Cognitive Stimulation Therapy (CST) for people with dementia in practice: A service evaluation.

Keywords: Cognitive Stimulation Therapy (CST), Dementia, Implementation, Evaluation, Outreach support.

Word count: 3548

Abstract

Background. Cognitive Stimulation Therapy is a well-recognised evidence based cognitive psychosocial intervention for people with mild to moderate dementia. Despite increased use of Cognitive Stimulation Therapy little is known about its implementation in practice.

Methods. A service evaluation of care home staff that received CST training and on-going support by a researcher to deliver the CST and maintenance intervention in practice. Outcome measures including sense of competence, learning transfer, dementia knowledge and approaches to dementia were collected prior to training and at the six month follow up. Attendance by the person with dementia and adherence to the programme was also collected.

Results. Ten out of 12 care homes attempted to deliver the Cognitive Stimulation Therapy programme after receiving training and support. Overall, a high number of Cognitive Stimulation Therapy and maintenance Cognitive Stimulation Therapy sessions were delivered. Over the timeframe of the service evaluation staff members

demonstrated significant improvements in positive approaches to dementia care and sense of competence.

Conclusions. This article reports encouraging findings of training and outreach support with demonstrated improvements in staff outcomes and successful implementation of the Cognitive Stimulation Therapy and maintenance Cognitive Stimulation Therapy programmes run with people with dementia. These results support the current evidence base supporting the use of Cognitive Stimulation Therapy in routine care. This is relevant to Occupational Therapy due to the profession playing a crucial part in the implementation of psychosocial interventions for dementia in practice.

Introduction

Evidence based psychosocial interventions for people with dementia have increased in popularity over recent years, with the acknowledgement that nonpharmacological options can be used, and have demonstrated significant benefit in cognitive symptoms for people with dementia (Ballard et al., 2011). A key shift in recent years is the perspective of care having shifted to person centred care (PCC) with the use of these therapies. A psychosocial therapy that adheres to PCC as a key foundation is Cognitive Stimulation Therapy (CST) (Spector et al., 2003). The National Institute for Health and Care Excellence (NICE) guidelines (2006) recommend access to a cognitive stimulation programme and in terms of cognitive benefit is considered to have the 'strongest evidence by far' (World Alzheimer

Report, 2011, p.44) for people with mild to moderate dementia. The implementation of the CST and maintenance CST programmes and potential benefits in key outcomes for staff members is important in understanding its implementation in practice.

CST and maintenance CST programme. The CST programme is a fourteen session twice-weekly programme followed by the 24 session once weekly maintenance CST programme. Each session lasts 45 minutes, comprising of a 10-minute introduction to decide on a group name and song to be used at the beginning and end of each session, a soft-ball activity, and discussion on their whereabouts and time of the year with the use of a reality orientation board. The main activity (19 session themes) is 25 minutes in length with two choices of activity (Level A and B) and 10 minutes for the session to come to a close. Both programmes have demonstrated benefits across cognition and quality of life (QoL) for people with dementia (Spector et al., 2003; Orrell et al., 2005; Orrell et al., 2014). There are currently two published CST manuals (Spector et al., 2006; Aguirre et al., 2011) and a commercial CST training day that staff can access to learn how to deliver the CST and maintenance CST programme.

Relevance to Occupational Therapy. CST training is available to a number of professions, including Occupational Therapy. A systematic review of the compatibility of CST with Occupational Therapy found that the values of the profession and CST principles are well aligned, and Occupational Therapy plays a crucial part in the implementation of psychosocial interventions (Yuill and Hollis,

2011). The implementation of CST and maintenance CST is particularly useful in Occupational Therapy, as the programme is embedded in the fundamentals of Occupational Therapy (Salmon, 2006) and will inform service delivery and the care that people receive.

