

Treatment Integrity in Early Intervention

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- Describe ABA-based early intervention services
- Describe implementation in home and schools
- Define and provide examples of treatment integrity
- Explain the importance of treatment integrity
- Describe research on treatment integrity
- Discuss ways to measure treatment integrity
- Review barriers to collecting data on treatment integrity
- Review strategies to promote high integrity
- Discuss general recommendations



- Frequently categorized as *comprehensive* intervention
- Characterized by:
 - Extended period of services (e.g., 3 years)
 - Many hours of intervention per week (e.g., 25-40 hours)
 - Aimed at producing changes in global functioning
 - Many targeted skills
 - Home- or center-based services
 - Delivered by professionals
 - Training provided to parents



- Early intervention based on principles of applied behavior analysis:
 - *"is distinguished from other interventions because it has been proven effective in promoting skill development in persons with autism."* (Organization for Autism Research)
 - has an established level of evidence to support their use (National Standards Project, 2009)
 - "has been repeatedly shown to have efficacy for specific problem behaviors, and ABA has been found to be effective as applied to academic tasks, adaptive living skills, communication, social skills, and vocational skills" (American Academy of Child and Adolescent Psychiatry)
 - is found to be a medically necessary treatment, not educational (Caring for Military Kids with Autism Act, 2011)

Evidence for Early Intervention

- EIBI is most studied comprehensive treatment model for young children with ASD (Reichow, 2012).
- Research has compared:
 - Different intensities of EIBI (e.g., Smith, Eikeseth, Klevstrand, & Lovaas, 1997)
 - EIBI and other treatments (e.g., Eikeseth, Smith, Jahr, & Eldevik, 2002; Howard, Sparkman, Cohen, Green, & Stanislaw, 2005)
 - Clinic- versus parent-managed models (e.g., Sallows & Graupner, 2005; Smith, Groen, & Wynn, 2000).



- Meta-analyses conducted on EIBI have sought to identify variables to predict the outcome of behavioral interventions
- Variables that positively correlate with improved treatment outcomes include:
- Greater treatment intensity (Makrygianni & Reed, 2010; Virues-Ortega, 2010)
- Longer treatment duration (Makrygianni & Reed, 2010; Virues-Ortega, 2010)
- Inclusion of parent training (Makrygianni & Reed, 2010)
- Supervisor training with the UCLA model (Reichow & Wolery, 2009)



- Many studies on early intervention methods (e.g., DTT) are:
 - Conducted in highly controlled settings
 - Conducted by individuals with extensive training
 - Include measures of reliability for target behavior
 - May include measures of treatment integrity

 Does this match the "typical" delivery of early intervention services provided to most individuals with ASD?



Early intervention services

- Mostly conducted by entry-level staff members
- Limited training in ABA
 - Completed 40 hours of training
 - High school diploma, maybe some college coursework
- Receive varying levels of supervision from more experienced staff
- May not have a behavior analyst providing services
- May not collect any reliability or treatment integrity data

MALWAUKEE BA Intervention in School Settings

- What do BA services look like in special education classrooms?
 - Frequently provided by TAs/IAs
 - May have limited training
 - High school diploma, maybe some college coursework
 - Receive varying levels of supervision from more experienced staff
 - May not have a behavior analyst consulting on service delivery
 - May not collect any reliability or treatment integrity data
 - May not analyze data collected for targeted skills



- Carroll, Kodak, and Fisher (2013)
- Descriptive assessment of educational teaching practices
- Teacher responses during trial-based instruction
 - Establish ready behavior
 - Secure attending
 - Clear instruction
 - Presents instruction once
 - Praise contingent on correct response
 - Tangible/edible contingent on correct response
 - Controlling prompt
 - Ignores/blocks problem behavior



Carroll, Kodak, & Fisher (2013)





