TH7- Non-Pharmacologic Interventions for Persons With Dementia in Residential Care: Strategies for Implementing Cognitive Stimulation Therapy

Thursday, March 22
8:00 AM- 11:30 AM

Session Description

This session will introduce participants to evidence-based, non-pharmacologic interventions that will expand knowledge and competence regarding strategies to address behavioral symptoms in persons with dementia and improve quality of life. Through three presentations, the interactive session will highlight non-pharmacologic interventions appropriate for the LTC setting with specific strategies for implementation of one, Cognitive Stimulation Therapy (CST), into the residential environment. The first presentation focuses on the evidence and options for interprofessional non-pharmacologic interventions with specific attention being devoted to Reminiscence Therapy, Validation Therapy, and Reality Orientation. The second and third presentations will focus on a well-researched non-pharmacologic intervention, Cognitive Stimulation Therapy (CST) which can be delivered by residential staff at multiple levels of clinical training to address behavioral symptoms and issues in persons with dementia.

Learning Objectives

Discuss the evidence for non-pharmacologic interventions for persons with dementia.
Describe criteria for appropriateness to receive non-pharmacologic interventions for persons with dementia.
Apply knowledge and skills gained to introduce Cognitive Stimulation Therapy within the residential care setting.
Implement strategies for integration and evaluation of Cognitive Stimulation Therapy.

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Presenter(s) Disclosures: All speakers have reported they have no relevant financial relationships to disclose.
Non-Pharmacologic Interventions for Persons with Dementia in Residential Care: Strategies for Implementing Cognitive Stimulation Therapy

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Speaker Disclosures

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Learning Objectives

By the end of the session, participants will be able to:

• Discuss the evidence for non-pharmacologic interventions for persons with dementia.
• Describe criteria for appropriateness to receive non-pharmacologic interventions for persons with dementia.
• Apply knowledge and skills gained to introduce Cognitive Stimulation Therapy within the residential care setting.
• Implement strategies for integration and evaluation of Cognitive Stimulation Therapy.

Non-pharmacological Interventions in Residential Settings

• Evidence supporting use
• Overview of psychosocial therapies for dementia

Medical model of dementia*

Predominantly used in assessment, formulation and treatment. Assumes that dementia is:
• A disease.
• Caused by organic (neurological) problems.
• Treated and managed according to medical authority.

Advantages:
• Can help communication amongst professionals.
• Can help people and families come to terms with the diagnosis.

Disadvantages:
• Medication has limited effects and is not suitable for all.
• Symptoms can be attributed to ‘the dementia’, without consideration of wider issues.

Dialectical model of dementia *

• Presents dementia as an interrelationship between neurological damage and psychological factors.
• Dementia = personality + biography + health + neurological impairment + social psychology.
• Model used to emphasise the importance of ‘personhood’ and person-centered care, which has had great impact on how dementia is viewed.

A Biopsychosocial model of dementia

DEMENTIA = NF + MS + SP + P + SS + E + PH + LE + M

- **NF** = Neurological factors
- **MS** = Mental stimulation
- **SP** = Social Psychology
- **P** = Personality
- **SS** = Sensory stimulation
- **E** = Environment
- **PH** = Health
- **LE** = Life events
- **M** = Mood


**Neurological factors**

- Different types of dementia defined by different pathologies.
- For example, Alzheimer’s involves atrophy (shrinkage) of the brain, plaques and tangles. Vascular Dementia involves restriction or loss of blood supply to the brain which destroys small areas of brain cells.
- No direct relationship between degree of brain pathology and dementia.
- Cases of advanced dementia with limited neurological damage at post-mortem and substantial neurological damage with limited dementia symptoms.
- A degree of cerebral atrophy in healthy aging.

**Mental stimulation (MS)**

- ‘Use it or lose it’: Mental activity can lead to new learning and increased cognitive functioning in dementia.
- Can lead to new neuronal pathways being formed / neuroplasticity.


