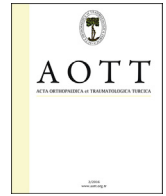


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## Do hand outcome measures reflect cultural influences?

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## ABSTRACT

**Objective:** The aim of this study was to compare the activities listed in DASH, MHQ, QuickDASH with the activities listed in Canadian Occupational Performance Measure (COPM) in a Turkish patient population with hand injury.

**Methods:** COPM questionnaire was administered to 163 participants (61 male and 102 female; mean age 40.72 ± 13.70 years). The activities that were stated in COPM were categorized and checked whether they were present in DASH-T, MHQ, QuickDASH.

**Results:** The highest rated stated activities were “carrying a heavy object” (39.2%), “cleaning the house” (25.7%) and “writing” (15.9%). DASH reflects 30% whereas MHQ and QuickDASH reflect 16.32% and 10.2% of the problematic activities, respectively.

**Conclusion:** None of three questionnaires have satisfactory results for reflecting the problematic activities among hand injured Turkish people. Open ended interviews should be irrevocable part of assessment process in order to describe a person-center treatment program.

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## Introduction

It is a commonly held belief by occupational practitioners that the intervention provided for people with physical abilities should extend beyond a focus on recovery of physical skills and address individuals' engagement in occupations.<sup>1</sup>

Upper extremity has a vital role in performing occupations and it has been reported that people with hand injuries may not be able to engage in activities successfully and they experience a variety of difficulties in their daily occupations.<sup>1,2</sup> It is therefore significant that hand therapists and surgeons know the problems and the needs of patients in activity basis to tailor an effective intervention plan.<sup>1,3</sup>

According to American Occupational Therapy Association (henceforth named as AOTA), Activities of Daily Living (henceforth

called as ADL) are fundamental to living in a social world thereby enabling basic survival and well-being.<sup>4</sup> The meaning of hand use in activities is related to participation and is influenced by socio-cultural values, beliefs, and expectations. Hand usage choice differs according to ADL which are tailored with an individual's occupation and culture. Hence, the assessment of activities should cover the understanding of the values and beliefs of the person and be sensitive to the person's culture.<sup>5</sup>

There are some outcome measures which are generally used in hand rehabilitation settings for measuring activity limitations. Disabilities of Arm, Shoulder and Hand<sup>6</sup> (henceforth named as DASH) and Michigan Hand Outcome Questionnaire<sup>7</sup> (henceforth named as MHQ) receive strong ratings, and the studies report reliability, validity, and responsiveness of these scales in upper extremity injuries.<sup>8,9</sup> They can also be used in Turkish population because of the fact that their version is valid and reliable among people with hand injuries.<sup>10,11</sup> Nonetheless, the activities measured in these scales reflect the activities of the western countries.

The Canadian Occupational Performance Measure<sup>12</sup> (henceforth named as COPM) is also found to be suitable for determining problems and the needs of people with hand injuries. COPM is useful in decision making process, and measures activity limitation and participation as well as allowing people to state their individual

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concerns.<sup>1</sup> In hand therapy, it is helpful to be aware of ADLs practiced by people from different cultures<sup>2</sup> and COPM can reflect cultural differences among people with hand injuries.<sup>1</sup>

The challenge, nevertheless, is to know the best tool to measure the necessary information in a practical way.<sup>9</sup> The concern of culture in hand therapy practice has been addressed in a number of studies,<sup>5</sup> but the use of mostly preferred outcome measures in different cultures is not analyzed yet. Therefore, from another perspective and going beyond the previous studies, the purpose of the study is to determine whether outcome measures used in hand therapy reflect the limited activities of Turkish population with hand injuries. In concordance with this aim, the research questions that are employed in the present study are as follows:

1. In which activities do Turkish people with hand injuries have difficulty?
2. Do commonly used outcome measures comply with the activities stated by COPM?
3. Which important activities according to Turkish culture are not mentioned in outcome measures?
4. Which outcome measure reflects the problems of Turkish people with hand injuries?

