

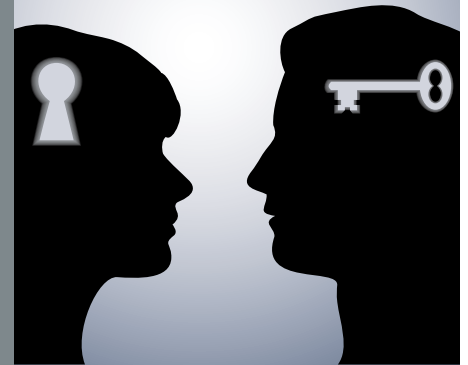
DOCTOR–PATIENT COMMUNICATION, PATIENT KNOWLEDGE AND HEALTH LITERACY: HOW DIFFICULT CAN IT ALL BE?

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Patients who understand their injuries, the aims and potential of their treatment are likely to experience superior outcomes. We review the literature on positive, encouraging doctor–patient communication, and the impact of health literacy and education on patient knowledge in medicine and surgery, with a particular emphasis on orthopaedic surgery. We also highlight methods of improving doctor–patient communication and patient knowledge.

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MEDLINE®, PubMed and ScienceDirect® were searched for English language manuscripts. The search terms used were ‘communication’, ‘patient knowledge’, and ‘health literacy’ in the broader context of general medicine and surgery. These search terms were also used in combination with ‘orthop(a)edics’ and ‘surgery’. Publications from all article types and within the past 20 years were selected. The reference lists of articles identified by the search strategy were also searched.

The art of communication

Medicine relies on effective communication between healthcare providers and their patients. Hall *et al* stated: ‘*Medicine is an art whose magic and creative ability have long been recognised as residing in the inter-personal aspects of the patient–physician relationship*’.¹ Good communication and interpersonal skills are powerful tools in a clinician’s arsenal, essential for the delivery of high-quality healthcare. It is only when these are effective and balanced that doctors can gather information to facilitate accurate diagnosis, counsel appropriately, give therapeutic instructions and establish caring relationships with patients.^{2–4} These are core clinical skills required to achieve the best medical outcomes and promote patient satisfaction.⁵ One public opinion survey conducted by the American Association of Medical Colleges highlighted that important attributes of the doctor were a caring attitude and communication skills (85% of participants), good listening skills (76%) and the ability to explain complicated medical procedures (77%).⁵

The doctor–patient relationship should be two-way and mutually beneficial. It involves developing shared perceptions and feelings regarding the nature of the problem, goals of treatment and psychosocial support.^{4,6} Basic communication skills alone are therefore insufficient for creating and sustaining a successful therapeutic relationship.

In orthopaedic surgery, Levinson and Chaumeton found that the mean duration of a consultation between orthopaedic surgeons and patients was 13 minutes, and the majority of the talking was done by the surgeon.⁷ Their study also observed that orthopaedic surgeons expressed empathy towards the patient infrequently and most consultations used closed questions, which limited patients’ responses.

Effective communication should begin within seconds of any consultation and this is often where the problem lies. Generally, patients initiate the consultation discussing the problem; this can be verbose and convoluted. Patients sometimes tend to save important issues until the end of the consultation. The doctor, however, interjects within seconds with a series of questions and the most important issue that the patient has been saving can be missed.

Herndon and Pollick have stated boldly that orthopaedic surgeons do not seem to be very good communicators⁵ and an early study by the American Academy of Orthopaedic Surgeons (AAOS) highlighted this.⁸ According to the AAOS survey, 75% of the orthopaedic surgeons believed that they communicated satisfactorily with their patients but only 21% of the patients

reported satisfactory communication with their doctors. Similarly to previous studies, this survey highlighted that orthopaedic surgeons failed to demonstrate good listening skills, showed no signs of empathy or a caring nature towards the patient and that consultation times were too brief.

One particular area that has been shown to result in poor communication between the doctor and patient is the use of medical jargon and subsequent inconsistencies in the terminology used by medical practitioners. In the UK, fracture clinics are among the busiest clinics in the hospital. Poor communication in these clinics is perhaps inevitable, with short consultations by overstretched medical practitioners and patients who are often worried or in pain.⁹

One question sometimes posed by patients in fracture clinics is: 'Have I got a fracture or a break?'. The dictionary definition of a fracture is 'a crack or break in a hard object or material, typically a bone',¹⁰ implying there is no difference between a fracture and a break. Peckham showed that miscommunication occurs between the terms 'fracture' and 'break'.¹¹ The study highlighted that 81% of patients believed there was a difference between a fracture and a break and, of these patients, 71% thought a fracture was better than a break.

