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Defining the Role of Cognitive Behavioral Therapy in Treating Chronic Low Back Pain: An Overview

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Abstract

Study Design Narrative review of the literature.

Objectives Determine if the term *cognitive behavioral therapy* (CBT) is useful in clinical care and research. What literature supports these variables being relevant to the experience of chronic pain? What effects of CBT in treating these factors have been documented? What methods and platforms are available to administer CBT?

Methods Chronic low back pain (CLBP) is a complex neurologic disorder with many components. CBT refers to a broad family of therapies that address both maladaptive thoughts and behaviors. There are several ways to deliver it. CLBP was broken into five categories that affect the perception of pain, and the literature was reviewed to see the effects of CBT on these variables.

Results The term *cognitive behavioral therapy* has little use in future research because it covers such a wide range of therapies. CBT should always be defined by the problem it is intended to solve. The format and method of delivery should be defined because they have implications for outcomes. They are readily available even at the primary care level. The effectiveness of CBT is unquestioned regarding its effectiveness in treating each of the variables that affect CLBP. It is unclear why it is not more widely implemented.

Conclusions CBT represents a family of therapies that are effective for a wide range of problems, many of which coexist with and influence CLBP. Each of the variables can be improved with focused CBT. Early, widespread adoption of CBT in treating and preventing CLBP is recommended. Future research and clinical care should focus on strategies to operationalize these well-documented treatments utilizing a public health approach.

Keywords

- cognitive behavioral therapy
- insomnia
- structured care
- catastrophizing
- chronic pain
- expressive writing
- CBT implementation
- presurgical screening

Introduction

Cognitive behavioral therapy (CBT) is a form of psychotherapy that has been documented to be effective in treating anxiety, insomnia, depression, addictions, and other mental disorders.[1–8] It has also been utilized in the treatment of chronic low back pain (CLBP).[9] Hoffman et al conducted a detailed meta-analysis demonstrating a strong therapeutic effect of psychological interventions on the treatment of CLBP. CBT was noted to be particularly effective.[10]

The literature contains many studies that compare CBT with isolated treatments for CLBP such as physical therapy and surgery.[1,2,11,12] The problem from a research perspective is that *cognitive behavioral therapy* is a general term that encompasses many variations and subentities under an umbrella term[9]; in addition, multiple factors affect the

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Table 1 Variables influencing the perception of chronic low back pain

Sleep[38]
Stress
Anxiety
Fear avoidance[13,54]
Catastrophizing[3,5]
Anger[49]
Injury conviction[50]
Depression[43]
Medications
Compliance[63]
Physical conditioning[1,2]
Life outlook
Forgiveness[27]

perception of pain (►**Table 1**). Therefore, looking at CBT in the treatment of CLBP may provide limited clinically useful information.

Indeed an extensive Cochrane review concluded: "There is no need for more general RCTs [randomized controlled trials] reporting group means, rather, different types of studies and analyses are needed to identify which components of CBT work for which type of patient on which outcome/s, and to try to understand why."[7]

The purpose of this article is to delineate the factors that have been reported to affect the perception of pain and what role the different types of CBT might have in addressing them. The manner and setting in which CBT is delivered will also be considered.

Methods

This study is a narrative educational review, and we note the potential for bias or omission of important articles. We sought to perform a formal systematic literature review at the onset of this project and after a midpoint review decided to base this article primarily on the conclusions of systematic reviews and meta-analyses instead. Individual studies are presented to illustrate promising areas for further research and clinical applications. In light of the vast nature of the literature regarding CBT for a multitude of different medical conditions, we decided to reframe our project with the intent to clarify the basic CBT concepts that are applicable to CLBP and to suggest a direction for further studies. Our intent was to educate spine providers about the options of selectively using elements of CBT for the various clinical scenarios that occur in the presence of CLBP.

Results

Defining Cognitive Behavioral Therapy

CBT describes a category of therapies that address the effect that thoughts have on behavior, emotions, and symptoms. It is more focused on the present situation rather than the influence of the past on your current experience.

