
EVALUATION OF A GUIDED COMPLIANCE PROCEDURE TO REDUCE NONCOMPLIANCE AMONG PRESCHOOL CHILDREN

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The effectiveness of a guided compliance procedure to reduce noncompliance among typically developing preschool children was evaluated. After baseline data on compliance to common demands were collected, a parent, instructional assistant, or graduate research assistant implemented the guided compliance procedure, which involved the delivery of progressively more intrusive prompts contingent upon noncompliance. The effects of the procedure were examined using a nonconcurrent multiple baseline design across participants. The results suggest that the procedure was effective for four of the six children who participated. Copyright © 2006 John Wiley & Sons, Ltd.

Noncompliance by preschoolers is one of the most common behavioral concerns among teachers and parents and may be associated with later academic and social difficulties (Taplin & Reid, 1977). Although noncompliance has received some attention in the research literature (e.g., Houlihan, Sloane, Jones, & Patten, 1992), many of the interventions that have been developed to treat noncompliance have emphasized antecedent-based procedures and may be of limited effectiveness. For example, the high-probability instructional sequence, which involves the presentation of a low probability request after one or more high probability requests, has received mixed empirical support (Ardoin, Martens, & Wolfe, 1999; Rortvedt & Miltenberger, 1994). Indeed, in a recent study, Cote, Thompson, and Mc Kerchar (2005) found that antecedent-only interventions were ineffective and that extinction was necessary to increase toddlers' compliance with transitions. Similarly, consequence-based interventions which only make use of positive reinforcement have been shown to be effective for some, but not all children who are noncompliant (Weisberg & Clements, 1977). At least two studies (Baer, Rowbury, & Baer, 1973; Rortvedt & Miltenberger, 1994) have examined another consequence-based procedure for the

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treatment of noncompliance, time-out from reinforcement. However, although these studies showed that time-out was effective for noncompliance, this procedure may not be permitted in all situations (e.g., in some schools).

Guided compliance procedures, which were first described by Horner and Keilitz (1975), typically involve the delivery of progressively more intrusive prompts (e.g., verbal prompt, model prompt, physical guidance) contingent upon child noncompliance to a caregiver or therapist-delivered instruction. While there have been some procedural differences in guided compliance procedures (e.g., number of steps, length of inter-prompt interval), all have involved the delivery of prompts culminating in physical guidance contingent upon noncompliance with less intrusive prompts.

Although guided compliance has been *described* many times in the behavior analytic literature, particularly in the context of teaching children new skills and implementing escape extinction procedures, its effectiveness has rarely been systematically *evaluated*. Recently, Tarbox, Wallace, Penrod, and Tarbox (2005) systematically evaluated the procedure with three 6–8-year-old boys, each of whom had a psychiatric diagnosis. They found that the procedure increased compliance for all participants. No study, however, has examined guided compliance as a general treatment for noncompliance in typically developing preschool children. The purpose of this study was to evaluate the procedure as a treatment for noncompliance in this population.

METHOD

Participants and Setting

The participants included the first six referrals to a university-based psychology clinic for children who exhibited behavior problems. The only criterion for participation in the study was noncompliance either at school (as reported by a teacher) or home (as reported by a parent). Kim (a 4-year-old girl), Cody (a 3-year-old boy), Mark (a 4-year-old boy), John (a 4-year-old boy), Jim (a 4-year-old boy), and Zach (a 3-year-old boy) participated in the study. None of the participants had a psychiatric diagnosis or a developmental disability, all had age-appropriate language skills, and all had been reported to be at least “occasionally” noncompliant by a parent, teacher, or instructional assistant. All sessions were conducted in a small room in participant’s homes or school classrooms. Two to three sessions were conducted per day, two to three days per week. Kim’s mother served as her therapist, Cody’s instructional assistant served as his therapist, Mark’s father served as his therapist, and Jim’s instructional assistant served as his therapist. For John and Zach, a graduate student research assistant served as therapist; teachers and parents were unavailable.

Response Measurement and Definitions

The dependent variable, compliance, was defined as doing what the therapist described in the instruction that she/he presented within 10 s. More specifically, in order to be counted as an instance of compliance, the participant had to initiate completion of the demand within 10 s. Noncompliance was defined as any behavior *other* than that which the therapist described in the instruction presented. Data were collected on the percentage of trials in which participants complied with the instruction presented by the therapist within 10 s. Compliance during each trial was recorded by trained observers using a data sheet. A second, independent observer recorded compliance during at least 50% of sessions for all participants. Interobserver agreement (IOA) was obtained on a trial-by-trial basis by comparing observers' records. Agreement was assessed by dividing the number of agreements by the number of agreements + disagreements and multiplying by 100%. Agreement values ranged from 93% to 100% for all participants during all phases of the study. Data on independent variable (IV) integrity were also collected by two independent observers during at least 25% of the guided compliance and DRA sessions for all participants. Specifically, during the guided compliance procedure, data were collected on the extent to which the therapist correctly implemented each prompt (i.e., presented the instruction correctly, waited 10 s between prompts). During the DRA procedure, data were collected on whether or not participants were given a coupon for compliance and whether or not an exchange period was conducted after every 3rd session. IV integrity, which was calculated by dividing the number of agreements by the number of agreements + disagreements and multiplying by 100%, was 100% for both interventions across all participants.