**Social Psychology (SP)**

- Describes how the way that people are treated and spoken to by others impacts on their wellbeing and behavior.
- Kitwood’s ‘Malignant Social Psychology’: 17 common factors which Kitwood argued can exacerbate the symptoms of dementia, such as:
  - Disempowerment: Not allowing a person to use their abilities.
  - Infantalisation: Treating a person like a child.
  - Outpacing: Acting or behaving at a rate too fast for a person to follow or understand.


**Sensory Stimulation**

- High incidence of impairment in all senses in older people.
- For people with dementia, effects are likely to be exaggerated, due to inattention or difficulty in selecting appropriate information.
- Hebb (1953) demonstrated that students placed in sensory isolation can experience hallucinations. Care settings often provide little sensory input.


**Other factors**

- **Personality**: including coping mechanisms, intelligence and cognitive reserve.
- **Environment**: presence of memory aids and supports such as signposts, door markings, reminders.
- **Physical Health**: medication may impact on mood and increase confusion, pain may impact on symptoms of dementia.
- **Life events**: dramatic life events such as loss of important others or move into care can trigger dementia or exacerbate symptoms.
- **Mood**: significant overlap between depression, anxiety and dementia.
Examples of Psychosocial Therapies for Dementia

**Reality Orientation**
- "The presentation and repetition of time, place and person related information".
- Made important impact in 1960s: one of first non-drug interventions for dementia.
- 24 hour RO (used in every interaction) versus group RO. Tasks included maps, categorizing words/objects, food, current affairs.
- RO boards: contain information such as day, date, next meal, weather, news headline, name of home, daily activities.
- Some evidence-base for its effectiveness but rarely used in practice since.


**Reminiscence Therapy**
- Discussion about the past, often using prompts (e.g. pictures, objects, music) with groups or individuals (e.g. life review books).
- Focuses on long-term memory; the last to deteriorate in dementia.
- Extremely popular - helps to avoid failure experiences, aids communication.
- Cochrane review showed marginal improvements in cognition and mood.


**Reminiscence Leagues in Missouri**
- Cardinals Reminiscence League
  - 2011: CRL groups begin at VAMC
  - 2014: CRL group begins at St. Louis Alzheimer’s Association
  - In partnership with GEC, St. Louis Alzheimer’s Association develops CRL Tool Kit
  - 2017: 5 CRL groups active in the St. Louis area

Special Thanks to Alzheimer Scotland Reminiscence Networks: From sport to culture in communities – we are all connected
http://www.alzscot.org/asrn

**Evidence**
- Improved cognition, mood, behavior
- Reduction of caregiver strain
- Improved staff/member relationships
- Social nature of the groups may be an important factor in promoting the above benefits
General Principles of Reminiscence Work

• Well-prepared work
• Multisensory triggers (props)
• Shared conversations
• Groups comprised of members with similar cognitive-linguistic ability
• Small staff/participant ratio
• Topic or theme loosely related to known background and interests

Key Features of CRL

• Bi-weekly 1-1½ hour theme-based sessions
• 20-30 participants (including some care partners)
• Volunteer-led sessions
• Facilitated group discussions and activities
• Guest speakers and field trips

Session Structure

• Beginning and ending rituals
• Pledge of Allegiance
• Songs
• Theme-based poems, verses or cheers
• Refreshments
• Sharing memorabilia

To view the CRL Toolkit, visit http://www.alz.org/stl/in_my_community_64030.asp

Validation Therapy*

• An approach that focuses on the emotional meaning of what people say or do, rather than the factual content.
• Instead of orientating to facts or reinforcing the disorientated perception, use active, empathic listening.
• Emotions are not right or wrong, but always real.
• Cochrane review** highlighted lack of evidence-base.

Cochrane review**


Multisensory Stimulation

Stimulating the senses through sound, taste, touch, smell and visual images.

• Snoezelen rooms: calming music, visual stimulation from fibre optics and lava lamps, aromatherapy etc.
• No strong evidence to support aroma, light, or SMST interventions*
• Some evidence-base** showing improvement in mood and reduced behavioral disturbance.
• Also argued that too much stimulation is unhelpful / distressing. Can be incorporated into other techniques.