One premise of CBT is that thoughts create a physiologic response that usually includes adrenaline and cortisol. Thoughts may represent cognitive distortions that have little to do with reality. The result may be unpleasant in that it includes a physical sense of alertness and tension to enable a "fight or flight" response. CBT aims to create an awareness of these distortions and resultant maladaptive behaviors (i.e., to identify automatic negative thoughts). CBT has been reported to be effective in treating anxiety and depression as well as other mental health conditions.[6,8] CBT is particularly relevant to the treatment of chronic pain,[9] in that different stressors and states of mind have an adverse effect on the perception of pain and functional outcomes.[13]

Ehde et al summarized the literature regarding the goals of CBT to reduce pain and psychological distress and improve physical and role function in the treatment of chronic pain by decreasing maladaptive behaviors, increasing adaptive behaviors, identifying and correcting maladaptive thoughts and beliefs, and increasing self-efficacy for pain management.[9]

Background of Cognitive Behavioral Therapy

The origins of CBT began with Albert Ellis in the 1950s. He is considered one of the most influential psychologists in history, publishing over 800 peer-reviewed papers. His term for this treatment approach was *rational emotive behavior therapy*. He founded the Albert Ellis Institute in 1959, which continues to disseminate these principles.[14] Interestingly, he gave credit to the Stoics who were influential in Roman times for the formation of basic cognitive concepts. He particularly recognized Epictetus (55 to 135 BC), a Greek philosopher who was exiled by the Romans, who stressed that human beings cannot control life, only their responses to it.[15]

Aaron Beck, an internationally renowned psychiatrist who is considered the father of CBT, modified the concepts developed by Albert Ellis and conducted extensive research regarding the role of thoughts in creating emotions. His work became influential beginning in the 1960s. The Beck Institute, founded in 1994, actively promotes CBT concepts through research, clinical care, and training health care professionals.[16]

David Burns, a Stanford psychiatrist, popularized Beck's work in a best-selling book, *Feeling Good,* published in 1980.[17] He also is actively engaged in research as well as teaching and training.

Types of Cognitive Behavioral Therapy

"Cognitive Behavioral Therapy"

A more traditional psychological approach to pain is operant conditioning, with which the various forms of CBT are often compared. This approach focuses on extinguishing maladaptive behavior and reinforcing positive reactions to pain. It is traditionally based on reward and punishment of behaviors in contrast to addressing the cognitive component of pain.[13]

CBT addresses both the cognitive and behavioral elements of a given problem. It is important to realize that there is no standard CBT protocol, and indeed many different techniques

are used to administer it. CBT may be perceived as a specific treatment paradigm but is really a descriptor for a "family" of treatments. Mansell proposed seven areas of CBT that need to be clarified to improve the delivery of CBT. The three most important are clarity (shared definitions of CBT and its terminology), coherence (shared therapeutic principles and theory), and cohesion (integration of individuals and subgroups using CBT).[18]

One problem when evaluating CBT is that the information learned is limited unless the type of CBT is clearly defined and the intended outcome of treatment is measured.

Third-Wave Cognitive Behavioral Therapy

CBT can be combined with treatments that calm the nervous system such as mindfulness and meditation. Instead of confronting and addressing the content of the thoughts, the participant learns to watch and disassociate from them. Tools include relaxation, mindfulness, meditation, acupuncture, medical hypnosis, play, among others. The general term being used for this more eclectic approach is *Third-Wave CBT*.[19]

One review regarding the role of Third-Wave CBT in treating depression described seven different approaches.[19] Again, the term describes a family of therapies that include various relaxation techniques. Meaningful data regarding its efficacy would still have to focus on the specific variable being treated.

