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Compliance Training

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Abstract

Compliance involves the extent to which a person behaves in accordance with the demands and expectations of their social environment. The issue of compliance is important to behavior analysis as failures to comply may produce detrimental effects on learning, health, social inclusion, and general well-being. The current chapter aims to address this issue by reviewing behavior analytic practices in the assessment and treatment of compliance. Specifically, the chapter first reviews skill assessments, functional assessments, and preference assessments that should be typically conducted prior to the implementation of treatment. Next, a treatment section presents both antecedent-based and consequence-based interventions that contribute to improving compliance in different populations. Finally, the chapter ends by emphasizing the importance of rigorously selecting interventions and monitoring their effects to ensure that compliance training produces socially significant changes in the beneficiaries of behavior analytic services.

Keywords: behavior analysis, behavioral assessment, behavioral intervention, compliance, treatment adherence

Compliance Training

Generally, compliance is understood as the extent to which an individual behaves in accordance with a proposed request, demand or expectation of the social environment. On the surface, some practitioners and researchers may view the concept of compliance pejoratively as it suggests the removal of autonomy and control by another individual. However, both children and adults encounter a plethora of situations where compliance behaviors are commonplace. For children, opportunities to engage in compliant behaviors with parent and teacher instructions occur on a daily basis. In many cases, these requests or demands are intended to increase academic and social skills and to ensure the safety of the child. Likewise, adults enrolled in higher education, those who are employed, and law-abiding citizens are also required to follow the rules and requests of other individuals and institutions. For individuals diagnosed with autism and other developmental disabilities, compliance is a basic skill required for both the assessment and treatment of other behavior. Failure to comply with requests in these circumstances may produce delays in learning, development, integration and health. Continued compliance issues may result in diagnoses such as oppositional defiant disorder, conduct disorders, or attention deficit hyperactivity disorder and may be associated with social and legal issues into adulthood (American Psychiatric Association, 2013).

In this light, the need to formally address compliant behavior often occurs as a result of noncompliance, which is paraphrased by Lipschultz and Wilder (2017) as “doing anything other than what has been requested by a parent or other adult authority figure within a specific time frame” (p. 263). Noncompliant behavior can be a common challenge for caregivers of individuals with and without disabilities. Oftentimes, behavior that occurs in place of compliance is undesirable and problematic, and typically consists of challenging behavior that occurs after

the instruction has been delivered (Cook et al., 2019). As such, professionals in the field of applied behavior analysis have been at the forefront of developing effective methods to enhance compliance skills.

Within this research area, compliance is designated as either active or passive. That is, the compliant behavior of interest may involve the occurrence of a specific behavior or the absence of a specific behavior. With respect to active compliance, common examples include following instructions and completing tasks, without engaging in other problematic behaviors. More specifically, if a parent asks a child to make their bed, the child engaging in the behaviors required to make the bed would be considered active compliance. Noncompliance often occurs together with many forms of challenging behavior, such as physical aggression or self-injury. Frequently, the behavior exhibited is part of the same functional response class (i.e., maintained by the same outcome). For example, aggression and self-injury may be negatively reinforced by removing or delaying demands after those behaviors occur, thus leading to noncompliance. Therefore, one strategy to increase compliance is implementing procedures that target the undesirable behavior that is associated with noncompliance (Cook et al., 2019).

Concerning passive compliance, a parent may ask a child to keep their knit cap on outside in the winter. In this example of passive compliance, the child is expected to passively keep their knit cap on their head. Some common examples of passive compliance include participating in a dental examination (e.g., Cuvo, Godart et al., 2010), receiving haircuts (e.g., Schumacher & Rapp, 2011), and wearing a heart monitor (e.g., Dufour & Lanovaz, 2020). Given the potentially detrimental effects of noncompliance, compliance is often central for practitioners of behavior analysis. The purpose of the current chapter is to review behavior analytic practices in the assessment and treatment of compliance. Specifically, the chapter will first review preliminary

assessments to conduct before treatment and then examine both antecedent-based and consequence-based interventions. The chapter ends with practical considerations to ensure a rigorous approach to compliance training with different populations.

