The Burden and Determinants of Neck Pain in the General Population

Results of the Bone and Joint Decade 2000–2010 Task Force on Neck Pain and Its Associated Disorders

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ABSTRACT

Study Design: Best evidence synthesis.
Objective: To undertake a best evidence synthesis of the published evidence on the burden and determinants of neck pain and its associated disorders in the general population.
Summary of Background Data: The evidence on burden and determinants of neck has not previously been summarized.

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Methods: The Bone and Joint Decade 2000–2010 Task Force on Neck Pain and Its Associated Disorders performed a systematic search and critical review of literature published between 1980 and 2006 to assemble the best evidence on neck pain. Studies meeting criteria for scientific validity were included in a best evidence synthesis.
Results: We identified 469 studies on burden and determinants of neck pain, and judged 249 to be scientifically admissible; 101 articles related to the burden and determinants of neck pain in the general population. Incidence ranged from 0.055 per 1000 person years (disc herniation with radiculopathy) to 213 per 1000 persons (self-reported neck pain). Incidence of neck injuries during competitive sports ranged from 0.02 to 21 per 1000 exposures. The 12-month prevalence of pain typically ranged between 30% and 50%; the 12-month prevalence of activity-limiting pain was 1.7% to 11.5%. Neck pain was more prevalent among women and prevalence peaked in middle age. Risk factors for neck pain included genetics, poor psychological health, and exposure to tobacco. Disc degeneration was not identified as a risk factor. The use of sporting gear (helmets, face shields) to prevent other types of injury was not associated with increased neck injuries in bicycling, hockey, or skiing.
Conclusion: Neck pain is common. Nonmodifiable risk factors for neck pain included age, gender, and genetics. Modifiable factors included smoking, exposure to tobacco, and psychological health. Disc degeneration was not identified as a risk factor. Future research should concentrate on longitudinal designs exploring preventive strategies and modifiable risk factors for neck pain. (J Manipulative Physiol Ther 2009;32:S46-S60)
Key words: *neck pain; epidemiology; incidence; prevalence; risk factors; associated factors*

In the introduction to this report of the "Bone and Joint Decade 2000–2010 Task Force on Neck Pain and Its Associated Disorders," Haldeman *et al*[1] state that "most people can expect to experience some degree of neck pain in their lifetime." Summarizing the epidemiology of neck pain is a natural starting point in any investigation of neck pain. We want to describe who gets neck pain and why. Many reports describing the incidence, prevalence, risk, and associated factors of neck pain appear in the scientific literature. From these, we can better understand the magnitude of the condition to plan and provide appropriate health care. Knowledge about risk and associated factors may also suggest preventive strategies and help to identify and target important subgroups of the population at greatest risk for neck pain.

The main objective of the Neck Pain Task Force report was to systematically search the scientific literature on neck pain and produce a best evidence synthesis on the epidemiology (incidence, risk factors, prevalence and factors associated with prevalent neck pain), diagnosis, treatment, and course and prognosis of neck pain. In this article, we present the results of a systematic review of the scientific literature and our best evidence synthesis on the incidence, risk factors, prevalence, and associated factors for neck pain in the general population.

Materials and Methods

Design and Data Collection

The literature search and critical review strategy is outlined in detail elsewhere.[2] We systematically searched the electronic database Medline for literature published from 1980 through 2005 on neck pain and its associated disorders; we also systematically checked reference lists of relevant articles and updated the search to include key articles for 2006 and early 2007.

Relevance Screening

We screened each citation for relevance to the Neck Pain Task Force mandate, using *a priori* inclusion and exclusion criteria; however, we made no attempt to assess the scientific quality of each study when establishing its relevance. Screening criteria are reported in more detail in Carroll *et al*.[2] Studies were considered relevant if they pertained to the assessment, incidence, prevalence, determinants or risk factors, prevention, course, prognosis, treatment and rehabilitation, or economic costs of neck pain; if they contained data and findings specific to neck pain and/or disorders associated with neck pain; if they included at least 20 persons with neck pain or at risk for neck pain; or if they described a systematic review of the literature on neck pain. We excluded studies on neck pain that was associated with serious local pathology or systemic disease, such as neck pain from fractures or dislocations (except where such studies inform differential diagnosis in neck pain); myelopathy; rheumatoid arthritis and other inflammatory joint diseases; or tumors.

Quality Assessment

Rotating pairs of Scientific Secretariat members performed independent, in-depth critical reviews of each article, identifying methodologic strengths and weaknesses, and made decisions about the article's scientific merit after discussions of each article. (The criteria used in the methodologic appraisal of the studies can be viewed by going to doi:10.1016/j.jmpt.2008.11.010). Our methodologic appraisal focused on sources of potential selection bias, information bias, confounding; and consideration of whether these biases would likely result in erroneous or misleading conclusions. Studies judged to have adequate internal validity were considered "scientifically admissible" and were included in our best evidence synthesis.