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Nonspecific Treatment Effects in Pain Medicine

Specialty training in pain medicine, particularly in western societies, is seen as a technical field that requires the mastery of many interventions such as pain-relieving medications, injections, and implantable devices. The literature suggests, however, that the reason someone with chronic pain gets better has as much to do with the nonspecific effects of treatment—such as the personality of the patient and the interpersonal relationship that person has with the pain clinician—as with the treatment itself. This issue of *Pain: Clinical Updates* presents a limited review of the literature about the role of nonspecific effects of treatment and discusses some suggestions for future training in pain medicine.

Limitations of Medical Treatments for Chronic Pain

Pain medicine is gaining respect as an independent field of study, and more health care providers are seeking training and certification as pain medicine specialists. However, despite technical advances in many different types of pain treatments, the outcome literature suggests that only a minority of patients with chronic noncancer pain show measurable benefit from any of the treatments commonly given for this condition, including opioid[1,2] and nonopioid medication,[3-5] injection therapy,[6,7] implantable devices,[8] and surgery.[9,10] Even with the advent of many new pain medications and advanced delivery systems, there is limited evidence of the long-term efficacy of any specific intervention for persons with chronic pain.[4] Thus, despite a steady increase in the number of surgeries and interventional therapies for chronic pain, many individuals with this condition report little noticeable improvement in overall health status.[10,11]

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Over the past decade, specialty training in pain medicine has become increasingly technical. To gain accreditation in pain medicine under the current guidelines of the Accreditation Council for Graduate Medical Education (ACGME) and the European Union of Medical Specialists (EUMS), physicians need to be competent in procedures such as neural blockade, radiofrequency lesioning, chemical neuroablation, epidural portacaths, discography, spinal cord stimulation, vertebroplasty, and kyphoplasty. These treatments are included in the training despite their limited efficacy for chronic pain.[6,12,13] Most training sessions at pain conferences focus on learning the intricacies of medication regimens, needle placement, and techniques for implanting devices designed to reduce pain. This training has as much to do with being a skilled

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technician as with being a compassionate care provider. In general, pain physicians tend to be extremely busy and often do not have the luxury of spending time with their patients. Moreover, by the time a person with chronic pain is referred to a pain

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management specialist, that person frequently has an established disability due to daily pain, has been unable to work, is depressed and frustrated, and has failed multiple first-line therapies. It could be argued that persons with chronic pain are some of the most challenging and difficult patients to treat. However, helping patients cope and deal with the suffering associated with having a chronic medical condition often is not considered a necessary component of the treatment, and pain specialists rarely have had training in the best ways to communicate with patients with pain.

Nonspecific Effects of Treatment

There is plenty of evidence to suggest that psychological factors play a significant role in pain management and have a direct effect on outcome of treatment.[14] A recent review of outcomes from lumbar surgery or spinal cord stimulation among back pain patients showed that 92% of published studies demonstrated a significant negative effect on outcome when psychological and psychiatric factors (e.g., anxiety) were identified among the patients receiving treatment.[9] Evidence also suggests that there is a greater chance for successful outcome when the psychological components of pain are treated with cognitive-behavioral therapy, fear-avoidance training, and interdisciplinary rehabilitation for persons with chronic pain compared with conventional medical interventions alone.[15-17]

Improvement after treatment can happen in one of three ways: (1) specific effects of treatment, (2) natural history (regression to the mean), and (3) nonspecific effects of treatment. The nonspecific effects of treatment could be due to attention from health care providers and others, the desire to get better, and social variables

The nonspecific effects of treatment could be due to attention from health care providers and others, the desire to get better, and social variables such as reduction of anxiety, increased optimism, and improved coping

such as reduction of anxiety, increased optimism, and improved coping. The nonspecific effects of any clinical trial are often considered an annoyance,[18] but the magnitude of the effect can be quite large. In fact, in the vast majority of drug trials no differences are found between the intervention and placebo.[19,20]

In a now-celebrated study, Roberts and colleagues[21] reviewed the literature relating to medical interventions that were once considered to be efficacious, but later were shown to have no efficacy based on controlled trials. Using strict inclusion criteria, the authors examined the outcome literature of five interventions that are no longer being prescribed or performed. These included glomectomy for the treatment of asthma; gastric freezing for treatment of duodenal ulcers; and levamisole, photodynamic activation, and organic solvents for treating herpes simplex virus. Remarkably, the published clinical trials showed that out of 6,931 subjects enrolled in the initial efficacy studies, 70% of the patients reported good to excellent results from these five treatments, despite later evidence that these treatments had no efficacy whatsoever in treating these conditions. The authors concluded that the heightened expectations among the subjects and investigators contributed to these favorable results.

