

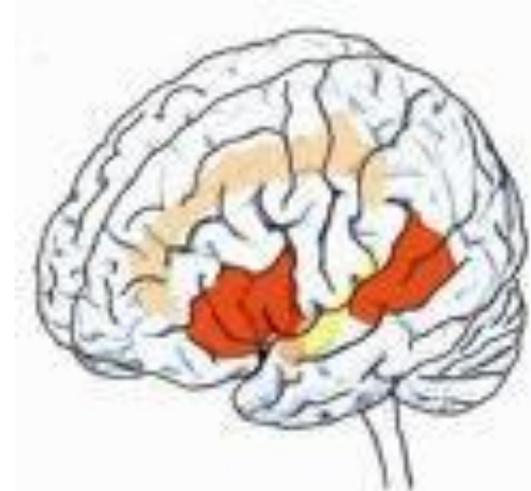
Cognitive Stimulation Therapy (CST) for people with dementia

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CST_Intl



What is CST?

- A brief group programme, for people with mild to moderate dementia, living in a range of settings.
- 14 themed sessions, designed to run twice a week for 7 weeks.
- Key aims: to improve cognitive functioning using techniques that exercise different cognitive skills.
- Achieved through a variety of means including executive functioning tasks (e.g. categorisation), multi-sensory stimulation, and reminiscence as an aid to orientation.
- Based on concept of ‘use it or lose it’: brain needs to be exercised in order for skills to be retained.
- Follows a simple manual: <https://hawkerpublications.co.uk/>

CST: The 14 Sessions

Physical games

Being creative

Sound

Categorising objects

Childhood

Orientation

Food

Using money

Current affairs

Number games

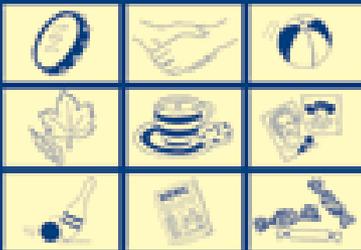
Faces / scenes

Word games

Associated words

Team quiz

Making a difference



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

The manual for group leaders

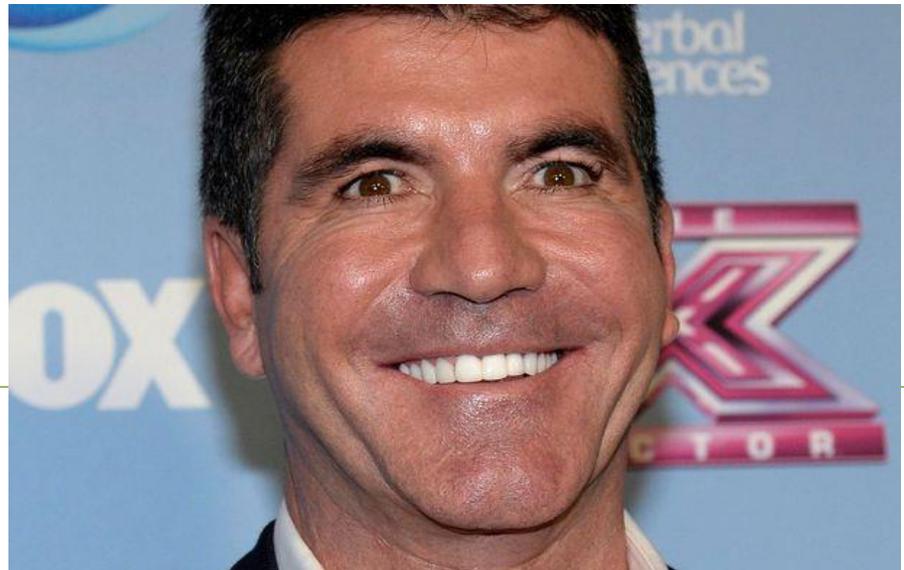
Anna Spector, Lena Thorgeman,
Daisy Woods, Marie O'Neil

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Updated Key Principles

1	Mental stimulation
2	New ideas, thought and associations
3	Using orientation, sensitively and implicitly
4	Opinions rather than facts
5	Using reminiscence as an aid to the here-and-now
6	Physical movement
7	Providing triggers and prompts to aid recall and concentration
8	Continuity and consistency between sessions
9	Implicit (rather than explicit) learning
10	Stimulating language
11	Stimulating executive function
12	Person-centred
13	Respect
14	Involvement and inclusion
15	Choice
16	Fun
17	Maximising potential
18	Building / strengthening relationships

New ideas, thoughts and associations



Opinions rather than facts



What is the Research Evidence?



