CSP CADERNOS DE SAÚDE PÚBLICA
REPORTS IN PUBLIC HEALTH

The *World Health Organization Disability Assessment Schedule 2* (WHODAS 2.0): remarks on the need to revise the WHODAS

World Health Organization Disability Assessment Schedule 2 (WHODAS 2.0): comentários sobre a necessidade de revisar a WHODAS

World Health Organization Disability Assessment Schedule 2 (WHODAS 2.0): observaciones sobre la necesidad de revisar WHODAS

Shamyr Castro [1]
Camila Ferreira Leite [1]
Michaela Coenen [2]
Cassia Maria Buchalla [3]

Abstract

Functioning and disability are concepts in increasing use in clinical settings and in public health. From the public health perspective, the use of functioning as a third health indicator could show more than the frequency of a disease and its death rates, offering information on how the population performs its activities and participation. Clinically, the functioning assessment can provide information for patient-centered health care and specific clinical interventions according to their functioning profile. WHODAS 2.0 is a generic tool to assess health and functioning according to the ICF functioning model. It is an alternative to assess functioning in a less time-consuming way, whereas the duration of the application is one of the main ICF critiques. This paper aims to present some of WHODAS 2.0 inconsistencies and weaknesses as well as strategies to cope with them. In this paper, we present some weaknesses related to the WHODAS layout; wording and scoring process. Some suggestions for strategies to correct these weaknesses are presented, as well.

International Classification of Functioning, Disability and Health; Needs Assessment; Health Status Indicators

Correspondence
S. Castro
Programa de Pós-graduação em Saúde Pública, Universidade Federal do Ceará.
Rua Professor Costa Mendes 1608, Bloco Didático, 5º andar, Fortaleza, CE 60430-140, Brasil.
shamyrsulyvan@gmail.com

[1] *Universidade Federal do Ceará, Fortaleza, Brasil.*
[2] *Ludwig Maximilian University, Munich, Germany.*
[3] *Departamento de Epidemiologia, Universidade de São Paulo, São Paulo, Brasil.*

Introduction

Information on functioning and disability has become increasingly important to describe health and health-related states of people with any kind of health conditions. Functioning-related concepts, classifications and measurements play a central role in clinical practice, teaching and research [1]. In addition, functioning is considered a Clinical Outcome Assessment (COA), which means that it can be used as a clinical assessment to measure patient outcome in a clinical trial [2], as we can see in some papers already published [3,4,5,6,7]. As a COA, functioning has been used in several health fields, e.g. in the health care of people with schizophrenia [8]; migraine [9]; cancer [10]; arthrogryposis [11]; dyspnea [12]; stroke [13]; chronic musculoskeletal pain [14]; congenital heart disease [15]; and prior to hematopoietic stem cell transplantation [16].

In the public health field, the importance of functioning is growing gradually. There are discussions about its use as a third health indicator, in addition to mortality and morbidity. As a set, these 3 health indicators could offer more reliable information on the performance of health strategies in the health systems. Functioning could be used along with mortality and morbidity in prevention and promotion of health; as an indicator for rehabilitation; as an indicator for curative health services; and for palliative health care. In all the five fields cited, the morbidity and mortality without functioning fail to provide comprehensive information to the health management [17]. In a country with an equitable health system, knowing the population functioning profile may be more important than knowing the occurrence of diseases and their deaths in this population. Only with the functioning information can we know their true health care needs [17]. Strategies of functioning information collection in health surveys are also laid down in the literature [18]. Some tools as the *Model Disability Survey* – MDS [19] and the *World Health Organization Disability Assessment Schedule* – WHODAS can be used [20]. Reinforcing the functioning role in the public health field, the *11th International Classification of Disease* – ICD-11 (https://icd.who.int/browse11/l-m/en) came up with a new section, "V Supplementary section for functioning assessment" in order to "*…allow creating functioning profiles and overall functioning scores for the individuals, which are suitable to describe and quantify the level of functioning associated with health conditions. To guide functioning assessment, the section includes two International Classification of Functioning, Disability and Health (ICF)-ground instruments developed by World Health Organization (WHO): the WHO Disability Assessment Schedule (WHODAS 2.0 36-item version), and the Model Disability Survey (MDS). The section is complemented by a generic set of functioning categories with a high explanatory power derived from the ICF Annex 9*". The inclusion of functioning assessment in the ICD shows its weight in monitoring the burden of health events.