- Kodak, Cariveau, LeBlanc, and Mahon (in preparation)
 - •Identified selection of training strategies for students with ASD in Oregon
 - •Compared teachers' chosen procedures to those described in the literature (e.g., errorless teaching)
 - •Observed teachers implement instruction with students with ASD



- Teacher responses from Carroll, Kodak, and Fisher, 2013
- Three additional teacher responses
 - Withhold reinforcement for error/no response
 - Randomize presentation of materials
 - No inadvertent prompts







POWERFUL IDEAS PROVEN RESULTS

Results: Not-yet-mastered Tasks

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Differences in curricula across states

- Nebraska did not have a specific curriculum implemented across districts
- Oregon uses the STAR curriculum
- Potential differences in training of teachers

 Special education teachers receive STAR curriculum training as part of their degree program



What is Treatment Integrity?



- Independent variable is implemented as intended (Peterson, Homer, & Wonderlich, 1982)
- Consistent and accurate implementation of a treatment protocol or intervention in the manner in which it was designed (Gresham, 1989)
- Extent to which essential intervention components are delivered in a comprehensive and consistent manner by an interventionist trained to deliver the intervention (Hagermoser Sanetti & Kratochwill, 2009)



- Not performing some part of the intervention
 - Reinforcement
 - Prompt













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Omit Reinforcement



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Omit Prompt



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- Implementing procedures not described in the protocol
 - Reinforcement
 - Prompt













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Incorrect Reinforcement



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Incorrect Prompt

You know this one; the banana













Importance of Treatment Integrity

POWERFUL IDEAS PROVEN RESULTS


- Identify effective interventions for clients
 - Unknown cause of poor treatment outcomes
- Negligence
- Implications for continued services for clients



- Protect our science
- Protect our field of practice



Research on Treatment Integrity Errors

POWERFUL IDEAS PROVEN RESULTS

UNIVERSITY & WISCONSIN Research on Problem Behavior

- St. Peter Pipkin, Vollmer, and Sloman (2010)
 - Errors of commission and omission
 - Differential reinforcement of alternative behavior (DRA)
 - Experiment 1
 - Computer





Treatment Red= FR 1 Black= EXT



POWERFUL IDEAS **PROVEN RESULTS**



Errors of omission and commission

- 20% errors
- 40% errors
- 60% errors
- 80% errors
- Errors of commission more detrimental
 - At lower levels of integrity (20%-40%)



St. Peter Pipkin et al. (2010)

- Experiment 2
 - Combined omission and commission errors
 - 20% errors
 - 40% errors
 - 60% errors
 - 80% errors
 - DRA resistant to lower levels of integrity errors
 - Integrity at 20%-40% detrimental to DRA
 - Consider sequence effects



Integrity during Skill Acquisition

- Errors of omission of controlling prompts (e.g., Grow et al. 2009; Holcombe, Wolery, & Snyder 1994; Noell, Gresham, & Gansel 2002)
 - Not delivering a programmed prompt following an error

















Holcombe, Wolery, and Snyder (1994)

Errors of omission of controlling prompts

- High-integrity instruction
- Low-integrity instruction
 - Omitted prompts following 50% of incorrect responses
- Results
 - 3 of 4 participants mastered targets during both conditions
 - Low-integrity instruction required more time to teach targets
 - 1 participant did not master targets during low-integrity instruction
 - Mastered targets after exposure to high-integrity instruction



Integrity during Skill Acquisition

- Errors of omission of reinforcement (e.g., Bergmann, Kodak, & LeBlanc, under review; Carroll, Kodak, & Fisher, 2013)
 - Not delivering reinforcement following a correct response



- Compared high-integrity instruction to instruction with specific errors during 67% of trials
- Types of errors during instruction
 - Omission of reinforcement following correct responses
 - Omission of prompts following errors
 - Commission errors of prompts (added extra prompt not in protocol)