Staff outcomes. When considering a psychosocial intervention in dementia care that includes training and on-going support, there are many staff outcomes that could be considered. Individual characteristics related to learning can be measured using the brief Learning Transfer System Inventory (brief LTSI; Spector, Orrell and Aguirre., 2011) as it is a useful tool in identifying training needs. Dementia knowledge is particularly useful to measure when considering an intervention that incorporates training with a focus on PCC. In particular the Dementia Knowledge-20 (DK-20; Shanahan et al., 2013) can measure the level of knowledge and approach to caring of the staff member. This could be expected to improve over the duration of the programme due to the key principles of the therapy and on-going support. Another outcome is sense of competence, as the level of competency of staff member may indicate the likeliness of them implementing the programme in their workplace. For the service evaluation perceived sense of competence in dementia care staff scale (SCIDS; Schepers, et al., 2012) was considered an appropriate tool for this purpose. In a previous study (Spector and Orrell, 2006) looking at staff attitudes and quality of life for people with dementia in care homes, higher levels of hope as rated by the Approaches to Dementia Questionnaire (ADQ; Lintern and Woods, 1996) were associated with higher levels of quality of life for the residents. The hope subscale

seems to predict staff behaviour and could be useful in predicting whether a staff member is likely to implement the CST programme or not.

Implementation of psychosocial interventions. It has been identified that there is less research looking at the implementation of psychosocial interventions (Boersma et al., 2015) and there is a gap in the literature in how the therapy is used in practice, delivery frequency, and required level of support. This is important as interventions are not necessarily implemented as designed (Boersma et al., 2015; Vernooij-Dassen and Moniz Cook, 2014). Consequently, effective implementation is not always clear and needs to be researched further. Issues related to implementation include a lack of education related to available options, the effect of the intervention on the person with dementia, lack of staff time, poor staffing ratios, and working environment (Staedtler and Nunez, 2015). In consideration of phase IV of the Medical Research Council (MRC) framework for complex interventions (Craig et al., 2008) and the revised framework (Moore et al., 2014) it is crucial to consider process evaluation and the implementation process. This includes the benefits of using multicomponent support options to tackle implementation barriers (Staedtler and Nunez, 2015) when understanding CST in practice.

Aim

To train and offer outreach support to care home staff members in order to successfully implement CST and maintenance CST.

Methods

This was conducted in outer London care homes with staff new to CST who received training and additional support to deliver the CST and maintenance CST as part of their usual caregiving duties. The Redbridge Care Directory 2013 was used to identify suitable care homes that included caring for people with dementia. In total 27 care homes were approached and 15 care home managers agreed to take part. Due to one care home not attending the CST training day it was carried out in 14 care homes, between January and December 2013. Care homes were required to have over 50% of residents under the responsibility of the London Borough of Redbridge and able to provide a minimum of two staff members who were able to: (1) attend the CST training day, (2) have an adequate understanding of spoken and written English, (3) complete a questionnaire before the training day and at six months, (4) set up CST in their care home, (5) identify five to eight people with mild to moderate dementia who were willing to take part in the groups, (6) complete attendance after each session, and (7) provide qualitative feedback on the effects of the programme. After recruitment, 46 staff members across 14 care homes attended the CST training day. One CST researcher who has extensive CST knowledge provided the training and two CST researchers provided the on-going support. If there were any issues or concerns support was provided by one of the founders of the CST programme, Dr Aimee Spector. All staff received the training and each care home received two CST training manuals (Spector et al., 2006; Aguirre et al., 2012).

All care homes had the opportunity to access the outreach support that included a set up visit, spot visits, and telephone support. There was no limit set to the number of times that outreach support could be accessed by each care home. Ethical approval was not required as it was undertaken as a service evaluation. A service evaluation of CST and maintenance CST is an appropriate study design as a tool to measure the implementation of the programmes in care home settings. No randomisation is required, as a service evaluation considers what standard the service is achieving and the delivery of current care (Health Research Authority, 2013; NRES, 2009).

