As the biopsychosocial model of health has become increasingly understood, it has become clear that there are complex, interdependent relationships between the physical and biomedical features of low back pain and the psychological and social factors that present concomitantly. Epidemiological studies have not only highlighted that psychological and social factors are associated with back pain and disability but also have shed light on the way in which these factors serve as prognostic indicators, or obstacles to recovery, predicting which patients will have a poor prognosis. Integrating the assessment of these obstacles to recovery into physical therapist practice and using this information to guide clinical decision making have the potential to improve the quality of care offered by physical therapists by improving the targeting of treatments to individuals and enhancing the therapist-patient relationship and adherence to management advice and treatment programs. In turn, such approaches may improve both patients’ clinical outcomes and the efficiency and effectiveness of service provision, helping direct interventions to those who need them. This article summarizes the key challenges to embedding psychosocial perspectives within physical therapist practice for patients with low back pain and the opportunities that could be realized by doing so, and it highlights new developments in research, clinical practice, and education that are shaping future directions in this field.
Given that there is some evidence of benefit for interventions that physical therapists traditionally provide for patients with low back pain, one may question the added benefit of incorporating psychosocial interventions into the range of therapeutic options of this professional group. For example, exercise is one of the key interventions within the scope of physical therapist practice that has been shown to be effective in the secondary prevention of low back pain and in the management of chronic low back pain. Benefits also have been shown, for example, using directional preference approaches, manual therapy, and acupuncture.

In addition, the interventions that physical therapists offer have been shown to be cost-effective at current levels of “willingness to pay.”

However, as the biopsychosocial model of health has become increasingly understood, it has become clear that there are complex, interdependent relationships between the physical and biomedical features of low back pain and the psychological and social factors that present concomitantly. Epidemiological studies have not only highlighted that psychological and social factors are associated with back pain and disability but also have shed light on the way in which these factors serve as prognostic indicators, or obstacles to recovery, predicting which patients will have a poor prognosis.

It has been argued that the transition from recent-onset pain to chronic pain might be more strongly associated with psychosocial factors than with physical factors.

Integrating the assessment of these obstacles to recovery into physical therapist practice and using this information to guide clinical decision making has the potential to improve the quality of care offered by physical therapists by improving the targeting of treatments to individuals and enhancing the therapist-patient relationship and adherence to management advice and treatment programs. In turn, such approaches may improve both patients’ clinical outcomes and the efficiency and effectiveness of service provision, helping direct more-intensive interventions to those who need them. However, there is uncertainty about how best to integrate psychosocial factors in order to improve patients’ outcomes. This article summarizes the key challenges to embedding psychosocial perspectives within physical therapist practice for patients with low back pain and the opportunities that could be realized by doing so and highlights new developments in research, clinical practice, and education that are shaping future directions in this field.

**Challenges**

There are many and varied challenges to embedding psychosocial perspectives within physical therapist clinical practice. Here, we shed light on select key challenges for entry-level (professional) physical therapy training and current physical therapist practice, which are summarized in Figure 1.

**Entry-Level Physical Therapy Training**

**The focus and priorities of entry-level training.** Physical therapist students choose their career based on their own perception of physical therapy, often informed by work experience or placements within sports settings or through their own experience of physical therapy from personal injuries. The initial focus of entry-level training tends to firmly consolidate biomedical models of health and illness and, thus, a fledgling professional culture starts to develop, to be further influenced by the opinions of respected teachers and clinicians.

Early learning often focuses on musculoskeletal problems that student and junior physical therapists will assess and treat, reinforcing notions of clear anatomical and pathological links with pain and disability. The physical assessment and treatment emphasis within early training starts physical therapists off on a biomedical perspective of musculoskeletal pain, which then is difficult to challenge as learning and experience progresses. Definitions of physical therapy rely heavily on disease and injury models of pain, body structure, the application of physical agents and modalities, and the focus on strength (force-generating capacity), movement, balance, and functional abilities.

Even at training institutions that introduce a biopsychosocial model of health to students and follow national and international guidance on rheumatology and pain curricula, the majority of time and attention often is spent on the biomedical assessment and treatment of musculoskeletal problems.

