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Original articles

Assessment of patients with neck pain: a review of definitions, selection criteria, and measurement tools

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Abstract

Objective: The purpose of this literature review was to synthesize the existing literature on various definitions, classifications, selection criteria, and outcome measures used in different studies in patients with neck pain.

Methods: A literature search of MEDLINE and CINAHL through September 2008 was performed to gather articles on the reliability, validity, and utility of a wide variety of outcome measurements for neck pain.

Results: Different types of definitions appear in the literature based on anatomical location, etiology, severity, and duration of symptoms. Classifications according to severity and duration of pain and the establishment of selection criteria seem to play a crucial role in study designs and in clinical settings to ensure homogeneous groups and effective interventions. A series of objective tests and subjective self-report measures are useful in assessing physical abilities, pain, functional ability, psychosocial well-being, general health status, and quality of life in patients with neck pain. Self-administered questionnaires are commonly used in clinical practice and research projects.

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Conclusions: Because of multidimensionality of chronic neck pain, more than just one index may be needed to gain a complete health profile of the patient with neck pain. The instruments chosen should be reliable, valid, and able to evaluate the effects of treatment.

Introduction

The introduction of evidence-based practice in the last years of the 20th century stimulated the development and research of an enormous number of instruments to assess many types of patient variables.[1] Now, more rehabilitation professionals are familiarizing themselves with the use of outcome measures in clinical practice and for research purposes.[2,3] Outcomes assessment is primarily designed to establish baselines, to evaluate the effect of an intervention, to assist in goal setting, and to motivate patients to evaluate their treatment.[4,5] When used in a clinical setting, it can enhance clinical decision making and improve quality of care.[6] Many patients with neck pain visit health care clinics seeking treatment of their problem, and health professionals aim to use the best available evidence for making decisions about therapy. The best evidence comes from randomized clinical trials, systematic reviews, and evidence-based clinical practice guidelines.[7]

One objective of this study is to provide to health care professionals who work with patients with neck pain some useful information about the existing outcome measures and the criteria for selecting the most appropriate ones according to treatment goals. Researchers can use this information to form homogeneous groups of participants and select the right measures for various research studies.[8] The purpose of this study was to conduct a critical review on assessment and measurement tools and various definitions and classifications of the existing literature on neck pain. The main results of a search looking at the evidence regarding the reliability, validity, and utility of objective tests and self-reported impairment and disability assessment in people with neck pain are presented here.

Methods and results

For this study, we considered neck pain to be a major or minor symptom of disease or disorder that occurs above the shoulder blades.[9] In that aspect, it can be a component of headaches, temporomandibular joint disorder, sprain/strain, tumors, fractures, various infectious diseases, inflammatory arthropathies, and fibromyalgia. We excluded articles with neck pain definitions found in the literature associated with serious local pathology or systemic disease. We searched MEDLINE and CINAHL and reviewed all relevant articles through September 2008, using *neck pain*, and *measurements*, *functional ability*, *exercises*, and *assessment* as search words and referring to neck pain as *non-specific*, *soft tissue*, or *mechanical neck pain*. Additional articles were identified from references of selected articles. Only articles written in English were included in this report. Eighty-six articles were selected for inclusion for this report.

Discussion

Definitions of neck pain

Different types of definitions appear in the literature based on anatomical location, etiology, severity, and duration of symptoms.

Definitions based on anatomical location

The International Association for the Study of Pain (IASP) in its classification of chronic pain defines *cervical spinal pain* as pain perceived anywhere in the posterior region of the cervical spine, from the superior nuchal line to the first thoracic spinous process.[10] This is clearly a topographic definition, and it states that neck pain is usually perceived posteriorly. This is consistent with patients' notions of neck pain. Pain to the front of the cervical spine is usually described as pain in the throat and not as neck pain.[11] Bogduk and McGuirk[11] also suggest that neck pain may be subdivided into upper cervical spinal pain and lower cervical spinal pain, above or below an imaginary transverse line through C4. From upper cervical segments, pain can usually be referred to the head, whereas from lower cervical segments, pain can be referred to the scapular region, anterior chest wall, shoulder, or upper limb. They also define *suboccipital pain* as the pain located between the superior nuchal line and C2, an area that appears to be the source of cervicogenic headache. In that aspect, the division of neck pain into suboccipital and upper and lower cervical pain may be important for clinicians and researchers in recognizing the area of the source of pain and trying to determine the possible causes.