What if LeadingAge

Using a Neuroscience Approach for Alzheimer's / Dementia Residents in Assisted Living & Memory Care

Learning Objectives

1. **Basic understanding of Neuroscience related to Alzheimer's Disease (AD)**
2. **Method of communication with the patient with AD.**
3. **Neuroscience approach to reduce mental stress & behavior problems using music, video, stimulating, tactile and reminiscent therapies.**

Dr. Govind Bharwani , *Adjunct Professor, Wright State University, Dayton, OH*

Learning Objectives

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AD = Alzheimer's Disease

Our Brain is divided into two Hemispheres: Left Brain and Right Brain

The left brain controls the right side of the body and the right brain controls the left side of the body.

Left and Right Brain Areas which affect ADL Function

Left Brain controls:

- Short-Term memory
- Language skill
- Analytical skill
- Talking, reading, writing etc.
- Speech comprehension
- Verbal memories
- Math skill
- Grammar skill
- Logical reasoning

Right Brain controls:

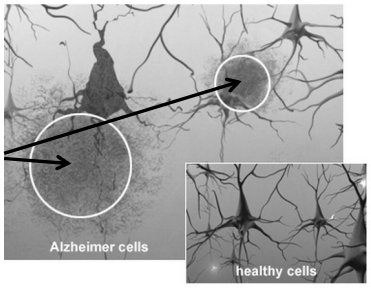
- Perception of faces
- Emotional speech
- Singing skill
- Environmental sounds
- Comprehension of music
- Emotional memories
- Visual-spatial processing
- Geometric thinking
- Creative thinking

ACTIVE BRAIN

PASSIVE BRAIN

Alzheimer's Disease affects the active cells of the brain

Alzheimer's Cells



Healthy Cells

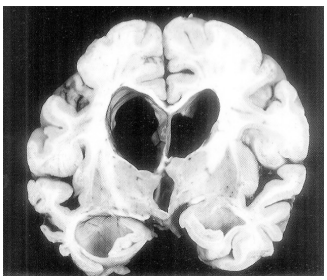
Alzheimer's disease is caused by the formation of protein build-up between nerve cells called **PLAQUES** and formation of twisted strands of proteins called **TANGLES**

Effect of Alzheimer's Disease

- **LEFT BRAIN** begins to deteriorate significantly affecting short-term memory, language skills, and analytical skills
- **RIGHT BRAIN** stays active for much longer duration maintaining sensory functions, emotions, and feelings

Brain PET Scan of PWD

Left Brain



Right Brain

Although the Alzheimer's disease affects neurons (brain cells) in both right and left brain, the ADL functional areas in the left brain is affected more than the right brain such as short-term memory, language, logic, executive function, math skill, etc

Effect of Left Brain Decline

- Short-term memory declines
- Speech pattern deteriorates
- Logic and analytical skills deteriorate
- Space/time concept becomes confusing

Effect of the Right Brain Bloom

- Music and art receptivity improves
- Tactile and touch sensitivity is retained
- Smell, taste, and aroma sensitivity is retained
- Feelings and emotions are retained

Left-Brain Personality in Assisted Living

Opportunities/Challenges

- PWD experiences decline of short-term memory
- PWD can communicate with some language difficulties
- PWD expresses denial and frustration
- PWD begins to hide the problem as much as possible
- PWD faces deterioration of logic and problem-solving

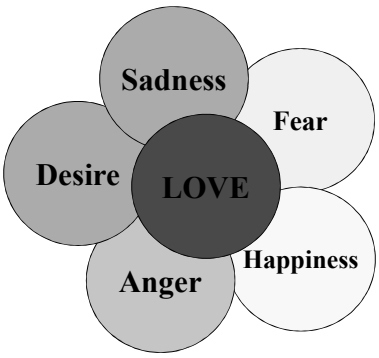
What should Caregivers do?

- Do not keep correcting the PWD
- Do not call attention to the memory lapses of the PWD
- Do not embarrass the PWD about use of incorrect words
- Do not argue with the PWD using your logic skills
- Do not force your help without being asked

Right Brain Personality in Memory Care

- Communicates using non-verbal method
- Does not like verbal method of communication
- Enjoys sensory interaction; touch, smell, etc.
- Pessimistic towards life with negative outlook after normal daily incidence
- Suspicious about everyone and thinks others want to hurt and steal from him/her
- Sometimes conducts in an anti-social behavior
- Very sensitive to negative criticism
- Likes to be treated with patience, respect, & kindness
- Loves music, art, nature with emotional connection

Emotions & Feelings of Alzheimer's and Dementia Residents Remains High even at the Late Stage



Conclusion

The Quality of Care for People with Alzheimer's and Dementia will depend upon how much the Memory Care Staff understand the capability and performance of the **Right Brain**

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Root Cause of Behavior Problems

1. **Loneliness**
2. **Helplessness**
3. **Boredom**
4. **Lack emotional activities**

Affect of Boredom on Behavior

1. It starts with "B**oredom**"
2. Boredom leads to agitation in the Brain
3. The Brain has a tendency to magnify & translate the agitation into emotional stress
4. The Brain deals with emotional stress by using behaviors as Emotional Stimulation
5. Behaviors are dominant emotional memories stored in the Brain during our life time
6. Emotional stimulation is a use of behavior by the Brain to neutralize agitation & stress

Alzheimer's/Dementia Resident Needs

1. Physical needs
2. Clinical needs
3. Emotional needs

There is lack of emotional care due to time, knowledge, and expertise of the staff.