Over a decade later, Kampa *et al* conducted an audit of patients' perceptions of the terms 'fracture' and 'break' to determine whether this misconception was still widely held.⁹ Similar results were found to those of Peckham:¹¹ 84% thought there was a difference between a fracture and a break, with 68% believing a break to be worse than a fracture.⁹ Kampa *et al* then performed a reaudit, introducing a patient information leaflet on broken bones and fractures. This time, 67% felt there was a difference between a fracture and a break, with 65% believing a break to be worse than a fracture. However, only 21% of the patients had read the leaflet provided and, of these, few appeared to retain the information or use it to answer the questionnaire, with 69% still believing that there is a difference between a fracture and a break.

It is not clear why such a small percentage of patients read the leaflet. The presentation and style of the leaflet may

not have been engaging, or patients may have lacked interest or understanding. Hospital-based leaflets generally have their content checked and approved for suitability for lay people but a different style may have been more appropriate in this case as there was a greater emphasis on text than on diagrams in this leaflet. It has been shown that factors such as font size, layout, visualisation, clarity

THE INABILITY TO UNDERSTAND HEALTH INFORMATION COULD HAVE DISASTROUS CONSEQUENCES

of expression and familiar words are important to external appearance.¹²

Nearly 20 years later, patients are either still misunderstanding medical terms and are confused or the terms are not being communicated effectively. A 2011 study by Bagley *et al* found that 71% of orthopaedic patients defined the term 'broken bone' correctly but 'fractured bone' was defined correctly by only 33% of patients, with 32% defining it as a less severe injury than a broken bone.¹³

Furthermore, this study highlighted that speaking English as a second language was a statistically significant factor for patients who had difficulty with orthopaedic definitions.¹³ Where patients were asked to provide a written definition of the terms, 81% of native speakers gave a correct definition of the term 'broken bone' compared with 43% of those for whom English was not a first language. Interpreters were not used in the study as they are not always requested or are unavailable in busy, fast-paced orthopaedic fracture clinics. The patients interviewed who had no translation assistance may have been disadvantaged answering the questions. One potential outcome from this study, in terms of better communication with patients who do not have English as a first language, would be to use interpreters and provide information in a language the patient can understand.

Studies have shown that patients have poor understanding of medical terms in a number of different specialties. Lerner *et al* found that many patients in an emergency department were unable to match words such as haemorrhage and bleeding or heart attack and myocardial infarction.¹⁴

It appears that medical terminology can still be misunderstood by patients. This may deter patients and they can become disengaged at the first mention of the word 'fracture', for example. Such language is often poorly understood by young, urban and poorly educated patients.¹⁴ It has been noted that medical jargon may be easy for knowledgeable patients to understand but this does not apply

to everyone.^{15,16} Consequently, there can be a mismatch between the level at which information is delivered to patients and a patient's level of comprehension. Information exchange, health literacy and education are therefore important.

Health literacy and education

Health literacy, as defined by the Institute of Medicine, is 'the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions'.¹⁷ Poor health literacy exists today despite improvements in health education, a growing media focus on health-related topics and increased access to the internet.¹³ Patient engagement relies on health literacy. For this reason, a synergy must exist between effective communication and health literacy. If patients cannot obtain, process and understand basic health information, how are they expected to look after themselves and make good decisions regarding their own health?

Patients with low health literacy have poorer health status, higher rates of hospital admission, are less likely to adhere to prescribed treatments and self-care plans, experience more drug and treatment errors, and make less use of preventive services.^{17,18} The inability to understand health information could have disastrous consequences. Wolf *et al*, for instance, reported that up to 78% of patients with low literacy misinterpret warnings on prescription labels.¹⁹

Several studies in the US have also found that patients with limited health literacy skills do not understand basic concepts of the diseases from which they are suffering. For example, patients with asthma could

not demonstrate proper use of an asthma inhaler.²⁰ Inhaler misuse is also common in the UK but patients are now receiving more education on appropriate inhaler technique via a practical approach in which they are being educated by the healthcare provider. One early study investigated the relationship between functional health literacy and patients' knowledge of their diabetes or hypertension.²¹ It was found that only 50% of patients with inadequate literacy knew the symptoms

Patients may want greater involvement in decisions regarding their care. In this respect, the doctor–patient relationship should be a concordant partnership rather than paternalistic. Information exchange is bidirectional. If patients are to understand treatment options, outcomes and risks, then the healthcare provider must use appropriate educational resources to help improve patient knowledge, through effective communication that respects patients' preferences.

satisfaction and better health behaviour.¹⁸ Adam *et al* also highlighted that only 13% of surgeons would consider the use of decision aids during a consultation.³⁰ Surgeons would be more motivated to use these aids if they improved patients' understanding (38%) or helped communication with patients (25%) while the most common factor for dissuading surgeons from their use was if outpatient workload was increased (23%).