- The first trial* included 201 people with dementia living in care homes or attending day centres.
- Significant improvements in CST group, compared to 'usual care' control group, demonstrated in:
 - Cognition (ADAS-Cog, $p=0.01$; MMSE, $p=0.04$) Both measured memory, language, and executive functioning.*
 - Quality of life, as measured by the person themselves and a proxy-rater (QoL-AD, $p=0.03$)*
- CST had similar impact on cognition to Galantamine, Rivastigmine and Donepezil**, as well as quality of life benefits.

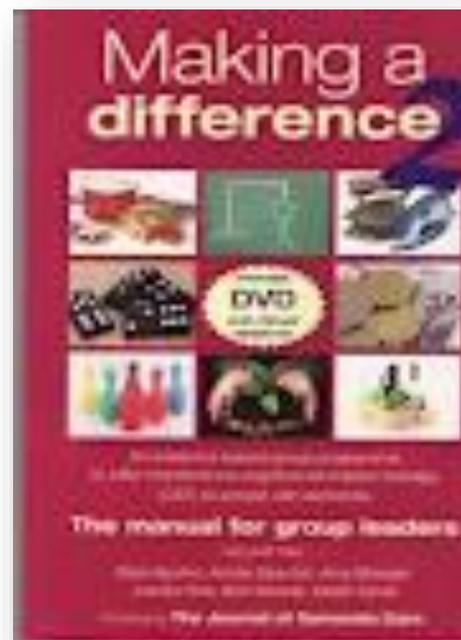
*Spector A, Thorgrimsen L, Woods B, Royan L, Davies S, Butterworth M, Orrell M (2003). Efficacy of an evidence-based cognitive stimulation therapy programme for people with dementia: randomised controlled trial. *British Journal of Psychiatry*, 183, 248-254.

**Livingston, G., & Katona, C. (2000). How useful are cholinesterase inhibitors in the treatment of Alzheimer's disease? A number needed to treat analysis. *International Journal of Geriatric Psychiatry*, 15(3), 203-207.

Long-term benefits: Maintenance CST

- Follow-up trial (n=237) evaluated a weekly, 24-session programme of Maintenance CST (MCST) compared to TAU.
- A third of the sample was on dementia medication.
- Significant improvements in quality of life at 3 and 6 months, and activities of daily living at 3 months.
- Cognition was higher in MCST group but the difference was not significant.
- Greatest improvements for those receiving both medication and MCST.
- Conclusions: There is good evidence for the benefits of continuing CST beyond the initial programme. Whilst people are still willing and able, CST should be continued.

*Orrell M, Aguirre E, Spector A, Hoare Z, Woods RT, Streater A, Donovan H, Hoe J, Russell I, (2014) Maintenance cognitive stimulation therapy (CST) for dementia: single-blind, multicentre, pragmatic randomized controlled trial. *British Journal of Psychiatry* 2014 (204): 1-8.



Individual CST (iCST)*

- One-to-one CST, led by family caregivers, following similar themes to group CST.
- 356 caregiving dyads were recruited, 273 completed the trial.
- 75 CST sessions, delivered up to three times a week for 25 weeks. Family caregivers were supported to deliver the sessions at home.
- At follow-up, no differences between iCST and TAU in cognition or quality of life.
- iCST improved relationship between the person and their caregiver and caregiver QoL.
- Significant limitations including low uptake (people on average received 33 sessions) and poor adherence to manual.
- **Pilot study of 14 session iCST programme delivered by psychologists (n=33) found significant improvements in cognition.

*Orrell, M., Yates, L., Leung, P., Kang, S., Hoare, Z., Whitaker, C., ... & Pearson, S. (2017). The impact of individual Cognitive Stimulation Therapy (iCST) on cognition, quality of life, caregiver health, and family relationships in dementia: A randomised controlled trial.

PLoS Medicine, 14(3), e1002269.