According to the WHO, functioning is defined as a "*generic term which includes body functions and structures, activities and participation. It indicates the positive aspects of the interaction between the individual (with a health condition) and its contextual factors (personal and environmental factors)*" (WHO. International Classification of Functioning, Disability and Health. v. 2. http://www.who.int/classifications/icf/en/), whilst disability is an umbrella term for impairments of the body functions, activity limitations or participation restrictions. These conceptualizations of functioning and disability are the fundamental basis of the (ICF), that conceives functioning as a multiple dimensional concept, accepting the biopsychosocial perspective as its framework [21].

In the past 15 years, the ICF has been assimilated and discussed by the user community in clinical or research settings and with its use some critiques have arisen. One of the ICF strengths, its comprehensiveness, is also a point of criticism [22]. To facilitate the use of the ICF and shorten its time-consuming application WHO started to develop and establish strategies to support the use and application of the ICF in a convenient and less time-consuming way. In line with this, ICF Core Sets [23], short lists of the ICF categories tailored to the specific needs of people with specific health conditions and ICF-based assessment tools such as the *World Health Organization Disability Assessment Schedule 2.0* (WHODAS 2.0) [24] have been developed.

In this paper, we will provide some explanatory remarks on the latter one, the WHODAS 2.0. WHODAS 2.0 is a generic tool designed to assess functioning according to the ICF framework by using the following six functioning domains in people aged 18 years and over: cognition, mobility, self-care, getting along, life activities and participation. It consists of 36 questions in its long version: Cognition (6 questions); Mobility (5 questions); Self-care (4 items); Getting along (5 items); Life

activities (8 questions); and Participation (8 items). Besides this 36-item version WHO also provides versions containing 12 questions and a hybrid version (12+24), in which questions can vary from a minimal of 5 to a maximal of 36. The application mode ranges from an interview version or self-administered version to a proxy version. For each version of the instrument there is a standardized version according to the format of the respondent (interview, self-administered and proxy). In all versions, functioning is being assessed by a general score ranging from 0 (no disability) to 100 (full disability), with the 36 item-versions allowing also scores for domains [25].

Since its publication in 2010, the WHODAS has been translated into several languages, always dependent on WHO's approval. There are translations into more than 47 languages and dialects [26] such as Hebrew [27]; Chinese [28]; Polish [29]; Japanese [30]; Norwegian [31]; and Portuguese [25]; just to name a few. Translations and cross-cultural adaptations have been welcomed by WHO as the WHODAS is intended to be one of the favorite tools to measure health and disability across cultures in a standardized way [32]. Besides that, a tool aiming to assess functioning in a standardized, less time-consuming and straightforward way could facilitate the assessment and more specifically the identification of needs in health care; matching treatments and interventions; measuring clinical and research outcomes and effectiveness; setting clinical priorities; and allocating resources [32].

With WHO's endorsement, WHODAS 2.0 has had its use spread gradually and quickly throughout the world in clinical and research settings [26]. As a result of this, the literature has shown some examples of its use as in the assessment of functioning in aged population in Poland [33]; in the check for the association between disability and common mental disorders [20]; in the research of the symptoms of depression and anxiety [34]; in the description of the gap in activities and participation between people with and without disabilities [35]; in the analysis of the participation of colorectal cancer survivors [36]; relating educational level and disability in people with dementia [37]; in the investigation of disability in people with HIV [38]; among others. Several papers with clinical approach can also be found. Reports of researches on evaluating mental functions in individuals with Huntington disease [39]; on assessing disability in men referred for treatment with work-related primary mental health care problems [40]; on researching the effect of a community-based rehabilitation intervention for people with schizophrenia [41]; on investigating disability in patients undergoing neurosurgical procedures [42]; on the knee posture during gait and global functioning post-stroke [43]; could be examples.

