Non-Pharmacological management of Chronic Lower Back Pain in Older Adults

Paul Dougherty, DC
Chief, Chiropractic and Acupuncture, VA Finger Lakes Healthcare System
Chair, Institutional Review Board, Syracuse VA Medical Center
Adjunct Professor, Northeast College of Health Sciences
DEMOGRAPHICS

• Back pain is a common health problem worldwide, with an estimated mean point prevalence of 11.9% and a 1-month prevalence of 23.2%

• The prevalence is highest in adults aged between 40 and 80 years old.

• Therefore, in a globally ageing population, back pain plays a significant role in morbidity figures, and it represents the leading cause of years lived with disability

Risk factors for non-improvement

- A prospective cohort study in general practice was conducted (Back Complaints in the Elders, Netherlands), including 675 patients >55 years with a new episode of care for back pain. Three definitions of nonrecovery were used combining 6-month and 12-month follow-up data: (1) persistent back pain, (2) persistent disability, and (3) perceived nonrecovery.

Predictors of persistent disability

- Sex, race, worse baseline clinical characteristics of back pain, leg pain, back-related disability and duration of symptoms, smoking, anxiety symptoms, depressive symptoms, a history of falls, greater number of comorbidities, knee osteoarthritis, wide-spread pain syndromes, and an index diagnosis of lumbar spinal stenosis.

- Within the imaging data subset, central spinal stenosis was not associated with disability or pain.

Predictors for persistent nonrecovery after 6 and 12 months.

• Biological factors:
  • increasing age, chronic duration of symptoms, higher pain intensity and higher back pain–related disability, a recent back pain episode, musculoskeletal comorbidity, spinal morning stiffness of over 30 minutes, pain during spinal rotation,

• Psychosocial factors:
  • lower expectation of patients to recover from their back pain, depressive symptomatology, and pain catastrophizing

Financial costs of CLBP in older adults

- A total of 2,498,013 adult patients with a new LBP or LEP diagnosis
- More than half (55.7%) received no intervention.
- Only 1.2% of patients received surgery, but they accounted for 29.3% of total 12-month costs ($784 million).
- Total costs of care among the 98.8% of patients who did not receive surgery were $1.8 billion.

Patients who did not undergo surgery frequently received care that was inconsistent with clinical guidelines for LBP and LEP: 32.3% of these patients received imaging within 30 days of diagnosis and 35.3% received imaging without a trial of physical therapy.

Biopsychosocial model of pain

- Psychological Factors:
  - Pain Perception
  - Pain Coping Skill
  - Pain Catastrophizing
  - Fear Avoidance
  - Depression
  - Previous Pain Experience

- Biological Factors:
  - Pain Intensity
  - Physical Health
  - Trauma / Injury
  - Sleep - Disturbed
  - Medication Use

- Social Factors:
  - Work / Disability
  - Cultural Factors
  - Economic Factors
  - Environmental Factors
  - Low Job Satisfaction
Prevention: public health and prevention strategies

• The percentage of survey respondents agreeing that they should stay active through LBP increased annually from 58.9 to ~72.0%. Respondents reporting exposure to campaign messaging were statistically significantly more likely to agree with staying active than respondents who did not report exposure to campaign messaging (adjusted OR, 95% CI = 1.96, 1.73-2.21).

Prevention

• What are some potential upstream prevention strategies?
  Jumpstarting Health With a 15-Day Whole-Food Plant-Based Program (Friedman et al)

In summary, a 15-day, intensive program that helps patients adopt an Esselstyn-style WFPB diet, without portion-control or calorie-counting, and that uses education, individualized medical feedback, social support, and facilitated small group work, leads to rapid improvements in health.

These improvements include **weight loss; reductions in blood pressure, cholesterol, and blood sugar; and positive changes to energy, mood, pain, and sleep.** The brevity of the program allows patients experience the benefits of a new eating pattern in a very short period of time. This program also provides a scalable, replicable approach to introducing patients to dietary changes that have the potential for enduring health benefits.
What is the best way to manage CLBP in Older adults?

The global gap between evidence and practice relates to both overuse of low-value care as well as underuse of high-value care and is apparent across all income settings.

Decrease low value care

• The surge in global low-value care for low back pain that includes presentations to emergency departments, liberal use of diagnostic imaging, opioids, spinal injections, and surgery has also led to skyrocketing medical and human costs.

• *Pain.* 2020 Sep; 161(1): S57–S64.
So where do we go from here?

- **Lancet Series: the "Magnum Opus" Regarding the Evidence on Low Back Pain.**

  ![Lancet Low Back Pain Series](image)

Lancet Series:

• Guidelines recommend self-management, physical and psychological therapies, and some forms of complementary medicine

• Place less emphasis on pharmacological and surgical treatments; routine use of imaging and investigations is not recommended
Lancet Series:

• Promising solutions include:
  • Focused implementation of best practice
  • The redesign of clinical pathways
  • Integrated health and occupational care
  • Changes to payment systems and legislation
  • Public health and prevention strategies
Education and self-care

Acute low back pain
(<6 weeks)
• Advice to remain active
  • First-line treatment, consider for routine use
• Education
  • First-line treatment, consider for routine use
• Superficial heat
  • Second-line or adjunctive treatment option