• Music therapy
• Decreased behavioral symptoms and anxiety;
• Evidence for overall effectiveness is not strong

People with dementia acting differently

How to help someone with Behavioral and Psychological Symptoms of Dementia (BPSD)

Things to check Things to do

P
• Are they sad?
• Are they taking their medication?
• Go to the Doctor
• Tell the Doctor what is happening

E
• Are they angry?
• Are they sad?
• Do not argue
• Reason and frame

A
• Can they do what they used to do?
• Are they less?
• Help them do what they used to do
• Help them feel useful

C
• Can they understand?
• Can they see and hear?
• Help them remember
• Speak their language
• Use interpreters

E
• Is the place ok for them?
• Are they getting lost?
• Keep things the same
• Keep them safe

*Abraha et al., BMJ Open 2017;16,7(3)e012759 (Systematic review of 38 systematic reviews and 142 primary studies);
**Folkerts et al., Archives of Gerontology & Geriatrics (Systematic review and meta-analysis of 15 studies of cognitive intervention in LTC);

Exercise Program

Balance, Strength, and Aerobic Exercises

• 15 min walking outside
• 5 min of weight lifting
• 5 min of sit and stand
• 5 min of throwing a beach ball
• 30 min of exercise, 3 days per week for 3 weeks

All Subjects

Agitated Subjects

All Subjects $p=.034$

Agitated Subjects $p<.001$

Discussion

Discuss:

1. Any experiences of using these approaches in your work.
2. Advantages / disadvantages of these approaches.

Introduction to Cognitive Stimulation Therapy

- Historical Perspective
- Development and Evidence
- Key Features and Guiding Principles

Cognitive Stimulation Therapy (CST)

Special Thanks to:
Cognitive Stimulation Therapy: Defined

- Cognitive Stimulation Therapy (CST) is an evidence-based group intervention for persons with mild to moderate dementia.
- CST provides guidelines for structuring small, theme-based group or individual sessions aimed at actively stimulating and engaging, while providing an optimal learning environment and the social benefits of a group or one-on-one interaction.

How did CST come about?

- Mid-nineties interest in positive non-drug approaches to dementia care
- Promising drug trials with rigorous methodology e.g. tacrine
- Psychological therapies as serious competitors to drugs
- Low quality of methodology of studies evaluating psych approaches
- Standard, sensitive instruments of measurement evaluating a range of outcomes in order to compare to drug trials
- Funding bodies should encourage large scale, robust, multi site studies inc. cost/benefits analysis
- Funding secured for the development of a psychological therapy package for dementia


Development of CST

- CST developed through systematic reviews of literature and pilot study*.
- 14 session program with themed activities (e.g. food, childhood)
- Designed to run twice a week for 7 weeks

Original CST study (2003)

- Multi-center, single-blind RCT of CST (14 sessions, 7 weeks delivered by researchers) vs. Treatment as Usual
- N=201 across 18 care homes & 5 day centers

Key findings

- Participants assessed at baseline and post CST/Treatment as Usual (7 weeks)
  - Improvements in cognition
  - Improvements in quality of life
  - Cost-effective compared to anti-cholinesterase inhibitors


CST Trial

- Multi-center, single-blind, randomised controlled trial (RCT).
- 23 centers (18 care homes, 5 day centres).
- 201 participants who:
  - Met DSM IV criteria for dementia.
  - Scored 10-24 on MMSE (mean score = 14).
  - Did not have significant visual or auditory impairments.
  - Did not have learning disability or major physical health problem.
  - Were not on dementia medication.
  - Groups run by two facilitators. Approximately 5 people in each group, others received treatment as usual.

CST Trial: Results*

- Cognition:
  - Mini-mental state examination (brief, widely adopted screening tool): significant improvement following CST (p=0.04).
  - ADMS-Cog (more detailed scale measuring cognition, used in drug trials): significant improvement following CST (p = 0.01).