WHO mentions the following advantages for the use of WHODAS:
(1) Direct link to the ICF, as it was developed following the ICF framework. WHODAS is not a list of codes derived from ICF, as ICF Core Sets are; it is a questionnaire that covers domains as defined in the ICF framework and classification.
(2) Cross-cultural comparability – WHODAS was developed and tested to be used around the world, ensuring its cross-cultural comparability;
(3) Availability of sound psychometric properties – validity and reliability were extensively tested and approved in validation studies.
(4) Ease of use – the self-administered WHODAS version application can last 5 minutes and the interview application, 20 minutes, a relative short time for data collection;
(5) Broad range of availability – WHODAS is available in more than 30 languages, all free to use around the world [24].

It has also been said that WHODAS can be considered a patient-reported outcome measure (PROM) with direct application in multidisciplinary services like community rehabilitation services [44]. Doubtless, the features presented above are strengths that would already favor the tool but WHODAS has yet another even more interesting feature. By using its domains and total scores it is possible to consider functioning as a quantifiable concept, ranging from 0 (no disability) to 100 (full disability), both for domain scores and for total score. The WHODAS scores will also provide the opportunity to compare and analyze functioning and disability in (clinical) population and subpopulations.

However, there are possible weaknesses or even inconsistencies that can only be seen in the practical application of the WHODAS. In Brazil, we have been working with WHODAS since 2015 and our experience is threefold: firstly, by becoming familiar with WHODAS conceptualization and content from reading the relevant literature; secondly, by translating the user's manual to Portuguese and by adapting it for the Brazilian specific needs; and thirdly, by applying the WHODAS in a broad range

for clinical and research settings in Brazil. In doing so, some inconsistencies have become evident in the process of translating, adapting and applying WHODAS to our research and clinical practice.

This paper aims to highlight these inconsistencies and to point out a set of proposals to cope with them from the Brazilian perspective. By presenting weaknesses of WHODAS and discussing how to cope with them, this paper (1) will contribute to its appropriate use in the health care process, benefiting professionals and researchers in the field of health and rehabilitation in Brazil and other countries in which WHODAS has been used, and (2) will provide a set of information to be considered in the case of preparing a revised version of the WHODAS and its manual.

Remarks on inconsistencies and weaknesses of the WHODAS along with proposals to cope with them

Reflections on the WHODAS layout

It is known that the layout of a questionnaire can impact the way how it is "understood" and filled in as well as the quality of data and time of application [45] and as a consequence the results retrieved from the analysis of the questionnaire such as prevalence and risk estimations [46]. Therefore, it is essential to provide a questionnaire that is easy to apply and use in different populations.

The WHODAS manual states very clear recommendations for its application and scoring. Some instructions describe the application process and there are – for the interview version of the WHODAS – specific information about how to read the questions for the interviewee. An instruction is provided that the text in standard blue colored print should be read to the interviewee. It is well known that in many countries research funding issues are central and the budget is often limited. Printing colored texts implies higher costs for both, in research projects and in clinical use. To cope with this, we suggest the use of the standard print in bold; italic; capslock; or in grey color. So, the text would remain highlighted for the interviewers.

Furthermore, WHODAS uses two flashcards aiming *"to provide a visual cue or reminder for the respondent about important pieces of information to remember while answering questions"* [32]. However, the flashcards cannot be used when applying the WHODAS in blind or illiterate people. Therefore, we suggest the use of cards printed in Braille. So, they can be read by blind people if needed. For illiterate and blind people who do not read Braille, we propose that the interviewer read the flashcards whenever the interviewee asks for them. With these suggestions, we assure the participation of the groups of people who are blind and the illiterate. It should be said that the prevalence of people with blindness can reach 8% in the Sub-Saharan Africa; in Brazil this prevalence was 3.6% in 2013 [47]; and in 2010 the amount of people with blindness around the world could come to 32.4 million [48]. The illiterate population can also be significant in some countries, as well. Some African nations, for example, can have more than 50% of its population illiterate [49]. Considering these indicators, it can be seen that failing to adapt WHODAS for its use in these groups may represent the exclusion of large population groups from the WHODAS application process, compromising the quality and representativeness of the research and finally the health care.

Comments on the WHODAS wording

The wording of a tool has a central role since it will deliver the message which will impact the information collection. Therefore, efforts must be made to ensure a wording that is as clear as possible.

