

AAC to Remediate Problem Behavior, Functional Communication Training: Case Study Demonstration

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Problem Behaviors (PBs)



- Self-injurious behavior (SIB) is considered the most chronic form of problem behavior in individuals with ASD (Waters & Healy, 2012)
- Risk of SIB is higher in individuals with ASD than other populations
- Prevalence rates of SIB range from 33% to 71% (Richards et al., 2012; Richman et al., 2013)

Communication



- Children with ASD & limited functional communication skills
 - Often exhibit problem behaviors due to communication deficits
- PB can serve a communicative function:
 - Gain access to items or activities
 - Escape aversive situations/activities
 - Seek attention

↓ Receptive & Expressive skills = ↑ SIB

Empirical Research: PECS, PB, & ASD



- Buckley & Newchok (2005)
 - Aggression decreased (PND=97%,)
 - Mands increased
- Charlop-Christy et al. (2002)
 - PB decreased (PND=53%, 78%)
 - Speech & social behavior increased
- Frea, Arnold, & Vittimberga (2001)
 - Aggression decreased (PND=86%)

Empirical Research: SGDs, PB, & ASD



- Cafiero (2001)
 - PB decreased
- Durand (1999)
 - PB decreased to near zero levels
 - Communication increased
- Olive, Lang, & Davis (2007)
 - PB decreased to near zero levels

Empirical Research: Overall AAC & PB



- Walker & Snell (2013)
 - Meta-analysis
 - AAC intervention moderately effective across participants with ASD (NAP=.86)
 - More effective for younger children than adults
 - Interventions that used FBA had higher effect sizes

Functional Communication Training (FCT)

- Empirically supported intervention (Fettig, 2013)
- Aim is to decrease problem behavior by teaching a functionally equivalent communicative behavior
 - Process includes conducting a functional analysis (FA) and a preference assessment (Powers et al., 2011)

Case Study

(Boesch, Taber-Doughty, Wendt, & Smalts, under review)

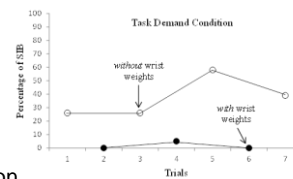
- **Purpose:**
 - Assess the effects of FCT as part of behavioral training package on the SIB of an adolescent with severe autism
- **Participant:**
 - Mike, 14-year old with autism
 - Nonverbal; indicated needs/want by leading other by the hand to the item(s); occasionally pointed to items & inconsistently used ~2 manual signs

Case Study (cont.)

- **Setting:**
 - Secondary, self-contained special education classroom
- **Dependent Variables:**
 - SIB (face slapping)
 - Manual sign ("want") [ancillary measure]
 - Time on task w/o SIB [ancillary measure]
- **Research Design:**
 - Changing condition design (ABCD; Alberto & Troutman, 2013)

Functional Behavioral Assessment / Functional Analysis

- A-B-C checklist
- SIB occurrence *with* and *without* wrist weights during a task demand condition
- **Function:** gain access to wrist weights



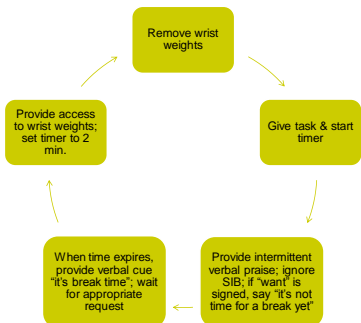
Target Goals

1. Decrease SIB
2. Increase appropriate communication
3. Increase time on-task w/o wrist weights
4. Fade wrist weights as a reinforcer

Intervention

- **Behavioral training package:**
 - **Functional Communication Training (FCT)**
 - Manual sign "want" (RB) to replace SIB (PB)
 - **Delayed schedule of reinforcement**
 - 1-min. then increase by 30-sec. for each phase thereafter
 - **Reinforcer**
 - 2-min. access to wrist weights contingent upon appropriate requesting (after allotted time expired)
 - **Extinction**
 - SIB was ignored; blocking procedures used when behavior was excessive (3+ continuous slaps)

Specific Trial Procedures



Training Conditions

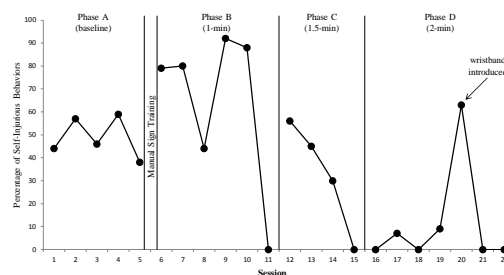
Condition	Schedule of Reinforcement	Reinforcer	Criterion Level
Baseline (Phase A)	Upon task completion (~2-3 minutes)	2.5 lb. wrist weights	---
"Want" training	1 minute	2.5 lb. wrist weights	3 consecutive opportunities of independent requesting
Phase B	1 minute	1.25 lb. wrist weights	1 session at 0% SIB
Phase C	1.5 minutes	1.25 lb. wrist weights	1 session at 0% SIB
Phase D	2 minutes	1.25 lb. wrist weights; wrist band	1 session at 0% SIB, then modified to 2 consecutive sessions at 0% SIB

Video Demonstration



Picture credit: Pedro Nogueira

Percentage of SIB



Results: SIB

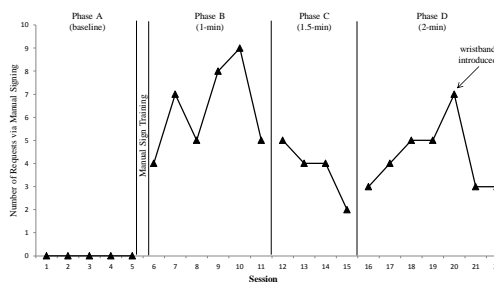
Condition	Mean	SD	PRD
Phase A (BL)	49%	8.93	--
Phase B (1 min)	64%	35.6	-25%
Phase C (1.5 min)	33%	24.3	48%
Phase D (2 min)	11%	23.12	56%

Note: BL = baseline; PRD = percentage reduction data; SD = standard deviation.

Percentage Reduction Data (PRD) (O'Brien & Repp, 1990)

- Magnitude of intervention effect b/n BL & intervention phase
- Avg. of last 3 BL data points & last 3 intervention data points

Number of Requests (manual signing)



Results: Manual Sign “want”

Condition	Mean	SD	PND
Phase A (BL)	0	0	--
Phase B (1 min)	6	1.97	100%
Phase C (1.5 min)	4	1.26	100%
Phase D (2 min)	4	1.5	100%

Note: BL = baseline; PND = percentage of non-overlapping data; SD = standard deviation.

Percentage of Non-overlapping Data (PND) (Scruggs, Mastropieri, & Casto, 1987)

- Magnitude of intervention effect b/n BL & intervention phase
- Identify highest BL data point & determine % of intervention data points that exceed this level

Limitations

- One participant (no replication across participants, settings or activities)
- Changing conditions design did not show complete experimental control (no return to BL; no immediacy of effect when Phase D was introduced)

Summary

- Important to conduct FBA/FA prior to intervention
- FCT + a tailored behavioral training package can:
 - Decrease SIB
 - Increase appropriate communication
 - Gradually increase time on-task by using a strong reinforcer
 - Reinforcers that are inappropriate can be faded to more socially appropriate reinforcers

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