- Quality of Life:
  - QoL-AD (brief questionnaire covering 13 areas of QoL, rated by person with dementia): sig. improvement following CST (p = 0.05)

**CST trial: Results**

- Adas-Cog divides into three subscales:
  - Memory and new learning
  - Language
  - Praxis
- Only significant subscale was language (p<0.05), which includes commands, spoken language, naming, word-finding and comprehension.
- No significant changes in functional ability (CAPE-BRS), depression (Cornell) or Communication (Holden): positive trends (p = 0.09).
- Adas-Cog divided into three subscales: verbal memory, non-verbal memory, and language
- Numbers needed to treat (NNT): number of people needed to be treated for one favorable outcome. Comparisons made using previous studies*
- For small improvements or no deterioration, CST not as effective as Rivastigmine, Donepezil and Galantamine.
- For larger improvements (4 or more points on ADAS-Cog), CST as effective as Rivastigmine or low dose (5mg) Donepezil.

**Cost-effectiveness**

- Analysis conducted in conjunction with London School of Economics (LSE)*.
- Incremental cost-effectiveness ratio: balancing cost difference between CST and usual activities with benefits.
  - £75.32 (U.S $131.81) per additional point on MMSE, £22.82 (U.S. $20) per point on QoL-AD.
- Conclusion: CST more cost-effective than usual activities, costs generally small.

**Comparison with cholinesterase inhibitors**

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- For small improvements or no deterioration, CST not as effective as Rivastigmine, Donepezil and Galantamine.
- For larger improvements (4 or more points on ADAS-Cog), CST as effective as Rivastigmine or low dose (5mg) Donepezil.

**Qualitative research**

- 34 participants (people with dementia, carers and staff) participated in individual interviews and focus groups.
- Asked about experiences of CST – positive or negative.
- Key themes emerging:
  - Positive experiences of being in group (e.g. supportive and non-threatening).
  - Changes generalized into everyday life: improvement in mood and confidence (finding talking easier), changes in concentration and alertness (wanting to attend to things more).

**Long-term benefits: Maintenance CST**

- Included 237 people with mild to moderate dementia who had previously received 14 sessions of CST. A third of the sample was on dementia medication.
- Intervention: weekly, 24-session program of Maintenance CST (MCST) compared to treatment as usual.
- MCST improved quality of life at 3 and 6 months, and activities of daily living at 3 months.

**Neuropsychological Mechanisms of change**

- 34 participants given detailed neuropsychological test battery before and after 7 weeks (14 sessions) of CST.
- Significant improvements (p<0.05) in verbal memory, non-verbal memory, language comprehension and orientation.
- No significant changes in executive function, praxis, attention/working memory, language expression.
What was the outcome of all this research?

Impact of CST

- UK best practice / routine care guidelines
- International guidelines e.g. Alzheimer’s Disease International
- CST used in over 25 countries
- World wide culturally adapted versions of CST
- 3 manuals published: CST, maintenance CST and individual CST

NHS Institute for Innovation & Improvement (Matrix Evidence, 2011)

- “An economic evaluation of alternatives to antipsychotic drugs for individuals living with dementia”.
- Analysis focused on cost of providing CST.
- Combining health care cost savings and QoL improvements, behavioural interventions generate a net benefit of nearly £54.9 million (U.S. $86.7 million) per year for the NHS.

Individual CST (iCST)*

- Involves one-to-one CST, led by home carers, professionals or volunteers. Follows similar themes to group CST.
- A total of 356 caregiving dyads were recruited and 273 completed the trial.
- 75 structured CST sessions for people with dementia, completed up to three times a week for 25 weeks. Family carers were supported to deliver the sessions at home.
- At follow-up, no differences in any of the primary outcomes when comparing iCST to treatment as usual.
- iCST improved relationship with carer and carer QoL.
- Uptake was low: people on average only received 33 sessions.

Implementation of CST

KEY FEATURES AND GUIDING PRINCIPLES

- 14 sessions, usually twice a week.
- Approximately one hour in length.
- Ideally 5-8 people in groups, run by two facilitators.
- Each session has choice of activities, to cater for interests and abilities of group.
- Group members should ideally be at similar stages of dementia, so activities can be pitched accordingly.
- Attention should be paid to gender mix.
CST Videos

Who should be included?