Integrity during Skill Acquisition

- Errors of commission of reinforcement (e.g., Bergmann, Kodak, & LeBlanc, under review; DiGennaro Reed, Reed, Baez, & Maguire 2011)
 - Providing reinforcement following an error



- Commission of reinforcement during DTT
 - Receptive identification task
 - Errors during trials
 - 0%
 - 50%
 - 100%

Limited acquisition with 50% and 100% errors



Integrity during Skill Acquisition

• Errors of commission of prompts (e.g., Carroll et al., 2013)

Adding extra prompts into instruction





MILWAUKEE Omission versus Commission Errors

- Comparison of omission and commission errors
 - Bergmann, Kodak, & LeBlanc (under review)
 - Which type of error is more detrimental to skill acquisition
 - Will the findings replicate those obtained for problem behavior?



Purpose

- 1. Compare effects of errors of omission and commission on skill acquisition
- 2. Evaluate effects of fewer integrity errors on learning



- Conditions
 - Control
 - High-integrity
 - Errors of commission 16%-17%
 - Errors of omission 16%-17%









High Integrity





High Integrity- Correct Response



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High Integrity- Incorrect Response



















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Summary of Results




























- Lower levels of integrity errors influence acquisition
 - 83% to 84% integrity slowed acquisition
- The specific type of integrity error that was most detrimental was idiosyncratic



Combined errors of omission and commission

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Common Combined Errors

- 1. Reinforced incorrect response and omitted prompt
 - Commission of reinforcement + omission of prompt
- Provided instruction multiple times and attended to problem behavior
 - Commission of prompt + commission of reinforcement for problem behavior



- Omitted prompt following no response and ended trial following problem behavior
 - Omission of prompt + commission of reinforcement
- 4. Conducted trial without ever securing attending and ended trial after no response
 - Two types of omission of prompt

MILWAUKEE Research on Combined Errors

Carroll et al. (2013)

- Compared low-integrity instruction with combined errors to high-integrity instruction
- During 67% of trials the experimenter:
 - Omitted reinforcement following a correct response
 - Omitted prompts following an error or no response
 - Delivered an additional instruction that was not part of the protocol

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MILWAUKEE Research on Combined Errors

Carroll et al. (2013)

- Low-integrity instruction either prevented or slowed acquisition
- No long-term effects on learning from low-integrity instruction
 - Participants acquired targets once exposed to high-integrity instruction
 - Results differ from Hirst and DiGennaro Reed (2015)



Measuring Treatment Integrity



Methods

 1. Correct implementation of each behavior/total number of times each behavior could occur during the session



- Example
 - 7 steps per trial (establish ready behavior, present materials in even horizontal array, secure attending to materials, deliver correct SD, wait 5 s for a response, provide a prompt if necessary, provide reinforcement if necessary)
 - 7 steps per trial X 10 trials per session= 70 possible steps
 - Instructor misses one behavior per trial (i.e., 6 correct steps per trial)
 - 60 correct steps/ 70 possible steps= 86% treatment integrity



Methods

- 2. Correct implementation of all steps in the trial/number of trials per session
 - Trials scored as 0 or 1



• Example

- 7 steps per trial (establish ready behavior, present materials in even horizontal array, secure attending to materials, deliver correct SD, wait 5 s for a response, provide a prompt if necessary, provide reinforcement if necessary)
- All steps must be conducted correctly in the trial to receive a score of 1
- Instructor misses one behavior per trial (i.e., 6 correct steps per trial)
- 0 correct trials/ 10 total trials= 0% treatment integrity



- Many studies on treatment integrity errors use the most conservative measurement method
- Many parent/staff/caregiver training studies use the *least* conservative measurement method



- Most conservative measurement method (must perform all steps correctly to score an instance of integrity)
 - Avoids consistent errors in one aspect of trial while still scoring high integrity
 - Ensure procedures are implemented exactly as intended most of the time
 - Ensure instructor is trained to high fidelity before using intervention