For example, Acceptance Commitment Therapy or adaptive CBT was developed in the 1980s. Instead of challenging intrusive thoughts, patients learn to accept and separate from them rather than judging or reacting to them. It is complementary to core CBT, which is cognitive identification, cognitive reappraisal, and behavior modification. As meditation and mindfulness have already been shown to be effective in treating pain, it is felt that this combination should be helpful, but the evidence regarding the efficacy of this combination of therapies is limited.[20]

An extensive Cochrane Review regarding its applicability to depression concluded that the data is promising but not robust enough to specifically recommend it compared with treatment as usual.[19]

Problem-Focused Cognitive Behavioral Therapy

By definition, all CBTs are problem-focused. The treatments are always targeted for specific issues and outcomes. Although anxiety is universal, CBT focuses on specific thoughts and behaviors around anxiety. Phobias would require an even more-specific approach.[21]

Brox's group conducted a randomized prospective study comparing a focused CBT for physical activation compared with a spine fusion for low back pain. CBT was comparable to fusion surgery but at 1-year follow-up, there was less fear avoidance in the CBT group.[2] A longer-term follow-up (4 years) of the same protocol confirmed these findings.[1]

A prospective randomized study compared early rehabilitation after a lumbar fusion. One group was placed into a structured exercise program and the other into exercise plus CBT geared toward modifying maladaptive pain conditions, behaviors, and motor control. This combination was termed *psychomotor therapy*. This group had improved functional disability, self-efficacy, outcomes expectancy, and less fear of movement/reinjury.[22]

Modes of Delivery

Individual Therapy

CBT is frequently administered in a one-to-one setting, which is ideal if there is a good fit of the patient with the mental health professional. Such an arrangement provides guidance, therapeutic alliance, and support.

Unfortunately, there is limited access to mental health resources, especially individual therapists. Access is limited because of both the availability of therapists and insurance coverage. Despite the federal government mandating that mental health be placed on even par with physical health, not much has changed to allow easier access to these resources. Nonetheless, this variable should be noted in directing patients to CBT.

With proper training, CBT can be administered by all who treat patients with pain such as family physicians, rehabilitation physicians, surgeons, physical therapists,[11,12] nurses, and occupational therapists.[23]

Group Treatments

Social isolation is a significant issue for many patients suffering from chronic pain. Unfortunately, in this state, the brain is spending more time on pain pathways and obsessing about the problems. People in pain may not have the energy to associate with others and eventually lose interest if they become depressed. They are also not that enjoyable to be with and they may drive friends and family away.

Social isolation causes the same part of the brain to light up on functional magnetic resonance imaging (MRI) as in physical pain; the pattern of responses are similar and reproducible. Social pain and physical pain are essentially one and the same. This adaptation may be part of the evolutionary process that allowed the more social species to survive.[24]

The interaction with other people is a powerful way of creating a shift out of pain pathways as well as diminishing the activity in the pain center.[23] One study reported that teacher-administered CBT could decrease depression, anxiety, and impulsivity in high-risk students.[25]

Self-Administered

Bibliotherapy is the use of reading materials to learn and implement CBT without the guidance of a mental health professional. Studies have reported a high success rate in treating anxiety and depression with just this approach alone.[26] Without access to mental health care, a self-administered approach can be considered as an option.

Another platform for self-directed CBT is the Internet. A systematic review looked at how a computerized format might be accepted in rural areas. The authors concluded it was a viable and effective platform and that rural patients might be more open to it than to face-to-face contact with practitioners.[6]

For a patient, taking responsibility for the present situation would logically be helpful for a successful long-term outcome. One way of assessing this responsibility is the "locus of control" concept. Patients with an external locus of control look to the environment as their source of happiness; patients with an internal locus of control look inward for life satisfaction.[27] When using screening tools, determining the patient's locus of control may be helpful. If a given patient refuses to engage in these tools and still demands treatment, it is a clear indication that he or she has an external locus of control. This scenario is a catch-22 of self-directed care in that one of the aims of CBT is to develop a sense of responsibility and internal locus of control.[28]

Expressive Writing—with or without Cognitive Behavioral Therapy

An approach that has been studied extensively in ~200 publications since 1982 is the use of expressive writing. The original study by Pennebaker reported the course of volunteers who were asked to write about an adverse life experience in detail.[29] They were asked to write for 20 minutes, 4 days in a row. The control group just recorded the day's events. A 2005 review article of the impact of this simple exercise reported improved immune system function, fewer stress-related visits to the doctor, reduced blood pressure, improved lung function, fewer inpatient days in the hospital, improved mood/affect, feeling of greater psychological well-being, less depressive symptoms before exams, reduced absenteeism from work, quicker reemployment after job loss, improved working memory, improved sporting performance, higher student grade point average, and altered social and linguistic behavior.[30] There was also improvement in chronic pelvic pain as well as a decrease in sleep latency.

