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Meta-Analysis of Effective Instruction Delivery

Halley Blanchard

META-ANALYSIS OF EFFECTIVE INSTRUCTION DELIVERY

by

Halley Blanchard

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Approved by:

Dr. D. Joe Olmi, Committee Chair
Dr. Crystal N. Taylor
Dr. Michael Mong
Dr. Zachary LaBrot

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ABSTRACT

Effective instruction delivery (EID) is a combination of antecedent and consequent strategies used to increase child compliance with adult instructions. The current meta-analysis sought to evaluate the effects of EID as an independent and combined treatment component across studies, as well as evaluate the reported treatment acceptability across studies. Additionally, moderator analyses were conducted to determine the impact of interventionist type (i.e., parent or teacher), implementation setting, child age, and child diagnosis on the effects of EID on child compliance. The analysis generated large effect sizes for EID across studies and high levels of treatment acceptability. The effects of EID were not determined to be impacted by the factors included within moderator analyses. Limitations and future directions are discussed.

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DEDICATION

This project is dedicated to my friends and family that have pushed me to complete difficult tasks without ever believing that they would not get done. To my parents, Brent and Rhea, and my siblings, Benton and Ava, thank you for the support, motivation, and laughs across 26 years. I am grateful for my longtime friends, especially Claire T. Barbier, Whitney Veron, and Maddy Martin, for answering the anxious calls, sending the supportive texts, and engaging in shenanigans as needed. This project is also dedicated to my internship cohort and office mates who supported me in the completion of this feat, especially Raquel Gutierrez, Jessica Mandell, and Julia Najm. You have all contributed to this dissertation (and my life) immensely.

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LIST OF ABBREVIATIONS

CP	Contingent Praise
CTC	Compliance Training for Children
DI	Direct Instruction
EC	Eye Contact
EID	Effective Instruction Delivery
ID	Indirect Instruction
NEC	No Eye Contact
TI	Time In
TO	Time Out
USM	University of Southern Mississippi

CHAPTER I - INTRODUCTION

Childhood noncompliance is a commonly reported behavioral concern, with 25-65% of parents of children non-referred for treatment noting noncompliance in the home (Kalb & Loeber, 2003). Some developmental models project early childhood noncompliance preceding several negative outcomes including poor school performance, peer rejection, and delinquency (Forehand & Wierson, 1993). Alternatively, childhood compliance is often viewed as a keystone behavior that positively influences a range of other behaviors including decreased aggression, decreased self-injurious behaviors, and improved academic performance (Barnett et al., 1996; Ducharme & Shecter, 2011; Matheson & Shriver, 2005; Russo et al., 1981).

Compliance, often conceptualized as following directions, has been defined as a child initiating demanded responses (Wruble et al., 1991). Marion (1983) separates the definition of compliance into two components: the specification of behaviors that are expected to be performed and the amount of time in which to perform them. Naturally, noncompliance is then defined as "not following a direction within a reasonable amount of time" (Rhode et al., 1995, p. 4).

Variables Affecting Compliance

Consequent Variables

The manipulation of consequences surrounding compliance, including the use of time-out for noncompliance and praise for compliance, have been determined to be effective in increasing compliance across studies (Bellipanni, 2005; Everett, 2006; Marlow et al., 1997; Olmi et al., 1997; Radley & Dart, 2016). While these strategies generally produce improved compliance, practitioners and researchers have highlighted

the need to evaluate antecedent approaches for behavior change in order to avoid the occurrence of problem behaviors (Kern & Clemens, 2007).

Antecedent Variables

Time-in, associated with time-out procedures, is one commonly researched antecedent to compliance (Rapoff & Christophersen, 1982). When comparing the effects of time-in as a stand-alone procedure to the combined effects of time-in and time-out for children with language disorders, Marlow et al. (1997) determined that time-in resulted in significant improvements in compliance (with percentages of compliance increasing from 21%, 22%, and 27% during baseline observations to 66%, 60%, and 66% during time-in). Although further improvements in compliance were seen with the addition of time-out, the results of this study reflect the utility of antecedent strategies to prevent problem behaviors. These findings related to time-in have been replicated across a number of studies (Bellipanni, 2005; Ford, 1998; Marlow, 1997; Olmi et al., 1997).

The amount of time allowed to initiate compliance following the delivery of a command, known as response latency, is another antecedent variable associated with compliance. In a study of 15 non-referred preschool children and their mothers, response latency of compliance was measured to average 5.4 s or less across 85% of observations (Wruble et al., 1995). These findings support the recommendation that children should generally be allowed at least 5 s to initiate compliance following the delivery of a command, with time varying based on the complexity of the command and development of the child.

In order to expand upon techniques used to increase compliance rather than identifying common antecedents to compliance, Radley and Dart (2016) identified three

evidence-based antecedent strategies for compliance according to What Works Clearinghouse (WWC; Kratochwill et al., 2010) single-case design standards in a systematic review of 42 studies. These strategies included errorless compliance training, high-probability command sequences, and effective instruction delivery. Errorless compliance training is a strategy in which instances of noncompliance are treated as errors, which are to be minimized by beginning with demands associated with higher compliance and building towards demands associated with lower compliance over time (Ducharme & Diadamo, 2005). Similarly, high-probability command sequences involve the presentation of a series of demands that the child is likely to comply with (high-probability commands) followed by the presentation of a demand that the child is less likely to comply with (low-probability command), using the concept of behavioral momentum (Rortvedt & Miltenberger, 1994). Effective instruction delivery (EID) is a collection of antecedent and consequent strategies used to increase compliance (Ford, 1998). The individual components of EID will be discussed throughout this review.

Command Type. The structure of commands delivered is a key variable in compliance, appearing in the compliance literature for decades (Roberts et al., 1978). Early manipulations of command type have included alpha commands and beta commands. An alpha command involves the delivery of a clear, specific, direct instruction followed by a 5-s period of silence to allow for compliance. In contrast, a beta command is described as indirect and vague, often presenting demands as a list or as questions. Roberts et al., (1978) investigated the comparative effects on compliance of parent training on command delivery, training on command delivery and time-out, and no training. Training on command delivery resulted in a 28.7% increase in compliance levels

from baseline, while training in both command delivery and time-out produced a 48.1% increase (Roberts et al., 1978).

The comparative effects of alpha commands with and without the addition of praise were evaluated by Matheson and Shriver (2005), training three general education teachers in each procedure who were experiencing issues with noncompliance. Training in the use of alpha commands resulted in increases in student compliance from 49.50% to 56.5%, 51.63% to 71%, and 44.5% to 61.25%. With the addition of praise, further increases in compliance to 66.44%, 84%, and 67.50% respectively were demonstrated. Supporting the conceptualization of compliance as a keystone behavior, increases in academic performance and decreases in disruptive behaviors were seen as compliance increased.

