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Research Paper

A qualitative study of physicians' and nurses' experiences of multidisciplinary collaboration with pharmacists participating at case conferences

Kjell H. Halvorsen[a,b], Per Stensland[a] and Anne Gerd Granas[b]

[a]Department of Public Health and Primary Health Care and [b]Centre for Pharmacy, Department of Public Health and Primary Health Care, University of Bergen, Kalfarveien, Bergen, Norway

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Correspondence
Mr Kjell H. Halvorsen, Department of Public Health and Primary Health Care, University of Bergen, Kalfarveien 31, N-5018 Bergen, Norway.
E-mail: kjell.halvorsen@isf.uib.no

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Abstract

Objectives Previous studies have revealed a range of drug-related problems for nursing home and hospital patients. Different attempts to reduce drug-related problems have been tested. Medication reviews performed by pharmacists and subsequent presentation of findings at case conferences is one of these methods. Physicians' and nurses' experiences from multidisciplinary collaboration with pharmacists have to a lesser degree been investigated. This study aims to describe how Norwegian physicians and nurses experience collaborating with pharmacists at case conferences to reduce drug-related problems in elderly patients.

Methods This was a qualitative interview study using systematic text condensation. The setting was nursing homes (long-term care) and hospital wards (gerontology and rheumatology). Four physicians and eight nurses participated and the main outcome was physicians' and nurses' experiences of multidisciplinary collaboration with pharmacists.

Key findings Organizational problems were experienced including, among others, what professional contribution team members could expect from pharmacists and what professional role the pharmacist should have in the multidisciplinary team. Both professions reported that ambiguities as to when and if the pharmacist was supposed to attend their regular meetings resulted in some aggravation. On the other hand, the participants valued contributions from pharmacists with regard to pharmaceutical skills, and felt that this raised awareness on prescribing quality.

Conclusions Physicians and nurses valued the pharmacists' services and reported that this collaboration improved patients' drug therapy. However, before implementing this service in nursing homes there is a need to make an organizational framework for this collaboration to support the professional role of the pharmacist.

Introduction

The elderly population is experiencing a range of diseases with concomitant drug use. Increasing drug use in nursing homes over the past decade[1] has increased the need for professional input to prescribing, administration and monitoring. Drug-related problems (DRPs) identified in nursing homes[2] and hospital patients[3] include inappropriate drug use,[4] adverse drug reactions,[5] drug underuse[6] and drug overuse.[7] To quantify and summarize different DRPs a classification tool was published for use by Norwegian physicians and pharmacists.[8]

Multidisciplinary teams consist of individuals from different disciplines who contribute to patient care from their own professional perspective; that is, these teams meet regularly without the patient to discuss individual patients' health care at case conferences. Safe drug prescribing has been addressed through multidisciplinary medication reviews in nursing homes.[2,9] Pharmacists' contributions in medication reviews and their participation at case conferences have been shown to improve quality of prescribing[10] and health economy.[11,12]

In Norway pharmacists' involvement in nursing homes has traditionally focused on supervising drug stocks and improving guidelines for drug handling. Their involvement in reviewing patients' drug charts and patient care teams has been limited.[2,13] In contrast, they have to a greater extent participated at case conferences with physicians and nurses in hospitals, despite the lack of established guidelines for pharmacists providing pharmaceutical care. However, knowledge about how physicians and nurses are experiencing multidisciplinary collaboration with pharmacists in both these settings is limited.

In a previous paper we described how DRPs in nursing home patients were identified and resolved at case conferences with pharmacists.[14] The pharmacists here performed medication reviews prior to multidisciplinary meetings, where the patients' physician and primary nurse were invited to discuss and reconsider the identified DRPs for groups of five to 10 patients at a time. Furthermore, relevant interventions were planned to resolve the jointly acknowledged DRPs.

With the present study we aimed to explore how physicians and nurses working in nursing homes experienced multidisciplinary collaboration with pharmacists. To improve the collaboration model for use in nursing homes these experiences were contrasted with experiences of physicians and nurses participating on multidisciplinary case conferences, including pharmacists, in hospitals.