There is much competition for space within entry-level training programs, and priorities are influenced by vari-
ous professional organizations and regulatory bodies. A recent survey of Canadian universities\textsuperscript{17} showed that undergraduate pain education was generally inadequate and that veterinary scientists received more pain education than health care professionals. A comprehensive survey of the curricula of 8 health care professions across the United Kingdom highlighted that current pain education is “inadequate preparation for professional practice.”\textsuperscript{16} Teaching on pain was often found to be delivered piecemeal as part of other topics, and despite the management of pain often requiring multidisciplinary approaches, students tend to learn about pain management in narrow professional groups. Physical therapist students received the highest input, with an average of 37 contact hours dedicated to pain, but there was a bewildering variation (ranging from 5 to 158 hours), and in only one physical therapy training institution was the International Association for the Study of Pain curriculum fully implemented. The amount of time devoted to specific topic areas within programs varied widely, and instruction was most frequently delivered through lectures and written patient case examples, with little attention to development of skills or the learning techniques that might best support such skill development.\textsuperscript{16}

The American Physical Therapy Association’s (APTA’s) Normative Model of Physical Therapist Professional Education\textsuperscript{18} provides a consensus-based vision for professional education in the United States and serves as the primary resource for the Commission on Accreditation in Physical Therapy Education when individual programs are reviewed. A review of this document for curricular content in the foundation and clinical science sections reveals little, if any, emphasis on pain education. In foundational sciences, pain is mentioned only as primary content when considering physiologic responses to physical agents. There is no mention of pain in other relevant primary content areas, including neurophysiology, plasticity, neurological function, and psychology. Areas where psychology is considered as primary content in the normative model include emotional responses to exercise, sport, illness, and disability, but not pain. In clinical sciences, pain is not explicitly addressed; instead, it is inferred from diseases, injuries, or conditions that require physical therapy intervention.

**The lack of cohesion across entry-level clinical education.** In parallel, when entry-level students spend time in clinical placements or practice environments, as they must do to consolidate their learning and develop their skills, a cohesive approach that spans the training institutions and associated clinical placements is largely missing. The knowledge and skills that are being developed within entry-level training institutions on integration of psychosocial perspectives may well fail to be consolidated by their clinical educators, many of whom continue to operate in the biomedical model, losing the opportunity for powerful and deeper learning on this topic. These often highly respected clinical role models may heavily influence students’ perceptions of the relative importance of biomedical versus psychosocial factors within patient

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<th>Entry-Level Physical Therapy Training</th>
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<td>The focus and priorities of entry-level training emphasize anatomical, biomechanical, and biomedical models.</td>
<td>Physical therapy “culture” and current physical therapist practice propagate anatomical, biomechanical, and biomedical models.</td>
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<tr>
<td>The lack of cohesion across entry-level clinical education environments means that opportunities to reinforce application of key psychological informed management principles are lost.</td>
<td>The focus of continuing education for physical therapists reinforces the biomedical emphasis from entry-level training.</td>
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<tr>
<td>Patients’ expectations of low back pain and physical therapy can raise challenges, such as their expectations about diagnostic certainty and hands-on treatment approaches.</td>
<td>There is uncertainty about the key psychosocial factors and how to assess and manage them in ways that fit into busy clinical practice.</td>
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<td>Reimbursement systems and service priorities do not value management of psychosocial factors.</td>
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Figure 1. Key challenges to integrating psychosocial perspectives in clinical practice.
assessment and management. Thus, even when students develop knowledge and competencies in the assessment and management of psychosocial obstacles to recovery from their training institutions, failure to consolidate this knowledge and these competencies within clinical environments essentially halts their development.

Most clinical education is carried out in clinical environments where adherence to evidence-based standards, in many cases, is less than optimal. The students then are exposed, sooner or later, to situations where they are being asked or expected to practice in ways that are incongruent with the ways in which they were taught. This is perhaps the major entry-level challenge to embedding psychosocial perspectives into physical therapy, that of integration into everyday clinical practice.

**Current Physical Therapist Practice**

Physical therapy “culture” and current practice. Traditionally there has been inadequate attention to psychosocial factors in the physical therapy literature. For example, the most recent online edition of the widely regarded Guide to Physical Therapist Practice only superficially includes psychosocial factors, stating that they may have an influence on the complexity of the case, number of visits, and the decision-making process in choosing interventions. Specific to the purposes of this perspective, the Guide to Physical Therapist Practice makes no recommendation on which specific psychosocial factors to measure for patients with low back pain, despite consistent evidence indicating which candidate psychosocial factors might be most appropriate for routine assessment for that particular practice pattern. Other factors influencing decision making include the clinician’s own beliefs about the effectiveness of treatments, his or her prior clinical experience, and the pre-eminence of his or her relationship with the patient.