Effective Instruction Delivery. Effective instruction delivery, otherwise referred to as EID, is a combination of antecedent and consequent strategies designed to increase child compliance with adult requests. Components of EID include obtaining momentary eye contact before delivering instructions, providing praise for eye contact, delivering instructions as directives rather than questions, delivering instructions within close proximity of the child, using descriptive commands, allowing 5 s for the child to initiate responding, and providing praise for compliance (Ford, 1998). The term was initially used by Ford (1998) and has continued to be used across multiple studies (Bellipanni, 2013; Blanchard, 2021; Faciane, 2001; Faciane, 2004; Roberts et al., 2008). EID's impact on child compliance has been documented across classroom, clinic, and home settings, with the majority of studies focusing on clinic and classroom utility (Blanchard, 2021; Everett et al., 2005; Ford, 1998; Mandal et al., 2000; Scoggins, 2005).

In a Head Start preschool setting, Scoggins (2005) evaluated the effectiveness of EID and contingent praise as classroom management strategies. Teachers referred for classroom behavioral concerns received training on EID and the use of contingent praise for appropriate behaviors. During the EID phase, levels of compliance increased from baseline by 23.75%, 17.56%, and 7.98%. With the addition of contingent praise, one classroom displayed a 4% increase in compliance levels, while decreases in compliance of 10% and 1% were seen in the remaining two classrooms. As this finding regarding praise is contradictory to much of the literature base, investigators attributed this reduction in compliance to poor treatment integrity of the teachers (Scoggins, 2005).

Additional Components of EID

Proximity of Command Delivery

As a component of EID, commands are to be delivered within close proximity of the child. This component, along with contingent praise and command type, was evaluated by Griffin (2007) within the general education setting. Students were separated into two groups, the first of which was delivered commands by a teacher standing at a distance of 5 ft or less from the student, while the second group was delivered commands from a distance of over 10 ft. In a subsequent phase, one group was provided demands in the form of questions, while the second group received direct statement commands. Lastly, contingent praise and EID in its entirety were utilized across both groups in the final phase. Results indicated that direct commands delivered within close proximity yielded compliance levels of 75% and 85%. The final phase including contingent praise and other components of EID further improved compliance in both close proximity and distant groups (Griffin, 2007).

Eye Contact

As a component of EID, the individual providing instructions must obtain eye contact from the child (i.e., instructing the child to look at them) and praise the child for complying with eye contact prior to delivering the intended demand. The significance of this component has been evaluated across several studies with inconsistent results. Hamlet et al. (1984) evaluated demanded eye contact using an AB design with two students in the classroom setting. In the intervention phase, teachers obtained each student's eye contact by stating their name. If the student did not look towards the teacher within 2 s, the teacher called the student's name and said, "Look at me." Once momentary eye contact was established, a command was delivered. Both students demonstrated significant increases in compliance levels from baseline ranging from 20 to 60% (Hamlet et al., 1984). Of note, demanded eye contact procedures were implemented only after the first instance of noncompliance.

Everett et al. (2005) evaluated the contributions of eye contact and contingent praise (CP) to the effectiveness of EID in a clinic setting. Participants were four parent-child dyads referred for concerns related to noncompliance who demonstrated compliance with less than 40% of demands during baseline observations. Throughout the baseline phase, parents provided 20 demands as they typically would. Following baseline, parents were trained in the use of EID and CP until 80% mastery of the skills was demonstrated. During the instructions phase, parents implemented all components of EID with the exceptions of eye contact and praise. This included delivering commands within close proximity, using specific and direct commands, and allowing a 5-s response latency. In the eye contact phase, parents continued to implement the previous

components of EID, adding in demanded eye contact. In the final phase, parents implemented all components of EID, including providing praise for compliance.

Average percentages of compliance of participants during baseline were 32%, 33%, 34%, and 28%. With the introduction of EID without eye contact and praise, compliance levels increased to 43%, 48%, 51%, and 51%, respectively. During the eye contact phase, further increases from 43% to 65%, 48% to 68%, 51% to 63%, and 51% to 66% were experienced for each participant. Additional increases were seen with the addition of contingent praise. These findings indicate that both eye contact and praise components of EID have significant impacts on child compliance. However, it is important to note that while these findings support the use of the components, parent treatment integrity for the implementation of demanded eye contact was variable throughout the study. Specifically, the highest percentage of treatment integrity obtained for demanded eye contact was 87%, ranging from 74-87% across participants for phases in which demanded eye contact was required. Additionally, parents often implemented contingent praise during phases which were intended to exclude the component (Everett et al., 2005).

Faciane (2001) further evaluated the effects of demanded eye contact and praise for eye contact as components of EID. Participants included three young children, ranging from three to four years of age, referred for problems related to compliance with adult directives. During a brief (approximately 15 min) screening session, participants were presented 15 commands by their parents in a private clinic room. Those 15 commands were utilized as a bank of potential commands throughout the study. Compliance was defined as the child initiating the demanded response upon first delivery

within 5 s. Following screening, participants were presented 10 of the 15 commands by the investigator for 3 observation sessions, with time-in and contingent praise offered in a manner similar to the parents.

Following the baseline phase, participants received three modes of treatment in randomly determined order: demanded eye contact with praise provided, demanded eye contact with no praise provided, and no demanded eye contact with no praise provided. Time-in, contingent praise for compliance, and options of commands were maintained throughout the study. During the "eye contact with praise" phase, the experimenter obtained eye contact by directing the child to look at the experimenter. Once eye contact was established, the experimenter provided behavior-specific praise for engaging in eye contact. At that time, one of the 15 commands was delivered. If the participant did not initiate eye contact upon request, the experimenter physically guided the child's face towards themselves. If this resulted in eye contact, praise was provided. In the demanded eye contact with no praise condition, eye contact was established in the same manner as detailed above. However, once momentary eye contact was obtained, a demand was delivered without first praising for eye contact. Lastly, in the no eye contact with no praise condition, the experimenter delivered commands in the format of other EID components, but without obtaining and praising for eye contact. The condition that resulted in the highest percentage of demands complied with entered a verification phase to determine if effects were maintained.

The results of this study showed little-to-no increases in compliance levels from baseline during any of the treatment conditions, contradicting prior findings on the effects of EID. However, problems associated with treatment integrity were noted, including the

inability to obtain eye contact during demanded eye contact conditions due to one participant closing their eyes throughout. A second participant showed some improvement in the demanded eye contact with no praise condition, but effects were not maintained during independent verification. The third participant demonstrated small increases in compliance during the eye contact with praise condition. However, these findings were also not replicated in the independent verification phase and were inconsistent with previous findings related to EID (Faciane, 2001).

Faciane (2004) continued this research by evaluating the effects of demanded eye contact on compliance separate from EID and praise. Participants included three children between two and three years of age, referred to a child psychology clinic for problems related to compliance with adult directives. During screening sessions, participants initiated compliance with 40% or less parent directives. As in Faciane (2001), the 10 commands utilized by the experimenter during baseline sessions were randomly selected from a bank of 15 demands provided by parents during screening sessions. During experimental phases, two participants received alternating treatments twice daily for 10 minutes each, while the third participant receiving one session daily due to decreased compliance in the initial two conditions. In total, each participant received 4 treatment conditions.