- Least conservative measurement method
 - Not all steps in the trial may be necessary
 - Could depend on the procedure (e.g., preference assessment in each trial)
 - May assist in identifying less critical components of procedure
 - Gives credit to instructor who performs most of the steps correctly
 - May reduce the length of time to train staff/caregivers

UNIVERSITY & WISCONSIN Limitations of Each Measure

- Most conservative measurement method (must perform all steps correctly to score an instance of integrity)
 - Assumption that each part of the trial is critical to learning
 - May be difficult for staff to maintain performance over time

UNIVERSITY & WISCONSIN Limitations of Each Measure

- Least conservative measurement method
 - May neglect to teach instructor some step(s) in intervention
 - Don't know which steps are critical for each client-may not perform the critical steps correctly
 - Overestimates integrity of intervention
 - False negatives for treatment



- When should we use more vs. less conservative measures of integrity?
 - Use more conservative measures if....
 - High-stakes situations
 - Intervention used in an RtI model prior to referral for special education
 - Outcomes used to determine whether individual will continue to receive services
 - Intervention being used for the first time
 - Trying to establish efficacy of intervention
 - Concerned about outcomes if integrity is lower



- Use less conservative measures if....
 - Intervention has been in place for a while
 - Intervention implemented with high integrity already
 - Maintaining reductions in behavior/mastered skill
 - Collecting integrity data once per day
 - Complete data after intervention has been used repeatedly within the same day
 - Steps may vary across sessions



- Examples of ways to measure integrity
 - Research
 - Practice

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	DateS	Skill:			Session:	D.	C	-
15	Target	Trial #	Indep	Model	Problem	SD	Prompt	Sr+
					behavior	Integ	Integ	Integ
		1	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		2	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		3	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		4	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		5	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		6	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		7	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		8	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		9	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		10	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		11	+ E NR	+ E NR	+ -	+ -	+ -	+ -
		12	+ E NR	+ E NR	+ -	+ -	+ -	+ -

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DateS	Skill:			Session:	D	.C	_
Target	Trial #	Indep	Model	Problem	SD	Prompt	Sr+
				behavior	Integ	Integ	Integ
	1	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	2	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	3	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	4	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	5	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	6	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	7	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	8	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	9	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	10	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	11	+ E NR	+ E NR	+ -	+ -	+ -	+ -
	12	+ E NR	+ E NR	+ -	+ -	+ -	+ -



DateSkill:			Sessi	on:I).C
Target	Trial #	Indep	Model	Problem	Integrity
				behavior	
	1	+ E NR	+ E NR	+ -	+ -
	2	+ E NR	+ E NR	+ -	+ -
	3	+ E NR	+ E NR	+ -	+ -
	4	+ E NR	+ E NR	+ -	+ -
	5	+ E NR	+ E NR	+ -	+ -
	6	+ E NR	+ E NR	+ -	+ -
	7	+ E NR	+ E NR	+ -	+ -
	8	+ E NR	+ E NR	+ -	+ -
	9	+ E NR	+ E NR	+ -	+ -
	10	+ E NR	+ E NR	+ -	+ -
	11	+ E NR	+ E NR	+ -	+ -
	12	+ E NR	+ E NR	+ -	+ -

UNIVERSITY & WISCONSIN Measuring Treatment Integrity

Collect data on reliability and treatment integrity

Bigger "bang for buck"



Instructor's Session Data

Date7/8/16Skill:_	Intraver	pal fill-ins_	_5-s TD	Session:_6_	D.CSB_
Target	Trial #	Indep	Model	Problem	Integrity
				behavior	
You eat	1	+ NR	+ E NR	+•••	+ -
You drink	2	+E JR	+ NR	+0	+ -
You play	3	+ E NR	+ E NR	+ -	+ -
You wear	4	+E NR	+ E NR	+0	+ -
You brush	5	+ ENP	+ NR		+ -
You watch	6	+E NR	+ E NR	+ 🖸	+ -
You drink	7	+E JR	🕀 NR	+ 🖸	+ -
You watch	8	+e nr	+ E NR	+ •	+ -
You eat	9	+E NR	+ E NR	+ -	+ -
You brush	10	+E NR	+ E NR	+ 🔿	+ -
You wear	11	+ NR	+ E NR	+ -	+ -
You play	12	+ NR	+ E NR	+••	+ -