The questions D6.4; D6.5 and D6.6 have in their beginning a wording which implies incoherence with the pattern of WHODAS responses (none; mild; moderate; severe; extreme or cannot do) (Box 1). Thus, the question D6.4 begins with "How much time did you spend on…". Starting from this question, an answer related to time as "1 hour"; "12 hours"; "a day"; "a week"; or "a year" is expected. These alternatives are clearly different from those in WHODAS. Assuming the suggestions above were adopted, the heading of this question could be improved to "Manage the time you spent on your health condition or its consequences?".

Box 1

Questions of the participation domain that can be improved to be consistent with the response pattern of *World Health Organization Disability Assessment Schedule* (WHODAS).

In the past 30 days		None	Mild	Moderate	Severe	Extreme or cannot do
D6.4	How much time did you spend on your health condition or its consequences?	1	2	3	4	5
D6.5	How much have you been emotionally affected by your health condition?	1	2	3	4	5
D6.6	How much has your health been a drain on the financial resources of you or your family?	1	2	3	4	5

Questions D6.5 and D6.6 start both with "How much have…" (Box 2). This kind of question requires answers like "not at all", "much"; "little", among others.

The scientific literature on the validation of WHODAS shows worst confirmatory factor analysis (CFA) [50] and exploratory factor analysis (EFA) [51] results for the questions D6.4 to D6.6.

The remarks on the wording of the WHODAS are essential as the wording of a questionnaire tremendously impacts the results [52], consequences for the use of health services [53] and the prevalence of a health condition [54].

Remarks about WHODAS scoring process

The sum score of a questionnaire should be carefully executed according to the recommendations of the instrument developers. In the case of WHODAS, two different scores can be computed, a simple and a complex one. We would like to dwell on the latter, the complex one. The WHODAS manual explains that the complex score is based on the "Item-Response-Theory – IRT" and considering the SPSS syntax presented, it is noticed that some variables have different weights. It remains unclear why only some variables were weighted and others were not. An explanation about the analysis would be very welcome for a better understanding of the weighting process.

The steps to compute the complex score were summed up in the manual with the following wording: "Step 1 – summing of recoded item scores within each domain. Step 2 – summing of all six domain scores. Step 3 – converting the summary score into a metric ranging from 0 to 100 (where 0 = no disability; 100 = full disability)". The domain scores are not clearly marked up by a heading. It could make the syntax more comprehensible and easily applicable.

There is a SPSS syntax available at page 59 of the manual, and we understand that some improvements can be made to this material. The questions D5.6; D5.7 and D5.8 cannot be found at the "Recode of polytomous items" section and there are at the end of this section the questions D5.8; D5.9; D5.10 and D5.11. The last four questions cited here are also in another syntax section. The issue lies on the fact that the questions D5.9 to D5.11 do not have the WHODAS pattern of answers. So, it seems that they should not be present in its syntax.

Another relevant point is the analysis of the variables classified as "not applicable" – N/A. Some variables can be considered N/A if the respondent considers that the question does not apply to his/her situation, or that was not experienced by the respondent in the last 30 days. The main question is that the N/A variables are not "missing data", so, they should not be treated like this. It seems that the command "compute" (used in the syntax) will result in a blank score if at least one of the component variables of the operation is missing (IBM SPSS Statistics 20 Core System User's Guide IBM SPSS Statistics Options, 2011. https://www.csun.edu/sites/default/files/statistics20-core-system-guide-

Box 2

Questions of the participation domain that can be improved by changing its wording.

In the past 30 days		None	Mild	Moderate	Severe	Extreme or cannot do
D6.5	How much have you been emotionally affected by your health condition?	1	2	3	4	5
D6.6	How much has your health been a drain on the financial resources of you or your family?	1	2	3	4	5

64bit.pdf). So, if one or more variables are blank, the scores may not be calculated, losing the answered questions. The total score could not be calculated as well. A suggested excel file is offered online to compute the scores (https://drive.google.com/open?id=1CB47ZIriCErjakSzqul0AgSyBX3f9Qmj).

It should be stressed out that tool revisions have already been documented by the scientific literature aiming to make the tool more comprehensible [55]; socially adequate [56]; or in order to fit with modern diagnosis approaches [57]. So, the presented proposal is not uncommon in the scientific setting.

Conclusions

This paper provides remarks on weaknesses or inconsistencies of the WHODAS 2.0 that became evident in the translation, cross-cultural adaptation and in the daily use of the tool in the research and clinical settings in Brazil. The remarks are related to the WHODAS layout, wording and scoring process. Strategies such as layout updating, sentence reformulation, and scoring process suitability can work around these problems.