Across all conditions, the experimenter provided contingent praise for compliance in accordance with EID protocols. During the no eye contact condition, the experimenter utilized EID, time-in, and contingent praise without demanded eye contact components, intentionally avoiding eye contact with the child prior to delivering a command. In the eye contact condition, EID was implemented in its entirety, including demanded eye

contact components. Eye contact was established in the same manner as Faciane (2001). The study concluded with an independent verification phase for the condition which resulted in the highest percentage of compliance with demands.

Similar to Faciane (2001), the results of Faciane (2004) were inconsistent with previous findings on the effects of EID and demanded eye contact (Everett et al., 2005). Two participants demonstrated small increases in compliance with treatment; however, the third participant displayed no significant change from baseline during either treatment condition. Of the two participants that demonstrated response to treatment, one exhibited substantial overlap with baseline data throughout. Two participants displayed no differences between eye contact and no eye contact conditions. The third participant showed small improvement in the demanded eye contact condition, but the independent verification phase yielded compliance levels lower than those observed during baseline sessions (Faciane, 2004).

Blanchard (2021) evaluated the effects of parent-implemented demanded eye contact as a component of EID via telehealth in the home setting. Participants included three mother-child dyads, with children ranging from three to nine years of age, with concerns related to noncompliance located throughout the United States. During one screening session and two additional baseline sessions, the experimenter remotely observed parents delivering commands as they typically would through a webcam in their home. Sessions were 10 min in duration or until 10 commands were delivered. Participants were required to demonstrate compliance with 60% of demands or less in order to participate in the study. Across the three participants, baseline levels of compliance averaged 36.7%, 30.73%, and 41.8%.

Following the baseline phase, participants entered one of two treatment phases in randomly determined order: EID with eye contact (EC) or EID with no eye contact (NEC). In the EC phase, parents were trained in the use of EID with all components, including demanded eye contact. In the NEC phase, parents were trained in all components with the exception of those addressing eye contact (i.e., obtaining and praising for eye contact). At the conclusion of each phase, parents were retrained in the steps of EID required for the subsequent phase. Parent treatment integrity data were collected throughout, as well as the percentage of commands complied with by the child (Blanchard, 2021).

Consistent with Faciane (2001) and Faciane (2004), the results of Blanchard (2021) showed similar variability between and within participants. The first participant showed an average increase from baseline levels of 36.7% to 50% in the NEC condition. However, data were highly variable across sessions, ranging from 10% to 70%. Further increases in level to 56% were seen in the EC condition with slightly less variability. The second participant showed an increase from baseline levels of 30.73% to 86% during the EC phase, with session-by-session compliance ranging from 70% to 100%. Compliance decreased in the NEC condition to an average of 76%, but sessions varied from 60% to 90%. The third participant showed an average increase from baseline levels of 41.8% to 52% during the NEC condition. However, similar variability was seen across sessions, ranging from 40% to 70%. Compliance decreased to an average of 50% with the addition of eye contact, ranging from 30% to 70%.

While differences between phases were too small to draw meaningful conclusions about the effects of demanded eye contact, parent treatment integrity was notably high

throughout the study, despite its remote telehealth format. Across phases, observed treatment integrity ranged from 92.86% to 100% (Blanchard, 2021).

Systematic Reviews and Meta-Analytic Studies

In their systematic review of antecedent strategies to promote compliance, Radley and Dart (2015) included 42 total studies with 8 evaluating the effect of command form on compliance. Within the pool of 8 studies evaluating command form, 6 specifically implemented EID as the independent variable both with and without other strategies (e.g., time-in and precision requests). Participant age ranged from 2 to 12 years of age. Of the 28 participants included in studies, 11 were reported to have identified disabilities, including attention-deficit/hyperactivity disorder, language delay, Down syndrome, intellectual disability, and specific learning disability. The authors concluded that antecedent interventions manipulating command form may be classified as "probably efficacious" based on Chambless et al. (1998) standards (Radley & Dart, 2015).

Within their review, Radley and Dart (2015) identified gaps in the compliance training literature evaluating antecedent interventions. The small number of studies including participants with identified disabilities, as well as a limited range of disabilities among the ones reported, limit the determination of whether EID and other manipulations of command type are empirically supported within those populations. Additionally, the authors noted that only 6 of the 42 reviewed studies included participants over the age of 10. Further research is needed evaluating the efficacy of antecedent strategies for compliance across pediatric age ranges and disabilities (Radley & Dart, 2015).

Derieux (2021) conducted a meta-analysis evaluating treatment effects, settings of implementation, characteristics of interventionists as moderators, and adherence to

single-case design standards of studies utilizing the Compliance Training for Children (CTC) Model. This model includes time-in, time-out, contingent praise, and EID. Twenty-five studies were included in the analysis, including fifteen unpublished theses and dissertations. Moderate to large effect sizes were reported across all component subgroups of the Model. Both intervention setting and primary interventionists were determined to be moderators for the Model's effects on child compliance, while studies' adherence to What Works Clearinghouse's single-case sign standards did not modify effects on compliance (Derieux 2021).

While Derieux (2021) included several strategies for compliance within a single treatment package, several limitations to the scope of the meta-analysis were presented. All studies included in the analysis were completed at the University of Southern Mississippi. Additionally, no studies included in the analysis were conducted within the home setting in an effort to control extraneous variables in the analysis of the effects of the treatment package. These limitations in the scope of the analysis may be due to the number of intervention components assessed within the CTC Model.

In order to address these gaps in the literature, the purpose of the current meta-analysis was to analyze the effects of EID across the compliance training literature. The following research questions were addressed:

1) What is the effect of EID as a single or combined treatment on child compliance across home, clinic, and school settings?
2) Does the primary interventionist (e.g., parent, teacher, or researcher) or location (e.g., school, home, or clinic) moderate the effects of EID on child compliance?

3) Do participant characteristics (e.g., age and identified disability) moderate the effects of EID on child compliance?
4) Do interventionists (e.g., parent, teacher, or researcher) report EID to be an acceptable treatment for child noncompliance?

CHAPTER II – METHOD

Article Identification

Scholarly database searches were conducted on PsychINFO, ProQuest Dissertation Abstracts, Educational Resources Information Center (ERIC), and Aquila platforms. Search terms were developed in order to identify studies utilizing EID and measuring child compliance as an outcome variable. Search terms utilized included "effective instruction delivery", "EID", "compliance training", and "children". The Boolean operator "AND" was used to combine search terms.

As an initial screening process, titles and abstracts were read by the primary investigator to determine whether studies included child participants, assessed child compliance with following directions, and included an intervention for improving child compliance, particularly involving the manipulation of command type consistent with EID. As a second tier of screening, manuscripts that did not list independent variables, dependent variables, and participant type in the title or abstract were scanned for these factors within the respective sections of the document. Articles that did not meet these initial criteria were excluded from further analysis.

