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OBJECTIVE

The ageing of population is a relatively new phenomenon in human history, and the consequent change in epidemiology is causing new problems, never dealt-with before, on the social and healthcare levels. The number of people over 60 years of age has now reached 900 million worldwide, or 12% of the population, with an estimated 2.4 billion in 2050, or 21% of the total population. Many of these individuals are already suffering from chronic degenerative diseases, dementia being one of the most serious and disabling forms. The most frequent form of cognitive decline is Alzheimer's disease (AD), a neurodegenerative condition making up 50% to 60% of all dementias. In early stages of the disease, patients are mostly cared for in the community, receiving informal care and support for ADLs (activities of daily living) from mostly female caregivers. Increasing severity, worsening of cognitive and physical functions, and presence of behavioral and psychiatric symptoms (BPSD) contribute to a growing burden on family caregivers, and augmenting demand for formal community support services. Dementia-related costs are associated with medical care, direct costs of formal care, and indirect costs of informal care. Although people with dementia need continuous, integrated, and holistic assistance, their care currently is not highly specialized, often fragmented, poorly coordinated, and unable to effectively meet the needs of patients and their families. Alternative or complementary therapeutic approaches, such as nutraceuticals, are now finding foothold near conventional therapies.

Since there is international consensus that dementia is the one of the most burdensome disease for modern societies, we aimed to quantify estimates of this burden in published data through cost-of-illness studies available in scientific literature.

METHODS

The review was conducted following the general principles published in the Centre for Reviews and Dissemination (CRD)'s guidance for conducting systematic reviews and the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement, inclusion and evaluation of studies in this review was based on PICOS (Population, Intervention, Comparators, Outcome and Study design) issues.

This systematic review included published cost of illness and economic evaluation, based on clinical studies or economic models of adults with dementia in general, and focusing specifically on AD patients, severity status (mild, moderate, severe) and living condition (home/institution).

An electronic literature search about all available articles meeting the inclusion criteria was carried out using Medline (PubMed), the Cochrane Library and Google Scholar up to July 2019. In addition, cross-referencing from the articles found was used to complete the search.

The keywords used to search titles and abstracts were dementia, Alzheimer Disease, cost of illness, economic impact, cost analysis, combined using the AND, OR Boolean operators.

RESULTS

A total of fifty economic studies were included in our systematic review; 6829 records were identified in the first searching, we excluded 4396 texts because published not in English, before 2000 or because they were duplicates, 2352 of these were considered not eligible, due to not in accordance with inclusion criteria. Therefore, 81 full-text articles were assessed for eligibility and after full-text viewing and elimination of further 31 studies not comply with the previous or other selection criteria, 50 articles were finally included in the review. Results of our systematic review allow confirming the great economic burden related to dementia. Many studies have been published on the dementia and related cost over the years, however there still seem to be little awareness about the importance of managing disease in the best way to avoid disease progression toward more serious and irreversible stages, in order to alleviate patients, caregivers and healthcare systems. Findings indicate an average annual estimate of total costs per patient of €26,027. Mean annual total cost per patient for mild dementia resulted €16,343. This annual cost increased to €26,289 for moderate stage and resulted more than twice for severe dementia, reaching an annual cost of €36,743. Regarding care setting, we identify a mean annual cost of about €27,689 for community-dwelling patient and € 37,944 for institutionalized patients.

CONCLUSIONS

Defining criteria and endpoints for nutraeconomy and for nutraeconomic studies would allow to better assess the economic impact of nutraceuticals on health policies and organizational models relating the healthcare as a whole. This would be a useful element to better recognize, define and make the most of the "role of nutraceutical products". In light of high burden of dementias confirmed with our review, and of progressive aging of population destined to worsen current dementia epidemiologic data, the need to search for new treatment strategies is clear. In addition to conventional drug-therapy, early-stage treatment with a preventive effect, such as nutraceuticals, and effective non-medical support interventions for dementia patients and informal caregivers have to be considered.

