

Challenges in Communicating Risk Information to Older Adults



**Christopher B. Mayhorn,
Ph.D.**

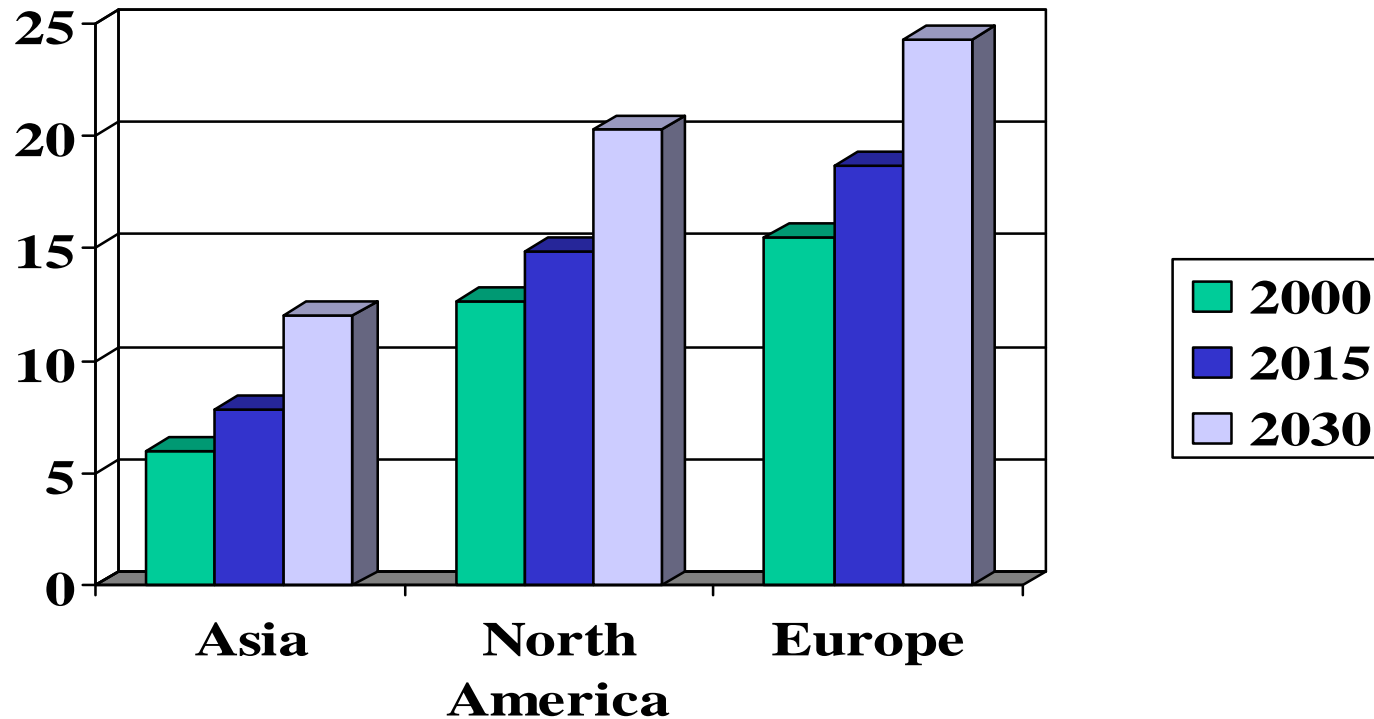
North Carolina State University

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Email: chris_mayhorn@ncsu.edu



The World Population is Aging at an Unprecedented Rate



Source: An Aging World (2001). US Dept of Commerce



Older Adults as a Vulnerable Population

Older adults are:

- More likely to become casualties of disaster (CDC-ARC, 1997; Friedsam, 1961)
- More likely to suffer from long term psychological distress and somatic symptoms (Phifer, 1990)
- Slower in their economic recovery (Bolin & Klenow, 1983)



Information Processing of Warnings

- Protective Action Decision Model (Lindell & Perry, 2004)
- Communication-Human Information Processing Model (Wogalter, DeJoy, & Laughery, 1999; Wogalter, 2006)

