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Literature review

A systematic review of the psychometric properties of the Jebsen–Taylor Hand Function Test (JTHFT)

Examen systématique des propriétés psychométriques du test de fonction de la main de Jebsen–Taylor (JTHFT)

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ABSTRACT

This systematic review of the literature aimed to identify studies examining the psychometric properties of the Jebsen–Taylor Hand Function Test (JTHFT) in various international populations on. The search was conducted in MEDLINE, SCOPUS, CINAHL and Web Of Science, with no restrictions on publication period, the country in which the study was conducted, or the age of the patients. Eligible studies were selected on the basis of inclusion criteria and data were extracted. Study quality and the risk of bias were assessed using the COnsensus-based Standards to select the health Measurement Instruments (COSMIN) checklist. 805 articles were identified; after removing duplicates, there were 361 single studies. 338 articles did not concern the psychometric properties of JTHFT. The remaining 23 studies were selected for full text review, and all were included. They comprised 8 languages and 9 pathologies. These findings suggest the JTHFT is a useful test of manual dexterity in activities of daily living. This study provides specific information on the instrument's psychometric properties in different populations and supports clinicians in making informed decisions when choosing instruments for upper-limb evaluations.

Mots-clés:
Test de fonction de la main de Jebsen–Taylor
Examen systématique
Fiabilité
Validité
Propriétés psychométriques

RÉSUMÉ

Cette étude visait à chercher, à travers une revue systématique de la littérature, les études qui examinent les propriétés psychométriques du Jebsen–Taylor Hand Function Test (JTHFT) dans différentes populations sur la scène internationale. Une recherche documentaire a été menée dans MEDLINE, SCOPUS, CINAHL et Web Of Science, et aucune restriction n'a été appliquée à la période de publication, au pays dans lequel l'étude a été menée et à l'âge des patients. Les études éligibles ont été sélectionnées sur la base de critères d'inclusion et des données extraites. La qualité de l'étude et le risque de biais ont été évalués à l'aide des normes fondées sur le consensus pour sélectionner la liste de contrôle des instruments de mesure de la santé (COSMIN). Au total, 805 études ont été extraites de la recherche. Après avoir supprimé les doublons, il y avait 361 articles uniques. Au total, 338 articles ne concernaient pas les propriétés psychométriques de JTHFT. Les 23 études restantes ont été sélectionnées pour une revue du texte intégral, et toutes ont été incluses. Dans les études incluses, huit langues et neuf pathologies différentes ont été identifiées. Ces résultats suggèrent que le JTHFT est une échelle de mesure utile pour évaluer la fonction de la main dans différentes activités quotidiennes. Cette étude permet d'obtenir des informations spécifiques sur les propriétés psychométriques de cet instrument dans différentes populations et aide les cliniciens à prendre des décisions éclairées lors du choix des instruments pour les évaluations des membres supérieurs.

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1. Introduction

Rehabilitation medicine aims to reduce disability, and it is necessary to identify a series of methodological points that make it possible to measure and evaluate the effect of rehabilitation on disability [1–3]. The tools used for this are the measurement scales.

In rehabilitation, the "measure" is fundamental for evaluating a treatment's effect over time; it can be defined as the quantification of an observation relating to objects or events about a given reference system. Therefore, the measure consists of a series of rules that allow numbers to be assigned to an object to quantify attributes. The term "evaluation" means attributing meaning to a datum, a measure, or a set of measures in a specific context [4]. A further aspect of measurement scales, which are standardized and shared, is that they represent an important means of communication, as different rehabilitation operators all recognize them. Furthermore, a measurement tool must possess a series of requirements (psychometric characteristics) to provide reliable data in the clinical and research fields; these are reliability and validity [5].

Reliability is defined as "the degree to which the measurement is free from measurement error". Reliability varies depending on issues that include the instrument under investigation, the evaluator, and the patients under study. These lead to different types of reliability: (i) test-retest reliability, when measurements are repeated over time; (ii) inter-rater reliability, when they are conducted by different evaluators but within the same time-frame; (iii) intra-rater reliability, when they are conducted by the same evaluator but on different occasions; and (iv) internal consistency, when different sets of items from the same tool are employed. Validity is defined as "the degree to which an instrument truly measures the construct it purports to measure". An adequate definition of the construct (i.e., an explanatory variable to be measured which is not directly observable) is imperative. The construct itself has to be part of the conceptual model within a theoretical and clinical framework. There are three different types of validity: content validity, criterion validity and construct validity [6,7].