Although the remarks do not question the overall advantages in the usage of WHODAS, they should be taken into account when revising the WHODAS and its Manual as well as its syntax.

Additional informations

ORCID: Shamyr Castro (0000-0002-2661-7899); Camila Ferreira Leite (0000-0001-6375-8845); Michaela Coenen (0000-0001-7492-7907); Cassia Maria Buchalla (0000-0001-5169-5533).

References

1. Stucki G, Cieza A. The International Classification of Functioning, Disability and Health (ICF) Core Sets for rheumatoid arthritis: a way to specify functioning. Ann Rheum Dis 2004; 63 Suppl 2:ii40-ii45.

2. Walton MK, Powers JH, Hobart J, Patrick D, Marquis P, Vamvakas S, et al. Clinical outcome assessments: conceptual foundation-report of the ISPOR Clinical Outcomes Assessment-Emerging Good Practices for Outcomes Research Task Force. Value Health 2015; 18:741-52.

3. Galvão DA, Spry N, Denham J, Taaffe DR, Cormie P, Joseph D, et al. A multicentre year-long randomised controlled trial of exercise training targeting physical functioning in men with prostate cancer previously treated with androgen suppression and radiation from TROG 03.04 RADAR. Eur Urol 2014; 65:856-64.

4. Yavuzer G, Senel A, Atay MB, Stam HJ. "'Playstation eyetoy games'" improve upper extremity-related motor functioning in subacute stroke: a randomized controlled clinical trial. Eur J Phys Rehabil Med 2008; 44:237-44.

5. Bahorik AL, Sterling SA, Campbell CI, Weisner C, Ramo D, Satre DD. Medical and non-medical marijuana use in depression: longitudinal associations with suicidal ideation, everyday functioning, and psychiatry service utilization. J Affect Disord 2018; 241:8-14.

6. Monson CM, Shields N, Suvak MK, Lane JEM, Shnaider P, Landy MSH, et al. A randomized controlled effectiveness trial of training strategies in cognitive processing therapy for posttraumatic stress disorder: impact on patient outcomes. Behav Res Ther 2018; 110:31-40.

7. Myrhaug HT, Odgaard-Jensen J, Østensjø S, Vøllestad NK, Jahnsen R. Effects of a conductive education course in young children with cerebral palsy: a randomized controlled trial. Dev Neurorehabil 2018; 21:481-9.

8. Rosa AR, Reinares M, Michalak EE, Bonnin CM, Sole B, Franco C, et al. Functional impairment and disability across mood states in bipolar disorder. Value Health 2010; 13:984-8.

9. Pathak DS, Chisolm DJ, Weis KA. Functional Assessment in Migraine (FAIM) questionnaire: development of an instrument based upon the WHO's International Classification of Functioning, Disability, and Health. Value Health 2005; 8:591-600.

10. Rowen D, Brazier J, Young T, Gaugris S, Craig BM, King MT, et al. Deriving a preference-based measure for cancer using the EORTC QLQ-C30. Value Health 2011; 14:721-31.

11. Steen U, Wekre LL, Vøllestad NK. Physical functioning and activities of daily living in adults with amyoplasia, the most common form of arthrogryposis. A cross-sectional study. Disabil Rehabil 2018; 40:2767-79.

12. Larsen KSR, Petersen AK, Lisby M, Knudsen MV. Dyspnoea and self-management strategies in patients admitted to the emergency department: a study of patients' experiences. J Clin Nurs 2018; 27:4112-8.

13. Magaard G, Wester P, Levi R, Lindvall P, Gustafsson E, Nazemroaya Sedeh A, et al. Identifying unmet rehabilitation needs in patients after stroke with a Graphic Rehab-Compass™. J Stroke Cerebrovasc Dis 2018; 27:3224-35.

14. Tseli E, Stålnacke B-M, Boersma K, Enthoven P, Gerdle B, Äng BO, et al. Prognostic factors for physical functioning after multidisciplinary rehabilitation in patients with chronic musculoskeletal pain. Clin J Pain 2019; 35:148-73.