- Meet criteria for mild to moderate Dementia?
  - Can she/he have a “meaningful” conversation?
  - Can she/he hear well enough to participate in group discussion?
  - Is her/his vision good enough to see most pictures?
  - Is she/he likely to remain in a group for the whole session?

- YES
- YES
- YES
- YES
- NO
- NO
- NO
- NO

This person should not be included in the group.

Who benefits most?

Who benefits most?

- The higher the cognitive & brain reserve, the better the response to CST.
- People >80 years old
- Females
- People on anti-dementia drugs

Session Structure

**Introduction**
- Welcome every member individually
  - Orient members to beginning of group and one another
  - Fosters Rapport
- State the Group name
  - Chosen by Group members on first session
  - Encourages feeling of ownership of group
- Soft ball toss
  - Serves as a warm up and orientation
  - Increases level of alert and intensity
  - Tool for facilitators to gauge language
- Reference to day, weather, season (always on board as cue)
  - Implicit orientation

**Theme Song**
- Sung at beginning and end of each session
- Chosen by group members
- Offer group participants options to pick from
- Pay attention to songs relevant to demographic
- Short song or chorus only are appropriate
**Session Structure: Current Affairs**

- Pull from local and national sources
- Human interest stories are crowd pleasers
- Do not shy away from controversial topics
- Print out individual copy for each member
  - Day and Date for orientation
  - Pay close attention to font size

**Session Structure: Main Activity**

- Each CST session centers around a suggested activity found within the manual
  - Open to manipulation
  - Level A and Level II
  - Freedom to enrich the experience
    - Integrate music, sensory stimulation (baking cookies in an oven)

**Session Structure: Suggested activities for home/Closure**

- Suggested activities for home
  - May include in take home handout or copy of news article read at beginning of session
- Closure
  - Discuss time, day, and activity for next session
  - Ask members for their opinions regarding the group session

**Key Principles**

1. Mental stimulation
   - Getting people’s minds active and engaged.
   - You might explain that you are trying to get them to exercise skills that may not be used so much and stimulate different parts of the brain. Some sessions will be harder than others, but trying hard is good mental exercise! It can be useful to explain the evidence for CST from research.
   - When you plan sessions, the aim is to pitch activities so that people have to make an effort, but not too high (so they can potentially feel deskillled).

2. New thoughts, ideas and associations.
   - Often with people with dementia, we tend to talk about things from the past. Whilst this is enjoyable for people, it often involves recalling information which has been over-rehearsed.
   - The aim of CST is to continually encourage new ideas, thoughts and associations, rather than just recall previously learned information.
   - Example – faces session. Show more than one face and ask questions such as ‘what do they have in common?’ ‘How are they different?’ ‘Who would you rather be?’
3. Using orientation sensitively and implicitly

- Orientation needs to be done in a subtle, implicit way at the beginning of each session.
- Orientation information such as the date, name of group and group members, activity of the day and news headline should always be written on the 'RO board', and you might refer to the board in your discussion. “Do you think this weather is normal for July, or is it hotter / colder than usual?”
- Orientation can be used in sessions e.g. seasonal food, seasonal collage.

4. Opinions rather than facts

- People will often be wrong, if we ask people for their opinions, then they may be amusing, sad, unusual, controversial or puzzling, but they cannot be wrong.
- Example: ask "what do you think of politicians?" rather than "who is prime minister?"
- Avoid questions beginning 'Who can remember...?'

5. Using reminiscence as an aid to the here-and-now

- Using past memories is an excellent way of tapping into a strength that many people with dementia have, in terms of recalling experiences.
- Ensure you know the background of the group members to avoid upsetting them when talking about past memories.
- Reminiscence can also be a useful tool towards orientation, a key goal of CST. E.g. comparing prices over time in ‘Using Money’.

6. Providing triggers to aid recall

- Using a Reality Orientation board is a useful way of triggering memories and aiding recall.
- Multi-sensory cues – introduce visual images, sound, smell, taste and touch.
- Always have something to look at or touch aids concentration. E.g. Make multiple copies of materials rather than passing things round.
- Use nonverbal communication as well as verbal; your facial expression, tone of voice, posture and gesture will speak volumes!