A trial consisted of the presentation of an instruction by the therapist (baseline and interventions) and progression through the prompt hierarchy if the participant did not comply with the instruction (guided compliance intervention). During the guided compliance intervention, compliance was only recorded if participants complied within 10 s of the first prompt; once the therapist delivered the second prompt, compliance was not scored even if the participant did what the therapist asked after the second or third prompt. Ten trials were presented during each 10 min session. One trial was presented every minute.

Procedure

Prior to baseline, each child's parent or instructional assistant was asked to identify two to four instructions with which the child often did not comply. The specific instructions identified for each child were then presented to that child during the study. The instructions used were "pick the (item) up from the floor" (Cody, John,

Jim, and Zach), “turn off the TV” (Kim, Cody, Mark, and Jim), “put the (item) on the shelf” (Kim, Mark, and Zach), “give me the (item)” (Kim, John, Jim, and Zach), and “sit down” (Kim and Mark). When an instruction involved an item, the items consisted of toys and instructional materials in the home or classroom. Instructions were presented to participants in a random order during sessions. The same instruction was not presented more than two times in a row.

Some toys and educational materials were present in the rooms in which the study was conducted, but no other children were present. During baseline, the therapist presented one instruction every min. Compliance resulted in brief praise by the therapist. Therapists did not respond to noncompliance.

During the guided compliance intervention, therapists presented the same instructions that were presented during baseline. Compliance resulted in brief praise. Contingent upon noncompliance with the first instruction, the therapist obtained eye contact with the participant by (if necessary) gently touching his/her chin. The therapist then re-presented the instruction while simultaneously modeling the correct performance. Compliance resulted in brief praise. Contingent upon noncompliance, the therapist re-presented the instruction while simultaneously guiding the participant to perform the activity. If a participant resisted physical guidance, the therapist simply continued to guide the performance of the task. Children were permitted to continue with their ongoing activities between instructions.

For two participants, a differential reinforcement of alternative (DRA) intervention was also implemented. This intervention was conducted with those participants for whom the guided compliance intervention was unsuccessful. During this procedure, the therapist presented the instruction as in baseline. Contingent upon compliance, a “coupon” was given to the participant by the therapist. The therapist did not respond (i.e., engaged in no additional vocal or physical interactions) to noncompliance. The coupons were exchangeable for preferred items (identified via a paired stimulus preference assessment (Fisher et al., 1992)) after every three sessions. The coupon system was explained to and modeled for participants before DRA sessions began.

Experimental Design

A nonconcurrent multiple baseline design (Watson & Workman, 1981) across participants was used to determine the effects of the guided compliance procedure. In addition, imbedded reversal designs were used with the two participants for whom the guided compliance procedure was ineffective. As part of the nonconcurrent multiple baseline design, initial baseline lengths (i.e., 3, 6, 9, 12, 15, 18 sessions) were first determined. Next, when a participant became available, (s)he was randomly assigned to one of the (remaining) baseline lengths. This process was repeated until all baseline

lengths were filled. Because baseline lengths were randomly determined for any one participant, intervention was started, for any given participant, at a randomly determined point in time, providing an additional degree of experimental control over a series of A/B designs (Watson & Workman, 1981). Zach was initially assigned randomly to a baseline length of 18 sessions; however, after 4 baseline sessions his mother informed us that his participation was time-limited, so intervention was started immediately.

RESULTS AND DISCUSSION

Figure 1 depicts the percentage of trials with compliance across baseline, guided compliance, and DRA interventions. Although the participants were enrolled in the study in a random fashion across pre-determined baseline lengths, figure panels are presented in order of ascending baseline lengths to ease visual interpretation. During baseline, all participants exhibited very low levels of compliance (range, $M_{\bar{c}} = 0\%–22\%$). During the guided compliance intervention, levels of compliance were substantially increased for four of the six participants (i.e., Kim, Mark, John, and Jim) (range, $M_{\bar{c}} = 70\%–86.6\%$). For Zach, guided compliance appeared to be effective initially, but later proved ineffective. For Cody, guided compliance had no impact on compliance. The DRA (i.e., coupon system) was effective in increasing compliance to high levels for both Zach and Cody ($M_{\bar{c}} = 95\%$ and 99% , respectively).

Results of this study suggest that guided compliance may be an effective treatment for noncompliance in many, but not all, young children. In addition, the procedure is straight forward; so much so that it could be taught to preschool personnel and/or parents on a large-scale basis in a short time period. The procedure might not be effective for all types of instructions, however. Physically guiding a child to perform some requests might be dangerous (e.g., if it evokes aggression in older, larger children) or simply impossible (e.g., if the request involves a vocal response; Tarbox et al., 2005). In addition, some settings have a “hands-off” policy, which may prevent teachers or other personnel from implementing the third step of the guided compliance procedure.

