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Pain measurement in patients with low back pain

Anne F Mannion*, Federico Balagué, Ferran Pellisé and Christine Cedraschi

SUMMARY

Pain is a multidimensional experience that is a prominent feature of many musculoskeletal disorders. Despite its subjective nature, pain is a highly relevant complaint; hence, nothing should deter physicians from attempting to formally assess it. This Review summarizes the main aspects of pain measurement from a practical standpoint, with a specific focus on low back pain. On balance, for the assessment of pain intensity, categorical scales with verbal descriptors or numerical rating scales seem to be preferable to traditional visual analogue scales, although no single best measure can be recommended. Pain per se should be assessed, rather than surrogate measures such as analgesic use. Back and leg pain should be evaluated separately in patients in whom these conditions coexist. For assessing change, prospective measurements are preferable to retrospective reports. Pain is not synonymous with function or quality of life, and other tools covering these important outcome dimensions should complement the assessment of pain, especially in patients with chronic symptoms. Clinicians should be aware of the psychometric properties of the tool to be used, including its level of imprecision (random measurement error) and its minimum clinically important difference (score difference indicating meaningful change in clinical status).

KEYWORDS low back pain, measurement, musculoskeletal pain, pain scales, psychometric properties

REVIEW CRITERIA

This Review was based on a PubMed search done using combinations of the following key words: "low back pain", "backache" or "pain", combined with different associations (AND/OR) of "evaluation", "measurement", "tools", "instruments" and "validity". Studies on animals were excluded, but no time limit or language limit was imposed. We emphasize that this article cannot be considered a systematic review. Due to space constraints, not all literature that was identified could be included in the review; instead, we elected to focus on key papers in the field, attempting to present a balanced perspective whenever opposing views were encountered.

CME

AF Mannion is Senior Research Fellow (Spine Center) and Head of Research and Development at the Schulthess Klinik, Zürich, Switzerland. F Balagué is Associate Clinical Director of the Department of Rheumatology, Physical Medicine and Rehabilitation, Fribourg Hospital, Switzerland. F Pellisé is a Consultant Spine Surgeon at the Spine Unit, Orthopaedic Department, Hospital Universitari de Traumatologia I Rehabilitació Vall d'Hebron, Barcelona, Spain. C Cedraschi is a Research and Clinical Psychologist in the Divisions of General Medical Rehabilitation and Clinical Pharmacology and Toxicology, Geneva University Hospitals, Switzerland.

Correspondence
*Spine Center, Schulthess Klinik, Lengghalde 2, 8008 Zürich, Switzerland
anne.mannion@kws.ch

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Learning objectives

Upon completion of this activity, participants should be able to:

1 Identify the most and least appropriate pain intensity assessment tools for clinical use.
2 Describe appropriate time frames for pain measurement for different types of pain.
3 Define the minimum clinically important difference (MCID) in pain assessment.
4 Describe the level of MCID pertinent to different types of pain.
5 List other important clinical aspects of pain management not included in pain measurement.

INTRODUCTION

Pain is a major cause of morbidity, with the low back being one of the most common locations of symptoms. Low back pain (LBP) has a considerable impact on both the individual sufferer and society at large. The accurate assessment of pain is a prerequisite for its effective management,[1] yet the systematic quantification of this common symptom is rare in clinical practice.[2] It is difficult for the busy clinician to keep abreast of the continually emerging scientific literature on pain assessment; the intention of this article is to provide a clear and practical overview of the current information. This Review is not exhaustive, but it is based on an extensive search of the literature and the knowledge and experience of a multidisciplinary group of authors. We aim to provide recommendations for daily clinical practice. The main focus of this Review is LBP, but many of the principles discussed and tools recommended are applicable to other musculoskeletal conditions.

WHY MEASURE PAIN?

