Development and validation of a self-administered Multidimensional Prognostic Index (SELFY_MPI) to predict negative health outcomes in community-dwelling persons: preliminary results from the European Project EFFICHRONIC

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EFFICHRONIC is an EU co-funded project (Health Programme, 2014-2020, R EF:738127) aimed to provide evidence on the effect of using the Chronic Disease Self-Management Program (CDSMP) in 5 European countries (France, Italy, The Netherlands, Spain, UK) in vulnerable populations.

Background

To stratify the vulnerable groups/individuals a multidimensional assessment was implemented.

The Multidimensional Prognostic Index (MPI) is a Comprehensive Geriatric Assessment (CGA)-based tool that very accurately predicts negative health outcomes, i.e. hospitalization, institutionalization, need for homecare services and mortality in subjects with different diseases and in different settings.

To calculate the MPI, validated tools exploring daily functioning, cognition, nutrition, mobility, co-morbidity, medication and co-habitation status are assessed by health care professionals according to the multidimensional assessment methodology.

Methods

We enrolled 167 subjects (mean age=67.3 years, 51%=males, range=20–88 years). All subjects underwent a CGA-based assessment by health professionals to calculate MPI and the SELFY_MPI. The SELFY_MPI included the assessment of: 1) basic and instrumental activities of daily living (ADL, IADL), 2) mobility (Barthel), 3) memory (Test Your Memory, TYM), 4) nutrition (Mini Nutritional Assessment-Short Form, MNA-SF), 5) co-morbidity (Cumulative Index Rating Scale, CIRS), 6) number of medications, and 7) socio-economic situation (Gijón scale).

The Bland–Altman (BA) methodology was used to measure the agreement between MPI and SELFY_MPI, plotting the difference against the average of the two measures to get 95% confidence limits of agreement for clinical consideration.

The mean MPI and SELFY_MPI values were 0.147 and 0.145 respectively. The mean difference was +0.002±0.07 (Standard Deviation). Lower-and–Upper 95% limits of agreement were -0.135 and +0.139, respectively, with only 5 of 167 (3%) of observations outside the limits. Deviation between two measurements was not clinically significant and visual inspection of the BA plot did not provide evidence of any trend along MPI scale. Stratified analysis by age provided similar results for younger (≤ 65 years old, No. 45 subjects) and older subjects (> 65 years, 122 subjects).

The analysis of variances in subjects subdivided according to different year decades showed no differences of agreement according to age.

Conclusions

The SELFY_MPI can be used as a predictive tool in subjects of different ages.