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Journal of Hand Therapy

journal homepage: www.jhandtherapy.org



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Scientific/Clinical Article

## Current practice patterns in conservative thumb CMC joint care: Survey results

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## ARTICLE INFO

## Article history:

Received 1 June 2012

Received in revised form

2 September 2013

Accepted 3 September 2013

Available online 12 November 2013

## Keywords:

Thumb

Carpometacarpal

Joint

Conservative management

Practice pattern survey

Survey

Orthosis

Orthoses

Exercise

Modalities

Therapy

Intervention

## ABSTRACT

*Study design:* Cross-sectional descriptive survey*Introduction:* Best practice for conservative clinical care pathways is not well outlined in the literature for patients with thumb carpometacarpal joint (CMCJ) pain. This self-report survey investigated the current practice patterns of assessments and conservative interventions for the painful thumb CMCJ among hand therapists.*Methods:* An online survey was distributed to members of the American Society of Hand Therapists (ASHT). Questions were included about evaluation measures and intervention techniques used for this population. A descriptive analysis was completed of the results.*Results:* A total of 23.5% of the ASHT membership responded to the survey. Results were categorized using the International Classification of Functioning and Disability domains as a framework. The survey results report varying use of evaluation measures, therapeutic interventions, including orthotic fabrication, joint protection and patient education all therapeutic interventional techniques, and modalities.*Conclusion:* Therapists use a comprehensive array of evaluation measures and interventions for body functions and structures in the care of thumb CMC pain. In contrast, more consistent use is needed of psychometrically-sound functional outcome measures that show change in activities and participation. This survey highlights areas to employ current evidence, as well as, future research should address environmental factors and personal factors for this population*Level of evidence:* Not applicable.

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## Introduction

With the aging population, carpometacarpal thumb joint (CMCJ) pain is becoming more prevalent and patients with CMCJ pain are more commonly seen in hand therapy clinics.<sup>1,2</sup> The purpose of this paper is to describe current practice by hand therapists based on survey results collected in 2011.

The etiology and subsequent assessment and treatment of CMC thumb pain varies. CMCJ pain can occur due to a variety of reasons: acute trauma, such as a Bennett fracture or ligament injury; systemic synovial inflammation, such as rheumatoid arthritis; or it may be idiopathic osteoarthritis, which could be due to overuse or

generalized ligament laxity.<sup>3–5</sup> Scientific evidence to support therapeutic management of a patient with CMCJ pain exists at various levels of evidence ranging from face validity through expert opinions common use in the clinic to randomized trials and systematic reviews. The traditional mainstay for conservative therapeutic management for thumb CMCJ pain is orthotic support along with joint protection education (JPE), thenar muscular strengthening, generalized hand and wrist strengthening.<sup>3,6–12</sup> The American College of Rheumatology and the European Union League Against Rheumatism both recommend conservative intervention for persons with thumb CMCJ pain which is comprised of individualized, or client-centered care, activities of daily living evaluation, JPE, provision of adaptive equipment, thermal heat, orthotic support and exercise.<sup>6–8,13–28</sup> Recent systematic reviews of conservative intervention for hand osteoarthritis studies demonstrate evidence for the positive benefits of general hand exercises, JPE, and strengthening to reduce pain, improve range of motion (ROM), and increase function.<sup>7,12,23</sup> A recent review included a biomechanical basis to guide exercises for persons with CMC OA.<sup>24</sup> These

This paper was not a part of a podium platform or a poster presentation.

We have no conflict of interest. No financial subsidy or support was given or received. It is noted ASHT granted this survey to be distributed to all ASHT members at no cost to the primary author.

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reviews inform hand therapy practice of the scientific evidence, however, it is not known what the current practice patterns are (such as utilization of evaluation and intervention techniques) when therapists take care of persons with thumb CMCJ pain.

Practice patterns of care provided by hand therapists impact a broad area of patient health: assessments and treatments focused on deficits in body function and structure, loss of activities, and abilities to participate in life roles. The model of the World Health Organization (WHO) and their International Classification of Functioning Disability and Health (ICF) framework is ideally suited to organize and gain insight into the broad scope of hand therapy assessment and practice.<sup>26,29,30</sup>

Surveys have shown validity in generating information for the purpose of moving practice and research forward. Survey results have been used to provide a “current snapshot”<sup>31</sup> of common practice, raise future clinical research questions, inform therapists and surgeons of current therapeutic evidence, and identify gaps in care and research implementation in practice.<sup>32</sup> In the field of care for patients with hand injuries, surveys have been useful to move practice and science forward for CMCJ osteoarthritis, distal radius fractures, lateral epicondylitis, and flexor tendon rehabilitation.<sup>7,29,31,33</sup>

The primary purpose of this study was to portray a picture of the current practice patterns of assessment, and conservative interventions for patients with pain in the CMCJ of the thumb among hand therapists using a survey method. The secondary purpose was to categorize assessments and treatments according to the WHO model of wellness. This is important, because the WHO model fosters communication of the health related outcomes in a common language, and thus the survey results may also be of interest for patients, third party payers or other stakeholders.

