

# TEACHING CAREGIVERS TO CONDUCT DISCRETE TRIAL TEACHING: A META-ANALYSIS

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(in preparation)

## Background

- ▣ Teaching paraprofessionals to work with ASD (Rispoli et al., 2011)
  - 12 studies with 39 paraprofessionals
  - Social stories, prompting, PECS, DTT, pivotal response training
  - Caregiver outcomes
    - 7/12 "positive outcomes"
    - 5/12 mixed
    - 0/12 negative
  - Children
    - 6/6 studies reported "positive outcomes"

## Aims

- ▣ No previous meta-analysis of DTT
- ▣ Therefore the aim(s) of this systematic review and meta-analysis were:
  - To conduct a systematic review of the literature of experimental studies teaching caregivers to conduct DTT
  - To determine of teaching DTT is an evidence-based practice

## Method: Search Strategies

- ▣ Data bases: PsycINFO, PubMed, ERIC databases and Google scholar using the term: 'discrete trial teaching'.
  - 901 abstracts
- ▣ Searched reference sections of reviews
  - 2 additional abstracts .

## Inclusion Criteria

- ▣ Inclusion criteria
  - 1) published in English in a peer reviewed academic journal
  - 2) must be a small N experiment
  - 3) Subjects must be caregivers of individuals with a diagnosed DD
  - 4) Subjects must have been trained specifically in the implementation of DTT
  - 5) must display data specifically for caregiver accuracy during DTT
- ▣ Reliability-
  - IOA = 97%.

## Data Extraction

- ▣ Extracted data into two tables
  - Dependent and independent variables
  - Experimental design
  - Treatment manual/integrity
  - Participant characteristics
  - Outcome measures
  - Effect sizes
  - Whether each study met Chambless & Hollon, 1998 criteria for EBP

## Effect Size calculation

- PND calculated for each experiment
  - Scruggs & Mastropieri (2001)
    - > 90% "very effective"
    - 70-90% "effective"
    - 50-70% "questionable"

## Data Aggregation and Disaggregation

- Aggregation- averages and standard deviations calculated for PND's for
  - Caregivers
  - Students
    - correct responding during DTT
    - problem behavior during DTT
- Disaggregation- PND's calculated and listed separately for
  - Caregiver and students
  - Acquisition, generalization and maintenance

## Studies Retained

- Two screeners read the headings and abstracts of papers
- Eliminated duplicates
- Excluded studies that did not specifically train of caregivers in DTT.
- 29 studies retained for further review.
- After applying ex/inclusion criteria 23 studies were included in the meta-analysis.

## Results: Data Characteristics

- Number of studies and experiments =23
- Number of participants
  - MBD-caregivers: 91
  - MBD-students: 63
- Number of ES's
  - Total-55
    - Caregiver
      - Acquisition 21
      - Generalization 13
      - Maintenance 12
    - Child
      - Acquisition 9
      - Generalization 0
      - Maintenance 0

## Data Characteristics: Participants

- **Caregivers**
  - 20 University Students
  - 52 staff
  - 13 parents (1 foster)
  - 3 siblings
  - 1 high school student
  - 1 college graduate
- **Students**
  - 52 children with autism
  - 6 children with PDD-NOS
  - 1 child with Down Syndrome
  - 1 child with Cerebral Palsy
  - 1 child with Intellectual Disability
  - 1 child with Global Delay
  - 1 adult with intellectual Disability

## Training Methods

- 16 training packages
- 2 video evaluations of self and others
- 1 computerized training package
- 1 training manual
- 1 video model
- 1 feedback
- 1 computer program

## Study Quality

Chambless & Hollon , 1998 Criterion for EBP	Percentage of Studies Meeting Criterion
Acceptable Experimental Design	100%
Treatment Manual/ Treatment Integrity	22%
Identified Participant Characteristics (Trained what type of Caregivers)	100%
Identified Participant Characteristics (Client)	65%
Used Acceptable Outcome Measures	100%
Demonstrated statistically significant effects- Caregiver	87%
Demonstrated statistically significant effects- Client	65%
Demonstrated statistically significant effects- Generalization	61%
Demonstrated statistically significant effects- Maintenance	61%
Reported both maintenance and Generalization-Caregiver Data	35%
Reported maintenance or Generalization-Client Data	4% (1 study reported generalization data for client behavior)
Reported social validity	20%

## Results

- Mean PND = 86.0% (“effective” Scrugges & Mastropieri, 2001)
- Caregiver
  - Mean = 93.6% (“very effective”)
    - 81 participants, 21 effect sizes, 21 studies
  - Generalization = 94.3% (“very effective”)
    - 55 participants 13 effect sizes, 13 studies
  - Maintenance = 94.5% (very effective”)
    - 42 participants, 12 effect sizes, 12 studies
- Client
  - Overall = 61.4% (question able)
    - 36 participants, 9 effect sizes, 9 studies
  - Generalization: no data
  - Maintenance: no data

## Conclusions

- BST is an evidence-based practice to teach DTT to
  - Caregivers
    - Acquisition, generalization and maintenance
- Child skills
  - Variable outcomes
  - Explanations

## Future Directions

- This meta-analysis expands
  - previous narrative reviews
  - Consonant with work done in Sturmey lab
  - Raises questions about child effects
- Replicate results with other ABA methods
- Report data based on effect sizes for each participant
- Use other effect size measures
- Empirically investigate individual differences in child responses to DTT
- Increase studies for adults with DDs