A small prospective study looked at the effect of expressive writing on the effectiveness of physical therapy. There were 20 patients in each group. The writing cohort showed significant improvements in pain, posture, and overall sense of well-being. Pain continued to decrease 6 months later only in the writing group.[31]

CBT may be combined with expressive writing. There is some evidence that it is more effective when combined with positive expression. Some advocate just writing a stream of consciousness. Although expressive writing is often used with CBT, it is a different entity. CBT is based on challenging disruptive thought patterns and beliefs. The writing increases the awareness of the negative thoughts, which is increasingly seen as important for mental health.[30,32]

Cognitive Behavioral Therapy's Role in Treating the Factors Affecting the Perception of Chronic Low Back Pain

The emergence of sophisticated functional MRI has allowed researchers to describe the neurologic basis of chronic pain. The nervous system is involved in the transition from acute to chronic pain. Several basic changes have been reported:

- There are changes in both gray and white matter in pain processing regions. The pain brain map grows and the motor cortex map shrinks. Fortunately, these maps can be reversed with treatment.[33]
- Mental and physical pain is sensed in close proximity with similar reaction patterns on functional MRI.[24]
- Back pain circuits shift from the nociceptive center to the emotional center within 12 months of onset.[34]
- The neuroexcitatory effect of prolonged cytokine immune response leads to a "wind-up" increased pain response.
- With sustained pain, patients feel trapped and angry. The resultant chemical hypersensitivity and inflammatory response create a multitude of physical symptoms in addition to magnifying the pain.[35]
- Pain pathways, mental and physical, are structurally imbedded (central sensitization), and it takes neuroplastic reorganization to recover from chronic pain.[36]

To successfully treat chronic pain, interventions that stimulate neuroplasticity to rewire the brain and also to calm down the nervous system are warranted. All the factors that affect pain should be addressed to optimize the outcome (►**Table 1**). CBT can be helpful in treating each of these variables either directly or by improving compliance with care.

Cognitive Behavioral Therapy and Sleep

Poor sleep quality is common in patients suffering from chronic pain. It is debated whether lack of sleep exacerbates the pain or the pain prevents sleep.[37] Regardless of the source of insomnia, it is important to address it as part of the treatment program. One study suggests that poor sleep quality is a better predictor of disability than the actual severity of the pain.[38]

Effect of Cognitive Behavioral Therapy in Addressing Sleep

There are various stepwise approaches to address sleep disturbance. *Sleep hygiene* refers to a set of strategies that improve the chances of falling asleep, such as avoiding caffeine in the afternoon, not having a clock in the bedroom, only going to bed to sleep when you are tired, among other. However, it is more difficult to obtain adequate sleep when experiencing pain. Sleep medications may be required for a defined period of time to break the cycle. CBT can be directed at insomnia or the depression and anxiety that may be the cause of insomnia. CBT-I (CBT-insomnia) is an example of a problem-focused therapy intended to improve the quality of sleep.[4] One study suggests that patients who have a successful resolution of their depression have a much lower relapse if they are sleeping well.[39]

Managing Stress: Role of Depression and Catastrophizing in Exacerbating Chronic Pain

Linton did a meta-analysis of the link between psychosocial stress and chronic pain.[40] He collected 913 articles, with the resultant meta-analysis utilizing 37 studies. Linton reported a significant association between stress and pain and poorer outcomes of spine surgery in stressed patients.[40] A review documented the relationship between depression and catastrophizing with rheumatologic disorders.[3] Catastrophizing is reported to increase pain and decrease the effectiveness of biomedical interventions. Prolonged stress has a profound

effect on almost every organ system including the immune system and inflammatory response.[3]