SO HOW CAN STANDARDS IN PATIENT CARE BE MAINTAINED WHEN WORKLOAD IS CONTINUALLY INCREASING?

of hypoglycaemia, compared with 94% of patients with diabetes and adequate functional health literacy. Alarming, 45% of patients with hypertension and inadequate health literacy did not know that a blood pressure of 160/100 mmHg was high.

Several more recent studies among patients with diabetes^{22,23} and hypertension^{24,25} have shown the importance of improving patients' knowledge through education, which has subsequently enhanced compliance with healthcare appointments and treatment. Patient education has many benefits. It is therefore not surprising that patients with low health literacy, who have difficulty in comprehending and retaining knowledge about their chronic disease, have worse health outcomes.²⁶

It is just as important to emphasise that limited understanding of health concepts and information can affect highly literate, well-educated patients. This is usually because these patients are baffled or confused by the medical vocabulary and physiological concepts that are unfamiliar to them. In the field of gynaecology, one study found that even patients with average literacy skills find it difficult to comprehend missed pill instructions.²⁷ This study suggested that providing written leaflets in addition to contraceptive counselling may improve patient knowledge. Nevertheless, graphic-based missed pill instructions and those containing less information may result in improved comprehension.

In order to facilitate shared decision making, patient decision aids have been developed such as leaflets (which have been described previously), audiotapes, CDs and DVDs. These are tools that provide patients with the relevant evidence-based information to facilitate the shared decision-making process.²⁸ They are a method of conveying the benefits and risks of healthcare options to patients, which allow them to make specific personal choices about their treatment. A Cochrane systematic review evaluated the impact of patient decision aids across a number of dimensions,²⁹ concluding that decision aids were better than usual care in terms of:

- > improved patient knowledge
- > improved patient perception of chances of risks and benefits
- > less decisional conflict
- > fewer patients were passive in decision making
- > fewer patients remain undecided after using an aid
- > greater concordance between patient values and chosen option.

Orthopaedic surgeons seem to be receptive to the use of patient decision aids; one UK study by Adam *et al* found that 79% of respondents thought that patient decision aids were a 'good' or 'excellent' idea.³⁰ Interestingly, 53% of surgeons preferred a booklet format and only 4% preferred an online aid. These data do, however, conflict with other findings as research has shown that online health information leads to greater user

In the context of orthopaedic surgery, there is a persistent effect of increased workload and time pressures, along with competing workflow priorities. Together, these limit the time for effective multidisciplinary communication, which will affect patient care. One of the predominant challenges, not only in orthopaedic surgery but also in medicine and surgery in general, is a 'pass the buck' attitude. For instance, if a healthcare professional has time restrictions, he or she may pass the task on to a colleague. However, the time pressures of the colleague can often mean the task is never completed. This is not because of selfish intent and is more to do with the restrictions imposed on healthcare professionals. Furthermore, the European Working Time Regulations limit doctors in training to a maximum 48-hour week, which has had a huge impact on time pressures and workload.

So how can standards in patient care be maintained when workload is continually increasing? One answer could be to use the multidisciplinary team more effectively. This includes registrars, junior doctors, nurses, healthcare assistants and, importantly, medical and nursing students. Students can play a pivotal role in educating and empowering patients, delivering information that can help with patient knowledge and the understanding of difficult medical principles.

In order to improve communication in the multidisciplinary team, with the ultimate goal of improving patient knowledge, understanding and care, we have to reduce the partite and 'silo' culture³¹ that still exists in many sectors of the healthcare system, both nationally and internationally. An example of this is the tripartite demarcated medical, surgical and nursing staff. Appreciably in these demarcated disciplines, individuals have specific roles that can lead to improved team efficiency

and performance. On the other hand, they can also lead to reduced team dialogue, which is paramount for improving patient knowledge and, ultimately, empowerment.

The challenge of improving patient knowledge becomes ever greater with limited face-to-face consultation time in clinics, patients who come from a wide variety of educational, socioeconomic and cultural backgrounds, and a proportion for whom English is not their first language. Many patients are also embarrassed about their lack of knowledge and will often try to hide their limited knowledge, making it difficult for doctors to detect whether a patient understands.¹³

The internet and information technology offer opportunities in helping to improve patient knowledge, and studies of such resources have shown high user satisfaction as well as beneficial effects on self-efficacy and health behaviour.¹⁸ Patients want to be engaged in healthcare decision making, which is possible as low cost internet access is erasing geographic, economic and demographic barriers.³² More patients than ever before are going online to find health information and self-diagnose. Imperial College research found 70% of patients use the internet to search for health information, with a third deciding not to visit their general practitioner afterwards as they were able to find the information they were seeking.³³

