to do and it informed participants that the study was completely voluntary and that they could withdraw at any point if they wished to do so. The information sheet also stated that the study was anonymous and that individual responses would be merged with those of a large number of other people. After signing the consent statement, participants were asked to read the first page of the questionnaire booklet. They were reminded that they could withdraw from the study at any point if they wished to do so, although none did. They all completed the questionnaire within seven to 10 minutes.

Results

Means and SDs were calculated for each of the measures that used the Likert rating scales. In terms of confidence that the nurse had prescribed the best medicine, 11% of the sample selected the two lowest confidence levels, while 48% selected

Question	Less for doctor than nurse (%)	Same for both (%)	More for doctor than nurse (%)
Confidence best medicine prescribed	6.6	48.6	44.8
Likelihood of taking medicine	4.1	71.6	24.3
Concern about taking medicine	14.3	74.3	10.8
Extent to which explanation wanted	2.7	77	20.3

Table 2 Percentage of people selecting each of three response options for the four questions asking about a 'doctor scenario' as opposed to the nurse one

the two highest levels. The overall mean was 4.3 (SD = 1.4). For likelihood of taking the medicine, the corresponding percentages were 10 and 76%, with the mean being 5.0 (SD = 1.4). For how much concern they would have about taking the medicine, 34% of the sample selected the two lowest rating options, while 28% selected the two highest, with the mean being 3.4 (SD = 1.6). The main concern was about medication side effects, followed by whether it was the correct medicine, or the correct dose. Other concerns noted by three or more participants were interactions with other medicines, allergic reactions, how effective the medicine would be, becoming dependent on it and not having seen the doctor first. Specifically, five of the 74 respondents stated that they would prefer to see a doctor, or to see a doctor before the nurse. One other wanted to be checked by a doctor at regular intervals, and two others questioned the nurse's competence/knowledge. Finally, in terms of the extent to which participants would want the nurse to provide an explanation/rationale for medicine choice, only 5% of the sample selected the two lowest rating options, compared with 95% who chose the two highest options.

Table 1 shows means and SDs for 'importance' for each of the 10 listed information categories, ranked in order of mean importance. Mean ratings ranged from 5.05 to 5.76, showing that most participants provided relatively high importance ratings for all information categories.

Table 2 shows percentage of the sample who selected 'less', 'same' or 'more' options to the four questions asking for ratings in relation to being prescribed the medicine by a doctor rather than a nurse. It can be seen that for likelihood of taking, extent of concern and degree to which they wanted an explanation or rationale, over 70% of participants selected the 'same' option. For confidence, responses were more evenly divided between 'same' and 'more' (i.e. would have same or more confidence if the doctor had prescribed the medicine).

Finally, non-parametric ANOVAs showed that there were no significant effects of age or gender on any of the measures. It was not possible to carry out the analyses in relation to experience of raised blood cholesterol as 82% of the sample indicated that they had not suffered from it.

Discussion

Before summarizing key findings and drawing conclusions, one needs to take account of two potential limitations of our methodology. Firstly, the study is clearly exploratory in nature and the results should be considered to be 'indications' rather than generalizable findings. Secondly, we used a convenience sample of volunteers, rather than a random sample of the general population. In addition, unlike the studies by Luker *et al.* (1997, 1998) and Brooks *et al.* (2001), we did not test patients who had been exposed to nurse prescribing. Although this could be considered to be a limitation, we were particularly interested in seeking the views of people who had not yet been prescribed medicine by a nurse, but who may well be in that situation in the future, given the planned growth of extended and supplementary prescribing. In addition, in constructing the scenario, we selected a situation (being treated for a relatively common longer term condition) that most participants could imagine experiencing themselves. Moreover, previous research of ours, using similar scenarios, sample and methodology, has reported results mirroring those obtained in comparable studies with actual patient groups (e.g. Berry *et al.* 2002, Knapp *et al.* 2004). Nevertheless, the next step is to extend this work to real patient groups, and we are currently doing this in studies with rheumatoid arthritis and diabetes patients.