The hand is structured to be able to carry out the main actions of daily life. The independence of each individual depends on it, or rather on both hands. Functional limitations of the hand, precisely because of the role it plays, constitute the greatest disability in many neurological and orthopedic pathologies [8]. Grip function can be severely limited by various traumatic, surgical and neurological events. Therefore, it is important to evaluate the functional abilities of the hand [8]. There are numerous methods for evaluating the activity of the upper limb and the hand's grip capacity, in order to determine the most appropriate training and aids [9,10].

There are many assessment tools for evaluation of the upper limb: Fugl-Meyer Assessment (FMA) [11], Action Research Arm Test (ARAT) [12], Box-and-Block Test (BBT) [13], Wolf Motor Function Test time subscale (WMFT-IT-TIME) [14], ABILHAND [15], Sequential Occupational Dexterity Assessment (SODA) [16], Sollerman Hand Function Test [17], Grip Ability Test (GAT) [18], Purdue Pegboard Test [19] and Crawford Small Parts Dexterity Test [20]. The present study considered the Jebsen–Taylor Hand Function Test (JTHFT), because it focuses on activities of daily living (ADLs), uses time as a parameter, and is not specific to any given pathology.

This test was developed by Jebsen et al. in 1969 to enable objective and standardized assessment of the manual dexterity necessary for ADLs [9]. The test is quick to administer and requires only readily available materials. Patients take a mean 15 min to complete the test, and staff spend an equivalent amount of time with the patient to administer it [21,22]. The test includes 7 subsets: writing, turning over 3 × 5 inch cards (to simulate page turning), picking up common small objects, simulated feeding, stacking checkers, picking up large light objects, and picking up large heavy objects [22]. All subset tasks must be performed first with the non-dominant hand and then with the dominant hand. Task execution is measured with a chronometer [21].

In the last few years, systematic reviews and meta-analyses have become increasingly important in health care. Systematic reviews of evaluation tools have become common, to guide clinicians in selecting standardized tools for evaluating outcomes that are internationally comparable. Moreover, they allow doctors to keep up to date with their field [23,24], and are often used as a starting point for developing clinical practice guidelines [25–27]. The present systematic review of literature aimed to identify studies of the psychometric properties of the JTHFT in different populations worldwide.

2. Material and methods

2.1. Protocol and registration

The study was registered on the Prospero website, the international prospective register of systematic reviews, and is available at https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020205451.

The review followed the 27-item Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist [26,28,29] and COnsensus-based Standards for the selection of health Measurement Instruments (COSMIN) methodology for systematic reviews of Patient-Reported Outcome Measures (PROMs) [30].

2.2. Information sources

The systematic review searched for studies that evaluated JTHFT psychometric properties. The following electronic databases were systematically searched, in May 2020: MEDLINE (via PubMed), CINAHL, SCOPUS, and Web Of Science. The Medical Subject Headings (MeSH) of the United States National Library of Medicine were used to find the terms included in the search strategy. The only MeSH term used was "Jebsen."

The reviewers chose to use the databases mentioned above as they index only journals that follow the peer review process, to keep the methodological quality of the study high; this is why we also chose to not use the gray literature.

2.3. Eligibility criteria

No restrictions were applied regarding publication dates, the country where the study was conducted, or the age of patients; however, only validation studies, psychometric studies and cross-sectional studies were included. The psychometric properties considered were those of the COnsensus-based Standards for the selection of health Measurement Instruments (COSMIN) study design checklist.

Inclusion criteria comprised: (1) studies evaluating the psychometric properties of the JTHFT, according to the COSMIN study design checklist measurement properties; (2) validation studies and cross-sectional studies. Studies using JTHFT as an assessment tool were excluded.

2.4. Study selection

The literature search was carried out by two occupational therapists (BF, AB), in compliance with the inclusion and exclusion criteria. The two therapists then made an initial selection based on

titles and Abstracts. Articles not excluded were then subjected to further selection based on a reading of the full-text. A list of eligible studies was compiled, and disagreements were resolved in a consensus meeting. Finally, the two therapists carried out reference checking and citation tracking to identify other studies for inclusion in the review.