7. Continuity and consistency between sessions

- Memory and learning is supported through providing continuity and consistency between sessions.
- Examples:
  - Referring to the group name
  - Running groups in the same room
  - Starting sessions and ending sessions in a similar way

8. Implicit (rather than explicit) learning

- Ideally, people will not be too aware that they are learning and being stimulated, perceiving the groups more as 'fun activity groups'.
- Avoid asking direct questions
- Avoid putting people 'on the spot'.
9. Stimulating language

- Evidence from the research that language skills improve after CST.
- Sessions stimulate language, for example naming of people and objects, word construction and word association.

10. Stimulating executive functioning

- Executive functioning skills, particularly involving planning and organizing, are often very impaired in dementia.
- Several sessions exercise these skills, for example planning and executing stages of a task (making a cake in ‘being creative’, selecting food for a meal in ‘food’).
- Mental organization is exercised through the discussion of similarities and differences.

11. Person-centred*

- Valuing people with dementia and their carers by treating them as they would want to be treated at all stages of the dementia.
- Treating people as individuals, e.g. through consideration of their histories, personality and coping mechanisms.
- Looking at the world from the perspective of the person with dementia, as the subjective experience of the individual is considered reality. E.g. through art or poetry.
- Providing a positive social environment in which the person with dementia can experience relative well-being.


12. Respect

- Avoid doing anything to expose people’s difficulties in the group.
- Get to know what is important to each individual.
- Value the diversity of views, opinions and beliefs within a group.
- Allow people to be different.
- Respect should be demonstrated with yourself and group members as well as amongst each other.

13. Involvement

- If during the group, you find yourself doing most of the talking, or talking ‘at’ the group, stop!
- Offer choices of activities that will interest and engage your particular group.
- Encourage group members to address their contributions to each other.

14. Inclusion

- Isolation? Is this due to hearing or vision problem?
- If the person is a little shy, encourage a more socially active group member to engage with them.
- If one person in the group has different views or opinions from all the other members, ensure they are not rejected.
- Diversity of views is welcomed.
15. Choice

- The group program is not prescriptive.
- Group members should always be offered choices, geared to levels of ability or interests.
- Group members should become involved in making the group their own – selecting a name for the group, choosing songs.
- The activities have been organized according to how demanding they are on the person's memory and other cognitive skills and ordered accordingly.

16. Fun

- Groups should provide a learning atmosphere which is fun and enjoyable.
- If members make comments about 'school', ask them what they liked and disliked about school, and reflect on whether the group leaders are taking on the role of 'teacher' too readily.
- Avoid using equipment that is childish.

17. Maximizing potential

- People with dementia often function at less than their full potential, perhaps due to lack of stimulation or opportunity.
- Give the person time. Be careful not to overload them with information, and provide just enough prompting to enable the person to carry out the activity themselves.
- People with dementia are more likely to achieve their potential by 'doing' rather than sitting passively.

18. Building and strengthening relationships

- The group sessions will help members get to know each other better.
- They can strengthen relationships between the members and leaders.
- Assist members, join in, have fun.
- See it as a small group activity, away from some of the care-giving pressures.

CST in Practice

- Why does CST work?
- Implementation and evaluation
- Combining exercise with CST

How do we think CST works?

Use it or lose it – taking part in mentally stimulating activities strengthens & creates new neuronal connections.

- Provides complexity, novelty & diversity required for transferrable cognitive gains (Moreau & Conway, 2014)
- Impact on memory:
  - Short Term Memory: how many pieces of information you can hold onto for short periods of time. Information comes in from auditory and visual systems primarily.
  - Long Term Memory: if value is placed on information in short term memory, it will move to long term. Repeatedly about information helps it stick.
  - Working Memory: taking information from short and long term and assimilating or manipulating it. Basis for higher executive function.