**Gibbor, L., Forde, L., Yates, L., Orfanos, S., Komodromos, C., Page, H., Harvey, K. & Spector, A. (2020). A feasibility randomised controlled trial of individual Cognitive Stimulation Therapy (iCST) delivered by professionals: impact on cognition, quality of life and positive psychology in people with dementia. *Aging and Mental Health*, in press.

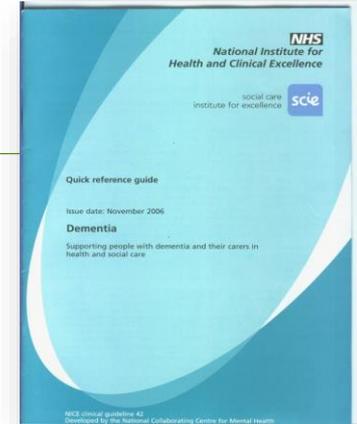
International CST research

- Recent systematic review * of studies evaluating this specific CST protocol, many culturally adapted.
- Included 12 papers of which 8 were RCTs and 4 were pre-post studies.
- Included research from the UK, US, Hong Kong, Japan, Tanzania and Portugal.
- All 12 studies examined cognition, with 9 finding a significant positive impact.
- 4 studies examined impact on specific cognitive domains, confirming that the greatest impact was on language.
- 9 studies examined QoL, of which 4 found significant positive impacts.
- 8 studies examined depression, of which 4 found significant positive impacts.
- 3 studies examined impact on caregivers, with 2 finding some benefits.
- Demonstrates how CST can successfully be generalised across language and culture.

*Lobbia, A., Carbone, E., Faggian, S., Gardini, S., Piras, F., Spector, A., & Borella, E. (2018). The Efficacy of Cognitive Stimulation Therapy (CST) for People With Mild-to-Moderate Dementia. *European Psychologist*.

CST Implementation: UK

- 2006: UK Department of Health NICE guidelines recommended group Cognitive Stimulation for cognitive symptoms of dementia.
 - Only non-pharmacological treatment recommended for cognition in dementia, ‘irrespective of any anti-dementia drug prescribed’.
 - 2018: UK NICE guidelines introduce a section on ‘interventions to promote cognition, independence and well-being’.
- ▶ “**Offer** group Cognitive Stimulation therapy to people living with mild to moderate dementia.” *
 - ▶ “**Consider** group Reminiscence Therapy, Cognitive Rehabilitation, Occupational Therapy”.
 - ▶ “**Do not offer** acupuncture, Cognitive Training, Interpersonal Therapy, Ginseng, Vitamin E supplements, herbal formulations or deep brain stimulation”.
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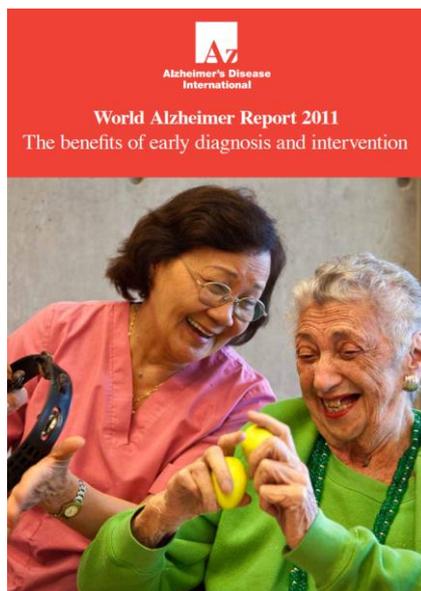


Use of CST in the UK

- 2018 survey* . 186 UK memory services contacted, 57 responded. Key findings:
- 50/57 offered CST, huge variation in provision.
- Nearly half offered sessions once a week rather than twice a week.
- Only 13 offered all 14 sessions, with the mean number of sessions offered being 11.54
- Average group size was 7.6 (range 2-12)
- 37 offered additional caregiver support.
- Main outcomes were quality of life and cognition (through standardized measures, mainly MMSE, ACE-III and MOCA) and quality of service, assessed through audit and observation.
- Diverse range of clinical staff able to provide CST. 9 different disciplines including Clinical Psychologists, Occupational Therapists, healthcare assistants, nurses and support workers.

* Holden & Spector (2018). Cognitive Stimulation Therapy Provision within the National Health Service. MSc thesis, UCL.

