A systematic review of the research on communication between patients and health care professionals about medicines: the consequences for concordance

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Accepted for publication
15 April 2004

Keywords: communication, concordance, health care professional–patient interaction, medicine-taking, systematic review

Abstract

Objectives We draw on a systematic review of research on two-way communication between patients and health practitioners about medicines in order to determine the extent to which concordance is, or is not, being put into practice.

Data sources Six electronic databases were searched using the following categories of search terms: health care professionals, patients/consumers, medicine-taking/prescribing and communication. Articles were also identified from handsearches of journals, article reference lists and the Concordance website.

Review methods Studies published between 1991 and 2000 were included. Studies were not excluded on the basis of design, methods or language employed. Abstracts of identified articles were assessed by at least two reviewers and the full articles were assessed by one reviewer and checked by at least one other reviewer. Data on the design, analysis and relevant findings were extracted.

Results A total of 11 801 abstracts were reviewed and 470 full articles were retrieved. Of the 134 articles subsequently included, 116 were descriptive studies. All but 10 of the papers were written in English.There were mixed findings about the extent to which patients feel that their beliefs, experience and preferences about medicines can be shared. Doctors tend to dominate discussions in consultations, although patient participation is associated with positive outcomes. Health care professionals' behaviour can impede as well as enhance patient involvement.

Conclusions There is little research that examines fundamental issues for concordance such as whether an exchange of views takes place. It is possible that interventions are needed to facilitate the development of concordance in practice.

Introduction

The traditional model of adherence (also known as compliance) does not value patients' beliefs, concerns and preferences about medicines. The concordance model, a new approach to the process of prescribing and medicine-taking, was originally conceived and has most commonly been used to define a process of prescribing and medicine-taking based on partnership. In a concordant consultation the patient and the health care professional participate as partners to reach an agreement on when, how and why to use medicines, drawing on the expertise of the health care professional as well as the experiences, beliefs and wishes of the patient.[1]

This paper considers the extent to which concordance may be judged to be happening in practice. As concordance is a recent construct, the evidence presented is drawn from a systematic review of the research on two-way communication between patients and health practitioners about medicines. The review had a broad focus that included research examining patients' communication with different health professionals about a wide range of medicines. The studies identified examined how patients and practitioners communicate from the point of view of observers, practitioners or patients and also patients' and practitioners' opinions about their communication with each other.

As there is no consensus about the constituent elements of concordance, in order to determine the extent to which concordance is, or is not, being put into practice we identified three elements, which given the definition of concordance appear necessary, although are not sufficient, for concordant practice. These elements were identified from the relevant findings of the descriptive studies included in the review and therefore they represent those areas that have been researched, rather than necessarily the most quintessential aspects of concordance. They are the (i) evidence that patients share their beliefs, experiences and preferences, (ii) information health care professionals ask patients to provide, and (iii) balance of discussion between health care practitioners and patients. As two-way communication about medicines is crucial for concordance, we also consider the barriers to two-way communication about medicine and the value of good communication. Finally, we consider the efficacy of interventions designed to improve aspects of two-way communication about medicine.

Methods

Selection criteria

The systematic review aimed at identifying all studies published between 1991 and 2000 that investigated communication between patients/consumers and practitioners about medicines. Studies were not excluded on the basis of design, methods or language. For the purposes of this review, communication was considered to be a two-way interaction, not just the provision of, or desire for, information.

Identification and selection of relevant studies

Full searches of the literature were conducted using six electronic databases: Medline, EMBASE, CINAHL, PsycINFO, Social Science Citation Index and Science Citation Index. The searches retrieved articles that contained one or more terms from each of the following four categories of search terms: health professionals, patients/consumers, medicine-taking/prescribing, and communication. Subject headings (index terms) and free-text keywords were used. Relevant articles were also identified from other sources including handsearches of six relevant journals, reference lists of included articles, Cochrane Controlled Trials Database and the Concordance website (http://www.concordance.org).

The titles, abstracts and keywords of the articles identified from the results of the searches of the electronic databases were assessed by at least two reviewers. The reviewers independently selected studies that fulfilled the selection criteria and met to resolve disagreements. The full articles of the studies considered to be relevant were then reviewed by one of four reviewers and checked by at least one other reviewer. Each of

the non-English language articles was assessed by one reviewer who was fluent in English as well as the language of the article. Their decision to include or exclude the article was checked by at least one other reviewer.

