A Systematic Review of Clinical Practice Guidelines for Persons

With Non-specific Low Back Pain With and Without Radiculopathy:

Identification of Best Evidence for Rehabilitation to Develop

the WHO's Package of Interventions for Rehabilitation

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OPEN ACCESS

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Objective: To Identify evidence-based rehabilitation interventions for persons with non-specific low back pain (LBP) with and without radiculopathy and to develop recommendations from high-quality clinical practice guidelines (CPGs) to inform the World Health Organization's (WHO) Package of Interventions for Rehabilitation (PIR).

Data source: We searched MEDLINE, EMBASE, CINAHL, PsycINFO, National Health Services Economic Evaluation Database, Health Technology Assessment Database, PEDro, the Trip Database, the Index to Chiropractic Literature and the gray literature.

Study selection: Eligible guidelines were (1) published between 2009 and 2019 in English, French, Italian, or Swedish; (2) included adults or children with non-specific LBP with or without radiculopathy; and (3) assessed the benefits of rehabilitation interventions on functioning. Pairs of independent reviewers assessed the quality of the CPGs using AGREE II.

Data synthesis: We identified 4 high-quality CPGs. Recommended interventions included

(1) education about recovery expectations, self-management strategies, and maintenance of usual activities;

(2) multimodal approaches incorporating education, exercise, and spinal manipulation;

(3) nonsteroidal anti-inflammatory drugs combined with education in the acute stage; and

(4) intensive interdisciplinary rehabilitation that includes exercise and cognitive/behavioral interventions for persistent pain.

We did not identify high-quality CPGs for people younger than 16 years of age.

Conclusion: We developed evidence-based recommendations from high-quality CPGs to inform the WHO PIR for people with LBP with and without radiculopathy. These recommendations emphasize the potential benefits of education, exercise, manual therapy, and cognitive/behavioral interventions.

Keywords: Education; Quality of life; Rehabilitation; Sciatica.

From the FULL TEXT Article:

Background

The World Health Organization (WHO) aims to achieve universal health coverage to ensure that “all people receive quality health services that meet their needs without being exposed to financial hardship in paying for the services”. [1] Importantly, universal health coverage includes rehabilitation services. Therefore, the WHO Rehabilitation 2030 call for action [2] committed to developing a Package of Interventions for Rehabilitation (PIR) to support ministries of health in integrating rehabilitation services into health systems. [3]

Low back pain (LBP) is the most prevalent musculoskeletal condition in the population, [4] with an estimated global prevalence of 568 million people [5] It refers to pain located between the lower rib margins and the buttock creases and sometimes can be associated with radiculopathy). [6] Radiculopathy refers to inflammation, injury, or compression of the spinal nerve roots that can present as pain, weakness, or numbness in a myotomal or dermatomal distribution. [7] Lumbar radiculopathy may be caused by spinal stenosis (narrowing of the spinal canal) or lumbar disk herniation (localized displacement of disk material beyond the normal margins of the intervertebral disk space). [7]

In most cases, no identifiable pathology is identified as the cause of LBP and most people are diagnosed as suffering from non-specific LBP. Nevertheless, LBP is commonly associated with physical and psychological symptoms, and it is known to negatively affect people's quality of life and functioning. [8] The global age-standardized point prevalence of LBP is 7.5% (95% CI: 6.8%–8.3%), ranging from 3.9% in East Asia and 5.6% in Central Latin America to 13.2% in high-income Asia Pacific and 13.5% in Southern Latin America.9 Globally, the prevalence is higher in women than men. [9] Less is known about the epidemiology of low back pain and radiculopathy, but evidence from general population studies suggests that the annual incidence of hospitalization is less than 8 per 10,000 and that the annual prevalence of radiculopathy is 2.2%. [10] The incidence of radiculopathy is associated with age; it is rare before the age of 20, peaks in the fifth decade and declines thereafter. [7] The available evidence suggests that risk factors for radiculopathy related to lumbar spine disk include acute injuries, heavy lifting, twisting, bending, driving, smoking, pregnancy, diabetes, body mass index, hypertension, hypercholesterolemia, and family history. [10–20]

In the past 3 decades, the focus of clinical interventions for the management of LBP has shifted from treating pain to targeting functioning by improving activities and participation, thus emphasizing the role of rehabilitation. The reason for this shift is that no pain-focused clinical intervention has been shown to significantly reduce the burden of low back pain in the population. [21]

Our objective was to systematically review clinical practice guidelines (CPGs) for the management of persons with low back pain with or without radiculopathy and synthesize recommendations from high quality to inform the development of a WHO PIR.

Discussion

We identified several CPGs to inform the management of LBP, but their methodological quality varies. According to our systematic search and quality evaluation, most of the retrieved CPGs did not fulfil the minimum quality criteria defined by the WHO to be included in the present review. All excluded CPGs failed to demonstrate editorial independence, while others also had limitations with the description of the search methodology. [31–38] Overall, we did not find CPGs that informed the management of pediatric patients with LBP.