15. Kovacs AH, Kaufman TM, Broberg CS. Cardiac rehabilitation for adults with congenital heart disease: physical and psychosocial considerations. Can J Cardiol 2018; 34(10 Suppl 2):S270-S7

16. van Haren IEPM, Staal JB, Potting CM, Atsma F, Hoogeboom TJ, Blijlevens NMA, et al. Physical exercise prior to hematopoietic stem cell transplantation: a feasibility study. Physiother Theory Pract 2018; 34:747-56.

17. Stucki G, Bickenbach J. Functioning: the third health indicator in the health system and the key indicator for rehabilitation. Eur J Phys Rehabil Med 2017; 53:134-8.

18. Castro SS, Castaneda L, Araújo ES, Buchalla CM. Aferição de funcionalidade em inquéritos de saúde no Brasil: discussão sobre instrumentos baseados na Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF). Rev Bras Epidemiol 2016; 19:679-87.

19. Cieza A, Sabariego C, Bickenbach J, Chatterji S. Rethinking Disability. BMC Med 2018; 16:10-4.

20. Antunes A, Frasquilho D, Azeredo-Lopes S, Neto D, Silva M, Cardoso G, et al. Disability and common mental disorders: results from the World Mental Health Survey Initiative Portugal. Eur Psychiatry 2018; 49:56-61.

21. Kostanjsek N. Use of The International Classification of Functioning, Disability and Health (ICF) as a conceptual framework and common language for disability statistics and health information systems. BMC Public Health 2011; 11 Suppl 4:S3.

22. Ptyushkin P, Vidmar G, Burger H, Marincek C. Use of the International Classification of Functioning, Disability, and health in traumatic brain injury rehabilitation. Am J Phys Med Rehabil 2012; 91(13 Suppl 1):S48-54.

23. Selb M, Escorpizo R, Kostanjsek N, Stucki G, Üstün B, Cieza A. A guide on how to develop an International Classification of Functioning, Disability and health core set. Eur J Phys Rehabil Med 2015; 51:105-17.

24. Üstün T, Kostanjsek N, Chatterji S, Rehm J. Measuring health and disability: manual for WHO Disability Assessment Schedule (WHODAS 2.0). Geneva: World Health Organization; 2010.

25. Castro SS, Leite CF. Translation and cross-cultural adaptation of the World Health Organization Disability Assessment Schedule – WHODAS 2.0. Fisioter Pesqui 2017; 24:385-91.

26. Federici S, Bracalenti M, Meloni F, Luciano JV. World Health Organization disability assessment schedule 2.0: an international systematic review. Disabil Rehabil 2017; 39:2347-80.

27. Marom BS, Carel RS, Sharabi M, Ratzon NZ. Cross-cultural adaptation of the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0) for Hebrew-speaking subjects with and without hand injury. Disabil Rehabil 2017; 39:1155-61.

28. Cheung MKT, Hung ATF, Poon PKK, Fong DYT, Li LSW, Chow ESL, et al. Validation of the World Health Organization Assessment Schedule II Chinese Traditional Version (WHODAS II CT) in persons with disabilities and chronic illnesses for Chinese population. Disabil Rehabil 2015; 37:1902-7.

29. Ćwirlej-Sozańska A, Wilmowska-Pietruszyńska A, Sozański B. Validation of the Polish version of the World Health Organization Disability Assessment Schedule (WHODAS 2.0) in an elderly population (60-70 years old). Int J Occup Saf Ergon 2018; 24:386-94.

30. Tazaki M, Yamaguchi T, Yatsunami M, Nakane Y. Measuring functional health among the elderly: development of the Japanese version of the World Health Organization Disability Assessment Schedule II. Int J Rehabil Res 2014; 37:48-53.

31. Moen VP, Drageset J, Eide GE, Klokkerud M, Gjesdal S. Validation of World Health Organization Assessment Schedule 2.0 in specialized somatic rehabilitation services in Norway. Qual Life Res 2017; 26:505-14.

32. Üstün T, Kostanjsek N, Chatterji S, Rehm J. Measuring health and disability: manual for WHO disability assessment schedule. WHODAS 2.0. http://apps.who.int/iris/bitstream/10665/43974/1/9789241547598_eng.pdf (accessed on 27/Mar/2014).

33. Ćwirlej-Sozańska A, Wilmowska-Pietruszyńska A. Assessment of health, functioning and disability of a population aged 60-70 in south-eastern Poland using the WHO Disability Assessment Schedule (WHODAS 2.0). Ann Agric Environ Med 2018; 25:124-30.