Comparison of Data

Date 7/8/16 Skill:	Intraver	oal fill-ins	5-s TD	Session: 6	D		l:_Intrave1	bal fill-ins	5-s TD S	ession: 6	D.C. TK
Target	Trial #	Indep	Model	Problem	Inte	Target	Trial #	Indep	Model	Problem	Integrity
				behavior						benavior	
You eat	1	+ NR	+ E NR	+	+	You eat	1	+ NR	+ E NR	+0	(+) -
You drink	2	+E JR	+ NR	+	+	You drink	2	+E JR	ENR	+0	+
You play	3	+ E NR	+ E NR	+ -	+	You play	3	E NR	+ E NR	+ 🖸	+ -
You wear	4	+ NR	+ E NR	+	+	You wear	4	+ E NR	+ E NR	+•••	(+) -
You brush	5	+ ENP	+ NR	(+) -	+	You brush	5	+ ENP	🛨 NR	(+) -	+ -
You watch	6	+ NR	+ E NR	+ 🖸	+	You watch	6	+ NR	+ E NR	+ 🖸	+ -
You drink	7	+E JR	🕀 NR	+ -	+	You drink	7	+ E JR	🕀 NR	+ 🔁	(+) -
You watch	8	+e nr	+ E NR	+ -	+	You watch	8	🛨 e nr	+ E NR	+ 🖸	(-) -
You eat	9	+ NR	+ E NR	+ 🖸	+	You eat	9	E NR	+ E NR	+ 🖸	(+) -
You brush	10	+E NR	+ E NR	+ 🔿	+	You brush	10	+E NR	+ E NR	(+) -	(+) -
You wear	11	+ NR	+ E NR	+ -	+	You wear	11	+ NR	+ E NR	+ 🖸	(+) -
You play	12	+e nr	+ E NR	+ -	+	You play	12	+ NR	+ E NR	+•••	(+) -

- Reliability: 10/12= 83.3%
- Treatment integrity: 11/12= 91.6%



Date

Self-rating Integrity Checklist

Treatment Fidelity Checklist

Student							
Behavior	Instru (1-Ra Usual	ictor Ra rely, 2-	ting		Observe rating	Total Agreement	
Conducted training in a distraction-free environment	1	2	3	1	2	3	
Prepared relevant materials before instruction	1	2	3	1	2	3	
Identified three high-preference items	1	2	3	1	2	3	
Provided clear instructions	1	2	3	1	2	3	
Used prompts as described in the protocol	1	2	3	1	2	3	
Provided praise for correct responses	1	2	3	1	2	3	
Interspersed mastered tasks to maintain compliance	1	2	3	1	2	3	
Provided tokens for correct responses	1	2	3	1	2	3	
Allowed child to exchange tokens for reinforcer at end of instruction	1	2	3	1	2	3	
Ignored problem behavior and continued instruction	1	2	3	1	2	3	
Total score		/30					/10



- Complete self-ratings
 - Daily-ideal
 - Several times per week
 - Weekly
- Have a secondary observer also complete ratings