Assessment

To begin, practitioners and researchers should identify the contingencies preventing the emergence of compliance. The first step in this process is to identify whether the lack of compliance is the result of a skill deficit. This issue may be addressed by way of a skill assessment. If noncompliance is not the results of a skill deficit, a functional behavior assessment should then be conducted to determine the contingencies maintaining the undesirable behavior, as well as preference assessments to evaluate effective reinforcers to target compliance (Lipschultz & Wilder, 2017).

Skills Assessment

Prior to selecting a treatment to increase active compliance, practitioners should first determine whether this lack of compliance is due to a skill deficit. In layperson's terms, the question is whether the person *can't* or *won't* engage in the behavior. The former would lead to straightforward skills training as the issue is not noncompliance, but rather a limited behavioral repertoire. In this case, we recommend that the reader consult the subsequent chapters on teaching (see Chapters 51 to 62). In contrast, the current chapter focuses on those individuals who have the behavior or skill in their repertoire, but that fail to engage in it when required. Therefore, the emphasis is on increasing the frequency or duration of compliance rather than teaching.

Assessing whether the lack of compliance is due to a skill deficit remains a challenge because noncompliance may lead to the individual failing to engage in the skill during the

assessment even when the skill is in their repertoire. To increase the probability of responding, the practitioner may provide choice during the assessment, deliver high-density and high-quality reinforcement, and alternate the skill being evaluated with skills that the child already complies with regularly (Lerman et al., 2004). For example, a task analysis may divide the skill into smaller units and reinforcement provided for each unit rather than the task as a whole (e.g., Lalli et al., 1995). This procedure may increase responding and facilitate differentiation between skill deficit and noncompliance. Furthermore, the trainer may provide reinforcement for any attempts at responding to the discriminative stimulus (rather than following correct responses only) to evoke responding in the individual during the assessment. Finally, the assessment may embed the skill at the end of a high-probability request sequence (see antecedent-based treatment section for details on procedures) to increase the likelihood that the individual will respond (Mace et al., 1988).

Functional Assessment

Because individuals avoid or escape something when they engage in noncompliant behavior, the most common behavioral function for noncompliance is escape (Hong et al., 2018). However, attention in the form of guided compliance may also maintain engagement in challenging behavior (Kern et al., 2002; Rodriguez et al., 2010). Given that both functions may lead to different treatment selections, we recommend that practitioners conduct a functional assessment before the onset of compliance training (see Chapters 26 to 31 for details).

Beyond identifying the behavioral function of noncompliance (e.g., attention, escape), practitioners may also use functional analyses to identify idiosyncratic variables that may affect responding to demands or tasks (Carey & Halle, 2002; Cooper et al., 1992; McComas et al., 2000). The trainer may manipulate variables such as task duration, task difficulty, number of

tasks, type of task or demand, or the presence or absence of other stimuli (e.g., music). This type of assessment involves comparing at least two conditions: one condition involves the presence of the potentially evocative stimulus and the other condition its absence while the trainer provides escape contingent on noncompliance (in both conditions).

As an example, assume that a child refuses to follow parental demands. Some demands may be more effortful than others. The practitioner could set up two conditions: one with less effortful demands (e.g., bring me the phone) and one more effortful demands (e.g., emptying the dishwasher). In each condition, the parent could make 10 demands of each type and then examine whether the different types of demands evoke differential responding. This functional analysis would not only lead to the identification of motivating operations, but may also support the practitioners when setting treatment parameters (e.g., high-probability request sequence, demand fading).

