Cognitive Stimulation Therapy (CST) for dementia

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Cognitive Stimulation

• Distinguish from cognitive training and cognitive rehabilitation (Clare & Woods, 2004)

• Cognitive stimulation:
  – Targets cognitive and social function
  – Has a social element – usually in a group or with a family care-giver
  – Cognitive activities do not primarily consist of practice on specific cognitive modalities

“\textit{I have no relevant financial relationships to disclose}”
People with mild/moderate dementia of all types should be given the opportunity to participate in a structured group cognitive stimulation programme … provided by workers with training and supervision … irrespective of any anti-dementia drug received …’
CST & maintenance CST programme

Making a difference

An evidence-based group programme to offer cognitive stimulation to people with dementia

The manual for group leaders

Aimee Spector, Lene Thorgimsson, Bob Woods, Martin Orrall

Promoted by The Journal for Dementia Care

Making a difference 2

An evidence-based group programme to offer maintenance cognitive stimulation therapy (CST) to people with dementia

The manual for group leaders

Elisa Aguirre, Aimee Spector, Amy Bradley, Juanita Hoe, Bob Woods, Martin Orrall

Promoted by The Journal of Dementia Care
The programme

1) 14, 45 minute sessions (2 x week, 7 weeks)

2) Participants asked to give a group name

3) RO board

4) Sessions begin with warm up exercise

5) Bridging between sessions, consistency in time, place, participants and facilitators

6) Presenting sessions in a fun and stimulating way
CST Key Principles

- Orientating people sensitively / when appropriate
- Information processing and opinion rather than factual knowledge -> implicit learning
- Multi-sensory stimulation
- Flexible activities to cater for group’s needs and abilities
- Using reminiscence (as an aid to here-and-now)
- Building / strengthening relationships
CST trial  (Spector et al., 2003)

• 23 centres (18 care homes and 5 day care)
• A multicentre Randomised Controlled Trial (RCT)

Attrition Rate: n= 201, n=168  at follow up

Significant improvement in the primary outcome measures cognition and quality of life

Improvement in QoL mediated by improvement in cognitive function

Numbers needed to treat for cognition = 6 similar to AChEIs
Treatment and Control Groups - differences between baseline and follow up: Cognition \((n=201)\)

- **MMSE**
  - Treatment: \(p=0.04\)

- **ADAS**
  - Treatment: \(p=0.01\)
Treatment and Control Groups - differences between baseline and follow up: Quality of Life (n=201)

change
QOL

p=0.03
Cost-effectiveness (Knapp et al., 2006)

CST is more cost-effective than usual activities using both outcome measures:

- Incremental cost-effectiveness ratio: £75.32 per additional point on MMSE (111 euros), £22.82 per point on QoL-AD (33.2 euros)
- Donepezil had larger cost per incremental outcome gain (AD2000, 2004)

Conclusions: Small costs outweighed by larger gains likely that decision makers will see CST as cost-effective.

Limitations – short time span, mainly focused on people in residential care
Cochrane Review 2012
Woods, Aguirre, Orrell, Spector

• 15 trials, 407 treatment and 311 controls participants
• Length of intervention varied: 1 to 24 months
• MMSE difference at follow up = 1.74 points (Z = 5.57, p < 0.00001)
• Holden Communication Scale SMD = 0.47 (Z = 3.22, p = 0.001)
• Wellbeing/QoL SMD = 0.38 (Z = 2.76, p = 0.006)
• Depression (GDS) SMD = 0.34 (Z = 1.88, p = 0.06)
• No benefits to ADL, behaviour, or carers measures
Development of the MCST trial programme

1. Identifying the evidence
2. Identifying the theory
3. Modelling

Development Steps (Craig 2008)

Evidence based
- Cochrane Review

Qualitative Methods
- Consensus Conference
- Focus Groups
- Delphi Survey

Final MCST programme

Draft version 1 → Draft version 2 → Draft version 3 → Draft version 4

Draft versions

Methods

Outcome
Maintenance CST development

• Extract features of research trials which had demonstrated effectiveness

• New themes: Useful tips (caring from oneself, memory tips, use of calendars, alarms) and Visual Clips from Requena (2007) and Olazaran (2004)

• 24 sessions based on the CST and MCST pilot plus new identified studies

• Presentation of the draft version 1 in a consensus conference to develop draft version 2 of the manual.
Modelling the programme
9 Focus Groups
(Aguirre et al., 2010)

• 17 people with dementia, 13 staff and 18 family carers
• Inductive thematic analysis to examine user perceptions of the Maintenance CST programme
• Mental stimulation highly valued by PWD, vital to keep healthy and active.
• Most family carers and staff very positive towards cognitive stimulation programmes BUT some concerns:
  - When use it or lose it doesn’t apply
  - Concerns about loss of confidence, anxiety, sense of inferiority.
Focus Groups results
(Aguirre et al., 2010)

• Positive agreement was found among 14 themes and suggestions were made for the 5 remaining themes.