Data extraction and synthesis

For each of the included articles, data on the design, analysis and relevant findings were extracted and recorded by one reviewer (KC). A coding framework was set up to code individual findings about two-way communication about medicines in the descriptive studies. Relevant findings were coded according to which communicative act they described (e.g. asking questions, initiating new medication topics, requesting medicines), if the act was by a patient, professional or both, and whether they described the occurrence of the act, its effects, the factors affecting it or patients'/professionals' attitudes towards it. The findings relating to each communicative act were then grouped into themes relating to concordance.

Findings from the intervention studies were described and grouped into categories according to the health care provider involved (i.e. doctors, pharmacists or nurses/medical assistants).

The descriptive studies identified were not weighted as the different designs and methodologies employed meant there was a lack of any clearly identifiable criteria upon which weighting could sensibly be based. Only the methodological quality of the intervention articles was assessed. Further details of the process of the review are provided elsewhere.[2]

Results

A total of 11 801 abstracts were reviewed, and 470 full articles were retrieved. Of the 134 articles that were finally included 116 were descriptive studies. All but 10 of the papers were written in English.

Initially we examine the extent to which concordance is, or is not, currently being put into practice drawing solely on the data collected from descriptive studies. We then provide a brief overview of the data from the intervention studies in order to consider the efficacy of interventions designed to improve aspects of two-way communication about medicine (see Table 1).

Due to the large number of descriptive studies included in the review we have not been able to include the findings of all of them, but instead have discussed the findings which are most relevant to the three themes of concordance identified. Table 2 shows the number of studies which produced findings relating to each theme.

The inclusive nature of the review means the studies identified described interactions in a variety of different health care settings and systems and used a range of research methods. For this reason comparison and the development of generalizations have proved difficult, but we are able to present the contradictions in published work and suggest areas in which future work might be necessary.

Evidence that patients share their beliefs, experiences and preferences

A key element of concordance is that patients perceive the value of sharing their experiences and attitudes and feel comfortable about doing so. There is evidence that the majority of patients believe talking to health care professionals about medicines is important and useful[3] and that they are happy to discuss their concerns when encouraged to do so by a health care professional.[4] In addition, patients perceive that doctors encourage them to ask questions about their medicine,[5–7] give them time to do so[8,9] and tell them what to do if they have questions after the consultation.[10] These findings suggest there may be some basis for the development of concordance. However, there is also counterevidence both from observational studies, and those based on patient self report, that health professionals may not always appear to encourage patients in this way.[11–14] This is a significant barrier to concordance. Furthermore, patients have concerns about medicines that they do not share with their health care professional[4,15] and practitioners may block or fail to explore any concerns expressed.[11,16–18]

Table 1 Intervention studies included in the review

Study	Country	Participants	Intervention
Airaksinen *et al.* [51]	Finland	Consumers at seven private pharmacies	Advertisement campaign in pharmacies to encourage consumers to ask questions about their medicines
Aufseesser-Stein *et al.*[47]	Switzerland	34 outpatient clinic doctors and their patients	Seminar for doctors on communicating about prescription medications
Barnett *et al.*[52]	US	323 consumers collecting a new prescription at community pharmacies	Written message for patients encouraging them to write questions for the pharmacist who then incorporated answers into their counselling
Blenkinsopp *et al.*[55]	UK	180 patients with hypertension at 20 community pharmacies	Pharmacist consultations to identify patients' adherence problems
Clark *et al.*[48,50]	US	74 general practice paediatricians	Interactive seminar to help doctors develop partnerships with asthma patients
Dow *et al.*[45]	US	48 psychiatric inpatients	Communication skills vs. medication education programme
Evans *et al.*[46]	UK	33 psychiatric inpatients	Medication fact sheet read through with a doctor who explained and answered questions
Gourley *et al.*,[54] Solomon *et al.*[57]	US	231 patients with hypertension or chronic obstructive pulmonary disorder at 11 medical clinics	Pharmacist consultation providing patient-centred care
Hanna[61]	US	51 female adolescents seeking oral contraceptives for first time at two family planning clinics	Nurse–patient consultation in which they identified oral contraceptive benefits and barriers and developed an adherence regimen to manage barriers
Kelly *et al.*[59]	Canada	31 patients with ovarian cancer receiving chemotherapy at day care unit	Patients telephoned by a nurse shortly after chemotherapy treatment to assess its effects and side-effects and patients' ability to manage
Kradjan *et al.*[53]	US	Staff and consumers at 90 community pharmacies	Asthma management programme by pharmacists including inhaler technique counselling, and talking to patients about overuse of inhalers
Lacroix *et al.*[49]	Switzerland	Eight outpatient clinic doctors	Seminar for doctors on communicating about prescription medications
Mills *et al.*[60]	UK	303 patients with epilepsy at 14 general practices	Epilepsy nurse at practices including providing information, advice and support to patients
Raynor *et al.*[56]	UK	143 elderly patients at risk to non-adherence at six community pharmacies	Home visits by community pharmacists to identify and deal with medication-related problems
Schectman *et al.*[58]	US	162 patients with hyperlipidaemia at an active lipid clinic	Telephone calls from medical assistants to help patients with their medication problems
Wildersmith and Schuler[62]	Switzerland	164 postoperative patients in a surgical gynaecological ward	The ward nurse asked patients if they wanted analgesia and, if not, why. The nurse then explained the aims and possibilities of analgesia and answered questions