Persistent low back pain
(>12 weeks)
• Advice to remain active
  • First-line treatment, consider for routine use
• Education
  • First-line treatment, consider for routine use
• Superficial heat
  • Insufficient evidence
## Non-pharmacological therapy

### Acute low back pain (<6 weeks)
- Exercise therapy
  - Limited use in selected patients
- Cognitive behavioural therapy
  - Limited use in selected patients
- Spinal manipulation
  - Second-line or adjunctive treatment option
- Massage
  - Second-line or adjunctive treatment option
- Acupuncture
  - Second-line or adjunctive treatment option
- Yoga
  - Insufficient evidence
- Mindfulness-based stress reduction
  - Insufficient evidence
- Interdisciplinary rehabilitation
  - Insufficient evidence

### Persistent low back pain (>12 weeks)
- Exercise therapy
  - First-line treatment, consider for routine use
- Cognitive behavioural therapy
  - First-line treatment, consider for routine use
- Spinal manipulation
  - Second-line or adjunctive treatment option
- Massage
  - Second-line or adjunctive treatment option
- Acupuncture
  - Second-line or adjunctive treatment option
- Yoga
  - Second-line or adjunctive treatment option
- Mindfulness-based stress reduction
  - Second-line or adjunctive treatment option
- Interdisciplinary rehabilitation
  - Second-line or adjunctive treatment option
Exercise Therapy

• Good news!
  • Our results found a beneficial effect for strength/resistance and coordination/stabilisation exercise programs over other interventions in the treatment of chronic low back pain and that cardiorespiratory and combined exercise programs are ineffective. (Clin Rehabil 2015)

• Bad news
  • There is no good evidence that any one exercise program is superior to another. (Cochrane Database Syst Rev 2017 Apr 24;4(4):CD011279.)

• The exercise program that works is the one that they will do!
Cognitive Behavioral Therapy

• There is inconsistent, patient-oriented evidence (grade B) to support the use of CBTs and/or psychoeducation strategies by rehabilitation specialists to treat fear-avoidance beliefs.

• Patient-centered and personalized CBTs were most effective to treat these psychosocial factors in patients with LBP when compared with a control treatment.

• SMT produces similar effects to recommended therapies for chronic low back pain, whereas SMT seems to be better than non-recommended interventions for improvement in function in the short term. Clinicians should inform their patients of the potential risks of adverse events associated with SMT.

Massage

• **Conclusion:** Current evidence on myofascial release therapy is not sufficient to warrant this treatment in chronic musculoskeletal pain.

We found that acupuncture may not play a more clinically meaningful role than sham in relieving pain immediately after treatment or in improving quality of life in the short term, and acupuncture possibly did not improve back function compared to sham in the immediate term. However, acupuncture was more effective than no treatment in improving pain and function in the immediate term.


Yoga

• There is low- to moderate-certainty evidence that yoga compared to non-exercise controls results in small to moderate improvements in back-related function at three and six months.

Mindfulness based stress reduction

• This review found inconclusive evidence of effectiveness of MBSR in improving pain intensity or disability in chronic low back pain patients. However, there is limited evidence that MBSR can improve pain acceptance.

Importance of context

• **Non-specific mechanisms in orthodox and CAM management of low back pain (MOCAM): theoretical framework and protocol for a prospective cohort study**
  - Psychological, social, and environmental factors that act alongside and can interact with the “specific” ingredients of treatment.
  - Felicity Bishop is investigating contextual factors and their effects on pain and disability with ongoing work on context in England.
Contextual Factors

Patient-Practitioner relationship

• Can patient/practitioner interactions cause psychological/behavioral changes that can predict outcomes?
• Supportive self-care communication, shared goals, increased self-efficacy for coping, and uptake of lifestyle advice.
• Communicate in a patient-centered and empathetic way.

Patient beliefs

• Patients who expect therapy to be successful are more open to developing positive patient-practitioner relationships which lead to improve outcomes.
Contextual Factors

Practitioner beliefs
- Beliefs about the nature of back pain may influence clinical decision making.
- Beliefs about the nature of back pain may also influence communication style.

Healthcare environment
- Physical-sensory environment
- Organizational environment

Treatment characteristics
- Direct effect of positive expectations on reported pain outcomes
- Individual effect and/or interaction between specific and non-specific components of treatment
Results

• Therapeutic alliance and practitioner-rated outcome expectancies demonstrated the largest effect sizes.
• There were no significant interactions with therapy type
  • Physiotherapy, osteopathy, and acupuncture
• Results suggest that enhancing contextual treatment components in practice could improve patient outcomes.
  • Make it a goal to improve patients’ LBP perceptions and self-efficacy for coping with pain
• How can providers address and leverage these contextual factors to improve outcomes?
• Language, attitudes, environment, and patient/provider perceptions may truly make a difference in outcomes.
• Opportunity for future studies on contextual factors and their effect on outcomes.
• More emphasis on contextual factors during education and training?
Take home points

• Chronic lower back pain is common in Older Adults
• Chronic lower back pain is a complex multifactorial condition that is best explained by the biopsychosocial model of pain
• Management of chronic lower back pain should include the following:
  • Use of high value care and avoiding low value care
  • Consideration of the initial use of non-pharmacological treatment
  • Needs to consider the patient’s beliefs and expectations