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To establish normative data using the Jebsen Taylor hand function test (JHFT) for normal, ethnically diverse South Africans aged between 20 and 59 years

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2009-05-06T13:27:56Z
http://hdl.handle.net/10539/6931

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CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION

The use of standardised tests like the Jebsen-Taylor Hand Function Test (JHFT) [1] should be considered, in occupational therapy, as an assessment and outcome measure. The addition of a hand function test to an assessment procedure, would allow the therapist to establish if there is a relationship between performance components (such as strength and range of motion) and functional limitations in activities [2]. This is necessary as the assumed correlation between dysfunction in performance components or impairments and ability to engage in activity or occupation has come into question by therapists. Various authors are suggesting that there is not an automatic translation between the two [3]. As such, performance component assessments may not give the therapist a true picture of the level of activity limitation nor participation restriction [4] that the patient is experiencing [5].

The focus on performance components could further skew the therapist's perspective during treatment and therefore the ability to measure the functional outcome of the treatment. An outcome measure that reflects the quality of the patients' hand function should be incorporated into the assessments. This is used to establish the effectiveness of the therapy, improve treatment and standardise research. It can be particularly important in providing evidence in medico legal cases [6].

The concept of an outcome measure that includes an assessment that uses activity or occupation was emphasised in the area of hand therapy in the early 1990's. Mathiowetz [7] amongst others indicated that the assessment and treatment of occupational performance areas like leisure, personal management and work should be prioritised. This resulted in extensive research into the assessment of hand function and hand function tests using activities of daily living (ADL) being carried out at this time. The measurement properties [8], psychometric criteria [9] and a description of the development of hand function test were emphasised during this

period [7]. Other essential criteria for a good hand function test identified were subtest types, standardisation, speed and reliability of administration as well as ease of fabrication [10].

The Jebsen Taylor Hand Function Test (JHFT), although developed and standardised in 1969[1], was one of two tests that met these criteria in 1993. The test also includes some other criteria identified as important, by Desrosiers et al such as co-ordination, dexterity and various types of prehension [11].

The JHFT is an assessment tool that is still used in both clinical and academic research settings as it has published norms [1] and is the test most reported in the literature in 1993[7]. The test has also been reported as an outcome measure on a regular basis in recent research of various diagnoses and with various age groups [12-15]. It has been proven to have good discriminative properties when hand function has been decreased by disease and illness [16]. The JHFT also met the application factors in Rudman and Hannah's [6] instrument evaluation framework presented in 1998. These include clinical utility, specificity, acceptability to patients and availability. It is one of the few hand function tests that is available commercially and can be constructed by therapist.

More recently the test has been shown to be one of the hand function tests that assesses activity limitations[17] as described in the International Classification of Functioning, Disability and Health (ICF)[4]. The JHFT can therefore be used in conjunction with the ICF by comparing the scores of patients and the normal population. This will allow the therapist to quantify the extent of the activity limitation and the subsequent impact of the injury on participation. This is important to evaluate the effectiveness of therapy within the specific patient's needs, values and context [18].

According to Hocking[3], an important challenge for therapists is to focus on the patient's ability to execute activities rather than the underlying performance components, like strength and range of motion or impairments, that may affect

engagement in purposeful activity. It is argued that the availability of activity or occupation based assessments will assist in better communication of the unique role of occupational therapy to its patient group, thereby promoting engagement by patients and understanding by colleagues.

1.2 STATEMENT OF THE PROBLEM

The treatment of dysfunction in the hand has always been within the scope of occupational therapy. Specialised hospital units and private practice focussing on hand therapy and neurology have developed in the last decade in South Africa. Thus, the need for an outcome measure to assess hand function clinically and in research should be considered. From the researcher's observation, the use of outcomes measures in South Africa is very limited.

The researcher as the most suitable test to be investigated for use by South African occupational therapists, although it has some limitations[19], identified the JHFT. This was due to the factors discussed above, as well as its availability, and its recent use internationally in the United States [20], Australia [21] and Hong Kong [22].

The original norms for the JHFT were standardised on an American population in 1969[1]. However, research by Gosciak [23] found that there are statistical differences between norms collated in studies that are more recent and those found in the original study by Jebsen. Agnew and Maas [24] have shown that norms for this standardised test cannot necessarily be applied to another population. In the original standardisation, no mention was made about the ethnic diversity or specific composition of the subjects chosen for the standardisation procedure.

Since the original study, a number of authors have undertaken studies to further investigate different aspects of the JHFT. Research by Hackel et al [5] has shown that separate norms are required for every decade above 60 years of age i.e. 60-69 years, 70-79 years and 80-89 years. They propose that this will enable a more accurate

assessment of hand function in patients of these age groups. Gosciak [23] demonstrated that it is still possible to class the norms of 20-59 year olds together. All norms presently available have been established in other countries and on more homogeneous populations than those found in South Africa. Thus, it cannot be assumed that the norms are applicable in the South African context. Factors like gender, dominance, culture and preferred hand use for certain ADL have also never been considered. The effect of these on the norms obtained for the test is not known.

1.3 PURPOSE OF THIS STUDY

The purpose of this study is to establish normative data for the JHFT on normal, ethnically diverse South Africans between the ages of 20 and 59 years. This is the age group, in which hand injuries requiring intervention from therapists, are most common. This will provide normative data from which occupational therapists in South Africa can assess the progress and functional outcomes of patients with upper extremity injuries.

1.4 AIM OF THIS STUDY

To establish norms for the JHFT on normal South Africans from diverse ethnic groups aged between 20 and 59 years.

1.4.1 Objectives of this Study

- To establish normative data on a sample of 120 normal South African subjects, from diverse ethnic groups, between the ages of 20 and 59 years using the JHFT. The study will duplicate the protocol for standardisation set out by Jebsen et al [1] in their study.
- To establish whether differences exist, in the norms on the JHFT, for four ethnically diverse population groups.

1.5 JUSTIFICATION OF THE STUDY

It is important to establish norms for the JHFT on an ethnically diverse population in South Africa. This will provide hand therapists practising in this country with a tool to

establish treatment outcomes in relation to diagnoses regularly encountered in clinical practice and in research studies.

The JHFT[1] examines a broad range of hand function commonly used in ADL and attempts to provide information on the impact of functional limitation. It is recognised however, that not all aspects, which cause occupational dysfunction, may be assessed when using an activity based hand function test. Therefore, analysis of performance components, like joint range and strength, will also be necessary to clarify the reasons for the reduced level of function and to plan intervention.

The use of this test would make communication and comparison of functional outcomes between therapists easier. It would also allow therapists to refer to current literature in terms of the effectiveness of therapy particularly in stroke[12,13,25], rheumatoid arthritis[26,27]and traumatic hand injuries[28,29] . Outcomes of therapy in terms of hand function in various diagnoses could be evaluated by considering functional progress, effectiveness of therapeutic techniques and cost effectiveness.