2.5. Data collection

Descriptive characteristics were extracted from the included articles (authors, year of publication, language, characteristics of the sample, comparison scales), and the specific characteristics of the measurement instrument: scale tested, subscales, age range of patients, number of items, increasing/decreasing instrument, language of validation, and statistical references.

2.6. Risk of bias

Risk of bias was assessed using the COSMIN checklist [30]; a Table summarized results for all studies selected. The COSMIN Risk of Bias tool comprises two parts. Part A assesses how the study results disclose the reliability or measurement error of the outcome measurement instrument under study. Part B assesses whether we can trust the result obtained in the study by assessing the risk of bias of the study. Each of the checklist standards is rated on a 4-point scale: 'very good', 'adequate', 'doubtful', and 'inadequate'.

The COSMIN study design checklist consists of 10 boxes. The first box, i.e., general recommendations for designing a study on measurement properties, is relevant to all studies. It contains general standards that should be considered in the design of a study on any measurement property.

The remaining boxes contain standards for specific studies on each of the nine measurement properties, in detail:

- Content validity is defined as the degree to which the content of a health-related patient-reported outcome tool (HR-PRO) adequately reflects the construct to be measured.
- Structural validity is the degree to which the scores of an HR-PRO instrument are an adequate reflection of a dimension of the construct to be measured.
- Internal consistency concerns the interrelation between elements.
- Cross-cultural validity/measurement invariance is the degree to which the performance of the elements on a translated or

