

**Multi-Sensory Stimulation
Rooms for Persons with
Dementia**
Design-on-a-Dime

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1

Objectives

1. Identify calming and stimulating sensory interventions for persons with dementia
2. List the benefits of multi-sensory stimulation for persons living with dementia
3. Enumerate design principles to consider when designing a multi-sensory space
4. Recognize everyday objects, activities, lo-tech and sensory inputs to include in a multi-sensory environment to facilitate purposeful engagement



2

Dementia

- Progressive decline in cognition along with a short- and long-term memory loss due to brain damage/disease
- Impairment in memory and at least 1 domain of cognitive functioning that represents a decrease from previous functional level & results in an impairment in daily activities

(Buffington, Lipski, & Westfall, 2013)



3

Background

- Estimated 5 million Americans suffer from dementia
 - More than 15 million provide caregiving
- Costly to treat (\$215 B in 2010)
- Caregiving is the most costly aspect of dementia care (AHRQ, 2014)



4

Background (Alzheimer's Association, 2015)

- In the US 1 in 9 persons over 65 have AD
 - 16 million by 2050
- Estimated 75% of persons with AD are admitted to a SNF
- AD is the 6th leading cause of death in the US
 - Only disease in the Top 10 that cannot be prevented or cured



5

BPSD

- Behavioral and psychological symptoms of dementia
 - Symptoms of disturbed perception, thought content, mood or behavior that frequently occur in patients with dementia.
- As many 76% of residents have BPSD
- Labels used to describe include agitated, aggressive, and disruptive (AHRQ, 2014)



6

Behaviors and Dementia

- “Behavioral symptoms related to dementia are defined as verbal, vocal or motor activities that are considered to be aggressive, excessive or lack adherence to social standards.”
- Behaviors result from interactions between the resident, the caregiver and the setting

(Boustani et al, 2005)



7

Disruptive Behaviors

- Inappropriate, repetitive or dangerous behaviors which are disruptive to the living and working environment in the NH
- Most common disruptive behaviors
 - Wandering
 - Aggression
 - Agitation

(Ahn & Horgas, 2013)



8

Behaviors

- ALL behavior has meaning and is indicating something
- Behavior is a form of communication
- Look at every behavior as unmet need
- Behaviors are considered a problem when
 - Safety or well-being of patient or others is compromised
 - A trigger or cause cannot be identified



9

Why Sensory Stimulation

- Everyday objects can trigger emotions and memories
- A way to explore a safe, stimulating environment with age-appropriate and enjoyable activities
- Can give a means for expression
- Can promote feelings of safety, relaxation
- Improves mood, self-esteem, well-being



10

Why Sensory Stimulation

- Familiar objects
- Focusing on one sense at a time
- Therapist provides reassuring nonverbal and verbal cues to stimulate a response
- Activities are often linked to interests the person had prior to dementia and can help build a connection to everyday life



11

Benefits of Sensory Stimulation

- Improve behavior and mood
- Promote alertness
- Increase brain function
- Improve communication
- Boost self-esteem and well-being



12

Examples

- Multisensory activities are activities that combine two or more senses
 - Drawing and listening to classic music
 - Hand-massage and conversation
 - Relaxing on a beanbag while watching colorful landscapes on a TV screen
 - Having nails groomed in a garden setting



13

Multi-Sensory Interventions

Increased engagement in multi-sensory environments (Heyn, 2003; Maseda et al., 2014)

- Sound
 - Natural environments decrease agitation (Whall et al, 1997)
- Sight
 - Light intensity improves performance and sleep (Koss & Gilmore, 1998)
- Smell
 - Lavender oil decreases agitation (Holmes et al., 2002; Thorgrimsen, Spector, Wiles, & Orrell, 2003)



14

Multi-Sensory Interventions

- Snoezelen Multisensory Stimulation Therapy (MMS)
 - Combines the therapeutic use of light, tactile surfaces, music, and aroma
 - Neuropsychiatric symptoms may result from periods of sensory deprivation
 - Short-term benefits on behaviors were significant (Chung & Lai, 2009)



15

Multi-Sensory Stimulation

- We can get information into our brains through our senses
- Too much stimulation – overwhelmed
- Too little stimulation -- lose interest and ability
- Sensory deprivation impacts wellbeing and health



