

# INTRODUCTION

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The theme of this issue is "Assistive Technology and Older Persons." We know that older persons have increased incidence of disability, and as a result use more assistive devices than younger persons. In fact, the majority of assistive device users (52%) are over 65 years of age. The types of devices used by older persons, as a group, also differs from younger persons with disabilities: older persons use many more mobility and hearing devices. Prevalence of assistive device use is 35% for persons 75 years of age and older.

The field of assistive technology encompasses three areas of interest: people—those using assistive devices to sustain or regain function; technology—the attributes of the devices which are useful to people with disabilities, caregivers, and service providers; and environments—the physical context in which the people and technology function. This issue focuses on people, specifically older persons (over 55 years of age), but also considers the areas of technology and environments.

The main article focuses on people, rather than technology or environments, by addressing the actual assistive technology needs of persons with disabilities who live at home. William C. Mann, Jurgis Karuza, M. Dianne Hurren, and Machiko R. Tomita, describe the consumer assessment project, an ongoing needs analysis within the Rehabilitation Engineering Center on Assistive Technology and Environmental Interventions for Older Persons with Disabilities. They describe the range of information on consumer needs being collected, the instruments used to document these needs, and preliminary information on the analysis of data developed through the participation of noninstitutionalized older persons and their caregivers. Assistive devices and environmental interventions are more prevalent among older persons than is commonly believed.

Maintaining an older person's independence often requires intensive support from a caregiver—typically a family member. The point at which a caregiver is unable to sustain support for bathing and toileting is often the point where the older person leaves their home and enters a managed care facility. Laura N. Gitlin and Mary Corcoran contribute the results of a study showing

how people do and do not incorporate environmental solutions to address problems of bathing and incontinence when caring for older persons with dementia. The results are instructive for caregivers and for professionals who work with them, showing how intervention strategies are perceived and either integrated or rejected.

Shifting the focus from people to technology, Jon A. Sanford, Steven H. Fazenbaker, and Bettye Rose Connell review alarm systems for elopement prevention. This technology is particularly relevant for older persons with Alzheimer's disease or related dementias who experience confusion or disorientation that induces wandering behaviors. They present alarm system technology, describe several options with differing capabilities, and discuss their relative effectiveness in specific installations. This information is helping in deciding which system to select and where to place it.

The gradual onset of sensory impairments is a common circumstance of aging. Deficits in hearing results from a lifetime of noise pollution, including industrial work and very loud music. Katherine D. Seelman assesses the adequacy of public policy concerning assistive technology for older persons with hearing impairments. Evidence shows that current federal policies do not address many of their communication needs, nor are there proactive policies to ensure greater access to new types of telecommunication systems and the built environments for which they are planned. If this examination represents policies regarding all types of disabilities affecting older persons, much change is needed in a short time.

In a related article on sensory impairments, Sheela Stuart and David R. Beukelman explore how older persons communicate verbally. This is important to augmentative communication devices, since their lexicons are developed primarily for use by children and young adults. Based on conversational language samples from two cohorts (one young and one old), there is more difference in the vocabulary of the young and old than between the vocabulary of males and females within each cohort. This study indicates the importance of age (and probably culture as well) as a

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context for developing product capabilities. Communication devices may need to be customized to meet the unique language attributes of older persons.

The field of assistive technology is applied science. Since it concerns people, their environments, and the activities they perform, it is also a transdisciplinary endeavor. "Trans"-disciplinary means the field draws knowledge from across a broad range of disciplines. RESNA conferences demonstrate this feature with engineers, therapists, architects, physicians, and technologists participating in the ongoing dialogue. Members of the social science disciplines—a substantial influence in many other applied fields—have only begun to join the discussion in the field of assistive technology. Their expertise is needed and their contributions are welcome. The proof is in the three social science contributions to this issue.

Laurel A. Strain, Neena L. Chappell, and Margaret J. Penning, make a persuasive argument for the role of social science research on assistive technology for older persons. They see a major role for social science in the context of manufacturing, retail marketing, and service delivery activities associated with assistive devices. They raise several potential barriers to improving linkages between consumers, professionals, and the private business sector to facilitate successful market transactions, to help marketers improve their products in meaningful ways, and to increase consumer access to the best solutions available.

Device usage and device abandonment is a subject with more questions than answers, answers residing in the study of human behavior, social interaction, and culture. Bryan J. Kemp presents the role of motivation in device use or nonuse, particularly for use by older persons. The base of knowledge in the social sciences offers a model for recommendations to improve device use. Dr.

Kemp provides a model of motivation, explaining the model's four key elements and how to apply them. The model can be readily applied to other studies of device abandonment.

In a companion article, Mark R. Luborsky describes the cultural and psychosocial context through which older persons perceive their functions and environment, and discusses how these contexts influence the use and nonuse of assistive technology. He argues that culture, which is internalized during the individual's socialization process, instills the basic perceptions of events and personal motivations for actions. Older persons who are polio survivors are the study's reference group.

The Kinsmen Rehabilitation Foundation of British Columbia is this issue's program spotlight. James R. Watzke and Marilyn Sakiyama present a thorough review of the Kinsmen Foundation's equipment, service, and education programs, some extending over the past forty years. Although originally designed to serve the needs of persons with disabilities of all ages, shifting demographics directed the Kinsmen Foundation's programs toward older persons. At present, about 50% of their client base is over 55 years of age. This situation reflects the changing demands on facility and community service programs everywhere.

In 20 years, one out of every four persons in the United States will be over the age of 55. The number of people over 85 years of age is doubling every 20 years. For all of these people, including all of you reading this introduction, developing assistive technology and environmental interventions that meet the needs of older persons is an investment in our collective futures. We hope you find value in this issue and in the perspectives presented by our colleagues from many fields.

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