Several recommendations from high-quality CPGs were consistent across guidelines. Specifically, high-quality guidelines recommended rehabilitation and education for patients with LBP. Furthermore, CPGs were consistent with their recommendations against the use of passive modalities such as ultrasound, PENS, TENS, and interferential therapy. [7] Overall, we found that the quality of evidence for pharmacologic therapies is poor. CPGs suggest that pharmacologic therapies have a very limited role in LBP patients, and should be used, when necessary, only together with other modalities.

The CPGs included in our review recommend multimodal approaches that combine exercise, manipulation, and education from cognitive behavioral approaches for chronic low back patients. The overall evidence suggests that an approach primarily focused only on pain management is not effective, while a rehabilitation approach based on multimodal care may be effective for chronic back pain >3 months.

A limitation common to many CPGs is that recommendations are often vague and do not provide practical advice for implementation in clinical practice. For example, it is recommended that clinicians should provide advice to continue usual activities (which includes resumption of work); however, no CPG describes the ingredients and mode of delivery of this intervention. [7, 29] Moreover, recommendations provide few details on how to address environmental or occupational barriers to optimize function. Finally, no details are provided about the effect of co-morbid conditions (such as depression) and how these co-morbidities should be co-managed to improve functioning. [39]

The examined literature's primary flaw is how frequently CPG recommendations rely on weak evidence or expert opinion (Table 4). Because providers and patients cannot be blinded, it might be challenging to perform high-quality RCTs in the field of rehabilitation, which results in recommendations being made based on weak data. Given the issues with blinding, we need to close the gaps and find better ways to carry out rehabilitation intervention trials. Also, interventions for rehabilitation require an individualized approach more than standardization and this creates specific research challenges. Finally, reporting is another issue for interventions to be replicated and compared across studies.

The CPGs examined in this analysis do not provide recommendations for appropriate sites for rehabilitation, supervision requirements, scheduling, or length of interventions. A description of the providers and their particular training is also missing, as well as information regarding the procedures, activities, and/or processes used in the intervention, including any enabling or support activities. The search strategy for our review ended in March 2019 to comply with the WHO PIR methodology. Future updates will likely include more recent CPGs and our recommendations should be updated accordingly. [40]

Our systematic review of CPG's agrees, in part, with a previous systematic review of CPGs for the management of low back pain. [41] In their review, Wong et al reported that all patients with acute or chronic LBP should be treated with education, reassurance, and instruction on self-management options. Moreover, they reported that patients with acute LBP should be encouraged to return to activity and may benefit from paracetamol, NSAIDs, or spinal manipulation. The recommendation that paracetamol should be used to manage acute LBP differs from our conclusion. This is due to the recent reporting in a placebo-controlled randomized controlled trial that paracetamol is ineffective for the management of acute LBP. [42] Our recommendations also differ from Wong et al for the management of persistent LBP. While Wong et al recommended that the management of chronic LBP may include exercise, paracetamol or NSAIDs, manual therapy, acupuncture, and multimodal rehabilitation (combined physical and psychological treatment), we recommended multimodal approaches that combine exercise, manipulation, and education from cognitive behavioral approaches. The differences in recommendations may be attributable, in part, to the fact that the literature search covered by Wong et al ended in 2014.

Study limitations

Our systematic review has limitations. First, our search of the literature needed on March 17, 2019. Therefore, it is possible that recently published high-quality CPGs were not included in our review. Second, our literature search was not reviewed by a second librarian using the PRESS checklist. we selected 5 CPGs and it is possible that including a larger number of guidelines may have affected our recommendations. Finally, we used an arbitrary cut point based on the AGREE II quality scores to differentiate between low vs high risk of bias CPGs. It is possible that using a different approach based on the effect of specific biases may have led to different recommendations.

Strengths

First, we used the WHO definition of rehabilitation to identify eligible interventions. Second, we searched articles in 4 languages in 9 databases. Third, we searched the gray literature. Finally, we used the AGREE tool to critically appraise the quality of CPGs.

Conclusion

Our review summarizes recommendations from high-quality CPGs for the rehabilitation of adults with LBP with or without radiculopathy. Overall, the recommendations highlight the benefits of education, exercise, and multimodal care that includes manual therapies. However, the use of most passive modalities is not recommended. Implementation strategies are needed to implement the recommendations and evaluation of these strategies to see if there's an improvement in patients’ outcomes and costs. The identified interventions from the high-quality CPGs were used as the basis for selecting relevant interventions included in the PIR for LBP.

List of abbreviations:

CPG = (clinical practice guideline),

LBP = (low back pain),

NICE = (National Institute for Health and Clinical Excellence),

NSAID = (nonsteroidal anti-inflammatory drug),

PIR = (Package of Interventions for Rehabilitation),

WHO = (World Health Organization)

Disclosure statement

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Footnotes

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