World Alzheimer Report 2011



CST is a low cost intervention that should be routinely offered to people with early stage dementia

Alzheimer's Disease International. (2011). *World Alzheimer Report 2011: The benefits of early diagnosis and intervention*. London, UK.

Adaptation of CST to different cultures and languages*

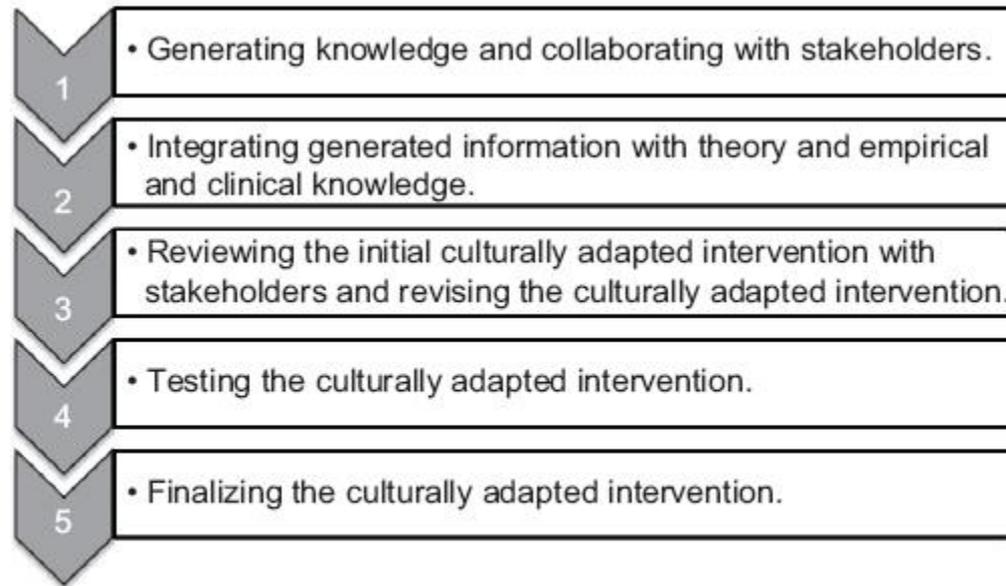
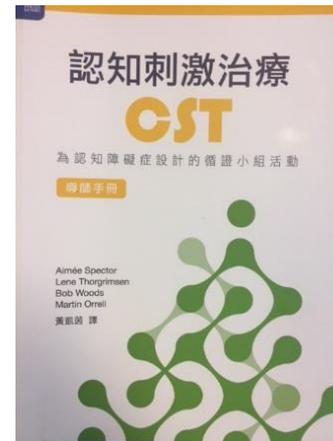
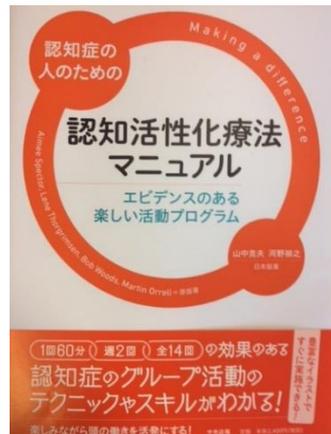
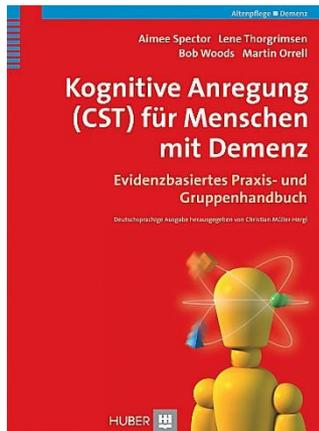