The behavioral mechanism(s) responsible for the effects of guided compliance are unknown. Since participants were prevented from avoiding or escaping a task as part of the procedure, it is possible that noncompliance was reduced via escape extinction. It is also possible that some aspect of the procedure (e.g., physical guidance) might have functioned as a punisher in some children and reduced noncompliant behavior that preceded it (i.e., doing anything other than what was instructed). Compliance may have increased due to negative reinforcement. That is, participants may have complied in order to avoid physical guidance or some

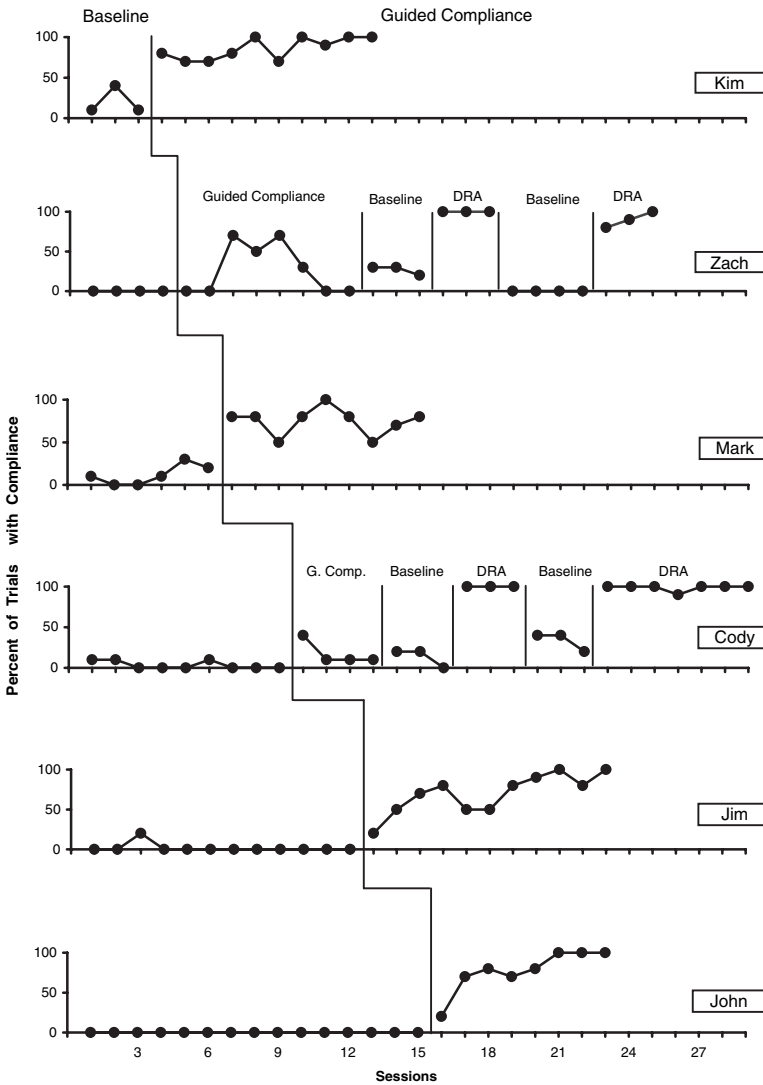


Figure 1. Percentage of trials with compliance across baseline, guided compliance, and DRA (i.e., coupon system) phases.

other component of the procedure. Future research should examine the mechanisms responsible for the effectiveness of the procedure in a variety of children.

Future research should also examine the behaviors that might correlate with or predict whether or not guided compliance would be effective for noncompliance. For

example, in this study Cody smiled when the physical guidance prompt was implemented. That is, it appeared that he enjoyed the physical interaction associated with the procedure. This may have been responsible for the ineffectiveness of the guided compliance procedure when implemented with him. Other methods, perhaps similar to the DRA intervention used in this study, need to be examined to address noncompliance in children for whom the guided compliance procedure is ineffective. The DRA procedure was used in the current study as an alternative to guided compliance because similar interventions have been shown to be effective for some children (Baer et al., 1973), but the DRA procedure used here was somewhat time-consuming and laborious.

One limitation of this study is that the variables maintaining noncompliant behavior among the participants are unknown. It could be that noncompliance served to avoid or escape the activity requested by the therapist. Alternatively, it is possible that noncompliance enabled the participants to maintain access to a preferred activity. Future research should include some form of pre-treatment functional assessment. Another limitation of the study is the short duration of the assessment of the guided compliance intervention, which was due to time and resource constraints. Future research should include long-term or follow-up data to determine whether or not the effects are maintained. A third limitation involves the external validity of the study. Although the study was conducted in participants' natural environments (i.e., homes and schools) and included demands that were typically presented by parents and teachers, the frequency with which the demands were presented (i.e., once every minute) might have made the sessions somewhat artificial. Future research should extend the duration of sessions and/or reduce the rate of demand presentation to address this issue.

ACKNOWLEDGEMENTS

The authors thank the parents, teachers, and instructional assistants who participated.

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