Carragee et al conducted a 5-year prospective study in volunteers with persistent back pain.[41] The researchers documented MRI findings and performed diskography in 25 patients. He demonstrated that psychosocial variables strongly predicted both long- and short-term disability events. He used the DRAM index, which is a combination of a depression and somatization scale and the fear avoidance questionnaire. There was no correlation of the disk pathology with the development of disabling pain, except for a mild correlation with the presence of Modic changes.[41]

Multiple studies have reported the poorer outcomes regarding pain and function in the presence of coexisting depression, catastrophizing, and fear avoidance belief.[5,42,43] One study reported some improvement in mental health if the surgery is successful.[44]

Several studies have reported that the use of presurgical psychological screening can help predict surgical outcomes. The Texas Back Institute reported 82% accuracy in predicting a positive surgical outcome.[45] Chou and Shekelle did an extensive literature review (1966 to 2010) on the predictors for developing persistent low back pain. The most effective components were maladaptive pain coping behaviors, nonorganic signs, functional impairment, general health status, and presence of psychiatric comorbidities.[46]

Most surgeons currently are not routinely evaluating psychosocial risk factors and they may have a limited ability to do so.[47] Daubs et al[64] prospectively administered a DRAM index to a cohort of orthopedic spine patients in a clinical setting. However, the overall sensitivity for detecting patients with high levels of distress was low. Using CBT to treat depression and catastrophizing was felt to be a meaningful intervention.

A meta-analysis compared the effectiveness of treating anxiety compared with a psychological placebo and a waiting list group. There was moderate evidence that CBT was effective in treating anxiety. The study suggests that the beneficial effect in the treatment of pain is mediated through decreased pain catastrophizing.[8] Interestingly, one study showed that engaging patients in a graded physical conditioning program could decrease catastrophizing without the use of CBT. CBT alone was also effective in reducing it. As patients gained more confidence in their ability to move, they were able to calm themselves down.[5]

Cognitive Behavioral Therapy and Physical Health

Edwards et al summarized the effects of depression and catastrophizing on diminishing efforts to engage in healing behaviors.[3] There was a strong effect in blocking positive self-directed interventions. They cited references regarding knee arthritis, medication noncompliance, lack of weight control, and insufficient exercise among other self-destructive behaviors.

Another prospective study demonstrated that an Internet-based CBT program could be helpful for patients with residual symptoms after physical rehabilitation.[48]

Richmond et al conducted a meta-analysis comparing CBT to usual care/wait list and guideline-based treatment for CLBP. They included any duration of low back pain and all age groups. The significant benefits in decreasing pain and disability and improving quality of life were maintained at longer-term follow-up. Although the various types and administration of CBT were documented, the results were reported for the general category of CBT.[65]

Life Outlook—Cognitive Distortions

CBT identifies various common cognitive distortions that in chronic pain may become deeply ingrained and evolve into an injury conviction and anger. Unrelenting anger may create a hypervigilant state of arousal and adds to the magnitude of the pain. Eventually it evolves into rage.[49]

Whether the original series of events that created the chronic pain were valid or become distorted over time makes no difference. The ongoing bodily reaction of anger creates a series of undesirable sequelae. One of those is "blame," also referred to as an "external locus of control." Possibly one of the most important factors in determining long-term success in addressing chronic pain is achieving a transition from an external to an internal locus of control.[27]

A 2003 study reported a link between the hyperarousal state of being angry and increased levels of pain. A majority of patients remained angry with the person or situation that created the pain.[50] Interestingly, one study showed that patients were commonly angry at themselves. It was suggested that CBT could improve pain by addressing the depression around pain and anger.[51]

One prospective study concluded that there was a higher external locus of control in treated patients versus those who were waiting to be treated with physical therapy. It raised the question of the providers reinforcing this belief system.[52]

The locus of control can be switched in a multidisciplinary pain clinic setting. This setting usually includes a form of psychological intervention, but it is unclear whether CBT alone can accomplish this shift.[53]

In a review article, Vlaeyen and Linton wrote that fear of pain was more of a problem than the actual pain experience. The resultant fear avoidance behavior reinforces chronic pain and disability.[54]

One foundational concept of CBT is to systematically identify and challenge these distortions in thinking. Then the next steps of substituting more rational thoughts versus engaging in mindfulness or other options depends on the therapist's approach. Catastrophizing is one of the cognitive distortions that has been associated with a poor prognosis.[3]

If a patient has deep anger or rage, the capacity of the patient to listen and understand may be compromised. The role of anger in creating depression and pain catastrophizing is beyond the discussion of this article. CBT is one tool but, for example, if a patient has a history of severe trauma, more sophisticated and focused strategies must be utilized.

