

Spaced-Retrieval Training (SRT) can be used to train persons with dementia to learn new and/or forgotten information/skills by capitalizing on preserved cognitive abilities. SRT uses gradually increasing recall intervals, and visual or verbal cues to promote errorless learning, which results in efficient goal attainment. Questions remain regarding the maintenance of SRT effects and generalization to natural contexts. Therefore, this study investigated the maintenance and generalization of the trained behavior for up to four weeks post-training. Specifically, the study examined: Will individuals with dementia learn to read nametags of staff caregivers as a result of SRT? Is there maintenance up to one month post-training? Is there generalization to natural contexts?

Method

Participants

As single-subject studies typically involve a small number of participants (eg. 3-8 participants) (Horner, Carr, Halle et al., 2005), three nursing home residents diagnosed with dementia were recruited to participate. Participants were recruited following procedures approved for human subjects. Participants met the following inclusion criteria: 1) diagnosis of dementia by a physician using the DSM-IV criteria, 2) a score of 10 – 21 on the Mini Mental State Exam (MMSE) (Folstein, Folstein & McHugh, 1975), 3) adequate functional hearing/vision (aided or unaided), and 4) passed the Bourgeois Oral Reading Screening at the simple sentence level (Bourgeois, 1992). An SRT screening was conducted (Brush & Camp, 1998a) to determine whether the person was able to recall the examiner's name at three increasing time intervals (i.e., immediate, 5 seconds, 10 seconds) (Brush & Camp, 1998a). Exclusion criteria included: 1) a history of other psychiatric/ neurological diagnoses (e.g., schizophrenia, developmental disabilities, aphasia), and 2) participant already reading staff nametags to recall names. All three participants received a score of 0/10 trials.

Procedures and Measures

Data collection. Probe data on nametag reading were collected throughout the study to determine goal attainment, with a minimum of three baseline sessions and 10 trials per session for each participant. The participants responded to the question, "How can you find out the name of a nurse?" Generalization to natural contexts was examined. Once in pre- and post- training and after each training session, the examiner walked with the participant throughout the nursing home. When passing caregivers, the examiner asked the participant the probe question, with 10 trials in pre- and post-training and 3 trials during the training phase.

Training

Each participant received training to read staff nametags using established SRT procedures. Training was initiated with the examiner instructing the participants to read nametags. In the first two sessions for each participant, the examiner began by pointing to her own nametag and stating, "If you want to know the name of a nurse, you can read her nametag. When I ask you 'How can you find out the name of a nurse?' you tell me, 'Read her nametag.'" The examiner then immediately asked the participant, "How can you find out the name of a nurse?" In order to provide an environment for errorless learning, the examiner provided visual and verbal cues for the response during the first two sessions. One participant also needed a written cue of the desired response. After the first 2 sessions, these prompts were removed, unless the participant did not provide an immediate correct response. With each immediate correct response, the time intervals for recall doubled (e.g., 0 sec, 15 sec, 30 sec, 60 sec). In the event that a prompt was required, the time interval returned to the previous length that resulted in an immediate correct response. Starting with the fourth session, the examiner began the training at the longest interval that elicited a correct response during the previous session. Goal attainment was measured from the third training session forward. During this time, no cues were provided. If the participant was incorrect, training began. Training for each goal continued until the participant correctly answered the probe question after a minimum 24-hour delay with no cues.

Experimental Design

This study utilized a single-subject (ABA) multiple baseline across participants design. The study included three phases: baseline (A), training (B), and post-training (A).

Data Analyses

The research questions were addressed by visual inspection of data across experimental phases in time series graphs, examining changes in level, slope, and trend (Kazdin, 1982).

Reliability

Treatment fidelity was ensured through use of a training manual, data collection sheets, and criterion to move forward with the program. Reliability of training procedures was over 95% for each participant, and for target behaviors was 98-100%.

Results

Stable baseline measures with 0-10% accuracy across participants were obtained. Participant 1 was unable to move beyond the cued response stage of training. Goal attainment was achieved for Participant 2 and for Participant 3 in 7 and 3 sessions, respectively; post training maintenance and generalization were achieved for Participant 3. Figures (see attached) display percent accuracy in each session and the longest time intervals for correct responses during each training session, including the minimum 24-hour delayed response.

