

Cost-Effective Treatments for Back Pain

1. Low back pain is a significant socioeconomic burden worldwide

Patients' approaches to physical activities when experiencing pain vary widely. Common approaches include: 1) escape or avoidance of an activity, even at low levels of pain, 2) enduring an activity while tolerating low to moderate levels of pain, 3) persisting with an activity to the point that pain is significantly aggravated (i.e. severe flare-ups of pain), and 4) persisting with an activity until a severe flare-up of pain forces to interrupt or stop this activity, also known as overactivity [7, 18, 26]. Approaches to activity are not always mutually exclusive; individuals can avoid certain activities or movements but persist with other activities to the point of a severe flare-up [3, 4, 27].

2. The prevalence of low back pain in low- and middle-income countries is increasing. There's an urgent need to find effective low-cost strategies which are culturally sensitive.

The prevalence of low back pain in high income countries is said to be higher than in low and middle income countries [6]. However, the prevalence is increasing and latest evidence shows the point prevalence of low back pain in Africa to be comparable (39%) with estimates in high income countries [17]. The impact of YLD on the fragile economies of low- and middle-income countries highlights the need to urgently find effective low cost and culturally sensitive strategies to tackle this problem and address this leading cause of YLD.

3. The most common form of low back pain is non-specific low back pain.

The burden of low back pain has been well documented [9 12; 24], but in most cases, a pathoanatomical cause of the pain cannot be found and it is referred to as non-specific low back pain (NSLBP) [16]. This raises ethical issues of why patients should be subjected to multiple investigative tests, with the inherent cost implications when a structural cause is unlikely to be found. The use of a biopsychosocial approach to the investigation of low back pain to identify or rule out 'red flags' (history or clinical pointers to serious disease) [10] and identify 'yellow flags' (psychological contributors) [19], may help prevent requesting of investigations that may not impact diagnosis and treatment.

4. Strategies for effectively managing chronic back pain may not be transferrable between developed countries and low- and middle-income countries.

International guidelines for the management of back pain are largely similar and most of these are based on data from high-income countries [13]. The management modalities employed are non-pharmacological, pharmacological, interventional and surgical depending on the specific diagnosis. Current evidence-based treatments for non-specific low back pain (NSLBP) recommend non-pharmacological therapies as 1st line treatments. However, the adoption of these recommendations in LMICs may be hampered by out-of-pocket costs to the users as well as reduced capacity of health care systems to provide non-pharmacological therapies [8].

5. Self-management programmes for back pain should be encouraged to prevent unnecessary

tests and treatments and ultimately reduce cost.

Evidence-based clinical practice guidelines recommend the use of campaigns that promote self-management and functional improvement of back pain [2; 8; 11; 21]. These campaigns address unhelpful beliefs about back pain and pain coping mechanisms by employing easy-to-understand messages based on best evidence available, aimed at ultimately stimulating a change in risky health behaviour [20]. The added benefits of using self-management programs is their potential to reduce cost, and unnecessary tests and treatments that may be harmful to the patient.

6. Early return to physical activity and promotion of healthy lifestyles reduce disability and cost of treatment for low back pain.

Current recommendations for the management of low back pain include encouraging patients to avoid bed rest for prolonged periods, stay active and continue with daily activities including returning to work [18]. In addition, exercise programmes which are patient-centred and individualized, taking into consideration the capabilities of the patient are recommended over specific types of exercise as there isn't evidence to show superiority of one type of exercise over another [8].

7. Exercise works and is a cost-effective treatment for chronic low back pain.

The term pain persistence behavior that merely refers to the frequency or severity of occurrence displays low or zero linear correlations with pain intensity and inconsistent results with positive or negative relations to pain disability.^{1,14,25,33} Negative associations with low to moderate effect sizes were shown for pain persistence and psychological distress, such as depression, anxiety, pain catastrophizing or fear of movement.^{1,25,33,39} In contrast, measures that include aspects of the process of overactivity, which is followed by an interruption of an activity due to intolerable pain revealed positive associations with disability or psychological distress.^{7,10,31,46}

8. Regular reminders to primary care physicians about appropriate indications for imaging is effective in reducing the cost of treatment for back pain.

Most people with low back pain do not require imaging and an even smaller percentage require specialised imaging like MRI [7]. In a landmark study on first time imaging in low back pain, over 90% of the patients who were asymptomatic of low back pain had findings on imaging [3], questioning the association between imaging findings and symptoms. Imaging is an important driver of LBP costs, and this is a very important factor to consider in LMICs where such costs can be quite prohibitive. Therefore, an effective low cost strategy should include regular reminders to primary care physicians that, imaging in the absence of serious disease may lead to additional tests and invasive procedures which may be harmful and offer no added benefit to the patient [25]. The cost-effectiveness of using primary care physicians in the treatment of low back pain has also been demonstrated in a recent review [15].

9. Epidural steroid injections do not provide long-term relief and may not be cost-effective in chronic low back pain.

A recent study found lumbar epidural steroid injections (LESI) were not cost-effective as the cost per Quality Adjusted Life Year (QALY) gained was insignificant [4]. Current guidelines [18; 21; 23] on management of low back pain also do not recommend the use of epidural steroid injections except in cases of severe radicular pain, as they have been found to only provide short term relief (<4

weeks) and do not reduce the long-term risks of surgery [5].

10. Cognitive behavioural therapy in combination with physical therapy is a cost-effective treatment in low back pain.

Recent guidelines from the North American Spine Society (NASS) suggest there is good evidence backing the use of cognitive behavioural therapy (CBT) and/or psychosocial interventions and/or neuroscience education to effectively reduce the duration and intensity of pain as well as improve functional outcomes in low back pain [14]. The cost-effectiveness of CBT has been confirmed in a recent review of treatments for low back pain [22].

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