A Framework of How Cognitive Behavioral Therapy May Be Implemented for Patients with Chronic Low Back Pain

As part of this review, we evaluated different types of CBT, as well as methods and formats of delivery. A multipronged rather than a multidisciplinary approach is suggested.

Possible Treatment Paradigm

The need for early identification of (and intervention for) at-risk patients with chronic pain has been documented in the literature for decades. Waddell reported a return to work rate of less than 5% if a patient was disabled for more than 2 years.[55] Therefore, the goal of care for any patient in pain is to quickly treat the acute phase and prevent it from becoming chronic. It is noteworthy that in one study 50% of the acute group progressed to CLBP.[34]

From a human suffering and cost perspective, patients at risk for developing chronic pain can actually be identified at the time of presentation. A small percentage of patients are responsible for over half of all health care costs.[56] Fear avoidance is consistently identified as a risk for disability.[57] A 2008 meta-analysis also showed that worker expectations have significant impact on return to work for nonspecific low back pain.[57] Early identification is important, and examples of validated questionnaires to accomplish this task include the DRAM index,[44] Fear Avoidance Behavior Questionnaire (FABQ),[42] and the Battery for Health Improvement (long and short form).[58] This process could be accomplished at the primary care level. Interestingly, one study showed that primary care physicians who expressed a special interest in musculoskeletal care were more likely to have faulty belief systems regarding the management of low back pain.[59] It is also important to understand that mental and physical pain are processed in the same part of the brain and should be treated in a similar manner.[24]

Acute and Subacute Pain—Multipronged Approach

If a patient has acute pain and is at low risk for developing chronic pain, then simple symptomatic care should be sufficient. However, if there are risk factors and/or the pain persists for more than 6 weeks, then additional interventions should be implemented targeting all the relevant factors affecting the situation. Linton, in a systematic review, found that psychological factors influenced development of chronic neck and back pain for acute, subacute, and persistent pain.[40]

Linton also demonstrated a ninefold decrease in long-term disability with a six-session CBT intervention in acute and subacute patients with spinal pain compared with patients only given information in pamphlets. This approach can be applied to primary care settings.[40]

Resources to address the cognitive and behavioral issues are easily available and do not require a full pain clinic setting to implement. Treatment can be accessed through books and the Internet. Delivery can be given in a group setting, self-administered, or administered individually by nontraditional providers such as nurses, occupational therapists, and physical therapists.

Chronic Pain—Multidisciplinary Approach

Should a patient's pain persist more than 3 months, a multidisciplinary approach is preferable. At this point, there are almost always more substantial issues that require professional assistance. CBT can be administered either in a group or an individual setting. Ideally, all the aspects of pain are addressed in these sessions.[60]

Finally, the ultimate goal for long-lasting successful outcomes is for the patient to develop an internal locus of control. Although the above-mentioned approach may work for a while, it is not sustainable unless the patient takes full responsibility for his or her care. A challenging paradox arises when patients who have a strong external locus of control, such as a strong injury conviction, will not engage in any of the strategies needed for healing. CBT may help shift the locus of control but alternate approaches may be needed.