A topic of great relevance when considering concordance is patients' actual medicine-taking. There is evidence both that non-adherence may be disclosed[18,19] or withheld[15,20–22] by patients. Patients may withhold information about non-adherence for fear of incurring the wrath of their doctor.[23] Analysis of audio-taped consultations found that even when the topic of adherence was raised it was not always discussed or explored with patients, instead doctors commonly responded by changing the medication or providing education.[18] The failure to address adherence issues fully makes achieving concordance, which involves a process of open negotiation about prescribing and medicine-taking, impossible.

Table 2 Descriptive studies included in the review

	No. of descriptive studies
Studies conducted in	
UK	47
North America	42
Europe (exc. UK)	17
Asia	3
Australia	3
Africa	2
Multiple countries	2
HCPs involved	
Doctors	52
Pharmacists	34
Nurses	4
Medical assistants	0
Various HCPs	16
Unspecified HCPs	10
How data about communication was collected	
Audio- or video-taping of consultations and HCP and/or patient reports	11
Audio- or video-taping of consultations	26
HCP reports	16
HCP and patient reports	7
Patient reports	56
Medication communicated about	
Specific medicines	85
Prescription medicines (unspecified)	23
OTC medicines (unspecified)	5
OTC and prescription medicines (unspecified)	3
Aspects of concordance examined	
Patients' sharing their beliefs, experiences and preferences	75
HCP requesting information from patients	58
Balance of discussions	60
Barriers to two-way communication	54
Value of good communication	41

HCP, health care professional; OTC, over the counter.

According to both patient reports and comparisons between taped consultations and patient reports, when patients have a preference to be, or not to be, given a prescription they do not necessarily voice it in the consultation.[24–26] Audiotaped consultations indicate that patients may also belittle the usefulness of treatments in the consultation so as to save face if they are not offered a treatment.[23] These findings suggest that many patients are not as confident discussing treatment as their reports suggest. This has implications for the likelihood of the success of concordance, which relies on open discussion about treatment options.

Requests by health care professionals for patients to provide information

Although patients are often asked questions about how they take their medicine[27] and their experience of taking their medicines,[19,27] this is not sufficient for concordance which requires a two-way discussion about treatment. Questions relating to patients' preferences for particular medicines,[26] and their ability to adhere,[19,28] which are central to concordance, are only asked in a minority of consultations. There is conflicting data about how important practitioners feel it is to listen to patients' concerns.[15,26,29]

Balance of discussion in consultations

Despite stating a preference for patient participation in discussions and decisions about treatment,[29] doctors spend more time speaking than patients and are more likely than the patient to initiate all medicine topics, except the patient's opinion about medicines.[30] Thus practitioner behaviour may be a barrier to concordance. The content of discussion is also important as research indicates there is more discussion about benefits than side-effects, risks and precautions.[30] This is problematic for concordance, as people need to be fully informed if concordance is to be realized. Equally crucial for concordance is that practitioners express their own views about medicines, yet this does not always appear to happen.[31,32] If practitioners are unwilling or unable to engage in discussions about medicines then concordance will not be possible.

