Meeting the Needs of Aging Persons with Developmental Disabilities

Cross Network Collaboration for Florida

Sensory Processing, Environmental Modifications and Adaptive Technology

Module 5

Based on ADRC training developed by:
Kathleen M. Bishop, Ph.D.,
and John Miullo, M.S.

ADRC Training
Purpose of Module 5

- Detail how older adults and individuals with developmental disabilities:
  - Interact with the physical environment and adaptive technology
  - Have the same environmental/sensory issues
Purpose of Module 5

- Outline techniques for individuals and their families to:
  - Reduce the impact of sensory changes
  - Maintain independence
  - Address common challenges they share with each other
  - Experience quality of life through use of adaptive environment and technology
Meeting the Needs of Aging Persons with Developmental Disabilities

Cross Network Collaboration for Florida

Sensory Processing
Sensory Changes and Aging

- Increase in impairments with aging
- Increase in sensory changes
- Potential for reduction in quality of life and independence
- Common experience as people age regardless of pre-existing disabilities
Importance of the Environment

- Immediate environment increasingly important with aging
- Reduction of barriers to community participation and social interaction essential
- Balance of ease of use and challenge
  - Changing with age and increased impairments
Sensory Processing and Aging

- All information for functioning taken in from sensory information in the environment
- Brain must
  - Be aware of sensory stimuli
  - Receive the information accurately
  - Bring the information together through processing
  - Interpret information to determine response
Sensory Processing and Aging

- Ongoing process 24 hours a day
- Too much information overwhelming
- Becomes more difficult with aging due to impairments and added perceived or actual environmental stress
Sensory Changes and Aging

- Although changes are age related, a combination of these changes may:
  - Increase risk of falls
  - Cause acute dementia
  - Reduce independence and quality of life
- Early onset aging of individuals with Down syndrome and cerebral palsy
Sensory Changes in Older Adults

- Slowing of memory recall
- Interference with short-term memory
- Slowing of cognitive function
- Reduced ability to process multi-sensory input (confusion)
Impact of Sensory Changes on Older Adults

- Reduced socialization
- Difficulty with directions and location
- Reduction in skills and interests
- Reduced ability to participate in interests and activities
Meeting the Needs of Aging Persons with Developmental Disabilities

Cross Network Collaboration for Florida

The Seven Senses and Aging
Seven Senses

- Hearing – Auditory
- Seeing – Visual
- Touch – Tactile
- Smell – Olfactory
- Taste – Gustatory
- Location in space – Proprioceptor
- Head moving through space – Vestibular
Hearing and Aging

- Increased hearing impairments with aging
  - Presbycusis – Greek for ‘Old hearing’
- Increased background noise interference
- Increased tinnitus – ringing in the ears
Environmental Modifications for Hearing Impairments

- Addition of soft materials to the environment
- Reduction of hard surfaces
- Reduction of background noises from appliances, conversation, street noise
- Increased lighting
Vision and Aging

- Increased visual impairments with age

- Central Vision Impairments – Difficulty with seeing in front affecting ability to read, see signage, recognize people

- Peripheral Vision Impairments – Narrowed visual field, affects ability to observe immediate environment
Vision and Aging

- Increased glare sensitivity
- Decreased ability to see color contrasts
- Difficulty adjusting to changes in lighting
- Difficulty with busy patterns, increased background interference
Vision and Aging

- Increased risk for falls due to reduction in vision
- Increased risk for misdiagnosis of Alzheimer’s disease due to visual changes/impairments
Environmental Modifications, Vision, and Aging

- Increase task lighting
- Decrease glare, avoid high gloss waxes, shiny surfaces
- Use consistent lighting to reduce shadows
- Use strong contrasting colors of furniture to floors and walls, objects to background colors
Touch and Aging

- Decreased tactile ability
- Loss in fine motor dexterity
- Increased tactile defensiveness
- Nerve reduction with inability to feel pain, sense danger
- Increased risk of skin breakdown
Environmental Modifications and Touch

- Be aware of textures that irritate skin
- Avoid synthetic fabrics
  - Use natural fabrics such as cotton to reduce skin breakdown
- Provide ample personal space and territory
Smell, Taste, and Aging

- Reduced taste and smell
- Increased sensitivity to noxious or dangerous odors
- Loss of appetite
- Changes due to medications
Environmental Modifications, Smell, and Taste

- Reduce noxious odors in environment if possible
  - Awareness that inappropriate behaviors may be related to noxious odors
- Bake before meals to stimulate appetite
- Conduct smell and taste exercises
  - Helps retain taste and smell
Increased disorientation in space through disease process (i.e., Alzheimer’s disease) or sensory loss
  - Inability to locate oneself in space

Increased changes in the physical environment resulting in potential disorientation
Possible Muscle Changes Affecting Mobility

- Moderate (15%) loss of muscle mass
  - Increase risk of loss for individuals who have not been weight bearing
- Moderate exercise will strengthen upper and lower body
Possible Muscle Changes Affecting Mobility

- Severe (33%) loss of muscle
  - Increased falls
  - Reduced activities or interest in participating in activities
  - Weak upper body
  - Behavioral changes due to pain
  - Likely in persons not weight bearing (cerebral palsy)
Environmental Modifications for Mobility

- Increased cueing in the environment
- Marking of personal space and objects
- Chairs with arms
- Decreased accessibility barriers
- Adaptive equipment for ease of movement and independence
- Removal of throw rugs, thresholds
Meeting the Needs of Aging Persons with Developmental Disabilities

Cross Network Collaboration for Florida

Assistive Technology and Aging
Assistive Technology and Aging

- Enhance independence
- Improve quality of life
- Support functioning and daily living
- Cost effective
- A resource for both networks
Assistive Technology

“Products, devices or equipment, … (from various sources), that are used to maintain, increase or improve the functional capabilities of individuals with disabilities…,” Assistive Technology Act of 1998.

From canes to voice recognition software
Assistive Technology Services

- Support individuals with disabilities and their caregivers to:
  - Select, acquire, or use adaptive devices

- Services include:
  - Functional evaluations and assessments
  - Training on devices
  - Purchasing or acquisition support
Assistive Technology Products

- Enable accomplishment of Activities of Daily Living (ADLs)
- Assist in communication (augmentative communication devices)
- Support education, work or recreation activities
- Help achieve greater independence and enhance quality of life “off the shelf” or by special design
Universal Design Approach

- For everyone
- Adapts to the individual
- Requires less updating and reassessment
- Generally requires less training
- Not always the best option
Clinical Design Approach

- Specific for the disorder or individual
- May require updating and reassessment
- Generally requires more training
- Not always the best option
Combine Design Approaches

- Examples in aging:
  - “Bob's Room” in a long-term care facility
  - Parkinson's Unit

- Examples in developmental disability group homes:
  - SmartSystems from Imagine!
Collaboration Across the Networks

- Using technology to help us all work together
- A point at which we can all come together to maximize supports, independence, and quality of life
- Regardless of age or disability
Summary of Module 5

- Environmental modifications for sensory impairments can help maintain quality of life and functioning for the older person.
- Assistive technology is a resource for both networks and can be another bridging opportunity.
Group Discussion

- Questions
- Survey Monkey