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The Global Activity Limitation Index mainly measured functional disability, whereas self-rated health measured physical morbidity

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Abstract

Objectives: As the Global Activity Limitation Index (GALI) has only recently been created and it is not yet known whether it adds any additional information to self-rated health (SRH), two hypotheses were tested: (1) GALI is primarily correlated with functional disability and secondarily with morbidity and (2) SRH is primarily correlated with morbidity and secondarily with functional disability.

Methods: The data source used was a subsample of the 2006 Spanish National Health Survey comprising people aged more than 64 years ($N = 7{,}835$). Age, sex, social class, physical and mental morbidities, and functional disability were selected as predictors in multinomial logistic regression models, in which GALI and SRH were the outcome variables. Fractional polynomials were used to handle the continuous predictors.

Results: The results supported, generally, both hypotheses: functional disability was the main correlate of GALI and physical morbidity, rather than mental morbidity, was the main correlate of SRH. Furthermore, mental morbidity was as strong a correlate of GALI as SRH, but physical morbidity was notably less strong a correlate for GALI than for SRH.

Conclusion: In older people, GALI mainly measured functional disability, whereas SRH mainly measured physical morbidity.

Keywords: Global activity limitation index; Self-rated health; Older people; Functional disability; Morbidity; Correlates

1. Introduction

The success of a comprehensive indicator of health such as self-rated health (SRH) is indicative of the potential usefulness of a global indicator of function [1]. Such an indicator would be useful to describe the functional status of a population, to screen people with disabilities, and for analytical purposes as a prognostic or outcome variable [1,2]. However, it is only recently that efforts have been made to develop such a measure, initially conceived as a global disability indicator and subsequently, under the International Classification of Functioning, Disability and Health conceptual framework, as a global activity limitation indicator [3,4]. Global Activity Limitation Index (GALI) was developed using a bottom-up approach, beginning with a review of global disability items and then constructing the English version, with a clear definition of what the item should measure [3,5]. This approach has facilitated the development of homologous versions in other languages. The result is a single-question item designed to identify people who have long-standing health-related restrictions or limitations on their daily activities and which, like SRH, makes no reference to any specific type of activity, life situation, health problem, age group, sex, or other subgroups [3,6]. (The GALI wording is ‘‘For at least the past 6 months, to what extent have you been limited because of a health problem in activities people usually do? Severely limited; limited, but not severely; not limited at all.’’) GALI, SRH, and a chronic morbidity indicator (an open-ended question) comprise the Minimum European Health Module that the European statistical agency, Eurostat, has adopted as an essential part of the European Health Interview Survey [6,7].

To date, only two studies have examined the correlates of GALI [5,8]. One study using data from the Belgian Health Survey found that GALI was associated as expected with several subjective measures of mental, physical, and functional health [8]. Subsequently, in a study using data from the Survey of Health and Retirement in Europe, which covers 11 European countries, GALI compared favorably with objective measures of functioning (walking speed and grip strength) and subjective measures of disability in basic and instrumental activities of daily living (I/ADL)

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What is new?

Key findings

- In a representative Spanish sample of elderly people, Global Activity Limitation Index (GALI) mainly measured functional disability, whereas self-rated health (SRH) mainly measured physical morbidity.

What this adds to what was known?

- As GALI is a newly created indicator, few studies have examined its correlates and whether it provides additional information compared with other global health indicators and, particularly, SRH, a classic and well-established indicator.

What is the implication and what should change now?

- We do not know if these findings can be confirmed in people aged under 65 years.

[5]. For the reliability of GALI (and SRH), in a study conducted in Belgium with a sample of 170 people (39.9% aged more than 65 years), the κ value for the group aged more than 65 years was 0.7 (the same value was observed for SRH). The mean interval between the two interviews was 20 days [7].

In addition to being correlated with measures of health and functional disability, GALI should be nonredundant with other global health indicators, particularly with SRH [2]. Although SRH is related to multiple variables, including sociodemographic variables, health behaviors, health service use, morbidity, symptoms, motor and sensory impairments, and emotional distress [9–12], it is primarily a measure of health [2,13]. In other words, physical and mental morbidities are the main independent correlates [13–16]. Consequently, a concurrent comparison of both measures, GALI and SRH, would be an additional and rigorous test of the added value of GALI compared with SRH. Our hypotheses were that GALI would be correlated primarily with measures of functional disability and secondarily with measures of morbidity and SRH primarily with measures of morbidity and secondarily with measures of functional disability. In this study, we used data from a subsample of the 2006 Spanish National Health Survey (SNHS) [17], consisting of people aged more than 64 years, to test both hypotheses.

2. Methods

2.1. Data source

This study was based on data from the 2006 SNHS, which forms a part of the European system of health surverys implemented by Eurostat [17,18]. The 2006 SNHS is a national representative survey of households in which 29,476 noninstitutionalized people aged 16 years or older were interviewed. The survey used multistage stratified sampling: 2,236 census sections stratified by size of municipality formed the first-stage unit, households were the second-stage unit (selected with equal probability from the census sections), and finally, one person aged 16 years or older was randomly selected from each household. Interviews were conducted between June 2006 and July 2007. More detailed information can be found on the Web site of the Ministry of Health and Consumer Affairs [17]. For our analysis, we selected the data ($N = 7{,}835$) for respondents aged more than 64 years (age range, 65–104 years). This sample was nationally representative of people older than 64 years living in households.

2.2. Measures

2.2.1. Dependent variables

GALI and SRH were the two response variables. The GALI statement was "For at least the past 6 months, to what extent have you been limited because of a health problem in activities people usually do? Severely limited; limited, but not severely; not limited at all." SRH was measured with the European version of the item: "Would you say your health has been very good, good, fair, poor, or very poor in the last twelve months?" To facilitate comparison with GALI, we reclassified SRH into three categories: very poor/poor, fair, and good/very good.

2.2.2. Independent variables

We selected three sociodemographic variables, age, sex, and social class, and three variables of health and functioning, physical morbidity, mental morbidity, and functional disability. Age was measured in years, sex was classified as male or female, and class was classified according to the Spanish version of the British Register General classification [19], comprising six categories, although these were reduced to two categories, manual or nonmanual, for the purposes of analysis. Physical morbidity was measured with the Functional Comorbidity Index (FCI), validated using functional status as the criterion [20]. The FCI encompasses 18 chronic conditions, including obesity (body mass index > 30 kg/m^2), hearing and visual impairments, and two psychiatric conditions (anxiety and depression). As we used a separate instrument to measure mental conditions, we used a modified version of the FCI that excluded these, and thus, it finally consisted of 16 items. To measure mental morbidity, we used the General Health Questionnaire-12 items (GHQ-12), which has been widely validated for this purpose, and used the GHQ scoring system, which ranges from 0 to 12 [21,22]. Cronbach α for this population was 0.90, and its structure was one dimensional. Functional disability was measured with 27 items related to I/ADL and mobility (see Appendix at www.jclinepi.com).