16

Benefits of a Sensory Room

- Stimulation provided in a controlled way
- Can be stimulating or calming in their effects
- Positive changes in mood and behavior for late stage dementia
- Improves staff interactions with residents



17

Deficiencies of Sensory Rooms

- Aesthetics and functionality are not satisfying and appropriate
- The equipment and set up is not age appropriate; juvenile
- Difficult to connect with
- Cluttered and distracting
- Insufficient multi-sensory stimulation



18

Factors When Designing a Space

- Feeling comfortable and safe
- Meaningful and familiar
- Multi-sensory experience
- Stimulation and relaxation
- Control and interaction
- Age appropriate and usable



19

Feeling Comfortable and Safe

- Space should be intimate, contained and quiet space
- Minimized or zero capacity for disturbance or distraction
- Low-level sensory stimulation to activate parasympathetic nervous system



20

Feeling Comfortable and Safe

- Textiles, fabrics and other soft materials
 - Soft blankets
 - Soft cushions and soft toys
 - Plain textile curtains



21

Feeling Comfortable and Safe

- Appropriate Lighting
 - Soft, indirect light for general lighting
 - Dimmer switch
 - Daylight
 - Selective stimulating lights creating visual focus points



22

Feeling Comfortable and Safe

- Avoid
 - Very dark spaces
 - Glares and flickering lights
 - Lights and reflections moving around the room
 - Over stimulation
 - Decorative lights



23

Feeling Comfortable and Safe

- Contact with Nature
 - Bring the feeling of the outdoors inside
- Easy Access
 - No stark contrast between multi sensory room and rest of home
 - Sensory cues directing the resident to the sensory space
 - Visual contact with the rest of the facility



24

Feeling Comfortable and Safe

- Over-Stimulation
 - Provide a visually calm space with a visual focus
 - Limit visually stimulating equipment
 - Eliminate disturbing noise:
- Comfortable furniture
 - Soft, tactile surfaces/material:
 - Comfortable and relaxing positions



25

Feeling Comfortable and Safe

- Serving snacks and drinks
 - To enhance the sense of comfort
- Pleasant climate
 - Comfortable room temperature:
 - Good air quality and sufficient oxygen



26

Meaningful and Familiar

- Provide familiar, personal, appropriate experiences
- Relevant to the resident's life and stage of dementia
- Everyday objects to trigger memories/ conversation
- Exploring and engaging in appropriate activity; create sense of purpose



27

Meaningful and Familiar

- Appropriate use of technology
 - Technology needs to be multi-sensory and age appropriate
 - Mix of natural things and technology
- A mix of the new and the familiar
 - Every day items, old items, familiar imagery
 - Playing old songs and music



28

Meaningful and Familiar

- Offering appropriate tactile stimulation
- Prepare the room for individual sessions
- Cultural relevance



29

Multi-Sensory Experience

- All the senses need to be addressed!
- Visual sense is often overvalued
- Tactile stimuli is limited
- Stimulating vestibular and kinesthetic sense
- Use equipment, items, material that are multi sensory in design



30

Multi-Sensory Experience

- Sight
 - Light and color
 - Films and videos
 - Projections on fabric
 - Material of different optical qualities catching the light in different ways
 - Food and natural things found outdoors
 - Motion



31

Multi-Sensory Experience

- Touch
 - Active tactile stimulation
 - Passive tactile stimulation
 - Natural and every day objects
 - Sensory cushions, blankets, books
 - Sensory armchairs and pockets
 - Tactile activities
 - Small vibrating items
 - Experiencing different temperatures



32

Multi-Sensory Experience

- Sound
 - Relaxation
 - Stimulation
 - Musical Instruments
 - Sing-along and rhythm sessions



33

Multi-Sensory Experience

- Smell
 - Scented rooms/space
 - Hand massage
 - Scented bags
 - The smell of every day things
 - Continued throughout the facility and the day



34

Multi-Sensory Experience

- Taste
 - Taste
 - Ensure you have a range of salt, sweet, sour, bitter
 - Texture
 - Ensure you have a range of different textures such as crunchy, soft, melting
- Movement
 - Different seating positions
 - Opportunities of movement



