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Research Paper

Validation of the World Health Organization Disability Assessment Schedule (WHO-DAS II) in Greek and its added value to the Short Form 36 (SF-36) in a sample of people with or without disabilities

Georgia Xenouli, R.N., M.Sc.[a,*], Kostis Xenoulis, Ph.D.[b], Pavlos Sarafis, R.N., Ph.D.[a], Dimitris Niakas, Ph.D.[a], and Evangelos C. Alexopoulos, M.D., M.P.H., Ph.D.[a]

[a]*Hellenic Open University, Parodos Aristotelous 18, GR-26 335 Patra, Greece*

[b]*Department of Informatics and Telecommunications, National and Kapodistrian University of Athens, Panepistimiopolis, Ilissia, GR- 15784 Athens, Greece*

Abstract

Background: There is controversy and ongoing interest on the measurement of functionality in the personal and social level.

Objectives: (1) to validate the Greek version of the World Health Organization Disability Assessment Schedule (WHO DAS II) and (2) to determine its added value to the physical and psychological health subscales of the Short Form 36 (SF-36).

Methods: In a cross-sectional design, data were collected between December 2014 and March 2015 by using three questionnaires (WHO DAS II, SF-36, PSS-14) in a sample of people with disabilities (n = 101) and without disabilities (n = 109) in Athens, Greece. WHO DAS II internal consistency, construct and criterion-related validity were assessed by Cronbach alpha, exploratory factor analysis and correlations; its added value by multivariable linear regression.

Results: Cronbach Alpha's were satisfactory for the WHO DAS II, PSS-14 and SF-36 (0.85, 0.88 and 0.96 respectively). Exploratory factor analysis confirmed the existence of one or two factors in people with or without disabilities, respectively. WHO DAS II score showed significant negative correlation with the physical and mental health scale of SF-36 score, especially strong for physical health while was positively related to PSS-14 score. In multivariate analysis mental health appraisal was related to perceived stress in both groups.

Conclusions: This study support the validity of the Greek version of WHO DAS II and warranted its use in assessment and follow up of people with disabilities, contributing to the development of suitable policies to cover their needs and providing comparable data with other surveys using the same instrument.

Keywords: Physical health; Mental health; Disability; Functionality; Perceived stress

Approximately 44 million people aged 15–64 in the European Union (EU-28 member countries) have some form of disability, which often prevents them from participating fully in society and the economy.[1] 42% of them depend on disability benefits while 57% of people with disabilities who work were classified as low-paid staff.[2] The percentage of people with disabilities aged 16 and over at risk of poverty or social exclusion is higher compared with people without disabilities in all 28 European Member States in 2013 e.g. in Bulgaria 63.7% versus 44.1% while in Greece 36.8% versus 34.5%.[2] Additionally, the increase in longevity has led to an increase in chronic diseases whose lifelong management is necessary and specific new needs emerge for the care of the elderly population.[3]

The assessment of disability helps in determining the patient's needs, the desired level of care, the possible outcomes, the duration of hospitalization, the need of disability benefits, their performance in routine activities, school, at work or in other social sectors and social reintegration.[4]

Stress plays an important role in the course of disease for people with disabilities which undermine quality of life and may cause increased comorbidity and unhealthy choices (alcohol and substances abuse, and poor diet).[5] Poor education and low socioeconomic status are factors associated with chronic stress and depressive symptoms.[6] Depression and physical pain (e.g. back pain) further deteriorate the ability of individuals to carry out their normal daily activities resulting in adverse consequences for the individual, the family, and the society.[7,8]

We have no any previous presentation of abstracts at meetings regarding the research.

We have no conflicts of interest to disclose.

* Corresponding author. Agiou Antoniou 68, GR-15235 Chalandri, Greece. Tel.: +00 306942496407.

E-mail address: gxenouli@gmail.com (G. Xenouli).