Analysis of consultations suggested that, despite patient reports indicating the opposite,[5] patients rarely initiate medication topics and can take a passive role when discussing medicines with health care practitioners.[17,30,33] Moreover, when providing information, doctors rarely assess patients' understanding of it,[19] despite an awareness of the importance of doing so.[26,34]

While few studies have involved an in-depth examination of patient–pharmacist communication, a study which examined interactions between pharmacists and parents of children with cancer suggested that asymmetry in discussions is reduced when patients reveal knowledge of the treatment, or use technical jargon.[35] Thus patients' expression of their knowledge can lead to a more equitable relationship, which is a necessary requirement for concordance.

In a concordant consultation the patient and practitioner work together to reach an agreement on treatment. We found scant evidence for the occurrence of shared decision-making.[16,17,33] Patients may be asked if they agree with the treatment decision at the end of a consultation and techniques including the use of words such as 'we', or 'may', 'could' or 'maybe' are used by doctors to soften instructions.[28] Thus the appearance of sharing is present but not the reality. These examples suggest that health care professionals may believe they are implementing concordance while closer examination may reveal this is not the case.

Barriers to two-way communication about medicines

Two-way communication about medicine is crucial if concordance is to be achieved yet patients may feel unable or that it is inappropriate for them to participate in the consultation.[22] There are mixed findings about the extent to which patients want to be involved in decisions about different medicines. Thus, for example, most women wish to be involved in decisions about hormone replacement therapy,[36,37] but some patients would rather the doctor make decisions about other medicines, feeling it is the doctor's responsibility to decide about treatment.[26,38] In terms of concordance, a patient's desire for the practitioner to take the treatment decision does not rule out concordance so long as the patient's decision is informed.

Another potential barrier to concordance is that in consultations medicines are not always referred to by name.[16,19,39] This may lead to misunderstandings and may be problematic both in the consultation in ensuring that the practitioner and patient are referring to the same medicine and also in empowering patients to obtain information outside the consultation so they are able to take part in more concordant consultations.

Patients ask different questions with different health care professionals.[5] In relation to communication with pharmacists both observational studies and those reporting pharmacists' perceptions suggest some people do not want counselling by the pharmacist and are irritated by attempts to provide it.[13,40] Moreover, pharmacists do not offer counselling in the majority of cases.[3,41] Thus the incorporation of concordance into consultations is likely to vary according to the professionally constrained role of the health care professional involved and the fulfilment of this role, and also the patient's perceptions of the health care professional's role.

Most patients prefer to discuss medicines with their usual doctor,[42] which demonstrates the importance of continuity of care. This suggests that it may be easier initially to achieve concordance in settings that have greater scope for continuity of care, such as primary care, and in relation to particular types of conditions, namely chronic rather than acute illnesses. It should, however, be noted that there is evidence that continuity of care is not associated with greater patient disclosure of their feelings about their medicines.[42]

The value of good communication about medicine

Practitioners' communication style may help patients become actively involved in discussions about their medicines.[23] Patient participation in discussions about medicines and greater involvement in decisions was found to lead to greater subsequent understanding of treatment, adherence, more satisfaction about both the visit and doctor behaviour, and less regret about the treatment decision.[43,44]

If patients do not express their views and concerns there may be negative consequences

such as mismatches and misunderstandings between doctors and patients. These can result in dissatisfaction, as well as the use of unnecessary medicines and non-adherence.[15,24]

The efficacy of interventions designed to improve aspects of two-way communication about medicine

Six intervention studies were identified that focused on communication between doctors and patients. Two of the interventions sought to improve patients' communication skills.[45,46] These led to an increase in patients' knowledge about medicines and communication skills, although there was no impact on the extent to which patients reported problems or symptoms, made medication requests or suggestions, or their perceived control. The other four papers discussed training sessions for doctors and were found to lead to improvements in doctors' general communication with patients and in patients' medication knowledge.[47–50]

Seven papers focused on patient–pharmacist interactions. Two interventions were designed to encourage patients to ask questions and these were found to be partially effective. The use of advertisements to encourage patients to ask questions had a positive impact on pharmacists' communication but no significant impact on patients' question asking behaviour, the amount of information provided or the duration of the interaction.[51] When patients were asked to write down the questions they wished to ask they asked more questions and there were longer consultations. However, there was no significant impact on the information provided by pharmacists and no impact on satisfaction, medication knowledge or compliance.[52]

Five papers described interventions targeted at the pharmacist.[53–57] These showed an increase in patient health outcomes, adherence, satisfaction with pharmacist services and pharmacists' communication and knowledge of their disease and treatment as well as decreases in the number of medicines prescribed, medication-related problems and the cost of medication.

