2020 GLOBAL YEAR FOR THE PREVENTION OF PAIN

FACTSHEET

Prevention of Low Back Pain: The Importance of Intervention from an Early Age

Introduction

Chronic low back pain (LBP) is a global problem, impacting individuals and societies. The lifetime prevalence of low back pain is reported to be as high as 84%, and the prevalence of chronic low back pain is about 23%, with 11-12% of the population being disabled by low back pain[1]. Risk factors for the development of chronic back pain include genetic predisposition, lifestyle and occupational factors, and aging [25].

Although the prevention of LBP offers improvements in quality of life and years lived with disability, by contrast with evidence from a large number of trials that assess treatments for low back pain, evidence that assesses prevention, particularly primary prevention, is inadequate, and is largely derived from studies of adults in high-income societies. Whether guidelines derived from available studies are applicable to children, or implementable in low-income and middle-income countries, is not known[7].

People with osteoporosis, degenerative spondylosis, and vertebral canal stenosis often experience LBP. Identifying the specific sources of the pain, however, can be difficult because of the interaction of biological and psychosocial factors [11, 23].

Osteoporosis

Osteoporosis is defined by decreased bone density associated with an increased risk of fracture.

Over 50% of women develop osteoporosis by their 70s and approximately 17% of men develop osteoporosis by their 80s, with a lifetime risk of symptomatic vertebral fracture from age 60 of 18% for women and 11% for men [16, 24].

Osteoporosis can cause LBP, even in the absence of a defined fracture [17]. Osteoporotic fractures can cause acute pain, and result in spinal deformity (mainly kyphosis) and an increased risk of chronic pain. Although heritability accounts for 40-80% of the risk of developing osteoporosis, acquired factors, such as nutrition status, exercise habits, and medical disorders are modifiable factors associated with osteoporosis [12, 18].

Interventions

Early interventions are known to prevent the onset of osteoporosis. Ensuring the adequate dietary intake of calcium and vitamin D, and participating in sports such as gymnastics, volleyball, basketball, and softball, are effective in maximizing bone mass in those under the age of 18 years, and decrease the risk of fracture in later life [5, 15, 21, 22]. Continuing these interventions into middle age is also important for preserving bone mass and reducing fracture risk [2]. Care must be taken in older age

groups, however, because unaccustomed exercise may cause adverse effects such as increased pain due to muscle strains, joint injuries and fractures [13].

Degenerative spondylosis may be associated with spinal malalignment (eg. kyphosis) and instability, also known risk factors for developing LBP[4]. Correcting abnormal pelvic inclination, and improving spinal muscle strength and neural control, are thought to be important in preventing or reducing LBP, with exercises that improve alignment and core muscle strength, such training the low back and abdominal wall muscles, are reported as effective [9]. A combination of strengthening with either stretching or aerobic exercises performed 2–3 times per week can reasonably be recommended for prevention of LBP in the general population [19].

Exercise is also effective in preventing occupational LBP, either alone, or in combination with activity-specific education programs. Ergonomic interventions, such as lumbar supports, lifting devices, workplace modification, job rotation, and modifications to production systems, appear less effective than exercise [8, 10, 20].

Educational interventions alone do not appear to be effective in preventing LBP, in children [14], adults [6], or in the workplace[10]. Mass media campaigns designed to alter societal views about back pain and promote behavior change have now been performed in several countries with mixed results[3].

Conclusion

More research is needed to develop and implement effective, including cost-effective, strategies that prevent LBP and promote participation in physical and social activities.

In summary, LBP is a global problem that requires innovative approaches to develop and implement preventative strategies in order to reduce disability and improve quality of life. Improving nutrition and encouraging exercise currently appear to be the most effective strategies that can be implemented from an early age to prevent LBP.

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