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# **Adoption of Medical Technologies by Older Adults and the Relationship With Functional Disability**

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# Abstract

## Background

In recent years, we have witnessed a wave of innovation in the field of medical technologies, from applications to robots for assistance in activities of daily living. The adoption of medical technologies by older adults can allow them to age in place while improving their quality of life and enhancing their accessibility to health services, thereby reducing inequality in the availability of health care, and cutting expenditure on health. The use of medical technologies becomes all the more important with the aging of the population and the growing prevalence of chronic morbidity and subsequently, the increasing national expenditure on health.

The perceived usefulness of the technologies, attitudes about technology, technology acceptance, and personal and social characteristics, including the level of digital literacy and access to the technologies, are among the factors affecting the adoption of technologies by older adults. Currently, there is not enough information on the attitudes of older adults with various characteristics about the adoption of medical technologies and their willingness to use home-based medical technologies. Information regarding the relationship between the adoption of technology by older adults and their level of functioning is likewise insufficient.

In view of the above, a research team at the Myers-JDC-Brookdale Institute submitted a research proposal to the Israel National Institute For Health Policy Research and receiving its approval, was granted funding for the research.

## Goal

The overarching goal of the research was to examine the use of technology, in general, and of medical technologies, in particular, by older adults as well as their attitudes about the use of such technologies.

## Method

1. Analysis of data drawn from the Central Bureau of Statistics (CBS) Social Survey, 2019 regarding the use of technologies; Secondary analysis of survey data drawn from evaluation studies of pilot programs and services for older adults, conducted at the Myers-JDC-Brookdale Institute from 2018 to 2020. The surveys provided data on the use of technology by older adults with various levels of functional disability and on their attitudes about the use of technology.

2. Qualitative analysis of seven focus groups of older adults with various levels of functioning and various levels of digital literacy.
3. Consultation with three leading experts in the field, as a basis for formulating policy recommendations.

## **Key Findings**

Low use rates of technology, in general, and of medical technologies, in particular, are associated with the following characteristics: age (75+), functional disability, level of education (non-academic), economic status (difficulty covering monthly expenses), and negative attitudes about the use of technology. Although the use of technology can improve the quality of life of older adults with a functional disability, technology use rates among older adults with a functional disability are lower than among independent older adults. Attitudes about the use of technology have a major impact on the actual use of technology, as shown even when the abovementioned characteristics are controlled. The main factors inhibiting the use of technology are: the fear of failing, poor physical condition, feelings of shame and embarrassment, and a negative view of technology. On the other hand, awareness of the advantages of using technology, supportive family members, and paced guidance tailored to the abilities of the older adult are among the facilitating factors that promote the use of technology.

## **Recommendations**

The recommendations were formulated following the presentation of the findings to leading experts in the field and consultation with the experts.

Given the low use rates of technology among older adults with a functional disability and its potential for improving their quality of life, their use of technology should be encouraged through:

- Attitude change regarding the adoption of technology and enhanced awareness of the advantages of technology use
- Guidance in the use of technology tailored to the abilities and needs of older adults (one-on-one lessons, ongoing and attentive support, availability for problem solving, etc.)
- Adaptation of the user interfaces of relevant applications and websites to the abilities and needs of older adults (offering user-friendly interfaces with simple buttons, large font size, clear icons, etc. as well as ad-free experience)

- Acquisition or funding of computers and/or smartphones for home-bound older adults who are interested in using the devices but cannot afford them
- Training of long-term care givers to serve as “user agents” and assist older adults in the use of technology
- Prioritized training and guidance for the benefit of older adults who have no family member to assist them in the use of technology
- Stepped-up efforts to promote the accessibility to public services for older adults and as part of the endeavor, training of a “technology accessibility trustee” tasked with the adaptation of technology-based services to the abilities and needs of older adults
- Promotion of technology use for social purposes (e.g., social media, video classes, and online group meetings) among older adults, especially those with a functional disability
- Promotion of the development of personal care technologies by issuing tenders and launching pilot programs.