Discussion and Conclusion

SRT can be used to train behaviors with persons with both mild to moderate dementia. Although the participants did not uniformly reach criterion, or maintain the behavior, there were some positive changes noted from conducting this study. For example, the nursing staff became more aware of the importance of wearing their nametags, and did so more consistently. Some staff were even noted to make an improvised nametag if they forgot theirs. In addition, there seemed to be increased interaction between the participants and nurses, as they would begin to talk when the participant approached to read the nametag in generalization probes. Furthermore, although participant 2 did not maintain the trained behavior, she did become more strategic in similar ways; rather than respond, "read the nametag," this participant often responded, "I'd just ask her," or she would sometimes read the name on the door, if the nurse was in a resident's room. Although not the trained behavior, these responses showed improvements over her baseline response, "I don't know." Limitations of the study, recommendations for future research, and clinical implications will be discussed.

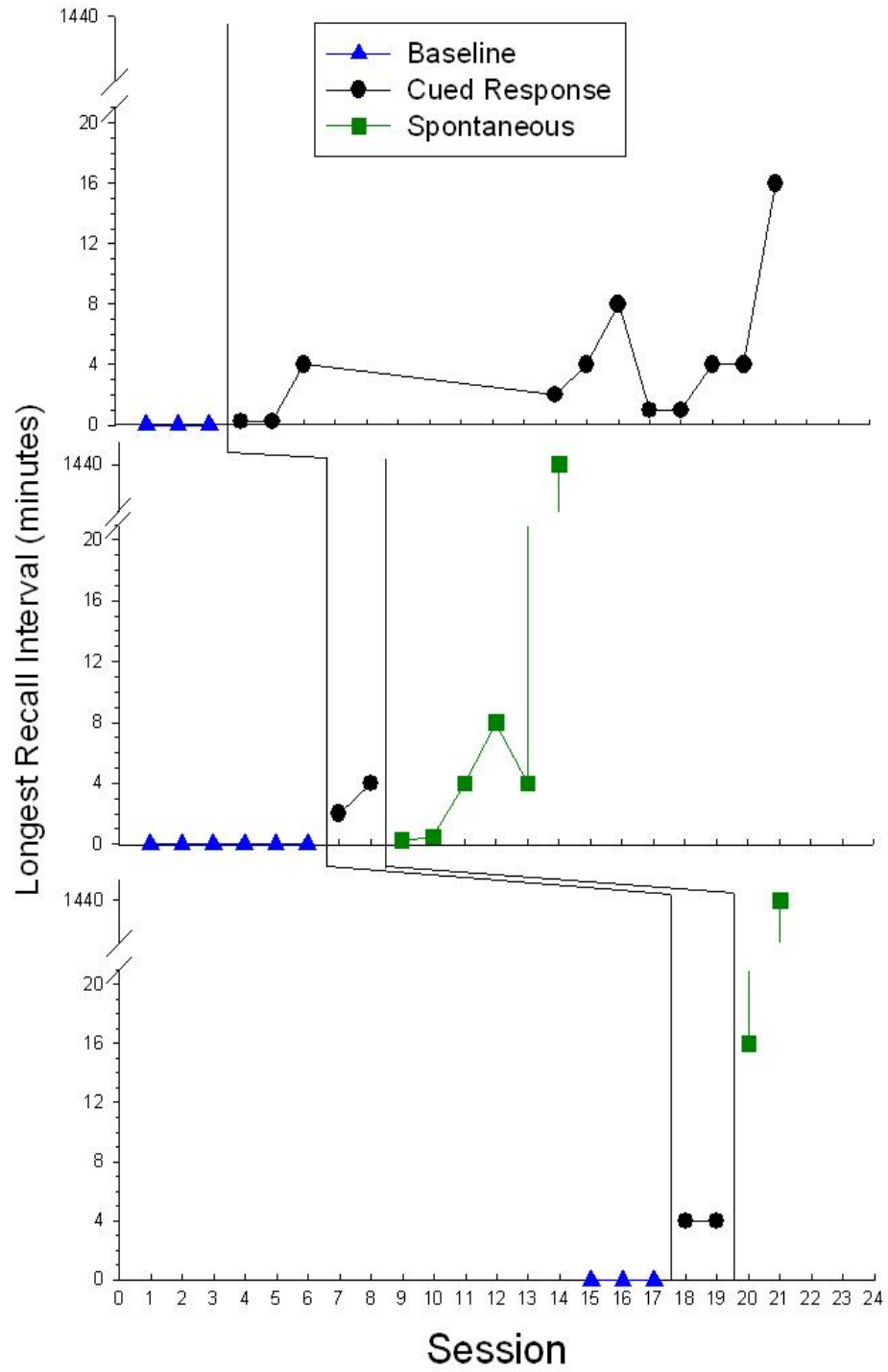


Figure 1. Longest recall interval for correct recall of target response. Blue triangles show baseline data; black circles show cued responses; green triangles show spontaneous, correct responses.