Physical therapy culture and current physical therapist practice for low back pain have been explored in research studies using qualitative interviews and survey questionnaires. These studies have highlighted wide practice variation, an emphasis on the assessment of physical impairments and pain, a lack of knowledge about the content of clinical guidelines and the way in which physical therapists’ pain beliefs influence their behavior within therapeutic encounters with patients. Interviews and observations highlight therapists’ beliefs regarding the development of craft knowledge needed to manage low back pain and beliefs regarding the clinical characteristics of patients they consider as “good” to treat and the challenge of patients who are seen as “difficult” to treat. Daykin and Richard son proposed that the physical therapists’ biomedically oriented pain beliefs influenced their clinical reasoning processes, including the explanations given to patients. Smart and Doody’s interviews with experienced physical therapists showed their clinical reasoning to reflect an integration of diverse models and theories of pain, which the authors termed “mechanisms-based” reasoning of pain.

Survey research has shown that a substantial proportion of physical therapists are unfamiliar with the content of clinical guidelines for low back pain. In a large UK survey using patient vignettes, Bishop and Foster found that although most physical therapists recognized when patients with low back pain are at high risk of developing chronicity, many paradoxically recommended limitations in patients’ activity levels and advised them not to work. Advice to not work was associated with more-severe perceived spinal pathology, again suggesting persistence of the biomedical model for low back pain within the culture of physical therapy. A survey 3 years later of both UK family physicians (general practitioners) and physical therapists showed that advice about work was significantly related to the clinician’s treatment orientations, as measured using the Pain Attitudes and Beliefs Scale (PABS). Physicians and physical therapists with high biomedical and low behavioral orientations were much more likely to advise continued work absence (44.9%) than those with high behavioral scores and low biomedical scores (11.9%). Several studies have shown that the attitudes, beliefs, and treatment orientations of health care professionals are associated with the advice they give to patients as well as the choice of interventions, begging the question of whether, and to what extent, these attitudes, beliefs, and behaviors of professionals—in this case, physical therapists—are modifiable.

The focus of continuing education for physical therapists. Following graduation, physical therapists pursue continuing education in order to maintain competency, raise awareness of new developments, and meet the requirements of national or state relicensure. Perusal of available post-qualifying education for physical therapists highlights a plethora of mostly didactic continuing education opportunities such as conferences, short courses, and workshops that reinforce the biomedical emphasis from entry-level training. In the United Kingdom, for example, courses on specific physical assessment and treatment approaches for low back pain are commonly advertised and attended, yet a physical therapist wanting to develop confidence and skills in the
psychosocial assessment and management of patients with musculoskeletal problems will struggle to find such educational opportunities. In the United Kingdom, there are very few interactive educational opportunities that focus on supporting changes in practice toward biopsychosocial models. In the United States, different states have different continuing education requirements, but based on our anecdotal experiences, few of these offerings are related to psychosocial models and how to integrate psychosocial principles into routine management of patients with low back pain.

**Patients’ expectations of low back pain and physical therapy.** Other potential challenges to embedding psychosocial perspectives within physical therapist practice include patients’ preferences and expectations. Patients and, indeed, the general population have specific beliefs and expectations about low back pain and physical therapy treatments. The public expects health care professionals to be able to tell them exactly what is wrong with their back, and 10 years ago most expected to have a radiograph. More recent data show that patients expect a physical examination and the “right” diagnosis. Patients with chronic low back pain continue to expect symptomatic improvements and can have very clear ideas of what treatment will entail. Some of these patients may be seen as “difficult or problem patients” by physical therapists, given their more complex health care needs and perceived resistance to self-care approaches. Anecdotally, physical therapists want to deliver credible treatments to their patients; thus, meeting patients’ expectations may be a key driver in the selection of both assessment and management approaches. For example, if a new patient refers to what he or she perceives to have been a previously successful intervention, a physical therapist may decide to offer similar treatment for this back pain episode, irrespective of best practice recommendations, in order to try to meet the patient’s treatment expectations. Several studies have reported higher patient satisfaction with hands-on treatment approaches, and this finding may influence physical therapists’ decision making about treatments.