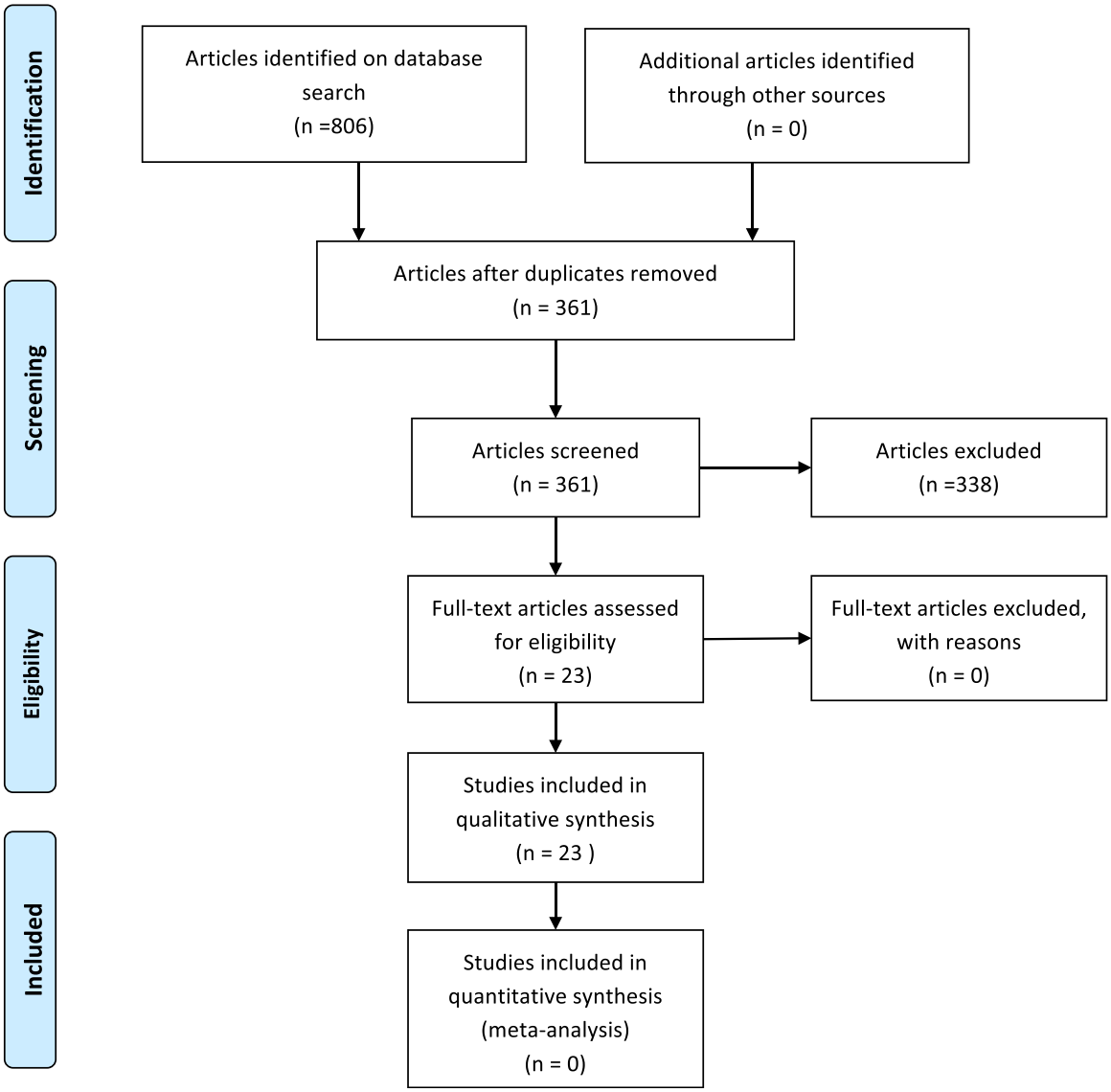

Fig. 1. Flowchart of search and screening process.

Table 1
Data extracted from studies evaluating the Jebsen–Taylor Hand Function Test (JTHFT).

Studies	Authors	Year of publication	Language	Population	Sample size	Mean age ± SD	Gender F (%)	Construct validity
Assessing kinematic variability during performance of Jebsen–Taylor Hand Function Test [32]	Kimberly et al.	2018	English	No upper limb disability	22	26.6 ± 8.1	8 (36.4)	
Fine motor skills predict performance in the Jebsen Taylor Hand Function Test after stroke [33]	Allgöwer et al.	2017	German	Hemiparesis	22	57.8 ± 13.4	8 (36.4)	
Fine motor skills predict performance in the Jebsen Taylor Hand Function Test after stroke [33]	Allgöwer et al.	2017	German	Healthy subjects	22	56.7 ± 13.4	19 (86.4)	
Standardized translated instruction versus spontaneously translated instruction: Test-retest and interrater reliability of a hand function test [34]	Xin Lim et al.	2019	Chinese	Healthy subjects	36	22.7 ± 0.9	17 (47.2)	
Standardized translated instruction versus spontaneously translated instruction: Test-retest and interrater reliability of a hand function test [34]	Xin Lim et al.	2019	Chinese	Healthy subjects	36	23.3 ± 1.1	29 (80.6)	
Investigation of reliability, validity, and cutoff value of the Jebsen–Taylor Hand Function Test [35]	Sıgırtmaç et al.	2020	Turkish	Hand injury	143	40.4 ± 12.9	79 (55)	
Investigation of reliability, validity, and cutoff value of the Jebsen–Taylor Hand Function Test [35]	Sıgırtmaç et al.	2020	Turkish	Healthy subjects	162	38.4 ± 10	98 (60)	
Examining Reliability and Validity of the Jebsen–Taylor Hand Function Test Among Children With Cerebral Palsy [36]	Tofani et al.	2020	Italian	Cerebral palsy	84	10.2 ± 3.7	35 (41.7)	
Cross-Cultural Adaptation and Validation of the Jebsen–Taylor Hand Function Test in an Italian Population [37]	Culicchia et al.	2016	Italian	Healthy subjects	320	35.3 ± 21.5	171 (53.4)	
The Italian Version of the Jebsen–Taylor Hand Function Test for the Assessment of Hand Disorders: A Cross-Sectional Study [38,53]	Nobilia et al.	2019	Italian	Injuries, burns, or neurological diseases of the hand	136	54.8 ± 22.4	80 (58.8)	
Reliability and responsiveness of the Jebsen–Taylor Test of Hand Function and the Box and Block Test for children with cerebral palsy [39]	Araneda et al.	2019	French	Cerebral palsy	154	9 ± 3	78 (50.6)	Box and Block Test (BBT)
Reliability, validity and description of timed performance of the Jebsen–Taylor Test in patients with muscular dystrophies [40]	Artilheiro et al.	2018	Brazilian	Muscular dystrophies	50		3 (12)	Performance of Upper Limb (PUL)
Establishing Australian norms for the Jebsen–Taylor Test of hand function in typically developing children aged five to 10 years: A pilot study [41]	Beagley et al.	2015	Australian English	Healthy subjects	102	7.5	52 (86.5)	
Internal consistency and validity of the Jebsen–Taylor hand function test in an Italian population with hemiparesis [42]	Berardi et al.	2019	Italian	Hemiparesis	48	69.9 ± 13.4	34 (70.8)	Wolf Motor Function Test time subscale (WMFT-IT-TIME)
Evaluation of Jebsen–Taylor hand function test for use in nursing students: close-future outlook [43]	Gulden et al.	2019	English	Healthy subjects	168	21.5	118 (70.2)	
Psychometric properties of the Portuguese version of the Jebsen–Taylor test for adults with mild hemiparesis [44]	Ferreiro et al.	2010	Portuguese	Hemiparesis	40	52.5 ± 16.1	23 (57.5)	
Does the use of a template board imply new normative data for the Jebsen–Taylor Hand Function Test? [45]	Harte et al.	2016	English	Healthy subjects	30	33.9 ± 9.8	30 (100)	
The Hong Kong Chinese version of the Jebsen Hand Function Test: inter-rater and test-retest reliabilities [46]	Li-Tsang et al.	2004	Chinese	Rheumatoid arthritis	24	45.7 ± 7.2	24 (100)	
The Hong Kong Chinese version of the Jebsen Hand Function Test: inter-rater and test-retest reliabilities [46]	Li-Tsang et al.	2004	Chinese	Healthy subjects	28	41.4 ± 7.3	28 (100)	Klein-Bell ADL Scale
Validity of the Jebsen–Taylor Hand Function Test in Predicting Activities of Daily Living [47]	Lynch et al.	1989	English	Spinal cord injury	18	52		