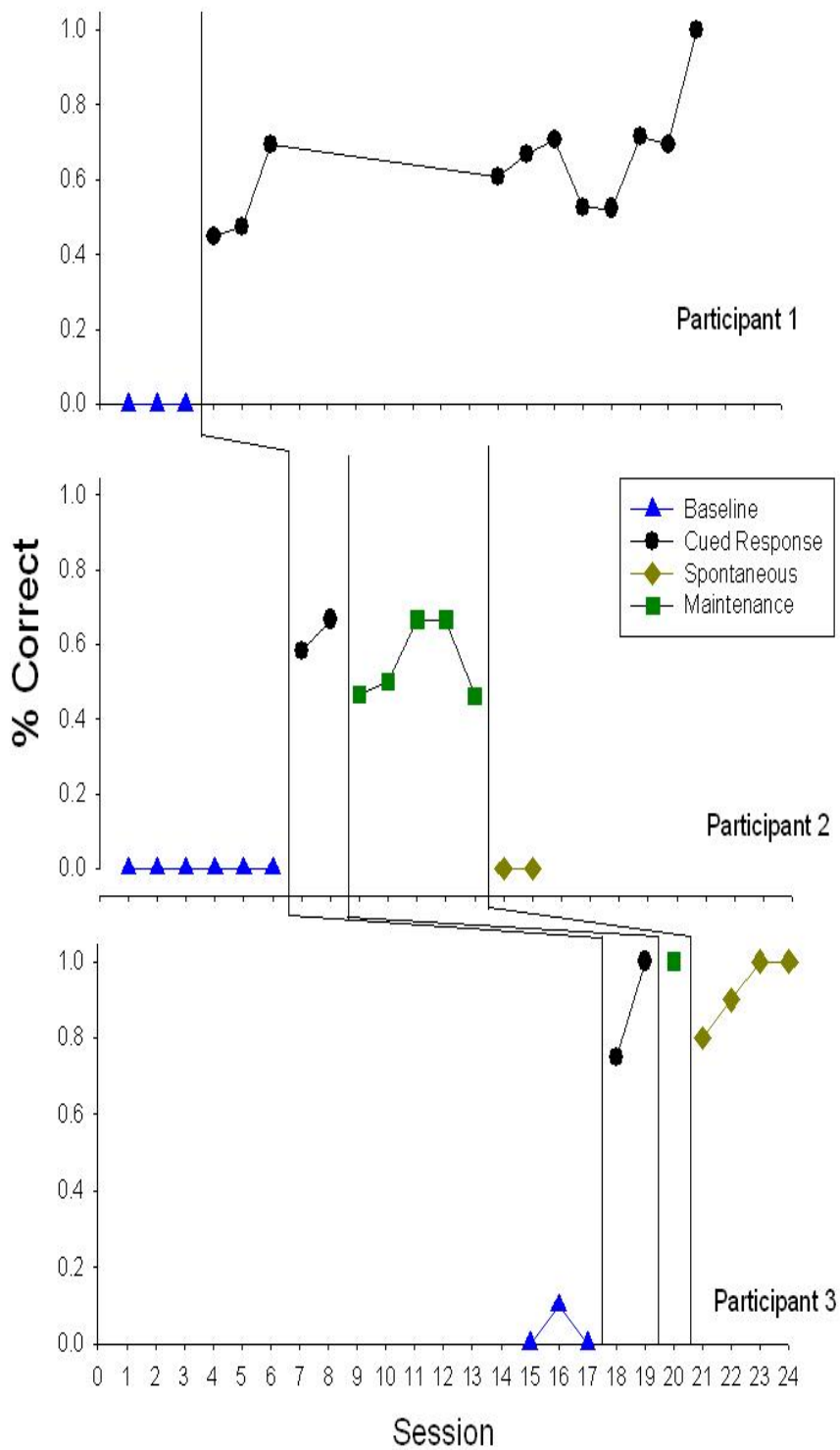


Figure 2. Percent correct responses during each session. Blue triangles show baseline data; black circles show cued responses during training; green triangles show spontaneous correct responses; and gold diamonds show maintenance responses.