CST quality participants through prompting memories and thoughts to stimulate working memory for assimilation and manipulation of thoughts. “Turning the lights on.”
Continued:

- **Positive reinforcement** of questioning, thinking about and interacting with objects
- **Social environment** is positive & stimulating participants perceive CST as an enjoyable experience and are more likely to continue to participate
- Sense of belonging, sense of achievement and getting physiological rib cage expansion with slow release all aide in serotonin release
- **Improves overall self-esteem, confidence**

QoL is mediated by improvements in cognition

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**HPA Axis**

- Amygdala: activates stress response, role in fear/emotion (sub-dominant), over-rides prefrontal cortex (executive function)
- Hippocampus: role in connecting old and new learning (dominant), and in negative feedback system to shut off HPA axis, vulnerable to cortisol levels (atrophy)
- HPA axis negative feedback system-elevated cortisol levels inhibit hypothalamus and pituitary so system shuts off

Provides for controlling anxiety and therefore the HPA axis cycle activation by avoiding placing participant in an uncomfortable or anxious position this in turn allows for memory recall and learning to take place (hippocampus/dominant hemisphere)

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**CST session themes**

| Physical games | Being creative |
| Sound | Categorizing objects |
| Childhood | Orientation |
| Food | Using money |
| Current Affairs | Number games |
| Faces / Scenes | Word games |
| Word Association | Team quiz |

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**Making a difference 2 – Maintenance CST sessions**

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**Example of CST Activities**

**Session one: PHYSICAL GAMES**

Activity: Indoor bowling (seated or standing)

**Level A:**
Split group into teams and play a few rounds of bowling.

**Level B:**
To add complexity, ask members of the group to write their names on slips of paper and pick them out of a hat to allocate each other to teams. Have group members keep track of, and calculate scores on the whiteboard.

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**CST in Action**

**CST Manual Clips**

*When watching the DVD, think critically about:*

Key principles: Any demonstrated well? Any not used sufficiently?

- **Facilitator:** Style / manner, wording of questions, body language.
- **Environment:** Room, lighting and ambience, seating, presentation of materials.
- **Activity:** Suitability to group – too easy / too challenging? Is it enjoyable?
Exercise: Role-Play

- 2 people act as group facilitators, remaining people as participants
- Sessions to be role-played:
  a) Faces / scenes
  b) Categorizing objects
- Issues for discussion:
  a) What was it like running that particular session?
  b) Is there anything you could do differently next time?

Session 6: Faces / Scenes

- Prepare multiple (laminated) photographs of famous faces or of local scenes, to stimulate discussion.
- Give people one or more pictures of famous faces and ask for opinions, such as:
  a) Who is the most attractive?
  b) What do they have in common?
  c) How are they different?
- Use pictures of local scenes to encourage reminiscence and compare the past with the present.

Session 9: Categorizing Objects

- Get one person to pick from a selection of categories (e.g. men’s names) and letters. Get group to think of many words in that category beginning with that letter.
- Place objects or pictures of objects on a table and ask the group to categorize them, for example items found in different rooms in the house.
- Place objects or pictures of objects on a table and ask the group to identify the ‘odd one out’.

Individual CST (iCST)

- The individual CST program is delivered by a relative, close friend, volunteer, or professional for:
  a) 30 minutes a session
  b) 3 times a week
  c) over 25 weeks
- Ideally same time each session
- Each individual CST session consists of a themed activity (i.e. life story, discussion of current affairs, being creative) and is designed to be mentally stimulating.
- Centered around fostering relationship

Preparation for the groups

- Assessment of individuals – strengths, sensitive areas, interests, literacy, etc.
- Explaining nature and purpose of CST groups.
- Organizing transport, a room, staff.
- Preparing CST sessions.
  a) making sessions culturally appropriate
  b) mindful of language/translation and activities
First US CST Study

- 3 sites across Missouri
- 2 rural sites, 1 urban site
- Pre and Post Test Measures
  - SLUMS (Cognition)
  - Cornell Scale for Depression
  - Quality of Life-AD
  - Timed Up and Go
  - Caregiver QoL
  - Caregiver Cornell Scale for Depression