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Appropriate psychological interventions on the functional capacity, on their adaptation to health problems and their access to resources could lead to the reduction of fatigue, depression, anxiety and stress, thus contributing in quality of their life, as studies have shown on multiple sclerosis patients[9] or during prenatal and natal depression.[10] Several multi-component interventions including stress management, enhanced physical and social functioning (e.g. exercise, ergonomic training etc.) have shown positive results.[11–16]

The World Health Organization (WHO) developed the International Classification of Functioning, Disability and Health (ICF) taking into account individual's functionality on a personal and social level and providing a definition for the functional evaluation.[17,18] However, the ICF is not a tool for the assessment and measurement of disability in daily practice and therefore the World Health Organization developed the World Health Organization Disability Assessment Schedule (WHO DAS II).[19]

The first aim of this study was to validate the Greek version of the World Health Organization Disability Assessment Schedule (WHO DAS II). The second aim was to determine the WHO DAS II added value to the physical and psychological health subscales of the Short Form 36 (SF-36) in people with or without disabilities.

Methods

Study population and design

The study population consisted of people with chronic diseases receiving disability allowance or disability pension and people without disabilities. The research carried out between December 2014 and March 2015, in Athens Greece. The first group originated by people receiving disability allowance or disability pension from the Department of Social Services in a Municipality of Athens. Following the approvals by the head of the department and the deputy Mayor for social policy, all people with chronic diseases receiving disability allowance or disability pension of the Department of Social Services and Relief were contacted and informed through telephone on the study by the social worker of the team (GX) and they were asked to participate in the study by accepting a visit. Exclusion criteria included the inability to respond to the questionnaires due to the severity of their state of health, either cognitive weaknesses or communication difficulties due to aphasia or deafness. Based on these criteria, 128 people were excluded by phone or during the visit and 31 more declined participation. 101 responded positively and answered the questionnaires. The 101 participants (64 females) receiving disability pension included paraplegic-tetraplegic, blind, and others with severe disability needs.

A convenience sample of 109 employees and pensioners not receiving a disability allowance, who visited other infrastructures of the Municipality during the study period, consist the group without disabilities (71 women and 38 men) included employees in regional public sector, private sector, students and pensioners.

Questionnaires

Data collected by using three questionnaires (WHO DAS II, SF-36, PSS-14) between December 2014 and March 2015. The questionnaires were distributed and collected by the same interviewer and there was no burden for other employees or processes. All potential participants were instructed that the study was voluntary and confidential.

The WHO DAS II questionnaire assesses limitations in performing socially defined roles and involvement restrictions in the family, at work, leisure and self-care such as communication activities and thinking, mobility, self-care, and the difficulties that may arise due to the state of health.[7,20] It is a general instrument for disability that assesses six areas of functioning in daily life: 1) understanding and communication, 2) mobility (getting around), 3) self-care, 4) relationships with others, 5) daily life activities and 6) social participation.[17] The WHO DAS II was developed to assess the difficulties due to health conditions, including diseases, injuries, mental or emotional problems and problems with alcohol or drugs.[18] There are the 36- and the 12-item versions of the WHO DAS II that can be completed by the patient, the doctor or by a person who can provide this information. The WHO DAS II scores are calculated for each subscale by adding the responses for each point and convert them to a scale from 0 to 100 with higher scores indicating higher levels of disability.[17] To calculate the score of the WHO DAS II, the following scores correspond to responses: 0 = no difficulty or none, 1 = mild, 2 = moderate, 3 = severe, 4 = extreme or cannot do. The 12-item version of the WHO DAS II used on this study.

The Short Form 36 (SF-36) Health Survey assesses eight domains of health related functions, which reflect the perception of the general health symptoms or damage (mental health, vitality and pain), restrictions on activities (the extent to which health problems can limit physical function) and participation (emotional role, social and physical functioning). The two subscales (i.e. SF_PCS: Brief physical health scale, SF_MCS Brief mental health scale), with 8 items each, are scored from 0 to 100 with higher scores indicating higher levels of functioning.[7]

The Perceived Stress Scale (PSS-14) evaluate the perception of stressful experiences by asking respondents to rate the frequency of emotions and their thoughts (never-almost never-sometimes-quite often-very often) for events and situations that took place during the last month of their life: e.g. inconvenience due to an event that occurred unexpectedly, the inability to control the important things in their lives, their ability to handle personal things etc.[21] The total score is obtained by reversing the