

Clinical gerontechnology and its assessment

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A. Franco, J.E.M.H. van Bronswijk, A. Littler. Clinical gerontechnology and its assessment. Gerontechnology 2008; 7(3):269-270. Products and services for older people on the interface of clinic and technology need a new, integrative protocol of assessment to show their efficacy, effectiveness, and economic and political feasibility.

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Classifying the requirements for interfacing clinic and gerontechnology centres will answer a much needed common concern in the two domains. A recent French official report¹ included chapters on home care and home security, social links and communication, mobility and transport autonomy, cognitive and somatic capacities stimulation, educational and working conditions, social inclusion, accessibility of buildings and services. According to the report, these are all areas that are calling for present and future products and services of established usefulness and high quality.

It is expected that ICT-based gerontechnology applications contribute to individual empowerment, and thus increase the options for independent living at home. Healthcare services for older or ageing people are usually provided in a collaboration among hospitals, care centres and primary healthcare. Introducing gerontechnology support to allow older and

ageing people to live longer at home, is thus linked to changes in care processes and organizational practices. To achieve the benefits of new technology, a redesign of organizations may be required².

Classical prospective assessment methods remain useful in gerontechnology³. But the example of telemedicine illustrates the difficulty of these methodologies since the field is in constant flux. The most appropriate evaluation should be aimed at investigating benefits and costs of alternative modalities as well as various dynamic combinations and configurations of technology, human resources, and health applications⁴.

In addition, the evaluation of health care options combines scientific requirements and political realities that are often incompatible. Scientific requirements pertain to robust research design, reliable and valid measurement, as well as rigorous methods for data collection and data analysis.

Political realities stem from the priorities of public policy and funding agencies and the process of allocating research funds.

The laws of the health and disability markets make it even more complex, especially for a trans-European application. Bashshur⁴ proposes an innovative triangulation process, adopted from epidemiology and referring to conclusions from a number of sources within each criterion of causal inferences. Criteria such as temporality, gradient, consistency, plausibility, coherence, specificity, experiment, or analogy are considered. The assessment of gerontechnology products and services must reply to multiple questions from suppliers, intermediate users and end-users.

The perspective of Health Services Research (HSR) as a framework⁵ of good potential to demonstrate effects and effectiveness of gerontechnology, must be considered. Unfamiliar to many investigators who conduct clinical research, HSR takes into account in a field approach: accessibility, cost and quality of care. Currently knowledge in the field is scattered and distributed over different more or less monodisciplinary domains: care, medicine, social psychology, architecture, building services, automation and robotics.

Defining families of technologies and services may bridge the gap between the approaches of industrialists and care professionals. The cross-fertilization matrix of gerontechnology, which is promoted by the International Society for Gerontechnology and was published in a recent comprehensive state-of-the-art⁶ article, is a common interdisciplinary and interprofessional language.

At the individual comprehensive assessment level, scales based on the International Classification of Functioning, Disability and Health (ICF) are available. ICF⁷ is WHO's framework for measuring health and disability at both individual and population levels, and represents mandatory universal standards of disability and environmental factors.

Building and implementing a normalized 'reference frame of evaluation' for medical or health related gerontechnological products, systems and services, as well as (specifications for) assessment tools are urgently needed to integrate the scattered pieces of knowledge and information, and to lead the way to new approaches in the different collaborating domains.

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