In some specialties, such as cardiology or oncology, primary outcomes might be mortality or survival. Such end points are not applicable in LBP. The importance of pain was highlighted in the 1990s when the American Pain Society declared it to be the fifth vital sign of medical examination.[3] In LBP, pain has been described as one of the cardinal domains to be assessed along with back-specific function, generic health status, work disability, and patient satisfaction.[4–6] Pain is one of the best determinants of disability due to LBP[7,8] and is predictive of work resumption within the year following related short-term absence.[9]

Traditionally, within the biomedical model, pain has been regarded as a subjective measure, while physical examination, laboratory tests, and imaging studies are considered more objective measures. Correlations between self-reported pain and both self-reported disability and objective measures of function (e.g. range of motion, muscle performance tests) are sometimes significant but are invariably weak,[6,7,10] highlighting the necessity of measuring pain itself. In patients with chronic LBP, the use of pain medication such as opiates is not always associated with pain severity,[11] indicating that drug intake might not be appropriate as a surrogate measure of pain.

Measurement of pain often yields much greater treatment effect sizes, or responsiveness, than physical variables[7,12] or condition-specific instruments[13] (i.e. it is the more 'sensitive' measure for evaluating the effects of treatment). Finally, and of importance, the patient typically seeks care due to pain, and hence this is the variable that needs to be carefully assessed both at baseline and in response to treatment. In other words, pain itself is the most relevant variable in the syndrome of LBP.

CAN PAIN BE MEASURED?

Pain has been defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[14] Pain is a highly personal experience and the patient is thus the best informant;[2,15,16] it is a multidimensional phenomenon that includes physiologic, sensory, affective, cognitive, behavioral, and sociocultural aspects. The understanding and interpretation of symptoms (beliefs and cognitions) is well known to modulate the pain experience. This experience might be associated with emotional reactions, such as anxiety, distress, or depression, which could in turn give rise to illness behaviors that then influence the individual's private, social, and professional activities. The social environment might or might not allow or reinforce the expression of symptoms and their consequences. Consideration of these various dimensions acknowledges the multifaceted nature of pain and confirms that the global evaluation of pain is not a straightforward matter.

The influence of various factors that modify patients' pain perception and reporting—such as age, sex, race, income, type of health insurance, comorbidity, education, work satisfaction, anxiety, and depression—appears to be variable.[16–21] The identification of confounders in the measurement of pain is, however, difficult because of the lack of any external reference or gold standard. Typically, predictors are sought that (statistically) account for the differences in pain levels of patients with a given clinical condition or in response to experimental pain. Whether this model is valid (i.e. whether the 'exposure' or pain stimulus can otherwise be considered the same in all individuals) is, however, not certain.

A review of pain assessment in clinical and health services research highlighted the pros and cons of the most frequently used tools.[22] The recall of key parameters of chronic recurrent pain (average intensity, interference with activities, activity-limitation days, and days with pain) had acceptable validity for at least a 3-month recall period.[22] Hence, despite its intrinsic complexity, it is still possible for clinicians and researchers to gather useful information on pain.

THE AVAILABLE TOOLS

An exhaustive description of all the available pain measurement tools is beyond the scope of this article. Interested readers are referred to a review on the topic published elsewhere.[23] In many patients with back disorders, back pain and leg pain coexist with different intensities and respond differently to treatment; as such, the severity of each should always be measured separately.[6]

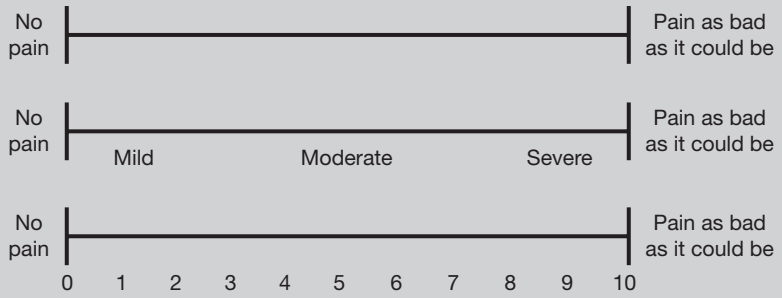
Pain intensity and pain affect

Various instruments have been developed to evaluate the two key dimensions of the pain experience—pain intensity (how much a person

Box 1 The visual analogue scale and graphic rating scale.