Self-rating Integrity Checklist

Treatment Fidelity Checklist

Date_7/7/16_____Student_Oliver_____

Behavior	Instructor Rating				Observer	Total	
	(1-Ra	(1-Rarely, 2-			rating	Agreement	
	Usual	ly, 3-Alv	vays)				
Conducted training in a	1	2	3	1	2	3	
distraction-free environment			$\mathbf{\mathbf{x}}$				
Prepared relevant materials	1	2	3	1	2	3	
before instruction							
Identified three high-preference	1	2	3	1	2	3	
items							
Provided clear instructions	1	2	3	1	2	3	
Used prompts as described in	1	2	3	1	2	3	
the protocol							
Provided praise for correct	1	2	3	1	2	3	
responses							
Interspersed mastered tasks to	1	2	3	1	2	3	
maintain compliance							
Provided tokens for correct	1	2	3	1	2	3	
responses			\mathbf{X}				
Allowed child to exchange	1	2	(3)	1	2	3	
tokens for reinforcer at end of							
instruction		-					
Ignored problem behavior and	1	(2)	3	1	2	3	
continued instruction							
Total score		26/30					/10



Date_

Self-rating Integrity Checklist

Treat	ment]	Fidelity	Chec	klist			
16Student	O	liver				_	
Behavior	Instru (1-Ra Usual	uctor Ra rely, 2- lly, 3-Alv	C)bserve rating	Total Agreement		
Conducted training in a distraction-free environment	1	2	3	1	2	3	1
Prepared relevant materials before instruction	1	2	3	1	2	3	1
Identified three high-preference items	1	2	3	1	\bigcirc	3	1
Provided clear instructions	1	2	3	1	2	3	0
Used prompts as described in the protocol	1	\mathbf{C}	3		2	3	0
Provided praise for correct responses	1	2	3	1	2	3	1
Interspersed mastered tasks to maintain compliance	1	(2)	3	1	(2)	3	1
Provided tokens for correct responses	1	2	3	1	(2)	3	0
Allowed child to exchange tokens for reinforcer at end of instruction	1	2	3	1	2	3	1
Ignored problem behavior and continued instruction	1	2	3	1	2	3	1
Total score		26/30					7/10


Self-rating Integrity Checklist

Treatment Fidelity Checklist				
Date_7/7/16Student_Oliver				
	Behavior	Instructor Rating (1-Rarely, 2- Usually, 3-Always)	Observer rating	Total Agreement
	Conducted training in a distraction-free environment	1 2 3	1 2 3	1
	Prepared relevant materials before instruction	1 2 3	1 2 3	1
	Identified three high-preference items	1 2 3	1 2 3	1
	Provided clear instructions	1 2 3	1 2 3	0
	Used prompts as described in the protocol	1 2 3	1 2 3	0
	Provided praise for correct responses	1 2 3	1 2 3	1
	Interspersed mastered tasks to maintain compliance	1 2 3	1 2 3	1
	Provided tokens for correct responses	1 2 3	1 2 3	0
	Allowed child to exchange tokens for reinforcer at end of instruction	1 2 3	1 2 3	1
	Ignored problem behavior and continued instruction	1 2 3	1 2 3	1
	Total score	26/30		7/10

POWERFUL IDEAS PROVEN RESULTS



- Evaluate accuracy of self-ratings
 - If two consecutive ratings are at or above 90%
 - Arrange fewer comparisons
 - If ratings are below 90%
 - Conduct re-training
 - Continue to monitor implementation and self-rating
 - Consider whether some aspect of treatment should be modified



Barriers to Measuring Integrity

UNIVERSITY OF WISCONSIN Barriers to Data Collection in Research

Perepletchikova, Hilt, Chereji, and Kazdin (2009)

- Survey of psychotherapy researchers
 Barriers to collecting data on treatment integrity in studies
 - 1. Lack of theory and guidelines on treatment integrity
 - How is treatment integrity defined and measured
 - What is the minimum amount of integrity that must be collected?
 - What is the minimum level of integrity that is acceptable?

