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The role of assistive technology in addressing the care and support needs of older people

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Assistive technology has been identified as a means of helping older people to remain living at home in a more secure, safe and independent manner. It is believed that assistive technology can reduce the speed of decline and need for future care and support. Based on a comprehensive literature review, the main reasons or trigger factors why older people need increasing levels of care and support were identified. These factors were then prioritised through a stakeholder event to highlight the top 36 trigger factors resulting in increased care need. Assistive technologies, both those in common use today and emerging technologies, were then mapped against these trigger factors to discover the role assistive technology could play in supporting older people. Results suggest that current assistive technologies can be utilised to assist, prevent or minimise the impact of 64% of the key trigger factors resulting in the increased care and support needs of older people. If emerging technologies prove successful in the coming years then assistive technology may be utilised to mitigate 86% of the trigger factors. This therefore suggests that, if used appropriately, assistive technology has a highly significant role to play in supporting the needs of older people.

Factors relating to being housebound - focusing on regional characteristics

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Purpose. The purpose of this study was to elucidate the regional characteristics related with factors causing the elderly to become housebound. **Method**. We sent self-completion questionnaires to 59,622 persons aged 65 years and older who were not disabled living in 12 insurers in 2003, and 32,891 persons responded. The frequency of going out was regarded as the dependent variable. Multivariate logistic regression analysis was used to provide age-adjusted odds ratios for physical, psychological, social / environmental factors, socioeconomic status(SES), and regional (urban or rural) factors. **Results**. (i) Almost all Physical, Psychological, Social/environmental, and SES factors were significantly related to becoming housebound, except 'Suffering from disease'. (ii) Among Social/environmental factors, 'Work status' for urban residents showed a significant odds ratio (male: OR 1.83, $p<0.001$, female: OR 1.90, $p< 0.05$), but not for rural residents (male: OR 1.19, female: OR 0.86). (iii) All Psychological factors tended to show higher odds ratios for urban residents than rural residents. (E.g.) GDS (urban male: OR 6.45, urban female: OR 5.09, rural male: OR 3.72, rural female OR 3.50). **Conclusion**. Factors related with becoming housebound varied with regional characteristics.

Database of gerontechnology and housing for older adults

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In order to have a complete overview of existing knowledge within the domain of gerontechnology and dwellings & indoor climates that meet the needs of older adults, a comprehensive online knowledge system concerning this matter is created within Hogeschool van Utrecht (Faculty Chair of Demand Driven Care), the Netherlands. The database provides an introduction on gerontechnology, its history and its users. The main purpose of the database is to provide information on gerontechnology (products) and dwellings for older adults. The database contains best practice examples of dwellings equipped with domotic appliances (home automation), which enable independent living of its users. In the end the database provides a contact list of all relevant actors in the field of gerontechnology. Information in the database is derived from (inter)national literature, the industry, and various research institutes. The database states e.g. the type of product, technology, data or service, the potential user group, literature and costs. Product specifications are further based on the 7A's: Awareness, Availability, Accessibility, Affordability, Acceptability, Appropriateness, and Adequacy. The structure of the database enables patients, care givers, building engineers, health insurers and researchers to quickly find information relevant to the specific user group.

Enhancing activity levels for older adults through a polymeric exo-muscular assistance system (PEMAS)

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Mobility for older adults is compromised by muscular deterioration or diseases resulting in deterioration of independence and consequential physio-psychological health issues. Current products to offset such disabilities are rigid, unwieldy, and intrusive. New products are called for which are of light weight, dexterous, and user friendly. To compensate for the problems associated with reductions in muscle function, this research project focuses on the development of an artificial muscle to lessen the effort required for mobility, lifting, reaching, and the conducting of the activities of daily living. This research incorporates revolutionary materials, revolutionary portable power supplies, a revolutionary feedback control system, and revolutionary computing machines. Materials utilized in the development of the artificial muscle will culminate in a Polymeric Exo-Muscular Assistance System (PEMAS) which will enhance elderly mobility and activity levels. The PEMAS will be first fabricated into a biceps muscular assistance device to assess and to demonstrate its feasibility. The research will then progress to the development of design requirements for muscular assistance devices for all major joints. The continued ability of older adults to engage in a broad range of activities is directly related to psychological and physical health issues and the reduction of dependence upon care providers.

Workability of workers at an auto-manufacturing plant in Korea

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The objective of this paper is to present whether there is any difference in workability of aged workers in a Korean auto-manufacturing plant. To find the aging effect of workers, workability of 4,173 workers were investigated. They included workers from 20 years old to 59 years old. It was found that workers in their 30's showed the reduction of perceived physical ability and mental ability compared to workers in their 20's But it was also found that the perceived physical ability and mental ability were higher in workers in their 40's and 50's than workers in 30's.