• Carers and staff rated using money and current affairs very low - felt using money could be a sensitive topic and current affairs was a theme people with dementia wouldn't relate to.

• In contrast people with dementia expressed a great interest in the using money theme and in the news.
Maintenance CST vs. CST

Randomised 272

8 to 10 Participants
CST group A

8 to 10 Participants
CST group B

Randomised 236

8 to 10 participants
TAU

8 to 10 participants
MCST

BASELINE ASSESSMENT

7 WEEKS CST
Twice a week (14 session)

BASELINE ASSESSMENT 2

3 MONTH Follow Up

24 WEEKS MCST
Once a week (24 session)

6 MONTH Follow Up
CST Predictors of change

- 272 recruited to CST groups as first stage of Maintenance CST Trial and 236 completed 7 weeks
- Improvement 1.09 MMSE points ($p < 0.001$), ADAS-Cog 2.34 points ($p < 0.001$)
- Improvement 1.85 DEMQOL points ($p < 0.003$)
- Female gender was associated with higher improvement
- Use of ACHEIs did not alter improvement
Maintenance CST Trial – results

• 236 participants (123 MCST/123 CST only)

• After 6 months MCST
  – Quality of life better QoL-AD $p = 0.03$

• After 3 months MCST
  – Quality of life better (proxy)
    DEMQOL $p = 0.03$, QoL-AD $= 0.01$
  – ADCS-ADL better $p = 0.04$

• People on ACHEIs did significantly better on cognition if MCST rather than on CST only
CST mechanisms of change

• Qualitative study of experiences of the people attending CST groups, carers & group facilitators (N=34)

• Data analysed using Framework Analysis

• Two main themes: 'Positive experiences of being in the group' & 'Changes experienced in everyday life'

• Experience of CST seen as being emotionally positive

• Most reported some cognitive changes.

• Findings support the mechanisms of change suggested by the previous RCT of CST.

• Spector, Gardner, Orrell 2011
What is the Individual CST programme?

- Delivered by carer 2 times a week for 20-30 minutes
- 75 individual CST sessions
- 25 week programme
- Themed activities eg: Number Games
- Manuals and resource workbook
- $n = 356$ in trial
Positive outcomes for people with dementia

Mum is enjoying the activities

Mum’s conversational skills seem to have improved

Mum is more alert after sessions

My dad’s mood is lifted during sessions

My mum seems more confident and like her old self

My mum is enjoying the activities
The Individual CST trial

- 356 participants across 8 UK centres seen at baseline, 3 & 6 months
- Randomised to intervention (180) or usual care (176)
- Main outcomes: no significant benefits to cognition or quality of life for the person with dementia
- Improved the quality of the patient-carer relationship for the person with dementia at 6 months ($p = 0.02$)
- Improved quality of life for the carer at 6 months ($p = 0.014$)
- When number of sessions conducted was included in analysis, carer depression also improved ($p = 0.018$)
- When number of sessions conducted was included at first follow up cognition (MMSE $p = 0.104$) and quality of life (QoL-AD $p = 0.084$) for the person with dementia were close to significance.
Cognitive Stimulation Therapy for dementia

- Cognitive and social activities in group or with family carer
- Easy to deliver using standard manuals & DVD
- CST principles also useful in practice
- Cost effective (Knapp et al 2006) and savings to NHS of potentially £54 million/year (Institute for Innovation 2011).
- Works in synergy with cholinesterase inhibitors
- Used in 65% of UK memory services and in 21 countries
- CST website:  [www.cstdementia.com](http://www.cstdementia.com)
- Making a difference 1/2 and DVD from [http://www.careinfo.org/books/](http://www.careinfo.org/books/)
- 25 countries using CST
- Join the CST Network - email a.spector@ucl.ac.uk