## Material and methods

### Participants

The participants that are employed in the present study are one hundred and sixty-three participants with hand injuries between the years 2013 and 2015. All the participants had hand injuries and the ones with additional shoulder and elbow injuries, lower limb injuries, systemic diseases and hearing or visual impairment that would affect the communication were not involved in the study. Additionally, all participants were born and raised in Turkey. Prior to data collection, each participant submitted informed written consent to participate in the study. All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

### Questionnaires

The data in the present study come from four questionnaires, namely COPM, DASH, MHQ and Quick DASH:

First and foremost, COPM questionnaire was used to determine the main problematic activities of participants regarding their injuries. COPM was created by Law et al in 1990 with an aim to address the problematic activities which were important for a person. COPM is based on semi-structured interviews and helps practitioners set therapy goals through a person-centered perspective. Within the questionnaire, a person should state his/her five problems of activities of daily living (ADL) maximum in three different activity areas which are self-care, productivity and leisure.<sup>12</sup>

Besides COPM, DASH was also used in the present study. DASH is a self-reported questionnaire consisting of 30 items that evaluate physical function and disability among people with upper extremity disorders.<sup>6</sup> The first 21 items of DASH are about ADLs and the rest of it -other 9 items-are about the symptoms of participants; hence, the first 21 items were used in this study to compare the activities with the activities stated in COPM. In fact, DASH has 8 more items regarding sports/music and work, yet they were not used in the present study. There is also the Turkish version of DASH (DASH-T) and it was published in Duger et al.<sup>10</sup>

In addition to COPM and DASH, another questionnaire used is MHQ. MHQ is a hand-specific outcome questionnaire with fifty-seven items in six different domains. These domains are overall hand function, activities of daily living, pain, work performance, aesthetics, and patient satisfaction. All the domains except two -work performance and pain-assess each hand separately and are scored according to the affected hand.<sup>7</sup> The Turkish version of MHQ was published by Oksuz et al.<sup>11</sup> In the present study, nonetheless, MHQ's twelve items in activities of daily living domain were used to compare them with COPM activities.

Last but not least, the QuickDASH was also used in the present study. The QuickDASH is a shortened version of DASH, yet it consists of eleven items. Items in the questionnaire inquire into the pain, tingling, weakness and stiffness, activities of daily living, social activities, work and sleep. The QuickDASH, moreover, involves 6 items that question physical activities which were used in this study with an aim to compare them with COPM mentioned activities.<sup>13</sup> The Turkish version of QuickDASH was indeed formed by Koldas Dogan S. et al. and found to have a high internal consistency and test-retest reliability.<sup>14</sup>

### Method

Demographic data collection – such as age and gender and COPM questionnaire were administered on the day of the participant's initial examination by an occupational therapist. The administration of COPM lasted approximately for 30–45 min for each participant. Having gathered the data, the activities that were stated in COPM were listed and they were checked whether they were present in DASH-T, MHQ and QuickDASH (see Table 1). Moreover, in the present study, the term “sub activity” was used to describe different tasks of activities. To exemplify “buttoning up a blouse or shirt” was used as a sub activity, which was in fact a part of “dressing” activity.

Furthermore, the COPM stated activities were categorized into Activities of Daily Living (ADL), Instrumental ADL (IADL), Rest and Sleep, Education, Work, Plan, Leisure and Social Participation areas according to Occupational Therapy Practice Framework: Domain and Process 3rd Edition. Some activities which couldn't be categorized were grouped in the “Other” section.

### Results

In total, one hundred and sixty-three participants (61 male, 102 female) with upper extremity injuries participated in the study. The mean age of participants were  $40.72 \pm 13.70$  years (male  $34.18 \pm 13.58$ , female  $44.63 \pm 12.29$ ) and the hand injuries of participants were fractures (36.8%,  $n = 60$ ), crush injuries (7.9%,  $n = 13$ ), carpal tunnel syndrome (34.9%,  $n = 59$ ) and tendon injuries (19%,  $n = 31$ ).

In COPM, a total of 612 activities were stated by all the participants. Ninety seven of the activities which were work, instrument and/or sports related, sleeping activities and statements as “grasping” that could not be categorized in any group were excluded from the data. After the exclusion of the above-mentioned activities, 515 activities remained to be analyzed and 49 activities were found as common. In the analyzing process of the activities 13 ADLs, 32 IADLs, 3 leisure and 1 education activities were grouped according to Occupational Therapy Practice Framework: Domain and Process 3rd Edition (see Table 2). The top three highly stated activities were “carrying a heavy object” (39.2%,  $n = 64$ ), “cleaning the house” (25.7%,  $n = 42$ ) and “writing” (15.9%,  $n = 26$ ) (for other activities, see Table 2). The activities which were mentioned the highest (“carrying a heavy object”, “cleaning the house”, “overhead activities”, “cooking” and “using knife”) were IADLs, except “writing” which was grouped as educational activity (see Table 2).

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