The visual analogue scale (VAS) consists of a line, usually 100 mm long, whose ends are labeled as the extremes ('no pain' and 'pain as bad as it could be'); the rest of the line is blank.[62] The patient is asked to put a mark on the line indicating their pain intensity (at the present time, over the past week, or over the past 2 weeks, etc.). The distance between that mark and the origin is measured to obtain the patient's score.

Sometimes descriptive terms, such as 'mild', 'moderate' and 'severe', or numbers are provided along the scale for guidance, as shown below, and the scale is then referred to as a graphic rating scale.[24,62]



hurts) and pain affect (how much a person suffers).[22,24] These dimensions are conceptually and statistically different but are not wholly independent.[22] Three methods have traditionally been used to measure pain intensity: visual analogue scales (VASs; Box 1), verbal rating scales (VRSs; Box 2), and numerical rating scales (NRSs; Box 3). VASs and VRSs are also commonly used to assess pain affect.[22,24,25]

For each type of scale, several versions are available, with different numbers of response levels (grades) for VRSs and NRSs and different space orientations and anchor words for VASs.[22] Sometimes the traditional VAS is supplemented with descriptive terms or numbers lined up along the scale for anchorage, producing what is then known as a graphic rating scale (Box 1).[24] Some still refer to the graphic scale as a VAS, which can cause confusion when discussing the merits of different scales. Both horizontal and vertical versions of the VAS exist, although some advise against the use of vertical scales in persons with chronic LBP.[26] Careful instructions regarding how to rate pain intensity on a VAS are imperative for its proper completion.[20,25] A short written introduction to the scale is, however, usually sufficient and further oral explanations do not seem to be necessary.[26] For all scales, the instructions should also be formulated in a manner that clearly states whether the question refers to current pain, usual pain, worst pain, average pain over a given time period, and so on.[26] The most appropriate time frame for measurement varies depending on the circumstances: for the assessment of acute pain or postoperative pain on the ward, current pain is most appropriate; for chronic pain, with its day-to-day fluctuations, an average rating over the preceding weeks (between 1 and 4) is recommended, with the precise period being influenced, in part, by the duration of any planned intervention and timing of the next follow-up. In chronic LBP it is not uncommon to inquire about current pain and worst and least pain in preceding weeks and then to take an average of these values as the representative value.[27]

In one study on patients with chronic pain, six different pain scales (traditional VAS, 101-point NRS, 11-point box scale, 6-point behavioral rating scale, 4-point VRS, and 5-point VRS) were compared in relation to their ease of administration of scoring, rates of correct responding, sensitivity (as defined by the number of available response categories), and responsiveness to change, as well as in terms of the predictive relationship between each scale and a linear combination of pain intensity indices.[28] The scales yielded similar results in terms of their predictive validity and the proportion of patients not responding as instructed (e.g. leaving response blank, marking between two categories, marking two answers, etc.). When considering the remaining criteria (responsiveness to change, ease of administration, sensitivity) the 101-point NRS proved to be the most practical index. In patients with osteoarthritis, VAS and VRS responses were shown to be highly correlated ($r \approx 0.7$–0.8) and the scales yielded similar effect sizes after treatment; however, the VRS was easier to administer and interpret.[29] Herr *et al.*[20] used an experimental pain model to compare five common pain scales. Although all scales were psychometrically sound, the VRS emerged as the overall scale of choice in both younger and older cohorts.