After irrelevant articles were removed, the remaining articles were reviewed to determine whether they met inclusion criteria for the analysis. To be included, articles must have reported results of a single-case study. Studies must have been conducted with children or adolescents and must have utilized EID as an intervention strategy. Included studies also reported compliance as an outcome and included a measure of treatment acceptability. Lastly, included articles were written or available in English. Articles that did not meet these inclusion criteria were excluded from review.

Coding Procedures

After articles were selected for inclusion (11 articles in total), each article was coded for factors relevant for data extraction, including participant information (i.e., number of participants, age, gender, ethnicity, disability status, and geographic location), intervention information (i.e., setting of intervention, intervention components, target behaviors, and dosage), interventionist information (i.e., title, age, gender, ethnicity, and years of experience), study design information (i.e., experimental design, outcome measure, treatment integrity), and characteristics of the article or dissertation (i.e., date published, publication outlet, and peer-review status). Each of these factors were coded utilizing a dummy coding system for consistency in data extraction. Coders included fifth and fourth-year graduate students completing doctoral training in school psychology.

Inter-rater Agreement

Inter-rater agreement was calculated for article coding and data extraction for 30% of articles in accordance with What Works Clearinghouse standards (What Works Clearinghouse, 2022). Agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements, then multiplying by 100 to obtain a percentage of agreement. Agreement in article coding was defined as codes for each of the 5 domains (participant information, interventionist information, intervention information, design information, and article characteristics) matching across coders on the article coding grid. Agreement in data extraction was defined as data points matching to the nearest whole number across data points.

Data Extraction

Data extraction was completed using DigitizeIt 2.5, a plot digitizer software available Windows, Mac, and Linux operating systems for converting graphs and charts to numeric data (Bormann, 2012). In a comparative analysis of reliability and validity of data extraction software for single-case research, Rakap et al. (2015) analyzed correlations between data points extracted by primary and secondary coders across 60 graphs. The mean correlation coefficient was $r = .990$ (range of .993 to 1.00). Additionally, the correlation coefficient for data extracted by coders and actual values reported in studies across 30 graphs was $r = .998$ (Rakap et al., 2015).

Training Data Collectors

Two fourth and fifth-year graduate student data collectors were trained by the primary investigator on coding procedures and data extraction. The primary investigator met with each data collector in person to review the coding grid and proper use of dummy codes, assist with downloading and accessing DigitizeIt, and train on the use of DigitizeIt to extract data. Training sessions included didactic teaching, providing written instructions, modeling coding and data extraction procedures, observing practice, and providing feedback. Data collectors were able to begin coding and extracting data after demonstrating 90% agreement with the primary investigator across practice trials during training.

Effect Size Calculation and Data Analysis

Once data were extracted from identified articles and input into an Excel spreadsheet, mean, standard deviation, and standard error values were calculated for each phase in individual studies. Effect size calculations for each study were completed using

Tau or baseline-corrected Tau methods to account for baseline trends in data (Vannest et al, 2016). Across studies, each treatment and follow-up phase was compared to baseline to determine effects and account for multiple treatment components. Calculations were completed using an online calculator, and recommendations for baseline correction were generated based on data trends in each baseline phase (Tarlow, 2017). Tau effect sizes were interpreted as follows: 0.20 or less is a small effect, 0.2 to 0.6 is a moderate effect, 0.6 to 0.8 is a large effect, and above 0.8 is a very large effect (Vannest & Ninci, 2015). Standard mean difference (SMD) was utilized to determine effect sizes across studies. These data were input into R Statistical software to calculate omnibus effect of EID on child compliance. Additionally, a meta-regression was conducted to determine moderating effects of setting, participant age, participant disability status, and interventionist type.

CHAPTER III - RESULTS

Study Identification

Initial searches across PsychINFO, Proquest, ERIC, and Aquila databases yielded 111 results. A significant number of studies (n = 90) were excluded based on reading of titles and abstracts, including studies related to medical compliance and adult adherence to therapeutic techniques. An additional 3 articles were excluded from the second tier of screening as they did not include components of EID as an intervention strategy. After this initial exclusion, the remaining 18 articles were reviewed by the investigator and duplicated articles across platforms were limited to one version of the article. After duplicates were removed, 11 studies were determined to meet criteria for inclusion in this analysis. One study (Benoit 2000) was excluded due to graphical presentation preventing accurate data extraction, including X and Y-axes extending into the negative value and overlap of scales.

Study Characteristics

The 10 studies included in the analysis are displayed in Table 1. Of the 10 studies, 2 were published in peer-reviewed journals while 8 were unpublished theses or dissertations.

Table 1

Experimental Studies Including EID as a Treatment Component for Noncompliance

Authors and Publication Date	**Participant Characteristics**	**Primary Interventionist and Setting**	**Treatment Components**
Bellipanni (2005)	4 preschool aged with diagnoses of developmental delay (4 participants), Down syndrome (1 participant), and metabolic disorder (1 participant)	Teacher in the school setting	EID, CP, TI, TO
Benoit (2000) *excluded from analysis	4 participants with unspecified ages and diagnoses of learning disability (1 participant), speech and language disorder (1 participant), and 2 with no diagnoses	Parent in home and clinic settings	EID, TI
Blanchard (2021)	1 preschool aged and 2 elementary aged with no diagnoses	Parent in the home setting (remote through telehealth)	EID
Everett et al. (2005)	2 preschool aged and 2 elementary aged with a diagnosis of ADHD (1 participant)	Parent in the clinic setting	EID
Ford et al. (2001)	3 preschool aged and 1 elementary aged with no diagnoses specified	Teacher in the school setting	EID, TI, TO
Griffin (2007)	4 elementary aged with diagnoses of intellectual disability (1 participant), specific learning disability (1 participant), and 2 participants with no diagnoses	Teacher in the school setting	EID, CP, TI

Table 1 Continued

Mandal (2001)	4 preschool aged with a diagnoses of developmental delay (3 participants) and 1 with no diagnosis	Parent in the clinic setting	EID, CP, TI
Miller Johnson (2022)	2 preschool aged and 1 elementary aged with a diagnosis of adjustment disorder (1 participant) and 2 with no diagnoses	Parent in the home setting (remote through telehealth)	EID, CP, TI
Roberts (2005)	3 preschool aged and 1 elementary aged with diagnoses of developmental delay (2 participants), Down syndrome (1 participant) and 1 participant with no diagnosis	Parent in the clinic setting	EID, CP, TI, TO
Scoggins (2005)	2 preschool aged and 1 high school aged classes with no diagnoses specified	Teacher in the school setting	EID, CP
Wimberly (2016)	4 preschool aged with no diagnoses	Teacher in the school setting	EID

Note: Components investigated include effective instruction delivery (EID), contingent praise (CP), time-in (TI), and time-out (TO).

