Training Caregivers of Elders with Dementia Who Exhibit Challenging Behaviors to Take a Functional Approach

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Relevant Statistics

- ~4.5 million individuals in U.S. in 2000
  - Three times this in 2050
- Annual Cost: $189 Billion in 2007
- Annual cost per individual:
  - $18,400 for mild/early AD
  - $36,000 and up for advanced
Examples of Successful Application

- Reduction of incontinence (Engel et al., 1990; Burgio, 1986)
- Reduction of seizure-like behaviors (Burgio et al., 1985)
- Reduction of wandering (Heard & Watson, 1999)
- Reduction of disruptive vocalizations (Buchanan & Fisher, 2002; Dwyer-Moore & Dixon, 2007)
- Reduction of aggression (Baker et al., 2006)
- Increasing rational speech (Beaton et al., 2006)
Preference and Relative Effectiveness for Behavioral Methods

- **Primary treatment:**
  - Neuroleptic and antipsychotic medications

- **DRI/Extinction and Time-Out:**
  - Preferred by physicians/family
Functional Analysis

  - Broadly replicated

- FA-based interventions may have higher probability of success than those that do not specifically/causally address behavior function (Iwata, Kahng, Wallace & Lindberg, 2000).
Current Research


Purpose

- Train non-professional caregivers at home
  - Understand basic principles of behavior analysis
  - Conduct FAs
  - Carry out function-based intervention plans
- Investigate prolongation of expensive residential care placement.
Participants

- Hilary and Harry:
  - Both 75 years old
  - Hilary, diagnosed with moderate-severe Alzheimer’s disease, and her husband/care-provider.

- Al and Jane:
  - Al, an 88-year-old man diagnosed with severe Alzheimer’s disease, and his 75-year-old wife/care-provider.

- Behaviors:
  - Hilary: Resistance to steps in nighttime routine
  - Al: Perseverative requests to go on outings
Experimental Design and IOA

- Non-concurrent multiple-baseline design across participants
- IOA: 52% of sessions across all participants
  - Harry: M=94%, range 83-100%
  - Jane: M=89%, range 37-100%
Methodology

Baseline
- Typical Routine

Training
- Operant Principles, Data Collection/Videos
- Pre/Post Quizzes
- Intervention Protocols

FA
- Hilary: 5 min
- Al: 15 min with extended pair-wise condition
Four-Condition Functional Analysis

Pair-Wise Condition

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Methodology

- **Intervention:**
  - Hilary and Harry: NCR-Attention, DRA, EXT-Escape
  - Al and Jane: NCR-Access, VM-DRO-15, EXT-Attention

- **Follow-Up**
  - Hilary and Harry: 2 and 5 weeks
  - Al and Jane: 2 and 4 weeks

- **Social Validity-Likert Scale**
Results

Behavior Intervention

- Hilary
  - Mean decrease in percentage of steps with resistance behavior from 30% to 6% of steps
  - Total overall decrease of 88%

- Al
  - Mean decrease in perseverative requests from 13 to .5 per hour
  - Total overall decrease of 96%
Results

Functional Analysis Integrity

- 87% of Sessions:
  - Harry: M=98%, range 94-100% adherence
  - Jane: M=54%, range 37-71% adherence
    - M Prompted=34%
    - Mean steps conducted accurately=88%

Intervention Integrity

- Harry: M=98%, range 94-100%
- Jane: M=83%, range 59-96%
Results

Social Validity

- Harry
  - Stress levels associated with routine reduced from highest to lowest level
  - Satisfaction and confidence in interaction with Hilary from lowest to highest levels

- Jane
  - Jane’s results indicate a reduction from high to low stress, and an increase in confidence and satisfaction from low to neutral

- Both
  - No change in likelihood of residential care placement, very satisfied/comfortable with intervention and training.
Discussion

- Training of non-behavioral caregivers successful in producing a differentiated functional analyses and successful function-based interventions
  - High treatment integrity and IOA
- Replication of functional analysis with dementia caregivers
- Expansion by training non-professional family caregivers, and in home settings
  - Treatment successful!
Possible Limitations

- Caregiver profession
- Introduction of medication
- Resistance to positive-attention points of intervention
  - Very Common
  - Threatens treatment integrity long-term
- Health complications
Future Research

- ABA training nearer to initial diagnosis.
  - Potential for increased prolongation of residential placement.
- Multiple baseline across behaviors with one patient.
- Potential combined approach of biomedical and behavioral interventions in tandem.
- Potential for group training in ABA and FA methodologies for groups of staff in residential facilities.
Final Implication

Total Lack of Memory

- No effect on success of intervention!