Methods

Design for examining collaboration

According to Morgan, focus-group interviews are suitable for investigating people's mutual experiences regarding a phenomenon.[15] Another method suitable for exploring experiences is in-depth interviews.[16] With the purpose of obtaining data from different nursing homes and different hospitals both these methods were applied.

Study setting and participants

Nursing home informants were recruited from the three nursing homes where we had previously identified and resolved DRPs.[14] All physicians (three men, one woman) and a purposeful sample of six nurses (all women; two from each nursing home) were invited to take part in intra-professional focus-group interviews.

To recruit informants from hospitals for individual interviews, a letter of invitation was sent to the chief doctors at the rheumatology and geriatric departments of two different hospitals. Both hospitals were known to include pharmacists in the multidisciplinary healthcare team. The purposeful selection was intended to include informants who had experienced multidisciplinary collaboration with pharmacists over a period of time.

The nursing home interviews were planned to be conducted by a moderator and a secretary, scheduled at the first author's work address. In contrast to the hospital setting, the interviews were arranged at the informants' work place for logistical and geographical reasons. The first author interviewed the informants individually. All interviews were audiotaped.

Interview guide

A semi-structured interview guide[16] was developed for both the focus-group interviews and the individual interviews. Questions covered the following topic areas to answer the study objectives and are listed in Box 1. The open-ended interview questions, aiming to evaluate how physicians and nurses experienced multidisciplinary collaboration with pharmacists, were put to all of the informants.

Box 1 Interview questions serving as guidance during data collection

Personal experience with pharmacist collaboration
- How have you collaborated with a pharmacist?
- How did you experience this collaboration?
- In what way did the pharmacist contribute?
- How would you describe the multidisciplinary group dynamics when the pharmacist was present?

Impact of collaboration
- What did you expect from the collaborating pharmacist?
- Which differences do you experience when the pharmacist participated at the case conference?
- How has this collaboration developed your knowledge regarding drug use?
- How would you describe the pharmacist' abilities to give constructive feedback?
- How has this collaboration benefited the patients?

Structure of collaboration
- How would you describe the use of time when the pharmacist was present?
- How did the pharmacist adjust his or her professional role when entering the multidisciplinary team?
- Which conditions have to be put in place if this kind of collaboration is to be practical and worthwhile?
- How can this collaboration be developed within nursing homes?
- How can the pharmacist get more involved in drug therapy reviews?
- How can multidisciplinary collaboration with pharmacists improve?

The researchers

Authors KHH and AGG are both pharmacists who have worked with DRPs and medication reviews in nursing homes[14] and general practice.[17] Working with nursing home research aroused our interest in exploring how pharmacists can be involved in improving the quality of drug therapy and preventing DRPs among nursing home patients through multidisciplinary collaboration. PS is a general practitioner with experience in qualitative research.[18] Because of the interest that pharmacists may have in developing this collaboration to extend their professional role it was important to take a multiprofessional approach to the analytical process and to balance our interpretation of the findings.

Analysis

All interviews were transcribed (modified verbatim) by the first author. The analysis was done in accordance with the principles of systematic text condensation.[19] The transcripts were read by all authors to identify an initial set of categories for sorting the text. The categories the authors consented on were: resources, quality changes, awareness and change of behaviour, professional knowledge, and multidisciplinary collaboration. The material was analysed iteratively according to these categories and searched for units of meaning. These were de-contextualized and analogous units were grouped under abstracted headings. The content of these coded groups was expressed in generalized descriptions. Using these categories as a framework, we searched all material for additional perspectives on the core items, which we formulated as: (1) introduction of a new team member, (2) consequences for the collaborating health personnel and their patients and (3) perspectives on collaboration development. To facilitate the analysing process we used QSR NVivo version 8.

Ethics

The protocol of the study was presented and approved by the Regional Committee for Medical Research Ethics of Western Norway. To ensure confidentiality for the informants their names and work places were omitted during transcription of the digital recordings.