In general, it seems desirable that a methodological approach that addresses mental health factors is utilized in every patient prior to the use of any invasive elective procedures. Distressed patients are more vulnerable to adverse events when undergoing procedures.[61] The United States Preventive Services Task Force recommended the use of routine presurgical psychological screening if resources are available to address the identified problem.[62] To date, only a minority of surgeons have implemented this practice.[47]

Future Research to Better Specify the Effectiveness of Cognitive Behavioral Therapy for Treating Chronic Low Back Pain

The evidence that psychosocial factors negatively affect outcomes of any treatment is irrefutable.[40] Yet few surgeons assess or treat these issues.[47] Methodologies should be developed and documented to ensure that every patient has mental health disorders defined and treated before undergoing elective procedures, especially in more invasive procedures such as spine fusions. The utilization of mental health screening and follow-up therapy might be of interest from a public health perspective.

The term *cognitive behavioral therapy* used in isolation should probably be discarded. Future research should always identify what aspect of a person's problem is to be addressed by what type of CBT. By definition, CBT always targets a specific set of behaviors and/or thought patterns. Many of these affect the perception of pain. The questions should be, "Did the CBT successfully treat a given variable? If so, how did the resolution of that specific problem affect the CLBP? How many issues need to be solved before the pain resolves? Are there core problems that are more important to address first?" Only by breaking CBT down to specific focused outcomes will we better understand its role in treating CLBP.

One important challenge is the development of resources and pathways to enable early identification and treatment of at-risk patients. Different validated questionnaires exist to profile this risk, and treatments could be made readily available. We recommend that future research focus on methodologies to implement and sustain known effective

treatments, which would hold true for focused CBT as well as addressing other aspects of chronic pain. Questions include:

- Who can develop these systems and tools and sustain them?
- What payment model must be developed to make these types of nonprocedural treatments equitable?
- What percent of money spent on procedures with poorly documented outcomes should be spent on strategies that are effective?
- What is the best way to create accountability?

Conclusion

CLBP is a neurophysiological disorder that is affected by multiple factors. Theoretically, the most effective treatment would systematically address every relevant variable for any given patient. Ideally, the patient would also be a partner in a shared decision-making process, which means he or she must have internal locus of control.

CBT can have an impact on most of these factors affecting the perception of pain. There are many types of CBT and ways of implementing it. Each has unique characteristics that must be considered when evaluating the role of CBT in treating CLBP in a given patient.

CBT can be accessible through delivery models than can be implemented early in a patient's care. Prompt identification of at-risk patients for the development of CLBP is necessary to take advantage of these resources.

Disclosures
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Editorial Perspective

Our reviewers were appreciative of the attention placed on the topic of CBT by Hanscom and colleagues, as use of these forms of therapy should be very important to spine care professionals and have been largely unappreciated in the past. The initially submitted idea for a Systematic Review of CBT regarding CLBP management turned out to be impossible to perform in light of the magnitude and diversity of the literature on this subject. After discussions with the authors, *Evidence-Based Spine-Care Journal* (EBSJ)/*Global Spine Journal* (GSJ) agreed to a resubmission of the study as a Narrative Review on the topic of cognitive behavioral health in the management of CLBP. Hopefully, the readership will agree that the authors provide a helpful introduction and overview of this area of care. There are several valuable take-home points from this article:

- Concepts of pain, and especially chronic pain, are probably not adequately taught in medical schools around the world. These subjects are certainly not part of the curriculum in the training of most spine surgeons. Similarly, identifying risk factors for the emergence of chronic pain are also not part of routine medical practice. This article highlights that in the future, primary care providers ideally would be trained to identify patients at risk for the development of chronic pain to facilitate early intervention rather than requiring late and costly interventions. In light of the high direct and indirect costs of low back pain care, the integration of such mental health and distress screening programs into the basic primary care evaluations would be of high public health interest.
- CBT is not one single entity but an array of therapeutic interventions directed at specific aspects of patient dysfunction. This distinction is important as future research in spine using CBT-type intervention can be rightfully expected to provide more differentiated details on the type of therapies administered and the timing and duration of such interventions.
- Attempts at comparing surgical treatment for CLBP and CBT are probably misguided. There is little reason to not make some form of CBT part of routine elective spine care and utilize screening tests to better identify patients at risk for poor outcomes based on psychosocial comorbidities.

EBSJ/GSJ thanks the authors for their efforts at educating spine surgeons around the world on this important topic and hopes that they will use this platform for more in-depth studies on this topic.