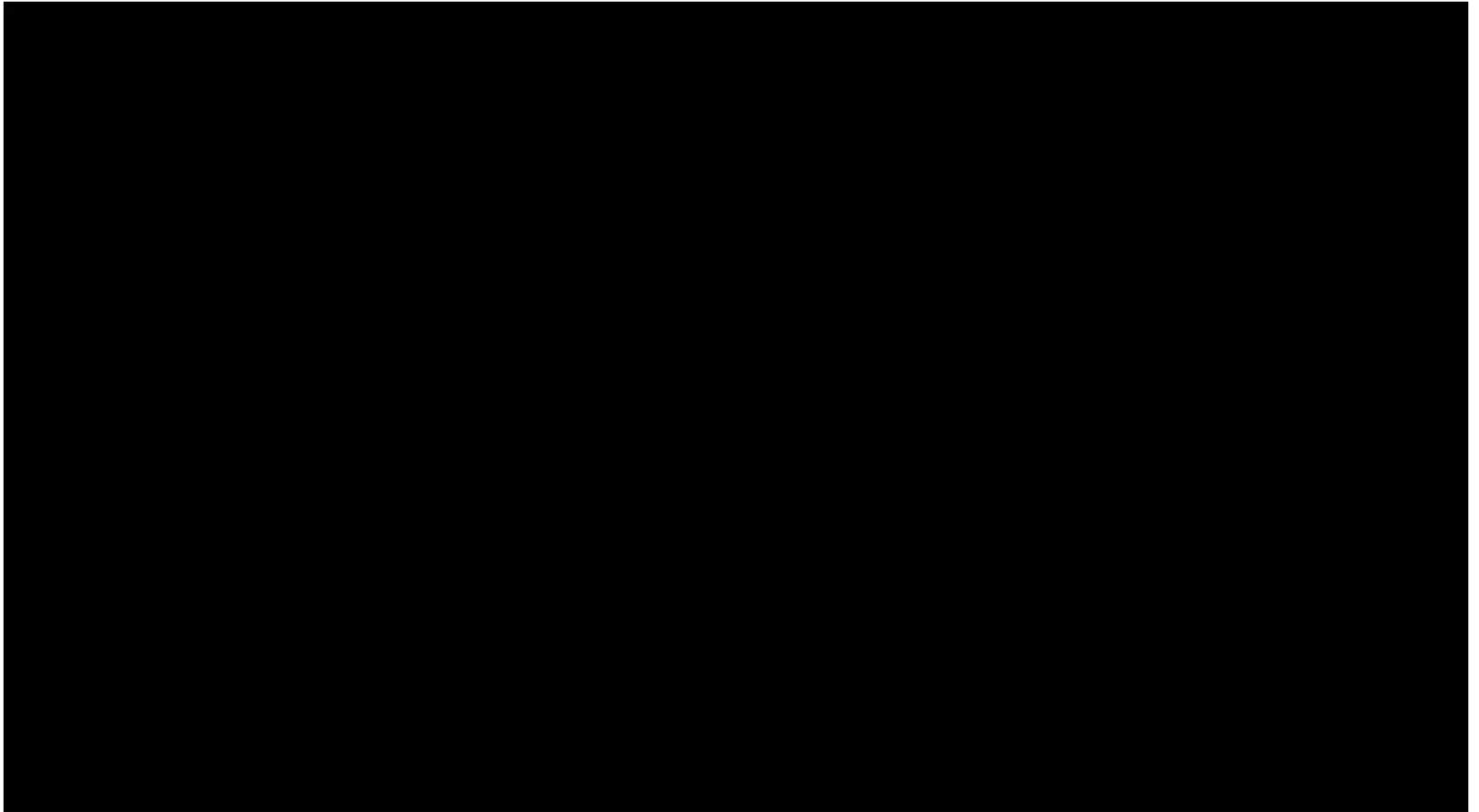
Figure 1 The five phases of the formative method for adapting psychotherapy.

International CST Centre/ Global CST Implementation

- International CST centre at UCL aims to a) Share information and encourage international collaboration and b) Bring people together for biannual CST conferences / training days.
- <https://www.ucl.ac.uk/international-cognitive-stimulation-therapy>
- CST now reported in at least 30 countries and in every continent except Antarctica. Manual now translated into multiple languages.