## Methods

### Design and procedures

After a process of structured survey development, the survey was presented in its final form as an online survey conducted in May of 2011. Permission was granted from American Society of Hand Therapy (ASHT) administration to survey the current membership via electronic mail distribution, or “email blast.” At the time of the survey distribution, the membership totaled 2661. To optimize response rate, the survey was sent out twice, the second time being two weeks from the initial survey. In the email, an electronic link was provided to link to the survey created in Survey Monkey. The formatting in Survey Monkey allows each respondent’s identity to be hidden. This option was chosen to ensure anonymity for each response. Respondents to the survey are referred to as therapists throughout this paper.

### Instrumentation

The survey had three phases of development before it was applied to the ASHT membership. The first survey was initially field-tested by attendees of the 2010 Minnesota Occupational Therapy Association annual meeting. Changes were then made for improved clarity. This second version was then screened by six experienced hand therapists. After suggestions by these therapists, further survey changes were made. A third version was reviewed and validated by persons experienced in survey development, from which the final survey was created (Appendix).

The survey included four sections related to the practice of hand therapy including: 1) “evaluation measures,” 2) “orthoses for thumb pain,” 3) “interventions,” and 4) “patient education.” Closed ended and open ended questions were included. Closed ended questions were multiple choices with one and in some case more

## International Classification of Functioning and Disability (ICF) World Health Organization, 2001

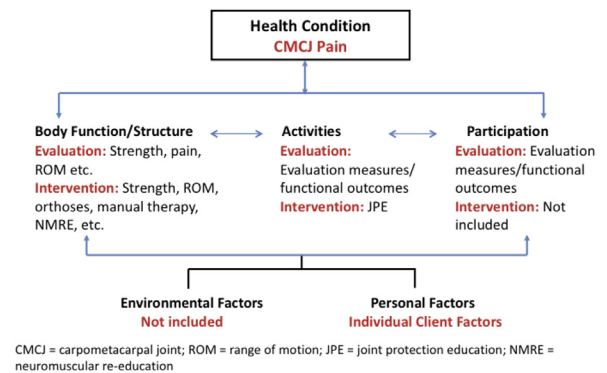


Fig. 1. ICF for CMC thumb pain.

than one answer option and dichotomous questions. The open-ended options allowed therapists to include personal current practice methods, clinical opinions and expertise on the survey questions.

Psychometric assessments named “evaluation measures” were divided into subsections of body functions and body structures (ROM, strength, and provocative tests). While not specifically outlined, survey questions regarding activities and participation were touched on in the questions regarding functional outcome tools and patient education. Orthoses for thumb pain were divided into custom and pre-fabricated orthotic designs. Intervention technique sections were divided into areas of strengthening, manual techniques, neuromuscular re-education, modalities and patient education. The final survey was delivered as a web-based survey through the use of Survey Monkey’s formatted templates with 38 questions (Survey Monkey; Palo Alto, CA (USA); <http://www.surveymonkey.com>)

### Descriptive data analysis

The surveys were computer scored and raw survey data were extracted from the electronic survey site and processed using IBM SPSS version 21 (SPSS Inc., Chicago, IL). Descriptive statistics were used to analyze therapists’ demographic information. Frequencies of therapists’ responses were calculated to summarize categorical data and multiple choice answer options. In some questions, multiple answers were allowed for the multiple choice questions. Therefore, summarized frequencies may exceed 100%.

Then, the responses were categorized according to the WHO ICF classification system of health and health-related domains (Fig. 1). The health condition was persons with thumb CMCJ pain treated by therapists. For the evaluation measures, the report included measures of *body function* and *structures*. The survey did not verbatim list measures of participation and activities, but these domains were included in the questions on functional outcome tools, patient centered measures and patient education. The questions regarding interventions were mostly assigned to *body functions* and *body structures*. No direct question asked about the utilization of *environmental factors* or *personal factors* as treatment interventions, however therapists were allowed free text comments in each survey section.

Free text comments were allowed in all sections. The orthoses section received the most comments. The question read, “Does your intervention plan include an orthotic weaning program? For example, when pain subsides, do you instruct your patients to reduce the frequency of wear?” Therapists responding to this question left 88 comments. The nature and content of these comments was further

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