As discussed earlier, communication of health information in the form of leaflets can be a useful adjunct to consultations between a doctor and patient. Nevertheless, leaflets on their own have been shown to have little effect but combined oral and written information can improve patient experience, and, in some cases, it can reduce use of health service resources.¹⁸ Furthermore, in terms of health literacy and education, it is not enough to simply give patients information. Patients are more likely to be compliant in their treatment if the information they are given is personalised. This provision of information therefore increases the patients' knowledge of matters related to their own care, helping them to take a more active part in their care.^{34,35} This gives patients a sense of empowerment.

Patients are considered to be empowered when they have knowledge that meets their needs, expectations or preferences

and when they are in a position to make good use of this knowledge.³⁶ Empowering education aims to engender a sense of control and helps to facilitate the patient's involvement in decision making and self-management. For empowering education to be successful, the extent of existing patient knowledge must be known so that one can enhance that knowledge.

Studies in orthopaedics relating to empowering educational interventions are limited in the literature. However, one study from 2010 compared the pre-admission education received by rheumatoid arthritis patients scheduled for hip arthroplasty.³⁷ This paper highlighted that written educational material was a good choice for pre-admission patient education compared with telephone counselling. Nevertheless, education via telephone was considered more empowering than written educational material. The practical implications from this study are significant to the field of orthopaedics, as there can be very limited time for patient education during hospital stays and even less time in outpatient clinics. It may therefore be necessary to provide empowering education prior to admission, helping to increase patients' knowledge from early patient assessments.

With continual advances in information technology and the advent of tablet computers, film radiographs in many healthcare settings appear to be a thing of the past. Such technology allows patients to view imaging at the bedside, which

One study investigated patient attitudes toward physician use of tablet computers in the examination room.³⁸ The authors found that patients' perceptions of the tablets were mostly positive, regardless of age, sex, race, ethnicity or income. They also highlighted that only 4.3% of the patients stated that they disliked the idea of a doctor with a tablet, and these patients had a higher education level (more than high school) and were older (mean age 64 years). It is therefore important to ensure that health information technology does not create additional health disparities in disadvantaged and older people.

There are few reports in the literature on the use of radiography (film or digital) as teaching aids for improving patient knowledge or empowerment. It is assumed that the use of radiography in communicating patients' results would be common practice for most clinicians. This can be a major resource in empowering and educating patients, which would ultimately allow them to make healthy lifestyle choices, to make informed decisions about their treatment, to be more treatment compliant and, potentially, to use fewer healthcare resources. If the use of radiography were not standard practice for clinicians, then this should be incorporated into ward rounds. Redefining respective roles of clinicians and other healthcare professionals may also be necessary so that if time is limited information can still be communicated to the patient by another experienced healthcare professional.

THE CHALLENGE OF IMPROVING PATIENT KNOWLEDGE BECOMES EVER GREATER WITH LIMITED FACE-TO-FACE CONSULTATION TIME

should inevitably educate the patients, improve on their knowledge and lead to greater empowerment by enabling them to participate more actively in their care. As such devices are mobile and can be manipulated relatively easily (eg zooming into particular locations), patients should be more informed about their health and the doctor–patient relationship should be ameliorated. This can reinforce bidirectional communication between the patient and healthcare provider.

In fact, improving patient knowledge and empowerment can have huge benefits on health outcomes. A model proposed by Camerini *et al* in 2012 highlighted that the more knowledgeable and empowered a patient is, the higher the level of physical exercise; the higher the level of physical exercise, the lower the level of drug intake; and the lower the level of drug intake, the better the reported health outcomes.³⁹

Conclusions

*'The patient will never care how much you know, until they know how much you care.'*¹⁸

Doctor–patient communication is critical to healthcare. A positive relationship can reinforce patients' self-confidence and motivation, which can lead to better health outcomes. The vast majority of complaints about doctors are related to communication rather than competence. Patients often misunderstand medical terminology and healthcare concepts. Doctors should explain procedures and directions to patients in a manner that they understand. Educational initiatives (verbal, written or through the internet and multimedia) are needed to improve patient knowledge and understanding. Importantly, health information materials should be used to augment the interaction between patients and healthcare providers rather than replacing it.

In orthopaedic surgery, shared decision making is promoted. Despite this, concerns are raised regarding logistics and practicality as well as the potential for clinical workflow disruption. It is evident, however, that patients benefit when they are involved in their care and this can lead to better use of resources. Further research is needed to evaluate the true impact of decision aids, service utilisation and healthcare costs, and the effectiveness of empowering education.

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