Proponents of VASs and 101-point NRS highlight the purportedly larger response ranges as a key advantage of these tools,[30] though whether such a high resolution really delivers more accurate results is uncertain.[28] In practice, many patients treat the 101-point NRS as a 21-point or an 11-point scale, consistently providing their responses in multiples of 5 or 10.[31] Furthermore, the error of measurement (Box 4) imposes a restriction on the minimal

score difference that can be reliably discriminated using the scale. Hence, 11-point and 21-point scales appear to provide sufficient levels of discrimination.[31]

VAS methods are sometimes criticized on the grounds of their being difficult to understand, with 7–16% higher failure rates being reported for VASs than for the VRSs and NRSs.[28,32,33] The problem is exacerbated in individuals with physical or cognitive impairment[20] and in the elderly.[33] Evidence shows that the visuospatial abilities required for the use of VASs are more affected by age than are the lexical abilities required for use of the NRSs or VRSs.[33] The VAS is also less reliable in illiterate patients.[34] The addition of markers to the traditional pain VASs (to form a graphic rating scale; Box 1) might render the scale more understandable; studies in other fields of medicine indicate that such anchors improve the reliability and sensitivity of the scale[35] and do not necessarily result in notable marker bias[36] (i.e. the tendency to be 'drawn' towards the markers when completing the scale).

The Faces Pain Scale, which was originally developed for use in children, incorporates schematic faces depicting increasing severity of expressed pain, each of which is associated with a number from 0 to 6;[37] this scale also appears to be a valid and reliable instrument for use in the elderly,[15] although it is not necessarily preferable to VRSs or NRSs.[20] The visual numeric scale was developed with the aim of reducing the amount of missing data in pain assessment.[38] This scale includes a horizontal line with anchors at both ends ('no pain' and 'severe pain'). The line is graded from 0 to 10, and vertical bars of increasing height and shading-depth are associated with each increasing number. The visual numeric scale was shown to be easier to administer and code than VASs and was sensitive to changes in pain after treatment.[38]

Box 2 The verbal rating scale.

Verbal rating scales (VRSs) consist of a list of adjectives that describe different levels of pain intensity.[62] A VRS for pain includes adjectives that reflect the extremes (e.g. 'no pain' to 'pain as bad as it could be'), and sufficient adjectives to capture the gradations in between. VRSs are most frequently five-point or six-point scales. The patient is asked to select in a questionnaire or state verbally the adjective that best describes his or her level of pain intensity. In behavioral rating scales, different pain levels are described by sentences including behavioral parameters.

SF-36 Bodily Pain subscale[12]

How much physical pain have you had during the past 4 weeks? (Please tick one box.)

- None
- Very mild
- Mild
- Moderate
- Severe
- Very severe

McGill Pain Questionnaire[12]

How strong is your pain? People agree that the following five words represent pain of increasing intensity. They are:

- Mild
- Discomforting
- Distressing
- Horrible
- Excruciating

Which word describes your pain right now? (At its worst? When it is least?)

Behavioral rating scale[24,28]

Please select the statement that best describes the level of your pain (today, over the last week, over the past 2 weeks, etc.):

- No pain
- Pain present, but can easily be ignored
- Pain present, cannot be ignored, but does not interfere with everyday activities
- Pain present, cannot be ignored, interferes with concentration
- Pain present, cannot be ignored, interferes with all tasks except taking care of basic needs such as going to the toilet and eating
- Pain present, cannot be ignored, rest or bed rest required

Pain frequency

Whether a single rating scale for symptoms suffices, or whether pain should be assessed in terms of frequency as well as intensity remains unclear. These issues are relevant to clinical care:[39] low-intensity pain might be of little concern if it is also infrequent, but its constant presence could markedly influence quality of life; likewise, rare episodes of intense pain would demand a different management strategy to constant disabling pain. The reality is that symptom intensity and frequency are often highly correlated and low–high combinations of the two are rare.[39] Symptom frequency was not included in the brief set of LBP core outcome measures recommended by Deyo *et al.*,[40] but they did recommend its inclusion as part of an expanded outcome set for research purposes. However, no specific tool was recommended for its measurement. Most authors appear to use a VRS for pain frequency, with varying numbers of response categories spanning the extremes

Box 3 The numeric rating scale.