Results

Participants

Background information for the different informants is given in Table 1. From the three different nursing homes, two men and one woman agreed to participate in a mini focus-group interview for physicians. However, a problem arouse as one of the physicians was prevented from meeting as scheduled. Therefore, only two physicians (a man and a woman) were interviewed for 2 h. The first author later interviewed the remaining physician at his office for an hour. For the nurses the focus-group interview lasted 2 h; one nurse failed to attend as planned.

From the invitation letter sent out to the hospitals we received two eligible physicians, one woman and one man. A male respondent was selected because of his relatively young age, in contrast to the nursing home physicians and the other eligible candidate (50–54 years). For the nurses (all women), two of them were selected by the head nurse at the first hospital, while the last nurse was selected from a list of potential informants (in four total) at the other hospital. Each interview lasted from 35 min to 1 h. The results from the interviews are presented chronologically according to the identified core items.

Table 1 Background information on informants

Discipline	Age group (years)	Work place	Gender	Interview type
Physician	55–59	Nursing home	Male	Focus*
Physician	55–59	Nursing home	Male	Focus*
Physician	35–39	Nursing home	Female	Individual
Nurse	25–29	Nursing home	Female	Focus
Nurse	25–29	Nursing home	Female	Focus
Nurse	35–39	Nursing home	Female	Focus
Nurse	45–49	Nursing home	Female	Focus
Nurse	50–54	Nursing home	Female	Focus
Physician	25–29	Hospital	Male	Individual
Nurse	25–29	Hospital	Female	Individual
Nurse	30–34	Hospital	Female	Individual
Nurse	35–39	Hospital	Female	Individual

*Group interview with two physicians.

Introduction of a new team member

Different expectations

Health personnel working in nursing homes and on hospital wards expected different contributions from pharmacists. The nursing home informants regarded joint case conferences with pharmacists as an opportunity to get professional input in their effort to provide better patient care. The hospital informants reported more vague expectations of pharmacists as team members. However, they all reported that the review process was performed systematically.

> . . . we selected those patients using most drugs and who had most [medical] problems. . . . (physician, nursing home)

> I think it is very nice that they are available for questions, which is probably the most important to me. (nurse, hospital)

Lack of predictability in case-conference planning

The case conferences did not have the same firm structural form as other ward routines. Both professions reported that ambiguities as to when and if the pharmacist was supposed to attend their regular meetings resulted in some aggravation. As the meetings differed in form and content depending on the pharmacist's presence, this often affected the rest of the staff's plans for that specific day. In the hospital settings both physicians and nurses reported that at times it was unclear whether the pharmacist was supposed to attend their case conferences. Having different pharmacists working on the same ward underlined this problem.

Change of existing interaction

Initially, the informants in both settings experienced that the case conferences with pharmacists introduced a formal structure that changed the participants' behaviour. Most questions raised by the pharmacist challenged the physicians more than the nurses, by demanding clear professional answers. However, most of the participants reported that the meetings got less formal as the group members adapted to each other, resulting in improved team interaction.

> Is it then right that you, the physician and the pharmacist meet? (moderator)

> Yes, because our presence is also useful, even if most of the questions are directed towards the physician- . . . . (nurse, hospital)

Questioning of professional boundaries is challenging

Several nurses from both settings and one hospital physician reported that it was challenging for the physicians when the pharmacists questioned their prescribed drug therapy.

> You mentioned that the physician had to bite his tongue. . . . I sensed that myself, as well. It emphasized that you really had to get a grip of yourself, but it was actually ok. (nurse, nursing home)

A nursing home physician emphasized how the pharmacists delicately presented their findings verbally, outlining the value of not presenting the results in a condescending way, to avoid leaving other team members humiliated.