Barriers to Data Collection in Research

Perepletchikova, Hilt, Chereji, and Kazdin (2009)

Barriers to collecting data on treatment integrity in studies

- 2. Time, cost, and labor constraints
 - Second person to observe implementation and collect data
 - Who will calculate integrity data and when?
- May be less of an issue for behavior analysts conducting research
 - Secondary observer to collect and calculate reliability

MILWAUKEE Barriers to Data Collection in Research

- Perepletchikova, Hilt, Chereji, and Kazdin (2009)
 - Barriers to collecting data on treatment integrity in studies
 - 3. Lack of editorial requirement for reporting treatment integrity data
 - Not a *requirement* for many journals (JABA, BAP, BI)
 - Issue can be resolved through the editor, AEs, and submission guidelines

UNIVERSITY OF WISCONSIN Barriers to Data Collection in Research

Perepletchikova, Hilt, Chereji, and Kazdin (2009)

- Survey of psychotherapy researchers
 - Barriers to collecting data on treatment integrity in studies
 - 1. Lack of theory and guidelines on treatment integrity
 - 2. Time, cost, and labor constraints
 - 3. Lack of editorial requirement for reporting treatment integrity data

Need to identify an acceptable criterion for treatment integrity



- Acceptable criterion level for integrity?
 - **90%**
 - Above 80%
- What does our research show?
 - Higher than 75%
 - High 90's is sufficient, based on many published studies



- Determine the effects of incremental deviations to integrity
 - 100% (control condition)
 - 95%
 - 90%
 - 85%
 - 80%
 - 75%



Strategies to Promote High Integrity



- 1. Conduct adequate training
- 2. Provide ongoing feedback to instructor



- Behavioral skills training (BST)
 - Instructions, modeling, rehearsal, and feedback
 - Over 100 studies supporting the efficacy of this training
 - Can be conducted in groups or one-on-one
- Limitations
 - Resource intensive
 - Poor maintenance of effects over time
 - May not generalize to novel learners or settings without remedial training (Rosales, Stone, & Rehfeldt, 2009)



Video Modeling

- May require less direct support from trained staff
- Video can be viewed in any setting, at any time, and repeatedly
- Effective for teaching staff to implement early intervention practices (e.g., Catania, Almeida, Liu-Constant, & DiGennaro Reed, 2009; Vladescu, Carroll, Paden, & Kodak, 2012)



- 3 novel staff members with no prior DTT experience
 - Implemented intervention with adult confederate
 - Assessed performance with clients with ASD
- Video model of receptive identification training
 - Included voiceover and text instruction during video
- Assessed treatment integrity following video model
 - No feedback provided to staff member
- Assessed generalization of trained skills to untrained protocols (i.e., expressive identification and match-to-sample)







Video Modeling

Limitations

- Requires time and resources to create video model
- May consistently miss step(s) that the video doesn't adequately teach



- Performance Feedback
 - Provide graphs or written feedback on performance of an intervention
 - Can include displays of teacher integrity and student behavior
 - Shown to maintain treatment integrity following training (Noell et al., 1997; 2000; 2002)



- Performance Feedback, practice, negative reinforcement contingency (DiGennaro et al., 2005)
 - Brief daily feedback
 - Require repeated practice of incorrect intervention steps contingent on lower levels of integrity
 - Integrity increased to 100% with performance feedback package
 - Maintained integrity when package was faded to once per week and every 2 weeks



General Recommendations

MILWAUKEE General Recommendations

- Consider 80%-90% as a minimum criterion
- Conduct training using most conservative integrity measure
 - Have to perform all steps correctly to score instance of integrity
- Measure integrity frequently at onset of intervention
 Identify reasonable schedule for integrity checks

UNIVERSITY & WISCONSIN General Recommendations

- Develop follow-up strategies
 - Criterion for re-training
 - E.g., two integrity checks with TI below 80%
 - Reinforcement for high integrity during checks
- Arrange contingencies for integrity
 - Report high integrity in quality assurance measures
 - Merit raises/promotion include integrity measures in matrix



Graduate students at UWM

- Samantha Bergmann
- Brittany LeBlanc



Treatment Integrity in Early Intervention

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