The numeric rating scale (NRS) involves asking patients to rate their pain intensity by selecting a number on a scale from 0–10 (11-point scale), 0–20 (21-point scale), or 0–100 (101-point scale) by filling in a questionnaire or stating verbally a numerical level.[62] For example[28]:

"Please indicate on the line below the number between 0 and 100 that best describes your pain. A zero (0) would mean 'no pain' and a one hundred (100) would mean 'pain as bad as it could be'. Please write only one number." An empty box or line is provided for the corresponding number to be entered.

A slight variation of the NRS[24] is the box scale, where each number (e.g. 0–10) is written in a box and patients are asked:

"If a zero (0) means 'no pain' and a ten (10) means 'pain as bad as it could be', on this scale of 0–10, what is your level of pain? Put an "X" through that number."[28]

0	1	2	3	4	5	6	7	8	9	10

of 'never' and 'always'.[41,42] Interpretation of the intervening adjectives (e.g. occasionally, often), in terms of the equivalent in days per week or per month, is often not specified. Another type of pain frequency assessment is given by the absolute number of days of pain within a given period (e.g. 6 months).[22] Attempts have also been made to combine scores of intensity and frequency scales to produce a single scale with 5 points of pain level,[16] although such a bidimensional instrument remains to be formally validated.

Pain location

Topography of pain can be evaluated by means of the pain drawing, a diagram depicting the front and back of a human body on which the location (and sometimes other qualities) of the pain is marked. In some patients, the drawing might be influenced by psychosomatic disorders and be used to alert the physician accordingly,[43] although there is a lack of high-quality evidence to support the use of the pain drawing as a psychologic assessment tool.[44] Pain drawings used solely as pain locators generally show reliable results.[43,45] In a study that examined the ability of various tools to discriminate patients with chronic low back pain from those with other types of pain, the pain drawing showed 100% sensitivity, but its specificity was only 47% in men and 39% in women.[46]

The minimum clinically important difference

A key point in the assessment of pain concerns the minimal clinically important difference ([MCID] i.e. the minimum change score that represents a noteworthy clinical difference after treatment). MCID should be considered as an indicator, not a hard and fast value, that varies depending on both the duration of back pain (acute or chronic) and the initial severity.[47] Most MCIDs have been determined on the basis of improvement; the change score for relevant worsening is rarely examined, probably because the small number of patients who typically fall into this group threatens the statistical power of any such analyses. In the study of Hägg *et al.*,[27] the MCID of deterioration after treatment for chronic LBP was generally smaller than that of improvement, for all outcome instruments (for 0–100 mm VAS, an increase of 8 mm versus a reduction of 18 mm, respectively).

For patients with acute LBP the MCID for improvement on the 0–100 mm VASs is approximately 35 mm.[47,48] For patients with chronic LBP, the corresponding value is typically around 20 mm,[27,47] or a 32% reduction from baseline values.[49] The equivalent values for the 0–10-point NRSs are variably reported as 3.5–4.7 and 2.5–4.5 for patients with acute and chronic pain, respectively.[47,48] All these values exceed the minimal detectable change ($MDC_{95\%}$; Box 4), otherwise described as the noise or imprecision of the measurement instrument, which is typically around 15–20% of the full-scale range.[27,42] If the MCID did not exceed the level of imprecision, the utility of the instrument would be highly questionable.[27]

A review article on pain in rheumatic diseases highlighted that, on a 100 mm VAS, an intensity score of less than 10 mm was interpreted as no pain, while 20 mm was considered a useful cutoff for indicating relevant pain in patients with rheumatoid arthritis.[2] Furthermore, the vast majority of patients with inflammatory or degenerative disorders have been shown to consider a pain level of less than 25 mm to be acceptable.' Therefore, a score of 0 for pain might not be a realistic or necessary goal, and a score of 10–25 mm on a 100 mm VAS might indicate a relatively normal or acceptable status.[2]