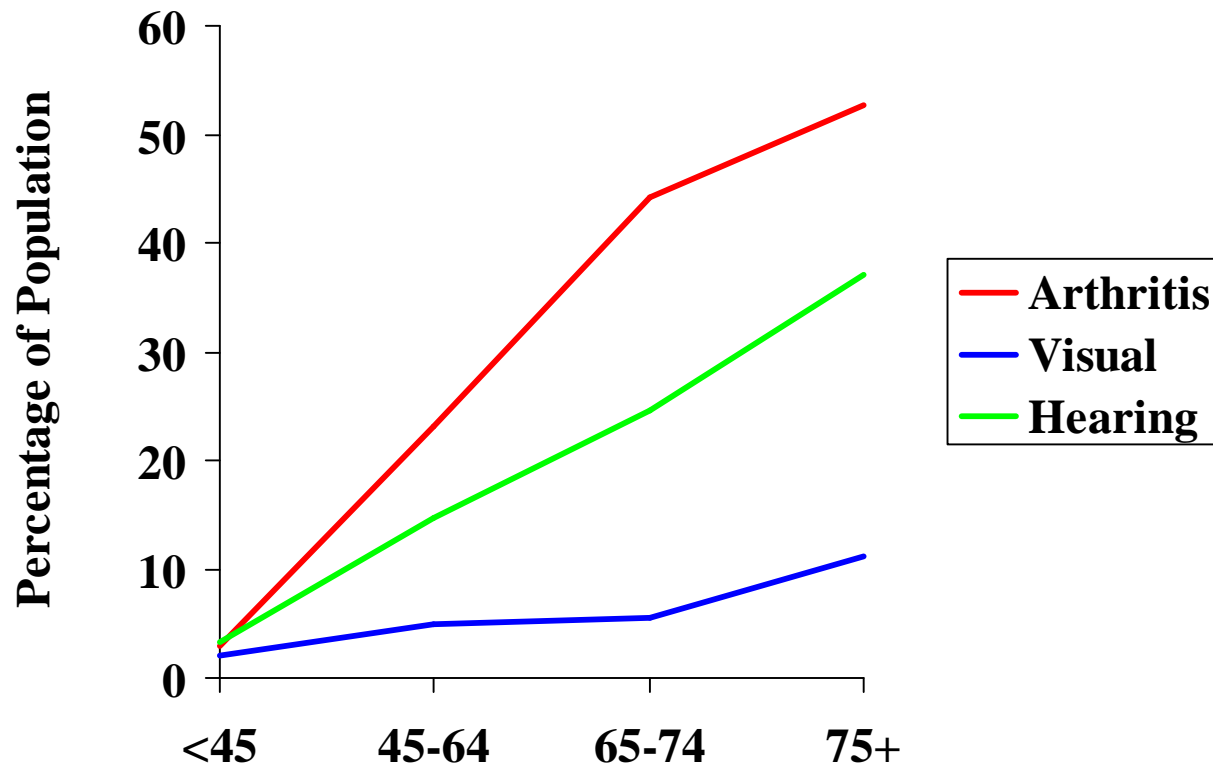


Age-Related Declines with Perceptual, Motoric, and Cognitive Variables

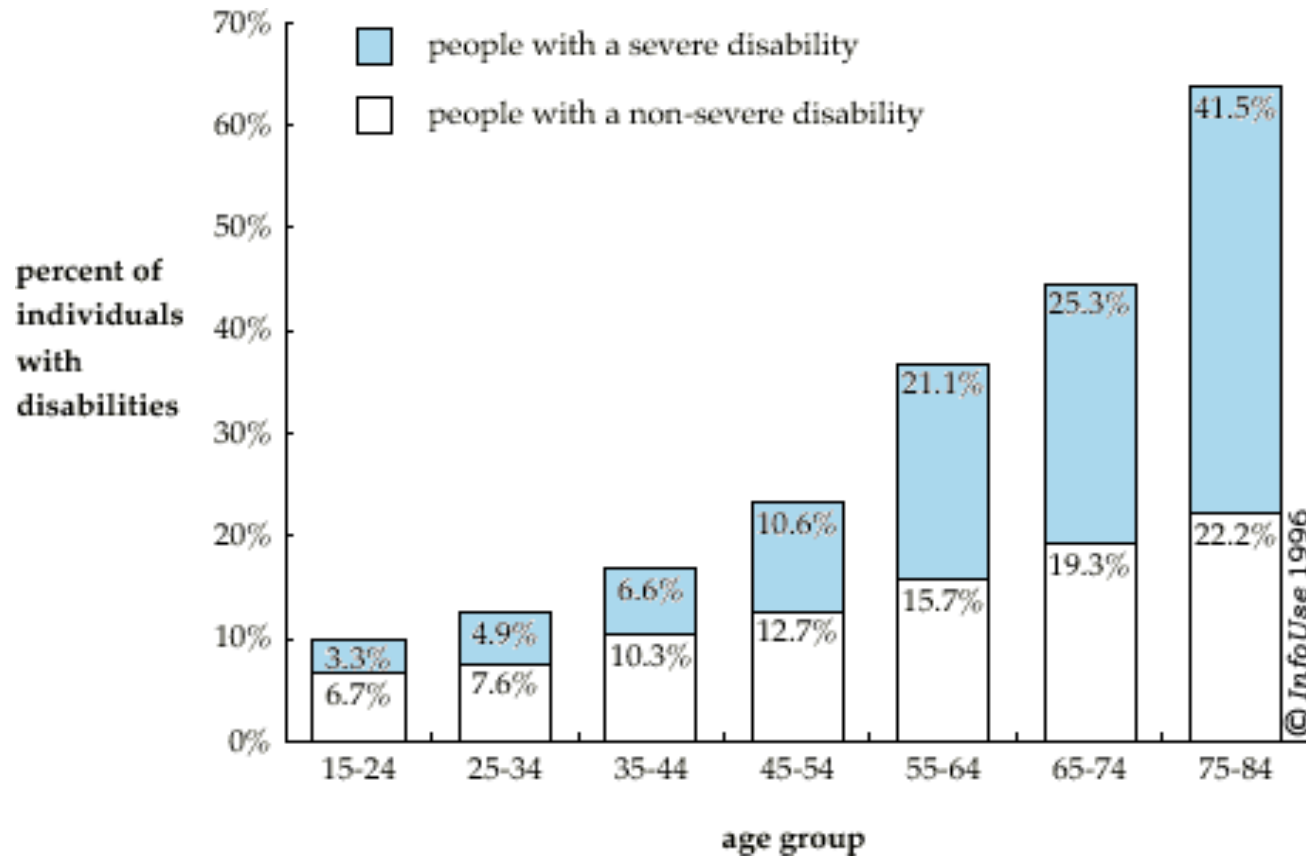
- Perceptual
- Motoric
- Cognition
 - Selective Attention
 - Working Memory
 - Reading Comprehension



Increased Likelihood of Perceptual/Motor Impairments



Disabilities Increase with Age



Source: Kraus, L., Stoddard, S., & Gilmartin, D. (1996). *Chartbook on Disability in the United States*. Washington, DC: U.S. Natl. Institute on Disability and Rehabilitation Research.



Older Adults and Technology Adoption: Implications for CMAS

- Fifteen percent of Americans are “Off the net” and these are primarily older adults (Horrigan, 2007)
 - Only 25% of adults aged 65+ years own cell phones (Pew, 2006)
- In general, ease of use is an important component of technology adoption and acceptance (Venkatesh, Morris, Davis, & Davis, 2003).
- Design barriers might prevent older adults from using new technology (Thompson & Mayhorn, in press).
 - Trends in miniaturization (Mayhorn, Lanzolla, Wogalter, & Watson, 2005; Mayhorn & Mendat, 2006)
 - Choice of input device (McLaughlin, Rogers, & Fisk, 2009)
 - Previous experience and perceived usefulness are important factors (Mayhorn et al, 2004; Melenhorst et al., 2006)



Warnings: Media Design Recommendations

- Training is important!
- To address age-related perceptual issues:
- Readability of visual information can be increased with the use of:
 - Sans serif typefaces such as Helvetica (sized at 12- or 14-point)
 - Avoid the use of multiple shades of blue and green figures which tax older adults' color discrimination abilities
- Auditory information:
 - Avoid broadcasting at high auditory frequencies (6-8 kHz)
 - Reduce background noise



Warnings: Cognitive Design Recommendations

- Direct attention by providing cues such as color or highlighting to focus on relevant message content.
- Information overload can be avoided by **not** taxing working memory:
 - Reduce speed of transmission
 - Avoid complex, sequential (step-by-step) safety procedures
 - Avoid jargon