**Uncertainty about the key psychosocial factors and how to assess or manage them.** There has been much uncertainty by physical therapists about which psychosocial obstacles to recovery in patients with low back pain are the most important to identify, assess, or focus on within clinical management. Even physical therapists who have been eager to integrate psychosocial perspectives into practice for some time have been somewhat undermined by the ambiguity surrounding how best to do this in ways that can be easily embedded in routine practice. Many psychosocial factors are reported to be important obstacles to recovery, such as patients’ fear avoidance, catastrophizing, perceptions about risk of persistence, depression, self-efficacy, expectations, beliefs about the future, and illness perceptions regarding their back problem. Clearly, the assessment and management of all of these factors cannot be integrated into everyday practice.

Even for those factors that appear to have a relatively consistent evidence base, there is only limited evidence about specific measurement properties. For example, the diagnostic accuracy of brief screening questions has only been established for a few factors. Rather, the screening tools that have been available are lengthy and not suited for routine use in busy clinical practice, and some have complicated scoring systems. The current variation in practice in the psychosocial factors that are assessed or addressed could be largely a consequence of this dearth of easy-to-use assessment and screening tools. Long has already identified that practice style differences flourish in environments of professional uncertainty.

A further challenge is the dearth of knowledge and confidence about what to do with patients for whom key psychosocial obstacles to recovery are identified. Kent and colleagues pointed out that the uncertainty about effective interventions for patients who have psychosocial obstacles to recovery may well mean that clinicians do not see the value in routine assessment of these factors. Some of these psychosocial obstacles to recovery (eg, pain-related distress, perceptions of poor personal control, catastrophizing, fear of movement) are likely to be modifiable using physical therapy treatment approaches. Other factors, such as unemployment, low levels of perceived job control, and social isolation, may be much more challenging to address within the context of physical therapy services alone. Many physical therapists work in settings where there are no, or limited, patient pathways to, for example, mental health specialists. This situation may serve to further inhibit physical therapists from opening the “black box” of patients’ cognitive appraisals and emotional consequences of their pain. They fear they are ill-equipped to manage these problems and may well have little or no support from other specialists in pain management teams. There are many pain management courses of varying quality and specific relevance to low back pain available; thus, the current picture in physical therapy is one of highly variable levels of competence and confidence in the assessment and man-
agement of patients with low back pain in whom key psychosocial obstacles to recovery are important.

**Reimbursement systems and service priorities.** In some health care systems, physical therapist practice is heavily influenced by the reimbursement systems in place. This situation is problematic given that these reimbursement systems look to standards of practice rather than best or optimal practice. For example, a study of practice in the Netherlands showed that the mean number of treatment sessions ($\bar{X}=10$) was similar to the number eligible for reimbursement by their public health insurance funds. The fee-for-service model that dominates reimbursement in the United States rarely includes reimbursement codes for psychosocial interventions in physical therapy. In other health care systems, such as the National Health Service in the United Kingdom, there are increasing pressures on waiting times and access to physical therapy services. Service managers are constantly looking at ways to deliver more efficient and more accessible services, using routinely collected data on waiting times and patient numbers to justify service changes without supporting systematically collected clinical or cost outcome data. New service initiatives in the United Kingdom include, for example, physical therapy telephone assessment and treatment, self-referral and increased reliance on physical therapist assistants and technical staff in patient management. In these contexts, it may be particularly challenging to offer the time some patients with low back pain and key psychosocial obstacles to recovery may need to elicit and address these issues successfully. Anecdotally, physical therapists in the United Kingdom have expressed concerns about identifying psychosocial issues with patients, given the limited amount of time and number of treatment sessions they are able to offer patients in a resource-strapped health care system. In the United States, similar trends are evident, as managed care initiatives limit the number of sessions and the amount of time per session that therapists spend with patients. The end result of these pressures is that current clinical environments act as a disincentive to directly address psychosocial factors and may encourage further application of biomedical approaches, as they are most familiar to most practicing clinicians.

**Opportunities**

Despite these challenges, many opportunities are available to physical therapists to facilitate embedding psychosocial perspectives within clinical management of low back pain. Again, we present these key opportunities under the 2 broad headings of “Entry-Level Physical Therapy Training” and “Current Physical Therapist Practice,” and they are summarized in Figure 2.