In another study, Kroenke and Mandelsdorff[22] examined the 14 most frequent symptoms reported by 1,000 patients within a primary care practice. Symptoms included chest pain, fatigue, dizziness, edema, headache, back and abdominal pain, dyspnea, insomnia, and numbness. These symptoms were chosen because they were significant enough for patients to visit their primary care physician and important enough for the physician to document. The investigators then reviewed the clinic charts of these patients over a 3-year period to establish the evidence for pathology that might account for these symptoms. In only 16% of cases could an organic cause be determined.[22] The authors concluded that psychosocial factors prompted most of the outpatient visits. In fact, many patients seek medical treatment primarily for the reassurance that their symptoms are not life-threatening or worrisome and only secondarily for resolution of their symptoms. Thus, a major value of medical treatment lies in education, reassurance, and counseling.[23]

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Expectations on the part of the patient and provider appear to be important nonspecific processes. In a study of radiofrequency ablation for back pain, patients' positive expectations before their treatment were among the best predictors of pain reduction,[14] while in a study of intravenous drug infusions and nerve blocks, physician's expectations of pain relief were highly related to their patients' report of post-procedure pain intensity.[24] Moerman and Jonas [20] present evidence that the attitude and message delivered by the provider have a substantial effect on reports of pain relief. The percentage of patients who reported getting better was significantly higher when patients were given a diagnosis and explanation for their symptoms, suggesting that the perception of diagnostic and prognostic information by the patient and provider are important determinants of pain treatment outcome.

A number of studies have shown that satisfaction with medical treatment is not related to the degree of pain or course of treatment, but is influenced by the meaning and interpersonal

experience associated with the treatment. Satisfaction with the hospital experience reported by mothers who were enrolled in a natural childbirth class illustrates this point. Mothers who were successful in natural childbirth were compared with mothers who had participated in the same class but had requested an epidural during labor. Patients who received an epidural had significantly lower pain scores than those who did not, yet they were significantly less satisfied with their hospital experience.[25] They described feeling disappointed that they had let themselves and their family down, despite having uncomplicated births with minimal pain. Thus, pain reduction alone was not the key factor in mothers' reported satisfaction with their childbirth experience. In a study of 316 cancer patients, satisfaction with pain management was strongly related to the doctor-patient relationship, and less related to the severity of the pain.[26] In another study of postoperative satisfaction with total hip replacement, the best indicator of satisfaction with care was not whether patients experienced complications or required extended hospital care but rather how much they thought that the physicians and nurses listened to them and cared about their condition.[27]

In an electronic diary study in which people with chronic back pain were requested to track their pain, mood, activity level, medication use, and side effects every day for 1 year, those using electronic diaries showed a higher level of compliance in achieving a week's worth of diary data every month (99%) compared with a controlled sample assigned to use paper diaries (56%).[28] In fact, 25% of subjects in the electronic dairy condition entered their diary data virtually every day for 1 year! Follow-up structured interviews at the end of the study revealed that the subjects believed that the two-way messaging available in the electronic dairies made it seem as if "someone was listening to me and paying attention to my progress," and this belief contributed to their high level of compliance with the monitoring task—even to the point that some were very reticent to give back the handheld device at the end of the 1-year study. Thus, even the perception of attention and caring can have a dramatic effect on outcome.