It appears that in terms of concordance if pharmacists are reminded of the fact that patients may ask questions then this may be sufficient to improve the way they provide information. Interventions targeted at the pharmacist directly, rather than patients, were more likely to encourage changes towards concordant practice.

Finally there were five interventions that focused on interactions between patients and nurses or medical assistants, two involving telephone services[58,59] and three involving face to face discussion of medicines with a nurse.[60–62] The telephone services had some positive effects with people feeling better informed and more likely to contact the clinic with specific queries. The three interventions in which patients discussed their medicines with a nurse face to face indicated that this may lead to patients being more likely to have subsequent discussions with the doctor and more adherent with both medicines and appointment attendance.

Conclusions

The review was designed with broad inclusion criteria, and therefore includes studies that employed different methodologies, focused on different practitioners, conditions and medicines and were conducted in different countries. These differences make it difficult to make any generalizations, while the data are too contradictory and not sufficiently robust to investigate sensibly patterns of communication across different countries, practitioners, conditions or medicines. In addition, different methodologies, such as the use of patient reports and observation of consultations, reveal contradictory results posing additional problems in relation to the comparability of data.

Despite a belief that patients should participate in discussions about medicines, health care professionals' behaviour can impede as well as enhance patient involvement. If concordance is to be achieved then it is necessary for both patients and practitioners to disclose and discuss their concerns and views. In order to encourage patients to feel comfortable in this task,

practitioners need to listen carefully and empathetically. Yet much of the research identified describes an asymmetrical relationship typical of paternalistic interactions.

There is limited research on communication between nurses and patients and little in-depth analysis of communication between pharmacists and patients. Research is needed to look at the impact of concordance on issues such as the relationship between health care practitioners and patients, patients' further use of services, and adherence. Inconsistencies between findings means further research is needed to investigate the impact of patients' race, age, gender and the type of health care system on providers' question asking, and the relationship between questioning and patients' expression of medication complaints and adherence.

As concordance is a relatively new concept it was unlikely to be in evidence in practice, but what was more likely was evidence of some of the necessary elements for concordance, such as question asking. As stated earlier, there is no consensus about the constituent elements of concordance, however we found little research that examined fundamental issues such as whether an exchange of views is taking place, whether health care professionals respect patients' views and if health care professionals and patients are working together towards shared decisions, although the limited evidence available suggests these aspects of communication are not happening. The studies in which two-way communication was assessed as an outcome of an intervention indicated that providing training on communication to professionals or patients could improve some aspects of two-way communication. The studies involving two-way communication as part of the intervention itself showed that structured interactions in which patients are asked about their experiences and concerns have many positive effects including increases in patient knowledge, adherence, health outcomes and satisfaction. It also appears that face to face interactions are more effective than telephone contacts. As there does not appear to be evidence that concordance, or even a weaker version of it, is apparent in practice, but that interventions to encourage two-way communication may have some effect, it is possible that further, more focused, interventions are needed to facilitate the development of concordance in practice.

Acknowledgements

We are grateful for the help and support received from the following. Sir Siegmund Warburg's Voluntary Settlement funds the Guy's, King's and St Thomas' Concordance Unit. Merck, Sharp and Dohme made a small financial contribution to the review. Gary Horrocks, a Senior Information Specialist at King's College London, assisted us with the design of the search strategy for the review. Angela Harden gave advice about using the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) criteria for assessment of methodological quality. The reviewers of the non-English language articles are as follows: Juan Baeza (Spanish articles), Sarah Detaille (Dutch), Kristin Eskildsen (Norwegian), Isabelle Fernandez (French), Joke Haafkens (Dutch), Claudie Haxaire (French), Andrew Herxheimer (French and Flemish), Vlasta Kakosova (Slovak), Anja Kapmeyer (German), Pia Knudsen (Danish), Irene Kwan (Chinese), Fusako Tamura (Japanese) and Piet Verbeek-Heida (Dutch).

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