> And you think as a physician that you are the one responsible for the medical treatment, and to have a pharmacist present is sort of a bonus, but at the same time it can be challenging for your self-image and your self-esteem, especially when there are important issues with regard to drug therapy, which you haven't thought of yourself, but who someone from the outside points out. So, there were some errors, or sub-optimal prescribing, which the pharmacists corrected. And, objectively, it was for the better, but subjectively, it was challenging being the one corrected. (physician, hospital)

Consequences for the collaborating health personnel and their patients

Shift in focus

> I noticed when the pharmacist was present that the physician spent more time discussing with her, in some way I experienced the physician to be more occupied with her during these case conference. (nurse, nursing home)

The informants from both settings reported a shift in focus from the way they had previously cooperated, towards increased emphasis on DRPs, when the pharmacist attended case conferences. In traditional meetings, where no pharmacist was present, matters concerning medication attracted less attention. Most felt that this shift added quality both for them and their patients, although they also outlined the importance of not leaving out issues which they previously would discuss.

Raising quality on prescribing awareness

Most participants felt that this collaboration improved patients' drug treatment. On the other hand, they found it

difficult to explain the actual impact in any detail. Being challenged to explain the actual impact of case conferences, most of the informants mentioned drug–drug interactions. One of the hospital physicians said that after the pharmacists performed medication reviews, almost no drug–drug interactions prevailed. The nursing home staff experienced that pharmacists were concerned about pharmacokinetics and pharmacodynamics in the elderly; for example, if inappropriate drug prescribing was revealed the pharmacists often suggested alternative drugs that were more appropriate for elderly patients.

The pharmacist gave recommendations with regard to drug cessations, dose adjustments, drug administration or other drug safety issues. The physicians felt that professional feedback on therapy strategies was valuable for raising their prescribing awareness.

> I now see [the] drugs patients received all year through, e.g. one patient who received a drug for allergy, so this year [after the pharmacist visit] was the first year it was discontinued. And when I checked the medical records, it had been given each day for several years. (nurse, nursing home)

> I would mention drug of choice – for the elderly. Several of the drugs we prescribe to younger patients are not intended for use in the elderly population. To watch and monitor pharmacokinetics, elimination half-life, and excretion mechanisms, with regard to the elderly – that's very important. (physician, nursing home)

Time strain

> The immediate disadvantage is that it demands extra time, and that it also reduces time for clinical examination and other tasks. And it also occupies the nurses – in this dialogue afterwards. (physician, nursing home)

When the pharmacist was present, meetings lasted longer than usual. This affected both the staff workload and patients. In some situations, the nurses reported that their other care concerns were not resolved at case conferences if pharmacists were present, either because time ran out or because of a shift in focus onto drug therapy. For the physicians, time spent on case conferences resulted in less time for clinical examinations of patients. When questioned why the meetings became longer, the informants stated that drug therapy issues normally had less attention and time dedicated to them, and that they had difficulties in prioritizing tasks at the case conference.

Despite case conferences demanding extra time, most felt that the medication reviews resulted in improved patient care.

> It demanded more time than usual in the beginning. But when we and our physician got used to this way of collaborating, it improved. Usually, our case conferences are time-demanding. (nurse, nursing home)

Perspectives on collaboration development

Continuous or intermittent medication reviews?

> . . . to put it like this, I would prefer to not have them there every Thursday. (nurse, nursing home)

A broad range of opinions were expressed with regard to how often pharmacists should participate at the nursing homes' weekly case conferences. While some recommended twice annually, others argued the case for continuous reviews to warrant good-quality drug regimes.

Modified, time-saving practice

Without staff interference, pharmacists initiated the medication reviews by examining patients' medical records and drug charts. Most of the informants confirmed that this approach required less time and resources from them. However, two of the physicians expressed that the present model for case conferences was feasible within the existing setting and time frame, and that proper organization would benefit this collaboration.

> I believe that the way pharmacists gathered data themselves, required least work from the nurses. I also think that if we should have contributed in any way, this would have demanded too much of us. However, now it required nothing of us. (nurse, nursing home)

Who should attend case conferences?