Importance of Communication Style

There is a lot of evidence that medical expertise or competence alone does not account for a positive outcome. Rather, the nonspecific effects of the doctor-patient relationship and communication style play a strong role in the outcome of treatment.[29-33] The evidence of the nonspecific effects of treatment may be most noticeable when patients experience unsuccessful treatment outcomes. Studies have shown that patients who reported liking their doctor but admitted that their condition was made worse by a particular surgery or procedure performed by that physician were more likely to state that this physician did all that could have been done without placing fault or blame. Conversely, patients who initially perceived that their physician did not care about their welfare often held their physician directly responsible for a negative outcome in what they perceived was inadequate or faulty treatment, even though the treatment technique may have been appropriate and without evidence of complications.[34,35] These perceived differences most likely lay in the physician's interpersonal skills used to help manage the outcome, including reassurance and establishing patient rapport.[30-33]

Litigation over negative medical outcomes also has much to do with the communication style of the physician in influencing medical-legal issues.[36] It has been suggested that clinicians who focus exclusively on the medical and not the emotional needs of the patient are more prone to be perceived as offering inadequate care and are at greater risk for legal action against them. However, those who demonstrate skills in listening, empathy, and expressing understanding are less prone to litigation.[35] This issue was addressed in a review of 45 plaintiff dispositions in physician malpractice lawsuits. Seemingly, the communication style of the physicians and the perceived negative relationship that the patients had with the physicians played a central role in two-thirds of the medical lawsuits reviewed.[37] In fact, in another review of negligence cases, the authors suggested that the majority of cases were not related to quality of care, but were brought on by problems in doctor-patient communication and in the practice styles of the treating primary care physicians and surgeons that began before the incident that led to a claim.[38]

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In a large study to assess personal and practice characteristics of health care providers, Krebs and colleagues[39] interviewed 1,391 physicians and found that physicians who were younger, worked more hours, had symptoms of depression and anxiety, were under higher stress, had more patients with psychosocial and substance abuse problems, and reported increased frustration with their jobs had more negative outcomes of treatment. Thus, it can be surmised that despite lengthy training in their area of their expertise, those clinicians with poor interpersonal skills and factors that negatively affect their doctor-patient communication style seem to be prone to poorer treatment outcomes.[40]

Patient-Focused Care

Henry Beecher, an early exponent of the placebo effect, identified the importance of the characteristics of the patient and the health care provider in influencing treatment outcome. He was the first to recognize that patients with an increased need to get better and providers with visible enthusiasm for their treatments tended to report better outcomes.[41]

In an interview study of 102 physicians who were known to have excellent skills in interacting with patients, the investigators concluded that empathy, mutual respect, and an open encouragement of doctor-patient collaboration in the treatment were the key ingredients to earning such a reputation.[42] These physicians were

known to be able to deal effectively with difficult patients because of their ability to defuse potentially problematic situations. Halpern[43] concluded that clinicians who showed caring, were able to address and diffuse negative emotions, were particularly attuned to patients' verbal and nonverbal emotional messages, and were open to negative feedback without being defensive were able to maximize positive outcomes. This increased sensitivity and empathy on the part of the health care provider had a positive effect on outcome.

Interestingly, physicians with a personal experience with pain and associated medical problems may be most understanding and sympathetic to patients with similar conditions. Klitzman[44] explored this relationship by interviewing 50 doctors who had undergone treatment for serious medical problems. Because of their own experiences as a patient with pain, these physicians acknowledged the importance of increased sensitivity to patients' experiences and the role of empathy in the doctor-patient relationship. They strongly supported hospital practice changes as a result of their experience, which included acknowledging whenever they kept a patient waiting, listening carefully to the patient's concerns and complaints, and being sensitive to nonverbal aspects of care. Street and colleagues[45] audiotaped and coded interactions among 29 physicians and 207 patients in a study on physicians' communication style and perceptions of patients. They concluded that more positive communication from one of the participants led to similar responses from the other and that reciprocity and mutual influence had a strong effect on quality of care.

Irwin and Richardson write that patient-focused care is care we would like those we care most about to receive, including ourselves.[46] Patient-focused care takes in the whole person's experience in a way that suggests understanding and caring.

Learning to Maximize the Nonspecific Effects of Care

There are many ways health care providers can maximize the nonspecific effects of treatment. The opening statement made by the care provider during the first patient encounter has a lasting impression on the relationship.[47] Roy and others[48,49] have shown that doctors who inform their patients of changes that affect their care in person rather than by mail have greater reported patient satisfaction. Back and colleagues[50] identified some common pitfalls of doctor-patient communication that they label as blocking, lecturing, depending on a routine, collusion, and premature reassurance. They encouraged instead employing open-ended communication skills they label as "ask-tell-ask" and "tell me more." Caregivers who show good patient communication skills are ones who speak in a caring way with an open body posture and do not transmit the impression of defensiveness or indifference when they engage in conversation with their patients. Thus, as summarized in studies examining the nonspecific effects of care, the secret of caring for patients is *really caring* for patients.