Electronic tools for the collection of pain data

In theory, electronic tools (e.g. palmtop computers, online data submission methods etc.) allow an efficient means of data collection that, in computerized practices or research environments, circumvents the need for

subsequent data entry. Such tools must, however, have proven reliability, validity and practicality compared with their pen-and-paper equivalents. For these electronic instruments, VAS measures of cognitive and sensory stimuli appear to compare well with paper versions.[50] In patients with chronic LBP monitored over 1 year, those using an electronic diary entered data more frequently and were more compliant than those using paper diaries.[51] Nonetheless, while electronic methods might be useful for research purposes, their use in the treatment of the individual patient remains an open question insofar as continuous pain recording might raise more issues than it can solve in chronic pain conditions.

Other aspects of outcome in low back pain

In the clinical environment, other patient-orientated tools that take a short time to complete and cover the most important outcome dimensions (e.g. function, quality of life, work or social disability) are recommended for regular use (Box 5).[5,6,40] Other aspects of pain, such as the pain history, pain coping strategies, pain acceptance or tolerance, and pain-related anxiety, might also be important to evaluate, although consideration of the available tools for doing so is beyond the scope of this paper; interested readers are referred to the review by Haefeli and Elfering.[24]

Box 4 Key psychometric properties of outcome instruments: the basics.

The quality of any questionnaire or instrument used to assess patients' perceptions is determined by its psychometric properties: score distribution, reliability, validity, and responsiveness.

Score distribution

A good score distribution with low (<15%)[63] floor and ceiling effects (i.e. percentage of people with the lowest and highest scores, respectively) shows the instrument's ability to assess the full range of severity.

Reliability

Two indices of reliability are of interest, and their coefficients should be >0.7 for the reliable interpretation of group change and >0.90 for the reliable interpretation of individual change:[64]

- Internal consistency (given by Cronbach's α): the degree of homogeneity of individual items in an instrument/scale (i.e. how well the items correlate with each other and the whole scale)
- Reproducibility or test–retest reliability: the extent to which consistent scores are recorded on successive occasions, when no relevant change has occurred inbetween.[62] The intraclass correlation coefficient (ICC) is one measure of reproducibility, but its value is sensitive to the heterogeneity of the sample examined.[65] The standard ('typical') error of measurement (SEM) provides a more practical indicator and allows calculation of the instrument's 'minimal detectable change' (MDC) (i.e. degree of change denoting 'real' change, beyond measurement error ($MDC_{95\%}$ being 2.77 × SEM).[65]

Validity

Validity is the capacity of the instrument to measure what it purports to measure and comes in many guises (content, construct, criterion),[62] a thorough discussion of which is beyond the scope of this review. It is typically evaluated by examining the correlation between the instrument's scores and those of conceptually related (or clearly unrelated) variables or outcome events.

Responsiveness

Responsiveness (or "sensitivity to change") refers to the accurate detection of clinically relevant change in disease status when it has occurred[62]; it is typically evaluated by means of effect sizes (Cohen's d) after intervention (where d ≥0.8 is large, 0.5–0.8 is moderate, 0.2–0.5 is small, and <0.2 is trivial).

WHEN AND HOW OFTEN TO MEASURE?

Due to its episodic nature, chronic LBP cannot be treated as a static phenomenon; both the intensity of pain and its episodic nature influence an individual's ability to function in work and social life.[8] Acknowledging that the episodic expression of back pain is common and complex, von Korff[52] reflected on what might be the most valid and useful summary measures to encapsulate its clinical course: percentage or number of days with LBP, with severe LBP, with LBP exceeding a definite severity level, or with LBP preventing the performance of major life activities; or average level of activity limitation or pain intensity when experiencing LBP. Unfortunately, there is still no consensus as to how such a summary measure is best formed, although new ideas are continuously emerging, based on cluster analysis of longitudinal pain patterns in large groups of individuals (i.e. the sorting of cases into homogeneous subgroups with 'typical characteristics').[53] It is hoped that such studies will ultimately lessen the confusion surrounding the definition of chronic LBP[52] and provide a better basis of classification for assessment and intervention.[53]