Participants

Care home managers were asked to identify a minimum of two staff members to volunteer to participate in the programme. Each participant received an information sheet and completed the measures in an online survey. Written informed consent was obtained prior to data collection. Forty-six staff members completed the baseline (BL) questionnaire prior to the training day and 31 participants completed the six-month follow up (FU) questionnaire. Five participants dropped out, three participants did not run the programme and consequently withdrew, two people left their centre, one person did not attend the training day, one person was absent at the FU time point, and no reason was given by three participants.

Data collection

Sociodemographic data. Information gathered included the staff member's gender, age, level of experience, and qualification and whether the participant worked in a specialist dementia setting.

Attendance. Attendance records mark attendance and include a rating scale from 1-5 for level of interest, communication, enjoyment, and mood of the group members. These were completed by staff members using the monitoring progress form located in the 'Making a difference 2' manual (Aguirre et al., 2012). These forms were collected at the 12 month end point of the service evaluation.

Measures. Questionnaires were completed online via Surveymonkey, or a paper version was sent to the care home for the staff member to complete at BL and FU time point (6 months).

Approach to dementia. The Approaches to Dementia Questionnaire (ADQ; Lintern and Woods, 1996) was used to assess the staff member's perceptions about people with dementia. The 19-item questionnaire uses statements such as 'there is no hope for people with dementia' and is rated on a five-point Likert scale from 'strongly agree' to 'strongly disagree'. The total sum of scores ranged from 19-95, with a higher score indicating a more positive approach to dementia. The scale has high validity and good reliability using Cronbach's α, and has good retest reliability (total 0.76, hope 0.70, and person-centred 0.69).

Dementia Knowledge. Knowledge was measured using the Dementia Knowledge-20 (DK-20; Shanahan et al., 2010) as a means to measuring the participant's knowledge and approach to caring for people with dementia. The measure has a minimum

score of zero and maximum score of 20, with a higher score indicating a higher level of dementia knowledge. The measure has demonstrated validity and sufficient reliability (Shanahan et al., 2013).

Competence. Competence was measured using the Sense of Competence in Dementia - Staff (Schepers et al., 2012). This measure is designed to be completed by untrained frontline dementia staff and the 17-item scale has four subscales: professionalism, building relationships, care challenges, and sustaining personhood. The responses are on a four-point Likert scale from 'not at all' (1) to 'very much' (4). A higher score indicates a higher perceived sense of competence of working with people with dementia. The scale has demonstrated validity and moderate test-retest reliability (Schepers et al., 2012).

Learning transfer. Learning transfer was measured using the brief Learning Transfer System Inventory (brief LTSI; Spector et al., 2011). The brief LTSI comprised on one exemplar question for each of the 16 factors devised for the original measure (Holton et al., 2000). The scale is measured on a five-point Likert scale from strongly disagree (1) to strongly agree (5). The constructs of the LTSI are validated using common factor analysis (Holton et al., 1997a; Holton et al., 1997b), however there are no psychometric properties reported on the brief version of the measure.

Outreach support. Outreach support included a set up visit, spot visits and telephone support. The set up visit was to help the care staff identify suitable residents to participate in the programme by using inclusion criteria in previously conducted CST research (Aguirre, 2010). The spot visits were to observe the running

of the groups and provide constructive feedback to the staff members and enable reflective learning. The CST researcher initiated telephone support to provide an opportunity for staff to have regular contact with the researcher to discuss and problem solve any group related issues.

Attendance. Total number of sessions attended were calculated for each centre, and then grouped to indicate whether CST had been implemented at a low, medium, or high level. The recommended group size is between 5-8 participants (Spector et al 2006, Aguirre et al 2012) so a score of less than 41, on average less than three group members, was considered low. An attendance score between 42–69, so on average three to four attendees indicated that CST had been implemented at a medium level. An average of five or more group members as demonstrated by a score of 70 or above suggested the therapy being delivered at a high level, and indicated that the therapy was being successfully implemented.