It has been suggested that clinicians need to understand the patient's perspective, attempt to actively listen to their patients, recognize what they can or cannot change, and get help from colleagues and friends for support if problems occur.[51] Pain medicine specialists who recognize when a patient is not ready to change, despite an individual's "lip service" to what needs to be done, are less inclined to transmit disappointment when no changes are made.

From these principles come expectations and behaviors important in every patient encounter that can have a lasting effect in improving patient outcome.[34] It is primarily important to recognize what patients expect from a doctor-patient relationship (Table 1). First, patients seeking care for their pain want to feel welcome. They would like to believe that their provider is happy to see

Table 1
Expectations patients have for clinical encounters

All patients want to:

1) Feel welcome
2) Feel informed
3) Believe their perspective is understood
4) Feel secure that their basic needs will be met

them and is concerned about their condition. Presenting oneself in a friendly, helpful manner can have a significant effect on reducing anxiety. Second, an individual seeking treatment wants to feel important and to be informed about what will take place. The goal of obtaining mutual respect in an atmosphere of collaboration is key to meeting these needs. Third, patients need to believe that their perspective is understood, which necessitates listening

Patients need to believe that their perspective is understood, which necessitates listening skills and a body posture that conveys a sense of understanding and caring

skills and a body posture that conveys a sense of understanding and caring—skills that are particularly important in dealing with patients with chronic pain. Finally, patients want to feel secure that their health care provider is competent and knows what needs to be done. To this end, addressing expectations regarding treatment outcome is paramount.[34]

A consensus report from the Institute for Healthcare Communication (www.healthcarecomm.org) on essential elements of communication in medical encounters, adapted in a number of models of care,[52,53] outlines general principles that health care providers can use to help improve patient outcome (Table 2). First, the clinician connects with the patient and builds rapport by greeting the patient warmly, having good eye contact, showing interest, and addressing any physical barriers by using nonverbal posturing that improves engagement. Second, the clinician listens to the patient and shows attentiveness by repeating the information back to the

Table 2
Important components to every patient encounter to maximize the nonspecific effects of treatment

1) Engage
Work to build a professional partnership.
Greet in a warm, pleasant, and friendly manner.
Maintain good eye contact.
Reduce any barriers.
Maintain a posture that shows interest.
Show curiosity and concern as to how the patient is doing.
Understand the patient's expectations and concerns.
2) Empathize
Listen, and feed back what you have heard.
Be aware of feelings, values, and thoughts.
Note body language and demeanor.
Reflect understanding.
Acknowledge and legitimize feelings.
Employ humor when appropriate.
3) Educate
Assess what the patient understands.
Address key concerns.
Let the patient know that you have reviewed his or her medical record.
Answer with compassion.
Inform the patient about what will happen, who will be there, and what the risks and realistic expectations will be.
4) Enlist
Seek the patient's input on the treatment plan.
Ask for patient's agreement and active participation.
Provide options.
Negotiate priorities.
Explain what will happen if a problem arises
5) End
Anticipate and forecast at the close of the visit.
Summarize the encounter.
Review the plan and next steps.
Express personal confidence, caring, and hope.
Follow through.
Source: Modified from the Institute of Healthcare Communication (2001).

patient. The clinician acknowledges feelings and shows understanding. When appropriate, he or she may also use humor. Third, the clinician assesses the patient's understanding, informs the patient, and answers any questions that might arise in order to address concerns and to alleviate anxiety. Fourth, the clinician seeks the patient's input about the treatment plan. Priorities are negotiated and different scenarios are discussed in order to address realistic expectations. Finally, the clinician ends the encounter by summarizing the plan and outlining the next steps. Reassuring comments as well as positive concerns are expressed. The effective clinician will also be sure to follow through with what was discussed. All of these components can exist in a relatively short patient encounter, but they can have lasting consequences in patient outcome. In the busy clinic, while there are time constraints, additional time spent in the first several encounters developing rapport and trust can lead to improved patient satisfaction and fewer problems in subsequent visits.