Table 1 (*Continued*)

Studies	Authors	Year of publication	Language	Population	Sample size	Mean age ± SD	Gender F (%)	Construct validity
Use of Jebsen Taylor Hand Function Test in evaluating the hand dexterity in people with Parkinson's disease [48]	Mak et al.	2015	Chinese	Parkinson's disease	15			
Use of Jebsen Taylor Hand Function Test in evaluating the hand dexterity in people with Parkinson's disease [48]	Mak et al.	2015	Chinese	Health	15			
The Jebsen Taylor Test of Hand Function: A Pilot Test–Retest Reliability Study in Typically Developing Children [49]	Reedman et al.	2016	English	Health	71	7.5	38 (53.5)	
Responsiveness of outcome measures for upper limb prosthetic rehabilitation [50]	Resnik et al.	2016	English	Upper limb prosthetics	39	45.7 ± 16.4	5 (12.8)	Box and Block Test (BBT)
Evaluation of intra- and inter-rater reliability and concurrent validity of the Italian version of the Jebsen–Taylor Hand Function Test in adults with rheumatoid arthritis [51]	Savona et al.	2019	Italian	Rheumatoid arthritis	108	59.9 ± 12.6	88 (81.5)	
Validity and responsiveness of the Jebsen–Taylor Hand Function Test [22]	Sears et al.	2010	English	Rheumatoid arthritis	111			
Inter-rater Reliability of a Clinical Test of Standing Function [52]	Triolo et al.	1995	English	Spinal cord injury	13	22	10 (76.9)	Functional Standing Test (FST)
An objective and standardized test of hand function [9]	Jebsen et al.	1969	English					

SD: standard deviation; *F*: female.

culturally adapted HR-PRO is an adequate reflection of the performance of the elements of the original version of the tool.
- Reliability refers to stability over repeated measurements.
- Measurement error consists in systematic and random error in a patient's score that is not attributed to actual changes in the phenomena being measured.
- Criterion validity is defined as the degree to which the scores of an HR-PRO instrument adequately reflect a "gold standard".
- Hypothesis testing for construct validity is the degree to which the scores of an HR-PRO tool are consistent with the study hypotheses.
- Responsiveness is defined as the ability of an HR-PRO instrument to detect change over time in the structure to be measured [31].