Analysis

Sociodemographic characteristics were defined using descriptive statistics at BL. A paired sample T-test was run using SPSS version 22 for the staff outcome measures that had complete cases at the six month FU. A paired sample T-test was considered appropriate to determine if the means of two related observations as normally distributed interval variables differed from one another. For measures to be considered statistically significant the p value was <0.05.

Results

Sociodemographic data. The majority of the participants were female (89%), with a mean age range between 35-44 years of age (30%). Staff worked in a specialist dementia setting (87%), had a mean range of experience of between three to eight years (39%), with no formal qualifications relevant to their post (43%).

CST Attendance. Seven homes (50%) delivered the full CST programme, three homes (21%) partially completed, and four homes (29%) were unable to deliver the programme. Of the seven homes, four ran the programme as designed, twice weekly. The remaining three homes delivered the programme once weekly. Sixty-eight people with dementia had access to the programme and 55 people received the programme in full, with approximately 7–8 people per group. Due to the aforementioned analysis of attendance the researcher was able to determine that the majority of homes successfully implemented the CST programme to a high level (Table 1).

Maintenance CST attendance. During the timeframe of the service evaluation two homes (29%) followed up the CST programme with the complete maintenance CST programme, four homes (57%) were midway through, and one home (14%) did not run the programme.

Staff measures. Staff outcomes are presented in Table 2. All measures increased in mean score at the FU time point, and approaches to dementia and sense of competence demonstrated a significant improvement between BL and FU.

Training, delivery of programme and use of outreach support. Forty-six staff members received CST training. Seven of the 14 care homes required a set up visit. At this point two homes dropped out as they felt unable to deliver the programme. Consequently, 12 care homes initially received the additional outreach support options, but this decreased to 10 care homes for the nine month duration of the service evaluation. In total there were 44 spot visits, averaging 3–4 visits per home by a researcher. Over the duration of the service evaluation the researchers made 207 telephone calls, averaging 17 calls per home. In addition text and email were used 16 times for care home staff that were harder to contact. Four homes did not deliver the programme, so there were 33 remaining staff members able to deliver the programme. In total 25 staff members were involved in the delivery of the programmes, and the attendance records indicated that seven additional staff members across centres assisted in facilitating the programme. One of the care home records were missing for the CST programme, but for the remaining nine homes, four homes delivered the full programme and two homes partially delivered CST once weekly, and three homes delivered the full programme twice weekly.

Discussion

As CST is commercially available it is useful to know how well implemented the therapy is in a care home setting. For the purposes of the service evaluation care home staff were trained to deliver the intervention. Yet, the successful implementation of CST is relevant to Occupational Therapists who have the skill set

to deliver the therapy well in practice in a variety of older adult care settings, and this may positively impact on occupational performance (Corr, 2016).

The service evaluation is useful in building a picture of implementation and the barriers to implementation of the CST and maintenance CST programmes in practice. Importantly, staff members delivered the CST programmes to replicate groups in practice. There is little research on implementation of psychosocial interventions and the reporting of this study is in line with the dissemination and implementation phase IV of the MRC framework for complex interventions (2008). The promising finding of outreach support increasing the delivery of both programmes builds on the findings from the Spector et al. (2011) evaluation of CST training alone. The successful multi-faceted approach of outreach support with the intention of problem solving and offering support is in line with occupational therapy implementation research (Dõpp et al., 2013). Additionally, a positive finding was the successful delivery of the CST programme with the majority of centres running sessions with five or more group members. For the two centres that completed the maintenance CST programme, one centre delivered the programme at a medium level, with on average three to four group members and the other centre successfully delivered the programme, with on average five or more group members. The high level of implementation indicates that the programme was being consistently delivered well across both programmes but a longer timeframe to follow up with the maintenance programme is required.

The two CST researchers delivering outreach support saw their role as supportive one, with the opportunity to provide constructive feedback by adhering to the CST key principles (Aguirre et al., 2011), and this may have contributed to the improvement in sense of competence and good dementia care practice.