Hospital nurses in particular felt that the dialogue between the physician and the pharmacist was sometimes too difficult to follow. One suggestion to resolve this was to present findings from medication reviews at case conferences without nurses taking part. This suggestion was also agreed to by the hospital physician. In contrast, the nursing home nurses and physicians reported that it was important that nurses participated in the meetings as they were the ones with the most profound patient knowledge. Except for specialized physicians and psychologists, other healthcare professionals were not considered relevant to take part in the medication reviews in the nursing homes.

Discussion

Main findings

This study adds insight and descriptions about how nurses and physicians experience multidisciplinary collaboration at

case conferences with pharmacists. Organizational problems were experienced; that is, what professional contribution team members could expect from pharmacists and what professional role the pharmacist should have in the multidisciplinary teams. Both professions reported that ambiguities as to when and if the pharmacist was supposed to attend their regular meetings resulted in some aggravation. On the other hand, the informants valued the contributions from pharmacists with regard to pharmaceutical skills, and felt that this raised awareness of prescribing quality.

Strengths and limitations of the study

The qualitative design used to evaluate our previous work[14] cannot answer whether or not the introduction of pharmacists to the multidisciplinary team reduced inappropriate prescribing or improved patients' quality of life. Since pharmacists are not normally contributors to multidisciplinary teams in nursing homes, we experienced difficulties in the recruitment of informants. Methodological problems arose as we were unable to run the focus groups with the nursing homes physicians as intended. In order to contrast the experiences from the nursing home setting, a physician and three nurses from the hospital setting were interviewed. Although other views could have come up by interviewing additional informants, the hospital interviewees' experiences demonstrate that this type of collaboration with pharmacists is at an early stage.

Whether findings are transferable to similar settings depends primarily on the method used by the pharmacists performing medication reviews. The pharmacists may differ in their professional contribution in case conferences and in their skills and abilities to collaborate and communicate with other health professionals in a way that may hamper transferability.

We believe that using open questions (see Box 1), allowing the informants to share real-life experiences, makes the results valid for the sample and the phenomenon being studied. Nevertheless, internal validity might suffer from the fact that a pharmacist served as moderator, which could have frightened informants about sharing divergent opinions that criticized the pharmacist. However, both moderators reported that the informants spoke freely during the interviews.

In 2002 Schmidt and Svarstad reported that the quality of drug use in nursing homes was positively associated with the quality of nurse–physician communication and with regular multidisciplinary team discussions addressing drug therapy.[20] However, in 2009 O'Brien *et al*. stated that little is known about how nurses and physicians collaborate in nursing homes.[21] Since literature searches revealed few studies, we believe that even less is known about how pharmacists collaborate with nursing home health professionals. In the following section we seek to interpret what this study adds to the knowledge of how multidisciplinary collaboration with pharmacists can be customised to improve prescribing quality.

Introduction of a new team member

This study demonstrates how non-professional aspects of professional collaboration may have clinically important implications in medication reviews. We found that there are at least four areas to consider when introducing pharmacists to the multidisciplinary team. First, the expectations of the other professions to the assignment that the pharmacist is supposed to perform should be clarified at an early stage. Second, health management should introduce new cooperation routines in a thoroughly planned way with clear meeting schedules. This seems rather obvious, but ambiguities about the purpose and scheduling of case conferences were a cause of frustration and uncertainty in both care settings. Third, introducing a new profession may change existing interactions between team members. It is important that all involved professionals are aware of this, and allow time to discuss how to cope with this. Finally, having drug therapy decisions questioned can be challenging, in particular for the physicians. Therefore, pharmacists need to communicate with physicians on a superior level on how this can be resolved in the best way possible, to sustain the integrity of both professions.