3. Results

3.1. Study selection

Search ended on August 24, 2020. Research by two occupational therapists (BF, AB) on MEDLINE, CINAHL, SCOPUS, and Web Of Science databases identified 806 articles.

445 of the articles from the 4 databases appeared in more than one, and were eliminated as duplicates. 361 articles were analyzed on reading the title and Abstract, and 338 were excluded as using the JTHFT as a measuring tool or not dealing with its psychometric properties. None of the 23 remaining articles were excluded after reading the full-text, since all concerned validation of the JTHFT [9,22,32–52]. The selection process is reported in the flowchart (Fig. 1), according to the PRISMA guidelines for reporting systematic reviews and meta-analyses [28].

3.2. Study characteristics

For each included study, the following data were obtained: author name(s), year of publication, language, population, demographic information (sample size, average age, sex ratio), and comparison scales.

3.3. Sample size

Sample sizes ranged from 13 [52] to 320 [37]. Mean age ranged from 7.5 [41,49] to 69.9 ± 13.4 years [42]. The data are shown in Table 1.

3.4. Pathologies

The reliability and validity of JTHFT in subjects with hemiparesis was examined in 3 articles [33,42,44], 1 of which [33] made a comparison with healthy subjects. Two articles [36,39] examined the validity of the scale in children with cerebral palsy, and 2 others [47,52] in subjects with spinal cord injury. Three articles [22,46,51] concerned rheumatoid arthritis, 1 of which [46] made a comparison with healthy subjects. Just 1 article each concerned muscular dystrophy [40], Parkinson's disease [48], upper limb prosthetics [50], no upper limb disability [32], and hand injuries (burns, neurological diseases of the hand, etc.) [38]. The remaining articles [34,37,41,43,45,49] demonstrated the validity of JTHFT in healthy subjects.

3.5. Countries

The English version of the JTHFT was used in 10 articles [21,22,32,41,43,45,47,49,50,52] and the Italian version in 5 [36,37,42,51,53]; 3 articles used the Chinese version [34,46,48], and 1 article each used the German [33], Turkish [35], Brazilian [40], Portuguese [44] and French [39] versions.

3.6. Risk of bias within studies

The risk of bias in the 23 studies was variable. Methodological quality was assessed using the COSMIN checklist [30]. Quality scores on the responsiveness subset are reported in Table 2. In

Table 2
Quality assessment of studies evaluating the Jebsen–Taylor Hand Function Test (JTHFT).

Authors (year of publication)	Language	Item									
		1	2	3	4	5	6	7	8	9	10
Konstor et al. (2020) [32]	English	–	–	–	–	–	–	–	–	–	–
Allgöwer et al. (2017) [33]	German	–	+	–	–	–	–	–	–	–	–
Xin Lim et al. (2020) [34]	Chinese	–	–	–	–	–	+	–	–	–	–
Sığırtmaç et al. (2020) [35]	Turkish	–	+	–	–	–	–	–	–	–	–
Tofani et al. (2020) [36]	Italian	–	–	–	+	–	–	–	–	–	–
Culicchia at al. (2016) [37]	Italian	–	+	–	+	+	+	–	–	–	–
Nobilia et al. (2019) [38]	Italian	–	–	–	+	–	+	–	–	–	–
Araneda et al. (2019) [39]	French	–	+	–	–	–	+	–	+	+	+
Artilheiro et al. (2018) [40]	Portuguese	–	+	–	+	–	+	–	+	+	–
Beagley et al. (2016) [41]	English	–	–	–	–	–	–	–	–	–	–
Berardi et al. (2019) [42]	Italian	–	–	–	+	–	–	–	+	+	–
Gulden et al. (2019) [43]	English	–	–	–	–	–	–	–	–	–	–
Ferreiro et al. (2010) [44]	Portuguese	–	+	–	+	–	+	–	–	–	–
Harte et al. (2016) [45]	English	–	–	–	–	–	–	–	–	–	–
Li-Tsang et al. (2004) [46]	Chinese	–	+	–	–	+	+	–	–	–	–
Lynch et al. (1989) [47]	English	–	–	–	–	–	–	–	–	–	–
Mak et al. (2015) [48]	Chinese	–	–	–	–	–	+	–	+	+	–
Reedman et al. (2016) [49]	English	–	–	–	–	–	+	–	–	–	–
Resnik et al. (2016) [50]	English	–	–	–	–	–	–	–	+	+	+
Savona et al. (2019) [51]	Italian	–	–	–	+	–	+	–	–	–	–
Sears et al. (2010) [22]	English	–	–	–	–	–	–	–	–	–	+
Triolo et al. (1995) [52]	English	–	–	–	–	–	+	–	+	+	–
Jebsen et al. (1969) [9]	English	+	+	–	–	–	–	–	–	–	–