**Entry-Level Physical Therapy Training**

**Changing the focus and priorities of entry-level training in pain.** Given the “woefully inadequate” pain education identified in entry-level training programs and the burden of pain in the general population, there are many opportunities for improvement. Recent studies have shown that single modules on low back pain and physical therapy degree courses can bring about more positive student attitudes toward function despite pain. Equipping students with knowledge of

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**Current Physical Therapist Practice**

Gather more evidence from clinical trials about the outcomes of patients managed through biopsychosocial management approaches and from implementation studies about how to facilitate tangible shifts in physical therapist practice.

Enhance the role of physical therapists in educating patients and the public, using all available media.

Identify and target key psychosocial factors more systematically and use them in decision making about treatment and advice about work.

Change the reimbursement system and service priorities to include patient-reported outcome measures and optimal standards of care to positively influence improvements in practice.

**Figure 2.** Key opportunities to integrating psychosocial perspectives in clinical practice.
psychosocial models of chronic musculoskeletal pain development and more specific knowledge about the key psychosocial obstacles to recovery in low back pain and providing better clarity about how to structure their assessment and reassessment are areas for improvement. Emphasis on the limitations of the biomedical model also should be a standard part of entry-level education. For example, students should be well versed in the limitations of imaging findings for the management of low back pain. Greater specificity about which patient behaviors are best to target within rehabilitation will help focus interventions on supporting patients to achieve meaningful living even in the context of persistent pain. Teaching methods on psychosocial issues and their impact on the effectiveness of physical therapy could better utilize adult learning theories, encouraging problem solving, deeper learning, and skill development rather than knowledge recall alone. It is likely that in order to provide competent and confident physical therapists who can integrate psychosocial perspectives into low back pain management, teaching approaches that facilitate interpersonal, communication, behavior change, and problem-solving skills are needed. Skills in establishing a therapeutic relationship that encourages disclosure are likely to be very important. These approaches may challenge the traditional therapeutic styles often seen within physical therapy consultations.

Utilizing specific frameworks upon which to “hang” learning about the biopsychosocial aspects of the pain experience and guide decision making about interventions also may be helpful, facilitating tangible shifts away from a sole focus on the biomechanical and physical features of the back problem. A promising case report published recently used the World Health Organization’s International Classification of Functioning, Disability and Health (WHO-ICF) as a framework for physical therapists to understand each patient’s experience of his or her back problem and assist in treatment selection.

The use of education benchmarks may offer an additional opportunity to improve entry-level training. For example, the British Pain Society recommends that educational standards from professional regulators and Quality Assurance Agency (QAA) subject benchmark statements should include pain-related knowledge and competencies to ensure they are integrated into the curriculum. Currently, for example, physical therapy in the United Kingdom has recommended standards by professional bodies but has established no QAA benchmarks for pain-related knowledge.

A further opportunity to improve entry-level training in pain is interprofessional education. Interprofessional education models that include 2 or more health care professionals can improve physical therapists’ understanding of their own and others’ roles and develop teamwork and collaborative problem solving. Interprofessional education that includes pain specialists and physical therapists, for example, may better equip future physical therapists to appreciate the practical aspects of psychosocial evaluation and treatment in everyday clinical situations. Many health care professions are advocating interprofessional educational models to better prepare their students for the workplace by embedding collaborative practice environments as part of the learning experience.

With regard to adding content to entry-level physical therapy curricula, a successful strategy was used by the orthopedic community when it was determined that manual therapy content was either not as explicit as it should be or simply lacking. To address this concern, a task force was formed by APTA and its components along with the American Association of Orthopedic Manual Therapists. First, the essential elements of a manual therapy curriculum were determined by a consensus of expert academicians and clinicians and published as proceedings. The proceedings included curriculum resources that could serve as a resource to any physical therapy program, such as curricular content (eg, theory, principles, technique, clinical education considerations), sample instructional materials (eg, syllabi content, laboratory handouts), and instructor qualification criteria. As part of the ongoing review, material from the manual was used as a guide to influence standards and criteria in the Commission on Accreditation in Physical Therapy Education to better ensure concordance between the relevant evaluative criteria related to manual therapy and the findings of the task force. A similar approach could be considered for pain components of the physical therapy curriculum, whereby a consensus panel can be assigned to construct a similar manual to be used to facilitate more comprehensive coverage of pain.