A longitudinal study of spinal fusion patients included both a prospective and a retrospective evaluation of the preoperative pain intensity. The authors showed that at long-term follow-up, the retrospective ratings of baseline pain were significantly higher than the actual

Box 5 Core outcome measures complementing the assessment of pain intensity in low back pain.[5,6,40]

Function
During the past week, how much did your back problem interfere with your normal work (including both work outside the home and housework)?
- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Symptom-specific wellbeing
If you had to spend the rest of your life with the symptoms you have right now, how would you feel about it?
- Very satisfied
- Somewhat satisfied
- Neither satisfied nor dissatisfied
- Somewhat dissatisfied
- Very dissatisfied

General quality of life
Please reflect on the last week. How would you rate your quality of life?
- Very good
- Good
- Moderate
- Bad
- Very bad

Disability: social
During the past 4 weeks, how many days did you cut down on the things you usually do (work, housework, school, recreational activities) because of your back problem?
- None
- Between 1 and 7 days
- Between 8 and 14 days
- Between 15 and 21 days
- More than 22 days

Disability: work
During the past 4 weeks, how many days did your back problem keep you from going to work (job, school, housework)?

(answer categories as above)

preoperative estimations by the same patients.[54] This finding is relevant to the evaluation of effect sizes after treatment: a cross-sectional postoperative study in this group would have led to an overestimation of the effectiveness of surgery.[54] The retrospective overestimation of pretreatment pain is not uncommon.[32,55] Experimental pain studies[56] suggest that pain recall might be more influenced by recollection of one's emotional state at the time of the initial experience than by factual information associated with it. LBP should hence be assessed prospectively, especially when evaluating treatment effectiveness.

Longitudinal studies on patients with acute LBP or sciatica[57] or undergoing spinal surgery[58,59] have shown significant reductions in pain during the first few months, with a leveling off thereafter. The pain levels recorded in the early postoperative phase are reliable indicators of the longer-term outcome.[58,59]

These examples indicate that it is important to carefully select the timing and frequency of the evaluation and the time period over which the patient is asked to reflect; these will depend on the characteristics of the patient and their pain, as well as the type of intervention under evaluation.[60]

CONCLUSIONS

Pain is a prominent feature of many musculoskeletal disorders, and its accurate and reliable measurement is a prerequisite for its effective management. For the assessment of pain intensity—one of the most important pain variables—VRSs and NRSs appear to be preferable overall to traditional VASs. No single tool is best, however, and valid instruments are available for patients of all ages and mental abilities.[15,20,61] The clinician should be aware of the properties of the tool or tools that he or she intends to use, including its level of imprecision and its MCID (Box 4). Brief measures for the other core outcome domains are available[5,6,40] (Box 5) and should complement the pain assessment.

The course of LBP, assessed in long-term longitudinal studies, is currently the subject of much investigation. An improved understanding of issues such as the natural history of LBP, factors that predispose to chronic pain, and the dependence of clinically relevant change on initial severity, duration, and type of intervention should assist with clinical decisions regarding the necessity for and timeliness of intervention.

KEY POINTS

- The evaluation of pain should be part of a physician's daily clinical activity
- In low back pain and other painful musculoskeletal disorders, pain per se should be assessed, rather than surrogate measures such as analgesic use
- For assessment of pain intensity, categorical scales with verbal descriptors and numerical rating scales appear to be preferable to traditional visual analogue scales; however, there is no single best tool and there is a tool for everyone
- In patients with sciatica, pain in the lumbar area and pain in the lower limb are two different dimensions that should be evaluated separately
- Pain is not synonymous with function or quality of life, and other tools covering these important outcome dimensions are recommended for clinical practitioners
- For research purposes, tools should be selected according to the purpose of the study, the population to be evaluated and the most suitable method for gathering data; in assessing change over time, prospective measurements are preferable to retrospective reports

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Competing interests

The authors declare no competing interests.

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