Perhaps one reason that a multidisciplinary team consistently demonstrates better outcomes among persons with chronic pain is that there are more people on the treatment team paying attention to the chronic pain patient and coordinating their efforts to

Reassurance that others are looking out for you can lead to a measurable improvement in health

improve that person's well-being. Just perceiving that there is a group of health care professionals who are "there for me" can do wonders in improving outcome. Reassurance that others are looking out for you can lead to a measurable improvement in health.

As Professor Gordon Waddell stated, "Fear of pain is more disabling than pain itself."[54] The lessons learned from medical providers from previous generations who treated chronic medical conditions with only a limited arsenal of effective interventions are the importance of reassurance and perceived support in reducing fear. As pointed out by Howard Brody,[55] anything that sends the message that (1) someone is listening to me, (2) someone cares about me, (3) my symptoms are explainable, and (4) my symptoms are controllable can have significant benefit in improving care.

Formalized Training in Patient Communication

Medical school training and pain fellowship programs would benefit from practice sessions designed to teach interpersonal skills used in doctor-patient interactions. Courses for pain clinicians should be designed to improve the teaching and interpersonal skills of health professionals based on the principle that

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effective doctor-patient interactions can be learned. Such courses would emphasize the improvement of interpersonal skills employed by physicians and other providers during patient encounters with the intent of positively influencing knowledge, attitudes, and behavior. Effective patient teaching and interpersonal relations can be demonstrated via didactic sessions, videos of actual patient encounters, and videos of practice teaching sessions. Such training helps prepare physicians and other care providers in positively interacting with patients to help improve compliance with treatment.[56,57]

Some medical centers have incorporated mindfulness training to improve attitudes about patients and their care. A program led by

Dr. Michael Krasner at the University of Rochester Medical Center in New York offered training to expand a physician's capacity to relate to patients and enhance patient-centered care.[58] The goal was to improve the quality of presence of the physician and the sense of curiosity and adventure in the patient encounter, which is frequently missed in medical practice. He recruited 70 physicians to participate in an 8-week training program that included guided mindfulness practices, meditation, narrative exercises, group discussion, and didactic material and followed them over 10 months. He and his colleagues demonstrated significant decreases among these physicians in burnout and mood disturbances. The majority of the participants reported positive changes in empathy, personal well-being, and psychosocial orientation to clinical care.

Why not require online and in-person training to maximize the nonspecific effects of treatment as part of the curriculum of any pain fellowship? This is powerful medicine that can significantly improve the welfare of persons suffering with chronic pain. We have, perhaps, failed to give heed to the sage advice of Sir William Osler, a Canadian-born physician who taught and practiced

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in the United States and in Britain and who was described by some as the best-known and most beloved physician in the world, who often cited Hippocrates that it is more important to know what kind of a person has a disease than what kind of disease a person has. He was also noted for stating: "The good physician treats the disease; the great physician treats the patient who has the disease."[59] He was adored by his students as a warm human scholar and skilled physician who changed the student-teacher and doctor-patient relationships from formal and cold to friendly and warm. Perhaps Osler's greatest contribution to medicine was to insist that students learn from seeing and talking to patients through participation in a medical residency—a concept that he established.

Conclusion

Basic scientists have successfully devoted their attention to mapping the mechanisms accounting for persistent pain and have made impressive gains in our understanding of the molecular and cellular origins of acute and chronic pain. However, much of the understanding of these mechanisms is based on animal models, and the attention paid to these pain models may have contributed to clinicians' need to mechanize interventions designed to reduce pain. However, the vast majority of outcome variance of any intervention for pain among humans goes unexplained. Much of this has to do with the unique aspects of the human brain and the individual's need to interpret pain.[60] Our thinking is dynamic, interactive, and context dependent. We seek meaning and understanding associated with perceived sensations, and this meaning is strongly related to our social networks and interactions. The therapeutic quality of the practitioner's manner and the role of expectations of treatment are very powerful, and we need to maximize that power in reducing the suffering of individuals with pain.

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