Right Brain Likes:

- Emotional connection from the past)
- Music and video with emotional connection
- Touch therapy to the left hand or shoulder
- Faces and shapes and colors
- Memories from old pictures & albums
- Limited conversation (talk less)
- Short words (3-letter nouns and verbs)
- Spatial stimuli with nature
- Sensory and emotional stimulation

Right Brain Strongly Hates:

- People who use long sentences or long words
- People who use the words “no”, “don’t” or “can’t”
- People who make them do non-sensory physical Activities
- People who talk loudly with a high pitch and tone
- People who force them to do tasks without explanation
- People who share too many steps to do a task
- People who talk too much

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Right Brain is receptive to

1) **Sensory Stimulation**
2) **Emotional Stimulation**

What does the Right Brain Like?
(by priority)

Sensory Stimulation

1. Music with connection to the past
2. Video of activities/hobbies with connection to the past
3. Any activity related to nature (indoor or outdoor)

Emotional Stimulation

4. Re-live emotional memories from the past (behaviors)
5. Actions to get attention (like a child from the pasts)

Solutions for Behavior Management using BBET Program
(BBET = Behavior-Based Ergonomics Therapy)

- BBET is an award-winning innovative program, which has been implemented in over 80 facilities in 11 states
- It uses neuroscience techniques to neutralize behaviors on residents with Alzheimer's and Dementia.
- The BBET Program has received **six national awards**:
  - 2011 Dorland Health Silver Crown Award for Alzheimer's Care
  - 2011 AMDA Foundation / Pfizer Quality Improvement Award
  - 2012 *Long-Term Living* Leaders of Tomorrow Award
  - 2012 LTC LINK Spirit of Innovation Award
  - 2012 OPTIMA Award by *Long-Term Living*
  - 2014 ACHCA Public Service Award

BBET consists of Four Therapies in a Resource Center

- Memory Prop Box (for each resident)
- 60 Audio (Music) therapy CDs (M1 – M60)
- 60 Video therapy DVDs (D1 – D60)
- 30 Stimulating therapy items (S1 – S30)

Libraries are based on Neuroscience research

150+ tools available in the BBET Resource Center

The part of the brain which is working after the onset of Alzheimer's disease is very sensitive to "Tone", "Pitch" and "Duration" of therapy

The audio and video library items are developed taking these Neuroscience criteria into consideration

Key Points to Note about BBET

- There are 150+ items available in the BBET Resource Center
- It is available 24/7 for the residents
- The training will help the staff to use BBET therapies to provide comfort to residents
- It is not a one-on-one activity by the staff
- The therapy action plan (prescription) is customized for each resident based on their life history and cognitive level
- It is a non-medication program to improve their quality of life
- Generally after each therapy a resident is calm for 3-4 hours

BBET Certification

- **4 training videos (4 hours total) focused on**
  - Understanding of Alzheimer's / Dementia
  - Behavior Management
  - Communication and Interaction
  - Techniques for ADL care
- **BBET Program Description & Resource Center Review**
  - Purpose of BBET Program (Tools, Timing, Approach)
  - Resource Center procedures (and equipment instructions)
  - Guidelines for therapies (comforting & stimulating)
  - Infection Control responsibilities
- **Competency test with certificate upon completion**

It is not necessary to add staff when the BBET program is implemented.

During steady state the BBET Champion and trainer spends about 4 hours a week to maintain the program

Published Results of BBET Implementation*

	Improvement in 6 months
Reduction in falls	33%
Improvement in mood & behavior issues	67%
Improvement in behavior episodes	38%
Reduction in PRN medications	47%
Reduction in anti-psychotic medications	65%

*Results of an independent study conducted by Wright State University College of Engineering and published in *Long-Term Living* magazine and the *American Journal of Alzheimer's Disease & Other Dementias (2012)*

Techniques to Manage Difficult Behaviors

1. Use of medications has risk of side effects
2. Redirect/Distract approach is like putting a band-aid with temporary effect
3. ☞ BBET/Neuroscience approach can lead to permanent behavior change

Right-Brain Dominant Phase

Opportunities/Challenges

- PWD begins to forget relationship link
- PWD begins to communicate using non-verbal methods
- PWD can become irritated and agitated very quickly
- PWD begins to be suspicious, pessimistic, and fearful
- PWD starts to live in the past

What should Caregiver do?

- Use Massage and Aromatherapy to calm the Right Brain
- Use Neuroscience technique to manage difficult behaviors

(These techniques are used constantly in the BBET Program)

BBET is a turn-key program.

It uses the Science of Cognitive Ergonomics & Neuroscience Research to reduce Mental Stress and Behavior Management for Alzheimer's & Dementia Residents in Assisted Living and Memory Care

Examples of BBET Therapies In Action

Major Challenge for the Caregivers

The Caregivers are LEFT BRAIN dominated taking care of the residents who are RIGHT BRAIN dominated

BBET Program uses the science of Ergonomics and Neuroscience research to train the caregivers on how to interact with the residents

BBET Program is a journey to improve the quality of life for people with Alzheimer's & Dementia

Questions?

For additional information give your business card or provide your email address on the sheet at the desk