34. Adewuya AO, Atilola O, Ola BA, Coker OA, Zachariah MP, Olugbile O, et al. Current prevalence, comorbidity and associated factors for symptoms of depression and generalised anxiety in the Lagos State Mental Health Survey (LSMHS), Nigeria. Compr Psychiatry 2018; 81:60-5.

35. Chiu T-Y, Yen C-F, Escorpizo R, Chi W-C, Liou T-H, Liao H-F, et al. What is the gap in activity and participation between people with disability and the general population in Taiwan? Int J Equity Health 2017; 16:136.

36. Lee HH, Shin E-K, Shin H-I, Yang EJ. Is WHODAS 2.0 Useful for Colorectal Cancer Survivors? Ann Rehabil Med 2017; 41:667-6.

37. Huang S-W, Chi W-C, Yen C-F, Chang K-H, Liao H-F, Escorpizo R, et al. Does more education mean less disability in people with dementia? A large cross-sectional study in Taiwan. BMJ Open 2017; 7:e013841.

38. Hanass-Hancock J, Myezwa H, Carpenter B. Disability and Living with HIV: Baseline from a Cohort of People on Long Term ART in South Africa. PLoS One 2015; 10:e0143936.

39. Lai J-S, Goodnight S, Downing NR, Ready RE, Paulsen JS, Kratz AL, et al. Evaluating cognition in individuals with Huntington disease: Neuro-QoL cognitive functioning measures. Qual Life Res 2018; 27:811-22.

40. Bailey S, Mushquash C, Haggarty J. Disability and psychiatric symptoms in men referred for treatment with work-related problems to primary mental health care. Healthcare 2017; 5:18.

41. Asher L, De Silva M, Hanlon C, Weiss HA, Birhane R, Ejigu DA, et al. Community-based Rehabilitation Intervention for people with Schizophrenia in Ethiopia (RISE): study protocol for a cluster randomised controlled trial. Trials 2016; 17:299.

42. Schiavolin S, Quintas R, Pagani M, Brock S, Acerbi F, Visintini S, et al. Quality of life, disability, well-being, and coping strategies in patients undergoing neurosurgical procedures: preoperative results in an Italian sample. ScientificWorldJournal 2014; 2014:790387.

43. Rosa MCN, Marques A, Demain S, Metcalf CD. Knee posture during gait and global functioning post-stroke: a theoretical ICF framework using current measures in stroke rehabilitation. Disabil Rehabil 2015; 37:904-13.

44. Kulnik ST, Nikoletou D. WHODAS 2.0 in community rehabilitation: A qualitative investigation into the validity of a generic patient-reported measure of disability. Disabil Rehabil 2014; 36:146-54.

45. Tourangeau R. Spacing, Position, and Order: Interpretive Heuristics for Visual Features of Survey Questions. Public Opin Q 2004; 68:368-93.

46. Ekerljung L, Rönmark E, Lötvall J, Wennergren G, Torén K, Lundbäck B. Questionnaire layout and wording influence prevalence and risk estimates of respiratory symptoms in a population cohort. Clin Respir J 2013; 7:53-63.

47. Coordenação de Trabalho e Rendimento, Instituto Brasileiro de Geografia e Estatística. Pesquisa Nacional de Saúde, 2013: ciclos de vida. Brasil e grandes regiões. Rio de Janeiro: Instituto Brasileiro de Geografia e Estatística; 2015.

48. Stevens GA, White RA, Flaxman SR, Price H, Jonas JB, Keeffe J, et al. Global Prevalence of Vision Impairment and Blindness. Ophthalmology 2013; 120:2377-84.

49. Institute for Statistics, United Nations Educational, Scientific and Cultural Organization. Literacy rates continue to rise from one generation to the next; 2017. Paris: United Nations Educational, Scientific and Cultural Organization. (Fact Sheet, 45).

50. Chiu T-Y, Yen C-F, Chou C-H, Lin J-D, Hwang A-W, Liao H-F, et al. Development of traditional Chinese version of World Health Organization Disability Assessment Schedule 2.0 36 – item (WHODAS 2.0) in Taiwan: validity and reliability analyses. Res Dev Disabil 2014; 35:2812-20.