35

Stimulation and Relaxation

- Stimulating
 - Sight
 - Lights of high intensity, color red, reminiscent images and objects
 - Smell
 - Citrus smells, peppermint
 - Sound
 - Loud music, fast tempo, sing-along tunes, abstract sounds
 - Touch
 - Textured objects, spiky balls, random contact
 - Taste
 - Citrus fruits, peppermint, sour sweets, sherbet
 - Movement
 - Random movements, spinning



36

Stimulation and Relaxation

- Relaxing
 - Sight
 - Low level, slow changing lighting, fairy lights, Christmas tree lights
 - Sound:
 - Quiet music, slow tempo, natural sounds
 - Touch
 - Hand massage, stroking, soft fabrics such as fur, velvet, silk or fleece
 - Taste
 - Milky foods such as chocolate, pudding, yogurt
 - Smell
 - Lavender, smell of baking cakes or bread
 - Movement
 - Linear rocking such as a rocking chair



37

Control and Interaction

- Right level for the individual
- Promotes brain activity
- Increases confidence/feelings of self worth
- Opportunity and empowerment to choose
- Mastery over the environment



38

Age Appropriate and Useable

- Not perceived as juvenile or childish
- Dignity is important
- Items are in easy reach
- Ergonomically designed for elders



39

Helpful Design Tips

- Less is more
- Familiar items promote relaxation
- Avoid dramatic smells
- Do not use overhead lighting
- Space should hold only 4-6 people



40

Helpful Design Tips

- Play music at a moderate level
- Start small. Find a balance between high-tech items and familiar household items.
- Think through each of the senses
- Keep rooms neutral and light
- Use contrast for better visibility
- Use less complex artwork



41

For Example

- Office
- Virtual Forest
- Rummage dresser
- Outdoor garden shed
- Old car



42

Multi-Sensory Interventions

- **Massage and Touch**
 - To reduce depression and anxiety
 - Hand massage with calming music
 - Tactile input during meals
 - Gentle massage 3X/day
 - Intermittent touch with talking
 - **Massage and touch therapy may have beneficial effects**
(Hansen, et al., 2009; Gleeson & Timmins, 2004)



43

Multi-Sensory Interventions

Music

- **Reduces repetitive disruptive vocalizations and self-stim behavior** (Casby & Holm, 1994)
- **Promotes mobility skills and body awareness** (Pomeroy, 1993)
- **Improves posture, competence, and sensory awareness** (Gotell, Brown, & Ekman, 2003).
- **Reduces agitation and time spent with meals** (Sherratt, Thornton, & Hatton, 2004)
- **Ambient music played other than at mealtimes can reduce undesired behaviors** (Padilla, 2011)



44

Animal-Assisted Therapy

- **Robotic cats, plush toys, fish tanks, resident cat/dog**
 - Decreases in agitated and disrupted behaviors
 - Increases in social and verbal interactions
 - Decreases in passivity
 - Increases in nutritional intake

(Greer, et al., 2001; Martindale, 2008; McCabe, et al., 2002)



45

Specialized Environments

- Moderate level noise promotes improved engagement in activities (Mercado & Mercado, 2006; Cohen-Mansfield, 2010)
- Homelike, personalized rooms reduce behaviors
- Small dining rooms, large clock, printed mealtimes help with confusion (Chaudhury et al., 2013)



46

Montessori Approach

- Dr. Cameron Camp adapted the Montessori method to treat people with Alzheimer's
- Engages the senses and evokes positive emotions
- Stimulation of cognitive, social, functional skills
- Conducted one-on-one



47

Montessori Approach

- Use Everyday Materials
- Match Interests & Skills
- Use Past Experiences & Preferences
- Adapt According to Cognitive & Physical Status
- Simplify as Much as Necessary



48

Montessori Approach

- Every participant should have an activity that he/she can successfully handle
- If materials are used inappropriately, but engagement is strong, let the activity occur
- Provide demonstration as needed
 - Matching Shapes/Colors
 - Color Sorting
 - Picture Puzzle
 - Pairing & Sorting
 - Sensory Boxes



49

Montessori Approach

- Sensory boxes
 - Offer an opportunity to stimulate as many senses as possible, for example:
 - Balls box
 - Cereal Box
 - Kinetic Sand
 - Seeds
 - Food



50

Activities by Stage

- Early stage of dementia
 - Activities that focus on the whole task
- Mid-stage of dementia
 - Activities that focus on the individual steps of the activity
- Late stages of dementia
 - Activities that focus on the sensory part of the activity



51