Limitations. Previous research has identified a lower staff to resident ratio, more complex needs of the person with dementia, and a lack of understanding in the effectiveness of nonpharmacological interventions by the staff member as barriers to implementation (Kolanowski et al., 2010). All these factors may have been present in the service evaluation, and could not be controlled for. In addition selection bias may have been present with the manager influencing the nomination of staff members to participate in the service evaluation. However, the information sheet and consent form reiterated the voluntary nature of their participation. The funding was specific to care homes located in Redbridge, so other professionals were not included in the study, such as Occupational Therapists. As CST is based upon fundamentals important to Occupational Therapy, such as person centredness, activity analysis and grading and meaningful occupation (Salmon, 2006) it would have been useful to include Occupational Therapists as they are well suited to delivering this programme due to their knowledge base and skill set (Yuill and Hollis, 2011).

Another limitation is that a number of measures were incomplete at the FU time point. At the beginning of the service evaluation there was 46 staff members, five people dropped out and there was no reason given for the remaining people that

did not complete the follow up questionnaire. Staff members were asked to complete the measures online and independently of a researcher. In practice, staff completed paper versions of the questionnaire, and in some instances answered one question more than once or left it blank and so limited the amount of information received by care staff. These types of errors may have been minimised if a researcher was present at the time of questionnaire completion, however due to lack of researcher time this was not possible.

The study had a small sample size reducing the statistical power to determine an effect size, so a larger sample size and more diverse sample characteristics are required to determine if these positive findings can be replicated in practice. No randomisation occurred as CST is now in routine practice and it was important not to deprive people of a programme they would receive as part of their usual care. A control group for the service evaluation would have provided a useful comparison, however the funding to support the delivery of the evaluation was to increase the delivery of CST, so this was not an option. The study had a short implementation period as if delivered as intended it is a 31-week programme, excluding screening, assessments, and FU timeframe. Nine months was allowed for the implementation of both programmes, and as demonstrated in this study this was not enough time to allow for the delivery of the full length of the maintenance CST programme. However, due to funding, the time restriction remained unchanged but this length of time should be taken into account when considering implementing the programme in practice.

Conclusion

The preliminary findings demonstrate a positive effect of outreach support for care home staff with an increased delivery of the CST and maintenance CST programme. In addition positive outcomes in approaches to dementia and sense of competence were reported for care home staff over the timeframe of the study. These findings support the evidence advocating the use of CST in routine clinical practice. Future research could replicate this study design on a larger scale, preferably as a RCT study design and paying particular attention to the profession suitable to deliver the programmes. For instance, occupational therapists adhere to person centred care and this is one of the defining features of the CST and maintenance CST programmes. This would provide a more robust evaluation of CST in practice.

Key messages

Key findings. Outreach support has demonstrated improvements in the delivery of the CST programmes and positive staff outcomes.

What the study has added. CST adheres to Occupational Therapy principles and this study has reported on the practical implementation of the programme and benefits of on-going support for staff members.

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CST implementation				
Delivery of CST	Number of programmes	CST low	CST medium	CST high
Yes n(%)	7(70)*	1(14)	1(14)	5(72)
Partially n(%)	3(30)	2(67)	1(33)	0(0)

Table 1: Delivery and level of implementation for CST programme.
*attendance records missing for one centre, entered in table as CST low

Measure	Follow up time point	n	Mean (SD)	Mean difference (95% CI)	Interaction *P* (1-tailed)
ADQ	Baseline		47.83 (4.65)		
	Follow up	23	50.70 (4.52)	-2.87 (-5.18, -.56)	0.01
DKQ	Baseline		4.4 (2.07)		
	Follow up	10	4.6 (2.07)	-0.2 (-1.08, 0.68)	0.31
SCIDS	Baseline	29	51.17 (5.53)	-8.80 (-11.53, -6.05)	0.00

	Follow up		59.97 (6.49)		
BLTSI	Baseline		60.26 (5.54)		
	Follow up	23	61.30 (9.64)	-1.04 (-4.60, 2.51)	0.27

Table 2: Results of care staff outcome measures.