Identifying content gaps in health status measures for intermittent claudication using the International Classification of Functioning, Disability and Health

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ABSTRACT

Objective: The Walking Impairment Questionnaire (WIQ) and Intermittent Claudication Questionnaire (ICQ) are commonly used patient-reported functional outcome measures for intermittent claudication, but their functional representation has not been characterized. The World Health Organization’s International Classification of Functioning, Disability and Health (ICF) framework comprehensively describes health-related function and has been used to evaluate health status and quality of life (QOL) measures. We applied a content analysis technique commonly used in functional rehabilitation research to evaluate ICF domains represented by WIQ and ICQ to characterize their health status and functional representation.

Methods: The overall perspective of each question was assigned as health status—function, health status—disability, Environment—facilitator, Environment—barrier, or QOL. All meaningful concepts in each question were identified and linked to the most appropriate and precise ICF code from the hierarchy of component, chapter, or category using the validated technique. A 20% random sample of questions was secondarily coded with disagreements resolved by discussion.

Results: Codability was agreed upon for 87% of questions; agreement was 100% on component and chapter and 88% on category. WIQ contains 18 concepts among 14 questions (1.3 concepts per question); all questions are from the health status—disability perspective. All WIQ concepts are from the ‘Activities/Participation-d’ ICF component. ‘Mobility-d4’ chapter. ‘Walking long distances’ (d4501, >1 km) is omitted. ICQ contains 37 codable concepts among 16 questions (2.3 concepts per question). Thirteen questions are from health status–disability perspective, three from QOL. Six of the nine chapters of the ‘Activities/Participation-d’ ICF component are represented by 20 of 37 concepts: 11 of 20 in the ‘Mobility-d4’ chapter. The other ‘Activities/Participation-d’ chapters and categories in ICQ are ‘Learning/applying knowledge’ (‘thinking-d163’), ‘General tasks/demands’ (‘carrying out daily routine-d230’), ‘Domestic life’ (‘shopping-d6200’, ‘doing housework-d640’), ‘Major life areas’ (‘Maintaining a job-d8451’), and ‘Community life’ (‘socializing-d9205’, ‘hobbies-d9204’). ‘Body Functions-b’ ICF component is represented 11 times, covering pain, numbness, emotion, mood, and cardiovascular functions. ‘Body Structures-s’ is represented three times as lower extremity. Neither WIQ nor ICQ specifically addresses ‘Walking on different surfaces,’ ‘64,502’ (‘Walking around obstacles’ (d4503), or ‘Moving around using equipment’ (d465), which includes assistance devices. Walking on an incline is not addressed in WIQ, ICQ, or the ICF.

Conclusions: Applying this ICF-based content assessment methodology to patient-reported vascular disease outcome measures is feasible, representing a novel method of assessing such instruments. WIQ’s scope is limited; it does not address functional capacity and covers only health status pertaining to walking disability. The ICQ is more inclusive, but concept density may obscure meaning. Neither instrument is functionally comprehensive and both have significant omissions that should be considered for inclusion. (J Vasc Surg 2018;67:868-75.)
Assessments meeting these criteria were then linked to the ICF using the standardized linking technique and rules devised and validated by Cieza et al. In this technique, each question (requiring a response from the subject) is referred to as an “item” and is considered and linked independently. If a number of items refer to a single prefix question, then the prefix is linked a single time along with each item. Before linking the items in a clinical assessment, the primary aim of the assessment is identified; in this case, the evaluation of walking disability. The ICF linking process proceeds from the perspective of this primary aim. Any necessary specific rules for coding are also developed before coding to reduce the ambiguities inherent to the process as it pertains to linking a particular assessment or assessments.

The ICF is organized hierarchically, with a topmost level of four components, each containing a number of chapters: Body Functions (b, 8 chapters), Body Structures (s, 8 chapters), Activities and Participation (d, 9 chapters), and Environmental Factors (e, 5 chapters). Each chapter contains a varying number of categories, with up to three category levels possible (Fig 1).

The linking process first involves identifying the meaningful concepts in each prefix or item (including any concepts present in the provided response options). For example, in the item “During the past 2 weeks, how often have you had to stop walking and rest because of pains in your leg,” there are three meaningful concepts, namely, walking, rest, and pains in your leg. Time factors (such as the past 2 weeks) are not linked. Once all of the meaningful concepts in an assessment’s prefixes and items have been identified, each concept is linked to the most appropriate ICF component, chapter, and category at the lowest possible level. Some concepts are not codable because they are not defined clearly enough (too general), or because they are not found within the ICF. Additionally, health conditions (specific diagnoses) are not coded because they can be coded using the ICD-10.
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