Participant Characteristics

Of the 37 participating children included in the current analysis, 64.9% were reported to identify as White, 24% identified as Black, 2.7% identified as Biracial, and 8.2% had unreported racial identities. 51.4% of participating children reportedly identified as male, 40.5% identified as female, and 8.2% had unreported gender identities. Across studies, 70.3% of participating children fell between the ages of 2-5,

29.7% fell between the ages of 6-10, and 2.7% fell between the ages of 14-18. 37.8% of included participants had a noted diagnosis or disability classification, 43.2% had no disability or diagnosis, and 18.9% were not reported.

Intervention Characteristics

Across the 10 studies included in this analysis, 9 included individuals as target participants (Bellipanni, 2005; Blanchard, 2021; Everett et al., 2005; Ford et al., 2001; Griffin, 2007; Mandal, 2001; Miller Johnson, 2022; Roberts, 2005; Wimberly, 2016), while 1 intervention was class-wide (Scoggins, 2005). Fifty percent of included studies involved implementation within the school setting (Bellipanni, 2005; Ford et al., 2001; Griffin, 2007; Scoggins, 2005; Wimberly, 2016), 20% in the home setting (Blanchard, 2021 & Miller Johnson, 2022), and 30% in the clinic setting (Everett et al., 2005; Mandal, 2001; Roberts, 2005). Only 30% of studies utilized EID and its components as a singular treatment for noncompliance (Blanchard, 2021; Scoggins, 2005; Wimberly, 2016) and 70% included EID within a collection or package of treatment approaches, including time-in, time-out, and contingent praise. The number of instructions evaluated in each study ranged from 10-20 per participant. All studies identified child noncompliance as the primary dependent variable.

Interventionist Characteristics

Interventionist characteristics varied across studies, with 50% of studies utilizing teachers as the primary interventionist and 50% of studies relying on parents. Two studies (Blanchard, 2021; Miller Johnson, 2022) reported interventionist age, ranging from 29-38 years. Miller Johnson (2022) and Wimberly (2016) were the only studies reporting interventionist race, with 5 interventionists identifying as White and 2 identifying as

Black across studies. Of the 37 interventionists, 16.2% reported 0-1 years of experience, 13.5% reported 2-5 years, 2.7% reported 6-10 years, and 67.7% did not report interventionist experience.

Design and Methods Characteristics

All included studies utilized multiple baseline single-case designs with the exception of Blanchard (2021), which utilized an ABC design. One hundred percent of studies obtained data through direct observation, collected treatment integrity data for 100% of intervention sessions, and utilized a measure of treatment acceptability. Sixty percent of studies utilized the Treatment Acceptability Rating Form-Revised (TARF-R) as their measure for treatment acceptability, 40% utilized the Intervention Rating Profile (IRP-15), and 10% utilized the Behavior Intervention Rating Scale (BIRS). Across all studies, 100% of rater responses fell within the "acceptable" range on their respective measure of treatment integrity for treatment components involving EID.

Interrater Agreement

Interrater agreement was obtained across codes for 30% of studies included within this analysis. Articles for coding were randomly selected and provided to a secondary coder along with the coding sheet included in Appendix A. Codes were discussed until 100% agreement was reached across raters. Additionally, interrater agreement for data extraction was calculated by dividing the number of agreements (up to the nearest whole number) by the total number of data points across 30% of articles included in the analysis. Interrater agreement was 84%. As DigitizeIt is highly sensitive to cursor location, variance in data extraction values were typically less that 0.5 of a percentage.

Effect Sizes (Question 1)

Effect Sizes Across Studies

Effect sizes were calculated across participants for each study utilizing baseline-corrected Tau and are displayed in Table 2. One study (Wimberly, 2016) required correction for baseline trends. Effect sizes across studies generally ranged from moderate to large with some yielding small effects in a single phase (Mandal, 2001; Scoggins, 2005).

Table 2

Tau Effect Sizes Across Studies

Study	**Participant/Class**	**Phase**	**Baseline-Corrected Tau**	**Effect Size**
Bellipanni (2005)	1	BL – CP	0.775	Large
		BL – CP/TI/EID	0.756	Large
		BL – CP/TI/EID/TO	0.732	Large
		BL – FOL	0.775	Large
	2	BL – CP	0.756	Large
		BL – CP/TI/EID	0.756	Large
		BL – CP/TI/EID/TO	0.756	Large
		BL – FOL	0.730	Large
	3	BL - CP	0.756	Large
		BL – CP/TI/EID	0.745	Large
		BL – CP/TI/EID/TO	0.775	Large
		BL – FOL	0.775	Large
	4	BL – CP	0.803	Very Large
		BL – CP/TI/EID	0.791	Large
		BL – FOL	0.775	Large
Blanchard (2021)	1	BL – NEC (EID without EC)	0.439	Moderate
		BL – EC (EID)	0.732	Large
	2	BL – EC	0.732	Large
		BL – NEC	0.745	Large

Table 2 Continued

	3	BL – NEC	0.348	Moderate
		BL – EC	0.775	Large
Everett et al. (2005)	1	BL – DI	0.775	Large
		BL – DI/EC	0.732	Large
		BL – DI/EC/CP	0.756	Large
	2	BL – DI	0.730	Large
		BL – DI/EC	0.730	Large
		BL – DI/EC/CP	0.655	Large
	3	BL – ID	0.770	Large
		BL – ID/EC	0.767	Large
		BL – ID/EC/CP	0.770	Large
	4	BL – ID	0.756	Large
		BL – ID/EC	0.745	Large
		BL – ID/EC/CP	0.739	Large
Ford et al. (2001)	1	BL – EID	0.756	Large
		BL – EID/TI	0.756	Large
		BL – EID/TI/TO	0.675	Large
		BL – FOL (1 month)	0.756	Large
		BL – FOL (4 months)	0.756	Large
	2	BL – EID	0.683	Large
		BL – EID/TI	0.683	Large
		BL – EID/TI/TO	0.717	Large
		BL – FOL (1 month)	0.683	Large
		BL – FOL (4 months)	0.683	Large
	3	BL – EID	0.663	Large
		BL – EID/TI	0.620	Large
		BL – EID/TI/TO	0.707	Large
		BL – FOL (1 month)	0.620	Large
	4	BL – EID	0.618	Large
		BL – EID/TI	0.570	Moderate
		BL – EID/TI/TO	0.570	Moderate
		BL – FOL (1 month)	0.570	Moderate
		BL – FOL (4 months)	0.570	Moderate