When introducing a new team member does not work as intended it is often easiest to blame the health personnel involved and their resistance to change, thus underestimating the importance of organizational structures and mechanisms which can facilitate team functioning.[22] Levenson and Saffel aimed to define some of this structure by clarifying the roles when pharmacists and physicians collaborated in nursing homes.[23] When initially presenting our study[14] to the nursing home leaders, we only presented how the pharmacist was to perform the medication reviews. We did not emphasize key elements (i.e. defining a clear purpose and goal for the pharmacist other than performing medication reviews or defining other responsibilities and which contributions team members should expect from the pharmacists) for an effective multidisciplinary approach.[24] Neglecting the importance of doing so can to some extend explain why the physicians in our study found it challenging to be questioned on their drug therapy choices. Besides, the nursing home physicians were not used to being exposed to the professional judgement of other professionals in front of nurses. This may have contributed to a change in tone towards more formal communication at case conferences.

Consequences for the collaborating health personnel and their patients

Interviewees from both settings described what they felt were the consequences of multidisciplinary collaboration

with pharmacists for themselves and their patients. The three results presented – shift in focus, raising prescribing quality awareness and time strain – are therefore all regarded as issues of importance if pharmacists should attend case conferences. First, the shift in focus experienced from general care issues towards DRPs is in itself not surprising when pharmacists are introduced to the healthcare team. Adding a new team member gives the other team members the opportunity to explore and exploit the skills possessed by the new member.

Second, a systematic review from 2006 concluded that introducing clinical pharmacists in the care of inpatients resulted in improved drug treatment, with no evidence of harm, a finding that is in line with our study.[25] Our informants stated that pharmacists had knowledge which contributed to raising prescribing awareness without being able to specify the clinical impact. Even so, the interviewees reported a wide range of benefits from having pharmacists present at case conferences. One might argue that the pharmacists addressed too wide a range of aspects of prescribing quality. Therefore, we propose a more systematic approach to the medication review according to an agreed protocol, as a way to further enhance the professional input.[23]

Third, the extra time spent on drug charts reduced available time for other tasks. If pharmacists should be included in the nursing home healthcare team there is a need to clarify whether time spent on medication reviews and at case conferences has a positive impact on patient outcome, or is perceived as cost-effective by the funding municipalities. In 2006 a review of the US Omnibus Budget Reconciliation Act (OBRA) guidelines was completed.[26] Three areas – unnecessary drug use, pharmacy services and medication review – were revised. The latter required that consultant pharmacists should perform medication reviews monthly. By moving from an *ad hoc* approach to a systematic continuous approach quality should improve with time, since the pharmacist's patient knowledge will improve. Therefore one may argue that a more permanent implementation will, with time, balance the time spent on medication issues versus caring issues for patients.

Perspectives on collaboration development

Nygaard and Bondevik[27] state that it is not for each health profession to decide whether or not they want to collaborate with others in geriatric care. The patient has a legal right, at any given time, to receive a coordinated and flexible health service provided by professionals who possess the relevant skills. The health of the elderly is a dynamic state, demanding awareness from the nursing home personnel.[27] As drug therapy can change considerably over time[28] there is a need to discuss the frequency of medication reviews to maintain good prescribing quality, regardless of who is performing them.

The hospital nurses of this study suggested that the reviews might be done without their presence. In contrast, nursing home nurses preferred to be involved in decisions regarding the patients' prescribed drugs. These different opinions may reflect the difference in available physician time in the two settings.

During recent years pharmacist-led studies have reported that pharmacist-performed medication reviews are beneficial by reducing the total number of drugs prescribed, identifying and solving drug-related problems, and adding pharmacists' skills and knowledge to benefit both healthcare teams and patients.[9,10,14] However, there is limited evidence for a positive effect on outcomes like hospital admission and mortality.[29] This qualitative study can offer explanations why anticipated outcomes were not observed. We believe that future approaches initiated by pharmacists to optimize the quality of drug therapy should take into account organizational issues to a higher degree than previous studies have done. This may be assessed by Delphi surveys or by using nominal group meetings.[30]

Conclusions

Physicians and nurses valued the pharmacists' services and reported that this collaboration improved patient drug therapy. However, before implementing this service in nursing homes, there is a need to create an organizational framework for this collaboration to support the professional role of the pharmacist.

Declarations

Conflict of interest

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

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