A second potential limitation is that the initial verbal description of the purpose of the study (whether participants would be willing to take part in a study looking at how best to support nurses in relation to nurse prescribing) may have biased them to provide more positive attitudes towards nurse prescribing. However, after the initial approach and before completing the questionnaire, participants were given more detailed information about the aims of the study, and what would be required of them, in the information sheet that was supplied as part of the consent procedure. This reduces the likelihood of the initial comment biasing the findings.

Overall, the findings from this study provide positive support for the acceptance of nurse prescribing by our participants. Given the diverse nature of our sample, it is likely that these conclusions would apply to the wider public,

although clearly some caution has to be taken in doing this. Specifically, our results indicate that the majority of people in our sample would have confidence in the nurse having prescribed the best medicine for them, and say they would be willing to take it. Although participants expressed a number of concerns about taking the medicine, the majority of these did not relate to the nurse's status. Only seven of the 74 people stated a concern that implied that they would have preferred to see a doctor. When asked to make a direct comparison between a situation where a doctor rather than a nurse had prescribed the medicine, the majority indicated that they would be just as likely to take the medicine and have the same need for an explanation or rationale for medicine choice in either situation. Finally, in terms of confidence in the best medicine having been prescribed, the majority indicated that they would have either the same or more confidence if the doctor had done the prescribing. The fact that some participants showed preference for doctor involvement is not a particular concern, however, given that treatment for raised cholesterol would fall under supplementary, rather than extended, prescribing. Hence, a doctor would have undertaken an initial assessment and diagnosis, and would have to review the patient at regular intervals (at least annually).

The findings from the present study are in line with those reported by Luker *et al.* (1997, 1998) and Brooks *et al.* (2001). Luker *et al.* (1998), for example, concluded that the majority of patients they interviewed were overwhelmingly positive about nurse prescribing. Similarly, Brooks *et al.* concluded that 98% of their patients were happy with the nurse prescribing process, although this latter result should be interpreted with a little caution as the patient sample was selected by the nurse prescribers, which may have led to some degree of bias.

Participants in our study clearly wanted nurses to provide a fair amount of information about the selected medicine. All 10 of the listed information categories received ratings of greater than five (out of a maximum of six) in terms of importance of being included in an explanation about a medicine. This desire for information was not driven by the fact that the scenarios involved nurse prescribing, however, as the majority of the sample indicated that they would have the same desire for an explanation/rationale if a doctor had prescribed the drug. Moreover, the desire for information is in line with Luker *et al.* (1997, 1998) and Brooks *et al.* (2001), who identified information provision as a potential benefit of nurse prescribing. In addition, several other studies in related areas in the literature have reported that patients, in general, typically want more information than they are routinely given by health professionals, and that inadequate information provision is one of the largest causes of dissa-

tisfaction in patient surveys (e.g. Donovan & Blake 1992, Payne 2002). The fact that our participants gave the highest importance rating to possible side effects is also in line with other studies in the literature (e.g. Berry *et al.* 1995, 1997).

Conclusions

Independent and Supplementary Prescribing are pivotal to modernizing the National Health Service. By rethinking roles and responsibilities, breaking down the barriers between professionals and making better use of the skills of nurses, patients should gain easier access to medicines and the quality of care they receive should be improved. It is, therefore, essential to evaluate rigorously the safety and effectiveness of the development of these new initiatives to date and to provide evidence to inform future policy and practice in both independent and supplementary prescribing by nurses, pharmacists and other professionals allied to health. This research provides further empirical support for the adoption of the role of prescribing by nurses, the importance of nurses providing a full explanation about the selected medicines they prescribe, and some indication as to which categories of information should be included.

The new General Medical Services (GMS) contract, which is being introduced in the UK, with its emphasis on chronic disease management and out-of-hours service (DoH 2003), and increased funding from the Government for nurse prescribing, means that nurses are increasingly adopting the role of prescriber in a variety of practice settings. There is a need to undertake further research (using different patient groups and in different settings) in order to identify the different types of medicines information required by patients of these nurses.

Contributions and funding

No external funding was used to support this work.

Study design: DB, MC; data interpretation and manuscript preparation: DB, MC; data collection and analysis: EB.

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