Table 2 Continued

Griffin (2007)	1	BL – EID (with directives)	0.745	Large
		BL – EID (with questions)	0.745	Large
		BL – EID (with directives + CP)	0.745	Large
	2	BL – EID (with questions)	0.752	Large
		BL – EID (with directives)	0.745	Large
		BL – EID (with directives + CP)	0.745	Large
	3	BL – EID (with directives)	0.745	Large
		BL – EID (with questions)	0.756	Large
		BL – EID (with directives + CP)	0.745	Large
	4	BL – EID (with questions)	0.635	Large
		BL – EID (with directives)	0.739	Large
		BL – EID (with directives + CP)	0.739	Large
Mandal (2001)	1	BL – TI	0.527	Moderate
		BL – TI/CP	0.553	Moderate
		BL – TI/CP/EID	0.696	Large
	2	BL – TI	0.430	Moderate
		BL – TI/CP	0.454	Moderate
		BL – TI/CP/EID	0.574	Moderate
	3	BL – TI	0.487	Moderate
		BL – TI/CP	0.000	Small
		BL – TI/CP/EID	0.263	Moderate
	4	BL1 – TI/CP/EID	0.770	Large
		BL2 – TI/CP/EID	0.638	Large
Miller Johnson (2022)	1	BL – TI/CP/EID	0.616	Large
		BL – FOL	0.598	Moderate
	2	BL – TI/CP/EID	0.664	Large
		BL – FOL	0.500	Moderate
	3	BL – TI/CP/EID	0.613	Large
		BL – FOL	0.452	Moderate
Roberts (2005)	1	BL – CP	0.775	Large

Table 2 Continued

		BL – CP/TI	0.756	Large
		BL – CP/TI/EID	0.707	Large
		BL – CP/TI/EID/TO	0.775	Large
		BL – FOL	0.775	Large
	2	BL – CP	0.756	Large
		BL – CP/TI	0.756	Large
		BL – CP/TI/EID	0.756	Large
		BL – FOL	0.756	Large
	3	BL – TI	0.756	Large
		BL – TI/CP	0.756	Large
		BL – TI/CP/EID	0.756	Large
		BL – TI/CP/EID/TO	0.756	Large
	4	BL – TI	0.745	Large
		BL – TI/CP	0.745	Large
		BL – TI/CP/EID	0.745	Large
		BL – TI/CP/EID/TO	0.745	Large
		BL – FOL	0.745	Large
Scoggins (2005)	1	BL – EID	0.756	Large
		BL – CP	0.707	Large
		BL – FOL	0.775	Large
	2	BL – EID	0.492	Moderate
		BL – CP	0.268	Moderate
		BL – FOL	0.276	Moderate
	3	BL – EID	0.426	Moderate
		BL – CP	0.365	Moderate
		BL – FOL	-0.236	Small
Wimberly (2016)	1	BL – EID	0.386	Moderate
		BL – FOL	0.447	Moderate
	2	BL – EID	0.701	Large
		BL – FOL	0.728	Large
	3	BL – EID	0.725*	Large
	4	BL – EID	0.724	Large
		BL – FOL	0.677	Large

Note. Phases are labeled as BL (baseline), EID (effective instruction delivery), CP (contingent praise), TI (time-in), TO (time-out), FOL (follow-up), NEC (EID without eye contact), and EC (EID with eye contact). An asterisk (*) indicates correction for baseline trends in data.

Omnibus Effects

Between-group effect sizes were calculated using R statistical software to determine standard mean difference (SMD) across groups. All studies included in this analysis yielded large effect sizes, meaning that significant differences were seen between experimental (treatment) and control (baseline) groups in each study. The omnibus effect calculated to determine effects on the dependent variable across all studies combined also fell within the large range (*SMD* = 1.8862), indicating that studies utilizing EID generally demonstrated a significant effect on child compliance. Effect sizes, ranges, and standard error estimates are displayed in Table 3. All values presented were calculated within a 95% confidence interval.

Effect sizes and a forest plot for the current dataset are also presented in Figure 1. Along with providing a graphical representation of data across studies, this figure also provides an estimate of the heterogeneity of data present in the analysis. The current Chi-squared analysis yielded a high *p*-value ($p = 0.54$), indicating that heterogeneity is not present in the data. This indicates that there is substantial overlap between studies. The I^2 value obtained is 0%, indicating that heterogeneity did not have a significant effect on the data.

Table 3

Standard Mean Differences Across Studies

Study	**SMD**	**Lower**	**Upper**	**SE**	**Effect Size**
Bellipanni (2005)	4.2187	1.0753	7.3620	1.4083	Large
Blanchard (2021)	1.4453	-0.6383	3.4633	0.9571	Large
Everett et al. (2005)	1.4453	-1.9994	4.8899	1.2338	Large

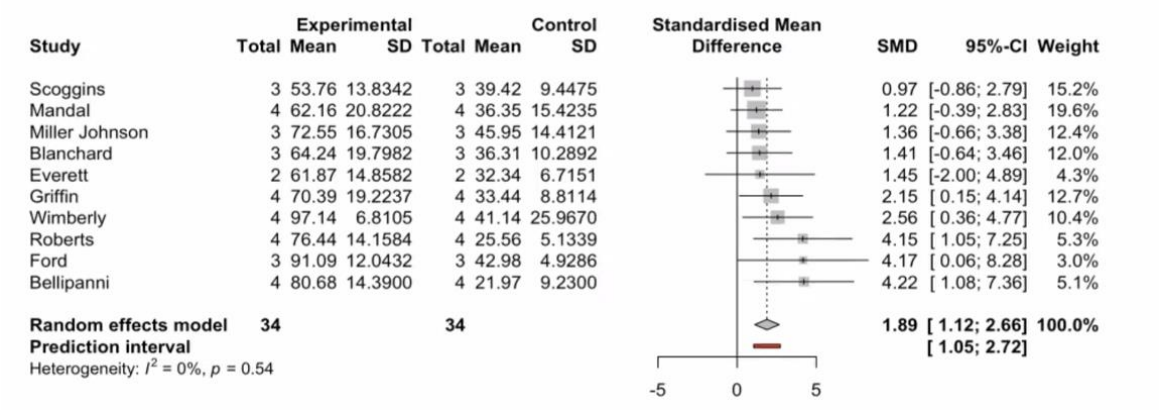
Table 3 Continued

Ford et al. (2001)	4.1714	0.0597	8.2831	1.6857	Large
Griffin (2007)	2.1460	0.1509	4.1411	0.9401	Large
Mandal (2001)	1.2235	-0.3859	2.8329	0.7904	Large
Miller Johnson (2022)	1.3595	-0.6615	3.3806	0.9475	Large
Roberts (2005)	4.1503	1.0480	7.2527	1.3912	Large
Scoggins (2005)	0.9659	-0.8589	2.7908	0.8850	Large
Wimberly (2016)	2.5623	0.3584	4.7662	1.0233	Large
Overall	1.8862	1.1151	2.6573	1.4773	Large

Note. SMD = Standard Mean Difference; SE = Standard Error

Figure 1

Effects, Heterogeneity Analysis, and Forest Plot



Moderator Analysis (Questions 2 and 3)

Moderators of interest were evaluated through subgroup analysis and meta-regression within *R* statistical software. A mixed effects model was utilized to determine the impact of tertiary variables (i.e., setting, interventionist, combined and individual treatments, participant disability, and participant age) on effect sizes across studies. Due to a small number of studies included in each subgroup, results of this meta-regression should be interpreted with a degree of caution. Results are displayed in Table 4.