**Every 3 minutes,
someone in the UK
develops dementia**



Cognitive Stimulation Therapy (CST) for People with Dementia: International Implementation in Brazil, India and Tanzania



GACD
GLOBAL ALLIANCE FOR CHRONIC DISEASES
AN ALLIANCE OF HEALTH RESEARCH FUNDERS



CST-International
BRAZIL, INDIA & TANZANIA



CST_Intl



cst-international@ucl.ac.uk

Aims and overview of CST International*

Aims:

- To develop, test, refine and disseminate implementation strategies for CST in three diverse parts of the world, creating ongoing and sustainable CST programmes.
- To offer a brief, half-day educational workshop for family carers

Methodology phases:

- *Investigate* the likely barriers and facilitators of implementation using a series of meetings and qualitative interviews with stakeholders.
- *Develop* an implementation strategy, with both generic and shared themes (related to CST) and unique considerations for each setting.
- *Test* this strategy (n=150) through looking at feasibility (including adherence, attendance, acceptability and attrition), agreed parameters of success (including numbers of trained facilitators, numbers of groups run), outcomes (cognition, quality of life, activities of daily living) and costs / affordability of models.
- *Refine and disseminate* implementation strategies, enabling ongoing pathways to practice which address barriers and facilitators to implementation. Will include published training manuals, a sustainable CST training programme, ongoing networks and allegiance, financial agreements and changes in policy.

*Spector, A., Stoner, C. R., Chandra, M., Vaitheswaran, S., Du, B., Comas-Herrera, A., ... & Laks, J. (2019). Mixed methods implementation research of cognitive stimulation therapy (CST) for dementia in low and middle-income countries: study protocol for Brazil, India and Tanzania (CST-International). *BMJ open*, 9(8), e030933.

Why is implementation working?

- CST and MCST are more cost-effective than usual care*, **.
- NHS Institute of Innovations and Improvements (2011) conducted: “An economic evaluation of alternatives to antipsychotic drugs for individuals living with dementia”.
- <https://www.acss.org.uk/wp-content/uploads/2016/03/NHS-Institute-for-Innovation-and-Improvement-antipsychotic-drug-evaluation-2011.pdf>
- Analysis focused on cost of providing CST. Conclusion: “By combining health care cost savings and quality of life improvements, behavioural interventions generate a net benefit of nearly £54.9 million per year. Behavioural interventions are a much more efficient use of public money than antipsychotic drugs.”

*D’Amico F, Rehill A, Knapp M, Aguirre E, Donovan H, Hoare Z, Hoe J, Russell I, Spector A, Streater A, Whitaker C, Woods RT, Orrell M (2015) Maintenance cognitive stimulation therapy: an economic evaluation within a randomised controlled trial. *Journal of the American Medical Directors Association*, 16 (1): 63-70.

**Knapp M, Thorgrimsen L, Patel A, Spector A, Hallam, A, Woods B, Orrell M (2006) Cognitive Stimulation Therapy for dementia: is it cost effective? *British Journal of Psychiatry*, 188: 574-580.

Why is implementation working?

- Training is brief, low cost and not mandatory. CST does not require specialist equipment or medical knowledge.
- A UK cluster randomised controlled trial (n=241)* found no enhanced benefit of additional outreach support (an online forum, email and telephone support) over just manual use and training, when looking at numbers attending groups as the primary outcome. Suggests that the current model is appropriate for widespread implementation. Availability of manuals.
- Often a disconnect between research and practice, due to lack of training manuals following clinical trials and people using programmes with no evidence-base.
**Fossey et al found 170 training manuals, only 30 meeting quality criteria and 4 subject to evaluation through an RCT.

*Streater et al (2016). Staff training and outreach support for Cognitive Stimulation Therapy and its implementation in practice: a cluster randomised trial. *International Journal of Geriatric Psychiatry*. DOI: 10.1002/gps.4653

**Fossey, J., Masson, S., Stafford, J., Lawrence, V., Corbett, A., & Ballard, C. (2014). The disconnect between evidence and practice: a systematic review of person-centred interventions and training manuals for care home staff working with people with dementia. *International journal of geriatric psychiatry*, 29(8), 797-807.

Conclusions and future considerations

- CST's robust evidence-base has changed dementia care practice in the UK regarding post diagnostic services.
- CST adaptation and manual publication is taking place worldwide. CST now needs to be included in country-specific guidelines to be widely implemented.
- **Practice:**
 - Linking with third sector (e.g. Age UK) to offer MCST.
 - Supporting family caregivers to maintain benefits at home.
 - CST becoming more routinely used in care homes.
- **Research:**
 - Increasing our understanding of optimal patterns of implementation.
 - 'Facecog': Virtual group CST project, in collaboration with Hong Kong University.