Facilitate cohesion across entry-level clinical education. As well as agreeing on benchmarks upon which to judge training institutions, there is much opportunity to facilitate more cohesive pain education flowing from the educational institution into the clinical practice settings where students gain their experience. Tools to achieve this aim include interprofessional education in the clinical environment, different methods of education, and joint clinical/academic posts and academic/clinical partnerships. Interprofessional efforts may be particularly
Embedding Psychosocial Perspectives Within Clinical Management of Low Back Pain

well suited for clinical environments and can serve a number of purposes. First, they provide opportunities for physical therapist students and other health care professionals to learn from one another in an applied environment. Second, they facilitate the application of the material delivered largely in a theoretical framework to the patient. Furthermore, they create an environment that facilitates role modeling of interprofessional behavior, which is much needed by future professionals involved in the treatment of patients with pain.

Different education methods may be helpful; for example, a train-the-trainer model may help to spread training and confidence among clinicians in the psychosocial management of back pain. Team reviews of patient cases as well as innovative ways of involving patients themselves in the education of physical therapist students may help achieve early focus on the problems described from patients' perspectives rather than the traditional clinician-led assessment and identification of key problems.

Other opportunities include joint posts for experienced physical therapists between research and clinical settings to help embed a culture of evidence-based practice, supporting colleagues to review relevant high-quality research evidence and agree on changes to practice and to help facilitate plan-do-study-act cycles of improvements in practice. These clinical champions can be seen as enthusiastic and professional role models who can mentor and support colleagues in making suggested changes. There are real opportunities for academic institutions and progressive clinical environments to work together in active partnerships where integrated biopsychosocial training is modeled to the student as part of standard of care. There are few such integrated partnership models currently in use. The short course training culture embedded already within physical therapist practice could be further enhanced by agreeing on specific and measurable goals that are reviewed on a regular basis to support meaningful shifts in practice within a learning organization culture.

Current Physical Therapist Practice

More evidence from clinical trials and implementation studies. Undoubtedly, further high-quality research evidence and patient outcome data are needed showing that integrating psychosocial perspectives into physical therapist practice leads to better outcomes. The current evidence base is promising but not yet compelling. The most recent United Kingdom guidelines for the management of low back pain recommend intensive cognitive-behavioral intervention (of approximately 100 hours) for patients who fail to improve after receiving first-line recommended treatments of exercise, manual therapy, or acupuncture. Most physical therapists, however, are unable to provide this level of intensive intervention for their patients, and there is some question as to who would be the preferred provider for this cognitive-behavioral intervention. New trials testing whether patients subgrouped on the basis of risk status, integrating information about psychosocial prognostic indicators, and matching them with less-intensive, targeted treatments are likely to contribute useful information for physical therapists. This type of quality evidence, over time, will begin to be incorporated into best practice guidelines for low back pain.

The reality is that even when there is good evidence to support changes in practice, we are still unclear about optimal implementation strategies. Passive dissemination of information is generally ineffective, and even contextualized, free information posted directly to physical therapists has small effects. It is clear that there is no single “magic bullet,” but that multiple and specific implementation strategies, and perhaps financial incentives and marketing approaches, are likely to be needed to support tangible changes in practice. A key opportunity in this is that we are now better able to provide recommendations about psychosocial issues that are clear, specific, and unambiguous—key attributes needed for recommendations in practice (the Appraisal of Guidelines Research and Evaluation) and that we have lacked until recently.

Several groups around the world have been investigating whether key beliefs, attitudes, and behaviors of clinicians can be modified, and, to date, there are mixed results. Training programs tested invariably include facilitating a shift from thinking of low back pain as a disease of the body and the spine to that of a health condition caused by the interpersonal relationships of factors within the individual and between the individual and his or her environment, including family relationships and work. Stevenson and colleagues showed that a brief training program can effect some changes in attitudes toward evidence-based practice, but did not result in actual changes in physical therapist practice. Overmeer and colleagues showed that the pain beliefs and attitudes of physical therapists changed following an 8-day training course; they became more biopsychosocially and less medically oriented and their knowledge of and skills related to psychosocial risk factors increased. Yet, despite these positive changes, their patients perceived their practice behavior before and after the course as similar and
were equally satisfied with their treatment. Vonk et al.80 showed that training might influence therapists’ treatment approaches, as their PABS biomedical scores decreased following a training program. However, in a recent study of general practitioners’ treatment orientations, treatment recommendations, and treatment behaviors and outcomes of patients with low back pain, no associations were found.76

So far, this growing body of research appears to show that we can modify physical therapists’ beliefs and attitudes about low back pain, but that achieving and sustaining meaningful changes in practice behavior are much more difficult. This perhaps remains the ultimate challenge for the future: how to ensure that quality evidence about psychosocial perspectives in low back pain is actually incorporated into clinical practice by physical therapists for the benefit of patient care. The solutions are not simple and are likely to need to include meaningful mentoring programs and clinical supervision by clinical experts, interprofessional group discussion of patient cases, outcome data collection and feedback, and perhaps even peer- and service-level comparison, plus organizational and reimbursement incentives to adopt new ways of working.