Setting

One variable selected for moderator analysis was implementation setting. Studies conducted in school, home, and clinic settings were analyzed to determine if setting impacted treatment effects. Each setting had large effect sizes, with school yielding *SMD* = 2.2545, home yielding *SMD* = 1.3856, and the clinic setting yielding *SMD* = 1.9724. The *p*-value for settings was also large ($p = 0.2413$), indicating that setting did not significantly affect treatment effects. Low I^2 values were obtained for each setting (I^2 = 7.6%, 0.0%, and 27.0% for school, home, and clinic respectively), demonstrating low heterogeneity in the data. Overall results indicated that treatment setting did not moderate the effects of EID in the current analysis.

Interventionist

Studies in which teachers and caregivers served as interventionists were analyzed to determine if interventionist type impacted treatment effects. Each interventionist type yielded a large effect size, with *SMD* = 2.2545 for teachers and *SMD* = 1.6030 for caregivers. The *p*-value for interventionist type was large ($p = 0.3538$), indicating that interventionist type did not moderate the effects of treatment. Additionally, low I^2 values were obtained for each interventionist type (I^2 = 7.6% and 0% for teachers and caregivers respectively).

Treatments

As some studies included in this analysis utilized EID as an independent treatment while others incorporated other treatments with EID, combined and independent treatments were analyzed as potential moderators. All studies utilizing other intervention strategies were collapsed into one combined category to allow for a larger *k*. Both

combined and independent treatments yielded large effect sizes (*SMD* = 1.8935 and 1.8661 respectively). Treatment yielded an effect size of $p = 0.9643$, indicating that whether EID was utilized as a component or as an independent treatment did not moderate effects. Low I^2 values were obtained for each treatment type ($I^2 = 17.8\%$ and 0% for combined and independent respectively).

Participant Age

The age of the child participant was analyzed as a potential moderator. Ages were coded as "preschool", "elementary", "middle school", or "high school" across participants. As some studies included participants across age ranges, those studies were collapsed into a "combined" category for the purpose of this analysis. All age ranges yielded large effect sizes (*SMD* = 2.2509, 2.1406, and 1.7069 for preschool, elementary, and combined ages respectively). Age yielded an effect size of $p = 0.8152$, indicating that age did not moderate effects. A low I^2 value was obtained for combined ages ($I^2 = 0\%$). Slightly elevated levels of heterogeneity were calculated for the preschool age range ($I^2 = 34.4\%$), meaning that validity of effects for this age group is somewhat unclear. A heterogeneity estimate for elementary aged participants could not be calculated as only one study included only participants within that age range.

Participant Disability/Diagnosis

Another variable selected for moderator analysis was child participant disability or diagnosis. To account for significant variability in diagnoses reported across participants, studies were coded and analyzed as a positive or negative binary for whether participants with disclosed diagnoses were included in treatment, with positive indicating reported diagnoses and negative indicating no diagnoses. Both positive and negative

groups yielded large effect sizes (*SMD* = 2.2531 and 1.6538 for positive and negative respectively). Disability/diagnosis yielded an effect size of $p = 0.4088$, indicating that this variable did not moderate effects. Low I^2 values were obtained for each category (I^2 = 14.8% and 0% for positive and negative respectively).

Table 4

Moderator Analyses

Moderator	***k***	**SMD**	**Lower (95% CI)**	**Upper (95% CI)**	**Effect Size**
Setting					
School	5	2.2545	0.6960	3.8130	Large
Home	2	1.3856	1.0491	1.7222	Large
Clinic	3	1.9724	-1.7649	5.7097	Large
Interventionist					
Teacher	5	2.2545	0.6960	3.8130	Large
Caregiver	5	1.6030	0.4296	2.7763	Large
Treatments					
Combined Treatments	7	1.8935	0.7485	3.0386	Large
EID only	3	1.8661	0.1722	3.5600	Large
Participant Age					
Preschool	3	2.2509	-1.2070	5.7089	Large
Elementary	1	2.1460	0.1509	4.1411	Large
Combined	6	1.7069	0.4660	2.9479	Large
Participant Disability/Diagnosis					
Positive	5	2.2531	0.6008	3.9054	Large
Negative	5	1.6538	0.5015	2.8061	Large

CHAPTER IV – DISCUSSION

Effective instruction delivery (EID) is a collection of antecedent and consequent strategies designed to increase child compliance with adult instructions. The purpose of the current study was to evaluate the effects of EID on child compliance, assess reported treatment acceptability, and analyze potential moderators across studies.

Research Questions

Question 1

The first research question addressed the effects of EID as a single or combined treatment across settings. Effect size calculations using baseline-corrected Tau indicated that all studies demonstrated moderate to large effect sizes for phases including EID as a component. Standard mean difference (SMD) across studies also yielded large effect sizes. The overall omnibus effect size also fell within the large range. Moderator analyses were conducted to determine whether EID presented as an independent treatment or combined with other treatments moderated treatment effects. No significant effect was noted, indicating that EID is effective as an independent treatment or as part of a package. However, only 3 studies utilizing EID and its components without additional treatment modalities met criteria for this analysis. Further investigation into the effects of EID as an individual treatment is warranted. However, results obtained through this meta-analysis are consistent with previous single-case studies which concluded that EID is an effective strategy for improving child compliance. Results also further support the case presented by Radley & Dart (2015) which classified interventions of command type as a "Probably Efficacious" treatment for noncompliance.

Question 2

The second research question addressed whether the primary interventionist (i.e., teacher, parent, or researcher) moderated treatment effects. No studies included in this analysis utilized a researcher as an interventionist, so moderator analyses were limited to teachers and caregivers. Analyses determined that interventionist type did not moderate treatment effects with no significant *p*-value and both caregiver and teacher groups yielding large effects. This question also addressed whether setting moderated the effects of EID on child compliance. Studies conducted across home, clinic, and school settings were included in this analysis. Setting did not moderate treatment effects with insignificant *p*-values and large effect sizes yielded within each setting. Overall, these results indicate that EID is effective across interventionists and settings, demonstrating its utility across contexts. Although the analysis of moderators may be impacted by variability in the data, as heterogeneity was low, these analyses are believed to be accurate representations.

Question 3

The third question addressed whether child characteristics, including age and disability/diagnosis, moderated the effects of EID. Moderator analyses determined that neither characteristic moderated effects. However, these analyses required combining groups in order to complete calculations. Due to individual studies including participants from 2 or more age ranges within their sample, effect sizes across studies for individual participants' age ranges were unable to be calculated. These studies were collapsed into the "combined" category. Further analysis into the effects across age ranges is warranted. Additionally, due to the number of different diagnoses endorsed across participants,

diagnosis/disability was analyzed as a binary code indicating whether any participants within the study were reported to have prior diagnoses. Further investigation is warranted to determine whether specific diagnoses moderate the effects of EID on child compliance. Overall, these results indicate that EID is effective for improving child compliance across age ranges and diagnoses.