Sample:
- N: 174
- Mean: 78.55 years (±10.01)
- Gender: 63.2% female
- Residence: 74.5% community dwelling
- Race/Ethnicity: 75% Caucasian, 25% African American
- Education: 95.1% HS Graduate

Results:

- Mean Differences after 7 weeks & 12 months
  - SLUMS (out of 30) vs. CSDD (≥12 depression) vs. QoL-AD (out of 52)
  - Combined scores from A.T. Still University / Perry County Memorial Hospital
  - Comparison of Means at 7wks & 12m

Cognitive Stimulation Therapy: NHC Nursing Home

- Mental Status
- SLUMS vs. DAS

Maintenance Cognitive Stimulation Therapy (MCST) in Long Term Care

- Combined scores from A.T. Still University / Perry County Memorial Hospital
- Comparison of Means at 7wks & 12m
- SLUMS vs. CSDD vs. QoL-AD

Assessment of participants

- SLUMS
- QOL-AD
- Cornell Scale for Depression in Dementia
- Short Blessed
- Trailmaking A and B
- Strengths, sensitive areas, interests, literacy, hearing, etc.
Combining Physical Exercise with CST

**Benefits of Combining Exercise with CST**

- Possibility that exercise could further improve cognition, and physical functioning leading to improvements in quality of life for older adults.
- Enjoyment and benefits of group interaction.
- Opportunity for physical exercise that might otherwise be difficult to get participation.
- Improved overall physical functioning reducing risk of falls and disability.
- Maintaining optimal level of independence.

**Guidelines for Exercise in Older Adults**

- **Aerobic Exercise**
  - Moderate Intensity: 30 minutes/day, 5 days/week
  - Vigorous Intensity: 20 minutes/day; 3 days/week
- **Resistance Exercise**
  - At least 2 nonconsecutive days/week
- **Flexibility Exercise**
  - At least 2 days/week for at least 10 minutes
- **Balance Exercise**
  - American College of Sports Medicine and the American Heart Association

**Baseline Testing prior to start of CST**

- **Five times Sit to Stand Test**
- **The Functional Reach Test**
- **The Timed Up and Go (TUG) Test**

**Comparison of Mean Change CST with Exercise N=28 vs Traditional CST N=50**

<table>
<thead>
<tr>
<th>Measure</th>
<th>CST Group with Exercise (n=28)</th>
<th>CST Group (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLUMS score: mean</td>
<td>3.50</td>
<td>2.65</td>
</tr>
<tr>
<td>CSDD score: mean</td>
<td>3.71</td>
<td>2.72</td>
</tr>
<tr>
<td>QoL-AD score: mean</td>
<td>4.82</td>
<td>3.46</td>
</tr>
<tr>
<td>Timed Up &amp; Go score: mean</td>
<td>4.07</td>
<td>-</td>
</tr>
<tr>
<td>Functional Reach score: mean</td>
<td>2.58</td>
<td>-</td>
</tr>
<tr>
<td>Five Times Sit to Stand score: mean</td>
<td>4.19</td>
<td>-</td>
</tr>
</tbody>
</table>
Post Questionnaire: Common Themes

Participants:
"I am feeling stronger and have more energy."
"I have more confidence in walking upstairs and longer distances."
"I am able to walk without my walker or cane, and haven’t had any falls."

Facilitator Observations:
"Overall improvements in mobility, less fear of movement and physical activity."

Next steps: Successful Implementation of CST in Residential Care

Things to consider:
• Program Management:
  • Assigning internal clinical leadership/ outside contracting
  • CST Facilitators
• Sustainability:
  • Administrative support: assuring staff have the tools for successful effective implementation
  • Reimbursement and methods for billing
  • Finding creative ways to support long term maintenance CST
  • On-going Education
  • System wide continued education

For More Resources:
• Cognitive Stimulation Therapy: University College London
  • http://www.cstdementia.com
• The Gateway Geriatric Education Center
  • aging.slu.edu

Upcoming Training
• Full-Day CST Training
  June 6, 2018
  Saint Louis University
  Register at: aging.slu.edu

Thank you