**Enhanced role of physical therapists in educating patients and the public.** The success of some of the public awareness campaigns for low back pain81,82 highlights the potential role for physical therapists in educating the public about both the primary and secondary prevention of low back pain. For example, Working Backs Scotland83 is now being relaunched and updated as Web-based educational and interactive material for the Scottish public (www.nhsinform.co.uk/health-zones/scottish-backs.aspx), an initiative led by a physical therapist. There are clearly many opportunities for physical therapists to get involved in influencing patients, and more broadly, the public’s perceptions about back pain and its management.

**Identify and target key psychosocial factors more systematically.** Key psychosocial obstacles to recovery are becoming clearer; thus, we are in a better position to advocate which factors should be the focus for assessment and treatment. Key psychological factors include depression, anxiety, fear avoidance, social isolation, catastrophization, perceptions about the future, and low personal control.11,12,53 Occupational factors that have evidence from more than one systematic review include heavy physical demands, ability to modify work, social support, short job tenure, job satisfaction, and fears of reinjury.84 As we achieve greater clarity on which obstacles to recovery to focus on, this should lead to systematic ways to incorporate these factors into education programs (entry-level and continuing education), identify these factors in clinical practice, and use them in decision making about treatment, building on the few tools that are already available.85,86 There is much opportunity to develop and validate new clinical prediction rules.
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within physical therapy and to ensure they include the assessment of psychosocial prognostic factors.97

A suggested pyramid for the integration of psychosocial factors into clinical practice is given in Figure 3. At the base of the pyramid are the common key psychosocial obstacles to recovery that are relatively easy to incorporate into physical therapist practice, such as enhancing personal control and self-efficacy in patients with pain. Identifying and addressing these factors is unlikely to require intensive additional education and skill development for physical therapists. Moving up the pyramid are the psychosocial factors and intervention techniques that are likely to require more specialist training to identify and address, but that can and should be part of at least some physical therapists’ practice and skill set. At the top of the pyramid are the patients with psychosocial obstacles to recovery who are most likely to need onward referral to mental health professionals. This model may be helpful in directing how to accomplish better integration of psychosocial factors into practice.

Intervention studies are increasingly trying to develop and test targeted interventions that modify key psychosocial obstacles to recovery.94,98,99 It is likely to be most useful to focus on beliefs about specific aspects of pain or treatment, whether as specific targets for cognitive-behavioral intervention or as potential obstacles to optimal engagement in treatment.90 Attempting to address such beliefs within a reactivation framework has become an integral part of new approaches to help prevent pain-associated incapacity in both health care settings70 and occupational settings.91 For some patients, it might be beneficial for physical therapists to directly communicate with employers and managers in order to facilitate sustained return to work, but in most cases, simple efforts to identify and discuss work issues directly with patients can lead to better work outcomes.94 These efforts could include proposals from the Canadian Medical Association92 such as discussing expectations about return to work early on; understanding the psychosocial context of the patient’s work and his or her work demands, risks, and return-to-work options; and facilitating a return-to-work plan.

Changes to the reimbursement system and service priorities. Given that it is clear that in some health care systems the reimbursement arrangements for services influence the number and content of treatments offered by physical therapists, it must follow that reimbursement systems could potentially be used to positively influence improvements in practice. In the United Kingdom, the Chartered Society of Physiotherapy (CSP) has recently developed a 5-year plan or vision for the profession.93 Among the many ideas within the CSP’s vision, several have the potential to positively influence quality improvements in clinical practice. For example, being “research-informed in all its activity,” “actively engaging in standardized data collection,” “changing practice in light of changing evidence,” and “leading and contributing to fit-for-work schemes” are all part of the CSP’s vision.