Question 4

The final research question addressed whether interventionists report EID to be an acceptable treatment for child compliance. Studies included in this analysis utilized the TARF-R, IRP-15, and BIRS to assess treatment acceptability. All parents and teachers reported that EID or treatments including EID were acceptable methods for treating child noncompliance. While these results indicate that stakeholders generally view EID as an effective and feasible strategy, it is important to consider the limitations of the use of acceptability measures in research, including the possibility that stakeholders may overstate positive outcomes to the researcher.

Limitations

Several limitations are presented by the current study. First, this study included only 10 articles in the analysis due to inclusion criteria and search methods employed. Requiring the assessment of treatment acceptability as inclusion criterion for the analysis in order to answer one of the primary research questions excluded several studies which implemented EID to treat childhood noncompliance. As scores on treatment acceptability measures may be influenced by parents and teachers providing favorable responses to researchers, the use of treatment acceptability as a moderator and inclusion for analysis was likely limiting without contributing to the study. Additionally, as several of the

included studies were conducted roughly 20 years prior to the current analysis, some studies included in the literature review were excluded due to absence from digital databases. Similarly, another limitation of the current study is the datedness of data included in the analysis. Only two studies (Blanchard, 2021; Miller Johnson, 2022) were conducted within the last 5 years. While it is reasonable to deduce that the effects of EID would remain consistent over time, recent data would strengthen this claim and allow for further analysis of other treatment modalities, including telehealth service provision.

Another limitation presented by the current study is the relative lack of information available for conducting meta-analytic research using single-case design data. The small number of subjects and data points are likely to impact effect size and heterogeneity calculations typically associated with large *n* studies. Baseline-corrected Tau effects were calculated in order to provide traditional single-case estimates of effect size to supplement effect sizes generated through meta-analysis.

Future Directions

The current study presents several future directions for evaluation. First, the majority of studies included in the current analysis utilized EID in conjunction with several other treatment approaches, including time-in, contingent praise, and time-out. As EID was presented as part of a treatment package, evaluating the effects of EID as an independent strategy within those studies was not feasible. Further investigation is warranted into the effects of EID as an independent treatment strategy. Another possible future direction for meta-analytic research in this area is to evaluate the effects of EID paired with other specific treatment strategies commonly occurring in the noncompliance

literature, including contingent praise, time-in, and time-out, as the current analysis collapsed these into a single combined treatment.

Additionally, as participant age and diagnoses varied within individual studies, it was necessary to combine variables to complete moderator analyses. Future studies may evaluate the moderating effects of specific diagnoses on EID. Notably, some populations commonly served within pediatric behavioral health were not represented in studies included in this analysis, including individuals diagnosed with autism spectrum disorder. Further analysis of the effects of EID within these specific populations is warranted.

Conclusion

The results of this analysis indicate that EID is an effective strategy for improving child compliance, both when implemented independently or with other strategies such as time-out, time-in, and contingent praise. Additionally, interventionist, setting, child age, and child diagnosis were not found to moderate the effects of EID, indicating that EID is effective across each of these factors. Lastly, 100% of respondents across studies indicated that EID is an acceptable strategy for improving child compliance. These findings are consistent with previous systematic reviews of strategies for improving child compliance.

APPENDIX A – ARTICLE CODING

Article Coding Sheet

Title:
Author(s):

Participants	
Number of Participants	#
PARTICIPANT CHARACTERISTICS: Code for Each Participant	
Participant Race	1 = Asian 2 = Black 3 = Hispanic 4 = Native American 5 = White 6 = Other (specify) 7 = Class or Group 888 = Not Specified
Participant Gender	1 = Male 2 = Female 3 = Other 4 = Class or Group 888 = Not Specified
Participant Age	1 = Preschool (2-5) 2 = Elementary (6-10) 3 = Middle School (11-13) 4 = High School (14-18) 888 = Not Specified
Disability/Diagnosis	1 = ADHD 2 = Autism 3 = Developmental Delay 4 = Down Syndrome 5 = Deafness 6 = Intellectual Disability 7 = Visual Impairment 8 = Multiple (specify) 9 = Other (specify) 10 = No Diagnosis 888 = Not Specified
Location	1 = Rural 2 = Suburban 3 = Urban 888 = Not Specified
INTERVENTION CHARACTERISTICS	
Intervention Target	1 = Individual 2 = Group

	3 = Class-Wide 888 = Not Specified
Implementation Setting	1 = Home 2 = School 3 = Clinic 4 = Multiple (specify) 888 = Not Specified
Intervention Components	1 = EID 2 = EID + Time-In 3 = EID + Time-Out 4 = EID – Eye Contact 5 = Contingent Praise 6 = Multiple (specify) 7 = Direct Instruction 8 = Direct Instruction + Eye Contact 9 = TI 10 = TI + CP 11 = TI + CP + EID 12 = TI + CP + EID + TO 888 = Not Specified
Target Behaviors	1 = Compliance 2 = Tantrums 3 = Other (specify) 888 = Not Specified
Length of Sessions (Number of commands)	# 888 = Not Specified
Number of Treatment Sessions (Avg across participants)	#

INTERVENTIONIST CHARACTERISTICS	
Interventionist Title	1 = Caregiver 2 = Teacher 3 = Clinician 4 = Other (specify) 888 = Not Specified
Interventionist Age	# 888 = Not Specified
Interventionist Race	1 = Asian 2 = Black 3 = Hispanic 4 = Native American 5 = White 6 = Other (specify) 7 = Class or Group 888 = Not Specified
Years of Experience	1 = 0-1 Year

	2 = 2-5 Years 3 = 6-10 Years 4 = 11-15 Years 5 = 16-20 Years 6 = 21+ Years

DESIGN CHARACTERISTICS	
Experimental Design	1 = AB or ABA (Simple Phase Change) 2 = ABC (Multiple Component) 3 = ABAB (Withdrawal) 4 = Multiple Baseline 5 = Alternating Treatments 6 = Other (Specify)
Measurement of Outcomes	1 = Direct Observation 2 = Caregiver Rating 3 = Teacher Rating 4 = Other (specify) 5 = Multiple (specify)
Treatment Integrity Reported	1 = Yes 2 = No
Treatment Integrity: Percentage of Sessions	# 888 = Not Specified
Treatment Acceptability Reported	1 = Yes 2 = No
Treatment Acceptability Measure	1 = TARF-R 2 = TAQ 3 = IRP 4 = Other (specify) 888 = Not Specified
Treatment Acceptability	1 = Acceptable (TARF-R 85-119) 2 = Not Acceptable (TARF-R 17-51)

MANUSCRIPT CHARACTERISTICS	
Date Published	#
Publication Outlet	1 = Peer-Reviewed Journal 2 = Other Journal 3 = Thesis/Dissertation Repository 4 = Other (specify)

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