Item 1 = PROM development; Item 2 = content validity; Item 3 = structural validity; Item 4 = internal consistency; Item 5 = cross-cultural validity/measurement invariance; Item 6 = reliability; Item 7 = measurement error; Item 8 = criterion validity; Item9 = hypothesis testing for construct validity; Item 10 = responsiveness (+ = sufficient; – = insufficient).

general, the studies were of fairly good quality. Items 4 (Internal Consistency) and 6 (Reliability) had the highest levels of positive ratings. Item 4 was assessed mostly in Italian studies, while item 6 was positively evaluated in half of the studies. The studies that demonstrated the highest quality were by Araneda et al. [39] and Artilheiro et al. [40].

4. Discussion

The present review aimed to identify studies evaluating the psychometric properties of the JTHFT in the worldwide literature. This review also proposed to identify the pathologies for which the JTHFT was validated.

The data available in the worldwide literature from 1969 to 2020 allowed identification of 23 studies that evaluated the psychometric properties of the JTHFT. Following the COnsensus-based Standards for the selection of health Measurement Instruments (COSMIN) checklist, authors have highlighted the reliability and validity of JTHFT in several major disabilities: hemiparesis (3 articles), rheumatoid arthritis (3 articles), and children with cerebral palsy (2 articles) and spinal injury cord (2 articles). For other cases, there was only 1 article each: healthy subjects, muscular dystrophy, upper-limb amputees, and Parkinson's disease. Because hand injuries, burns and neurological diseases were not present, it appears that this test is less well known in relation to hand surgery; perhaps this is only a question of specialty culture and other functional tests may also be effective.

Descriptive features were extracted from the included studies, to provide a more complete picture of the assessment tool and to help in selecting it. Information such as the method of administration or relating to populations in which the tool has been validated should help experts in choosing the scale for use in their particular contexts [23].

Since there are many assessment tools in the literature, it is extremely important to determine which show optimal characteristics and have been most widely used internationally [24]. This allows provides information on the reliability of the instrument in different patient categories, for researchers and doctors to choose the right instrument [25–27].

There are some limitations to this review that need to be considered. While we systematically searched 4 electronic databases, it is possible that not all relevant studies were identified; studies may also have been published in journals that were not indexed in the databases. In addition, the review included only published studies; studies that have been submitted and not accepted for publication or have only recently been accepted for publication were excluded.

5. Conclusion

This review showed that the JTHFT is a useful measurement scale to evaluate manual dexterity in activities of daily living. It is important to use valid and reliable measures for evaluation. It has been suggested that performance-based outcome measures do not target the same constructs as patient-rated outcome measures, and are a vital part of comprehensive assessment. Thus it is important to present the results of a systematic review of studies investigating the psychometric properties of performance-based outcome measures of hand function. Moreover, the review underlines the importance of having measures that can be compared, using the same outcome, so that different pathologies and different treatments in the same pathology can be compared on the same evaluation scale, to compare studies not only on a national but also an international level. The present review provides specific information on the instrument's psychometric properties in different populations and supports clinicians in making informed decisions when choosing instruments for upper-limb evaluation.

Human and animal rights

The authors declare that the work described has been carried out in accordance with the Declaration of Helsinki of the World Medical Association revised in 2013 for experiments involving humans as well as in accordance with the EU Directive 2010/63/EU for animal experiments.

Informed consent and patient details

The authors declare that this report does not contain any personal information that could lead to the identification of the patient(s) and/or volunteers.

Disclosure of interest

The authors declare that they have no competing interest.

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Author contributions

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for Authorship.

Availability of data and material

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.hansur.2021.05.004.

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