These goals are similar to those articulated in other national directives for health services about demonstrating real value in terms of patients’ outcomes. Recent initiatives in Europe (eg, in Norway and in Scotland) include the start of standardized outcome data collection in physical therapy services, and one of the real opportunities of these initiatives will be to use feedback and peer and service comparisons to facilitate quality improvements in practice. With the introduction and use of standardized data collection on patient outcomes as well as process measures (eg, numbers and waiting times), future benchmarking initiatives will be facilitated, likely serving to enhance quality improvements in physical therapist practice. The CSP’s vision requires support for coordinated, standardized data collection and clearly defined minimum as well as optimum standards of care. In addition, there are clear opportunities to work with reimbursement systems to identify codes to reflect physical therapy-led psychosocial assessments and interventions and to identify and test ways in which to encourage judicious use of psychosocial approaches.

Future Directions
There is little question about the need for more biopsychosocial research related to low back pain as well as innovative ways in which to implement research findings in our educational programs and everyday clinical settings. In Figure 4, we briefly highlight key future directions that will facilitate the integration of psychosocial perspectives into physical therapist practice across the areas of research, clinical practice, and education.

Conclusion
Although it is clear that there are many and varied challenges to integrating psychosocial perspectives within physical therapists’ management of low back pain, there are many opportunities to improve on the current order of affairs. Taking advantage of these opportunities seems to be especially important for low back pain, which is commonly experienced and has a strong adverse impact on society, yet often is not managed from a psychosocial perspective. Ultimately, it is envisaged that progress in the biopsychosocial management of low back pain will serve to enhance physical ther-
### Embedding Psychosocial Perspectives Within Clinical Management of Low Back Pain

<table>
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<tr>
<th>Future Directions</th>
<th>Current Physical Therapist Practice</th>
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| Research          | Despite recent advances in our understanding of psychosocial aspects of low back care, the following research directions should provide important additional contributions:  
- a clear set of variables to accurately identify patients in need of more-intense and comprehensive management;  
- clearly establish which psychosocial factors are most appropriate as prognostic factors, treatment effect modifiers, and treatment mediators;  
- accurate and systematic psychosocial screening protocols that are feasible for use in clinical practice;  
- evidence on approaches to better target treatment interventions using more defined dosages;  
- high-quality research that tests education strategies at both entry and postgraduation levels. |
| Clinical practice | • One of the greatest challenges facing practice environments is finding appropriate mechanisms with which to provide incentives for physical therapists to engage in, and adhere to, best practice recommendations that include appropriate psychosocial assessments and treatments.  
• Although pay-for-performance concepts and pilot programs have been designed with incentives in mind, there has not been a consensus on their implementation, yet they have the potential to facilitate both more-widespread use of simple screening tools to identify psychosocial obstacles to recovery and a clearer focus on their assessment and management. This approach appears to be especially effective if the explicit management of the psychosocial obstacles results in better patient outcomes.  
• Once physical therapists realize that their clinical performance is going to be based partly on how well they conform to best standards of practice, it would seem logical that there might be renewed interest in professional development activities aimed at increasing knowledge and skills in the assessment and management of psychosocial factors. |
| Education         | • Entry-level physical therapist programs are already credit rich, with little room for additional course material related to psychosocial and pain factors. Thus, the addition of more material related to psychosocial factors may seem improbable.  
• However, if education programs are truly dedicated to the notion of evidence-based care, the time dedicated to specific topics should be related to the degree to which these topics have an evidence base for direct impact on clinical management. Such an approach may lead to decisions to spend less time on biomechanical and biomedical areas lacking underpinning clinical evidence and more time on other, more evidence-based areas such as the detection and elimination of psychosocial obstacles to recovery.  
• These sorts of arguments can be contentious, as they may require reduction of time or even elimination of some “sacred cows” within the professional curriculum. However, elimination of content areas that lack supporting evidence should be seen as a way to potentially advance the profession into areas associated with better patient management skills. |

**Figure 4.** Future directions.
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apists’ clinical practice and scope of practice to meet the challenges of the impact of musculoskeletal and low back pain on patients and associated demand for physical therapy services.

Professor Foster provided concept/idea/project design and project management. Both authors provided writing.

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References


28 Kent PM, Keating JL, Taylor NF. Primary care clinicians use variable methods to assess acute nonspecific low back pain and usually focus on impairments. Man Ther. 2009;14:88–100.

29 Smart K, Doody C. The clinical reasoning of physical therapists with low back pain. BMC Health Serv Res. 2010;20:1–12.


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