51. Zhao HP, Liu Y, Li HL, Ma L, Zhang YJ, Wang J. Activity limitation and participation restrictions of breast cancer patients receiving chemotherapy: psychometric properties and validation of the Chinese version of the WHODAS 2.0. Qual Life Res 2013; 22:897-906.

52. Bąbel P. The effect of question wording in Questionnaire surveys on placebo use in clinical practice. Eval Health Prof 2012; 35:447-61.

53. Siegel PZ, Qualters JR, Mowery PD, Campostrini S, Leutzinger C, McQueen D V. Subgroup-specific effects of questionnaire wording on population-based estimates of mammography prevalence. Am J Public Health 2001; 91:817-20.

54. Pescatore AM, Spycher BD, Beardsmore CS, Kuehni CE. "Attacks" or "whistling": impact of Questionnaire Wording on Wheeze Prevalence Estimates. PLoS One 2015; 10:e0131618.

55. Vrieze T, Vos L, Gebruers N, Groef A, Dams L, Gucht EV, et al. Revision of the Lymphedema Functioning, Disability and Health Questionnaire for Upper Limb Lymphedema (Lymph-ICF-UL): reliability and validity. Lymphatic Research and Biology 2019; 17:347-55.

56. Chen CH. Revision and validation of a scale to assess pregnancy stress. J Nurs Res 2015; 23:25-32.

57. Berthold SM, Mollica RF, Silove D, Tay AK, Lavelle J, Lindert J. The HTQ-5: revision of the Harvard Trauma Questionnaire for measuring torture, trauma and DSM-5 PTSD symptoms in refugee populations. Eur J Public Health 2019; 29:468-74

Resumo

A funcionalidade e a incapacidade são conceitos cada vez mais utilizados no contexto clínico e de saúde pública. Do ponto de vista da saúde pública, o uso da funcionalidade como terceiro indicador de saúde é capaz de refletir mais do que a frequência de uma determinada doença e as respectivas taxas de mortalidade, fornecendo informações sobre a maneira pela qual a população realiza suas atividades diárias e participação social. Clinicamente, a avaliação da funcionalidade pode subsidiar os cuidados de saúde centrados no paciente, além das intervenções clínicas específicas de acordo com o perfil de funcionalidade. WHODAS 2.0 é uma ferramenta genérica para avaliar a saúde e a funcionalidade de acordo com o modelo da CIF. É uma alternativa para avaliar a funcionalidade com menor dispêndio de tempo, uma vez que o tempo gasto na aplicação é uma das principais críticas do modelo da CIF. O artigo tem como objetivo abordar algumas das inconsistências e fraquezas do WHODAS 2.0, além de estratégias para enfrentá-las. O artigo, discute algumas fraquezas na formatação, redação e processo de pontuação do WHODAS, assim como, diversas estratégias para corrigí-las.

Classificação Internacional de Funcionalidade, Incapacidade e Saúde; Determinação de Necessidades de Cuidados de Saúde; Indicadores Básicos de Saúde

Resumen

Funcionamiento y discapacidad son conceptos cuyo uso está aumentando dentro del contexto clínico y de la salud pública. Desde la perspectiva de la salud pública, el uso del funcionamiento como un tercer indicador de salud podría mostrar más allá de la frecuencia de una enfermedad y sus efectos respecto a la mortalidad en la población, ofreciendo información sobre cómo desarrolla la población sus actividades y participación. Clínicamente, la evaluación del funcionamiento puede proporcionar información sobre la atención a la salud centrada en el paciente e intervenciones específicas clínicas, según su perfil de funcionamiento. WHODAS 2.0 es una herramienta genérica para evaluar la salud y su funcionamiento, respecto el modelo CIF. Se trata de una alternativa más breve para evaluar el funcionamiento, aunque la duración del formulario es una de las principales críticas el CIF. El objetivo de este trabajo es presentar algunas inconsistencias y debilidades del WHODAS 2.0, así como también estrategias para afrontarlas. En este artículo, presentamos algunas debilidades relacionadas con el formato del WHODAS; así como los procesos de redacción y puntuación. Asimismo, se presentan algunas sugerencias como estrategias para corregir estas debilidades.

Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud; Evaluación de Necesidades; Indicadores de Salud