Preference Assessments

Trainers should always conduct a preference assessment prior to the implementation of interventions that involve the delivery of preferred stimuli or reinforcers. Conducting a preference assessment may increase the effectiveness of the intervention being implemented (Kang et al., 2013; Simonian et al., 2020). Apart from reminding the reader of the importance of preference assessment prior to compliance training, we will not review detailed procedures here. For those readers unfamiliar with preference assessment, we refer them to Chapter 21 on this topic. In sum, skill, functional, and preference assessments remain essential preliminary steps preceding the selection and implementation of treatment for noncompliance. These assessments should increase the probability that the treatment will produce the expected outcomes with the individual targeted by the practitioner.

Treatment

Antecedent-Based Interventions

Antecedent-based interventions involve the manipulation of stimuli that precede the behavior. In other words, the trainer manipulates the antecedents (i.e., what occurs before the behavior) independent of engagement in a specific behavior. Examples of antecedent-based interventions for compliance include manipulating demand and task parameters, the high-probability request sequence, graduated exposure, noncontingent reinforcement, and self-monitoring.

Manipulating Demand and Task Parameters

When demands and tasks fail to evoke compliance, the first step is often to examine the demand or task itself. For example, ambiguous demands are difficult to follow for anyone regardless of the presence of any noncompliance issues. Researchers have found that delivering clear, concise, and feasible demands increases the probability of compliance (e.g., Bouxsein et al., 2008; Browning, 1974; Matheson & Shriver, 2005). In an observational study, Christenson et al. (2011) found that elderly patients receiving long-term care were more likely to comply with demands that were clear, concise and feasible than with demands that were ambiguous, interrupted or unfeasible. These results suggest that nursing staff should be trained to modify their demands to increase compliance rate. The advantage of modifying the demands or tasks to make them clearer is that this type of intervention requires low response effort. That said, the intervention may produce insufficient changes, especially in those individuals who show persistent noncompliance under diverse environmental conditions.

A second intervention that involves manipulating demand and task parameters is demand fading. In demand fading, the trainer reduces the number of demands presented to the individual

and then gradually increases them (Pace et al., 1993). For example, Pace et al. (1994) reduced verbal obscenities in an adult with brain injury by initially reducing the number of demands below baseline levels. Then, the authors reintroduced demands gradually until the person complied with the same number of demands as were presented during the initial baseline while engaging in zero rates of challenging behavior. Although the intervention may function as a standalone treatment, researchers have repeatedly used demand fading in combination with other interventions to increase their effectiveness or reduce their side-effects (e.g., Gerow et al., 2020; Ringdahl et al., 2002; Shillingsburg et al., 2019; Zarcone, Iwata, Hughes, & Vollmer, 1993). That is, implementing demand fading along with other interventions may reduce engagement in challenging behaviors associated with demands. Similar to modifying demands, reducing the number of demands or tasks is simple to implement for practitioners. The main drawback being that the demands must be initially faded, which may be unrealistic in certain contexts or when the staff-to-client-ratio is too low.

Choice

Another low effort intervention to improve compliance is the use of choice. Researchers have shown that different types of choice may increase responding following demands (e.g., DeLeon et al., 2001; Dunlap et al., 1994, Harding et al., 2002; Kern et al., 2001; Lory et al., 2020; Peck et al., 1996). For example, Kern et al. (2001) examined the effects of choosing the sequence in which multiple tasks could be completed in three children with attention-deficit hyperactivity disorder, intellectual disability, or both. Their results indicated that having the child choose the sequence of tasks not only increased engagement with the tasks (i.e., compliance), but it also reduced engagement in challenging behavior. In a more recent example, Lory et al. (2020) provided instructional choices to children with autism and found that it increased compliance

with tasks. Another type of choice involves selecting the reinforcer that will be provided contingent on compliance. In such an implementation, Peck et al. (1996) reported that choice-making may improve compliance while reducing engagement in challenging behavior in young children. Providing choices has the advantage of promoting self-determination with individuals who may experience limited opportunities for making decisions on their own.

High-Probability Request Sequence

The high-probability request sequence is an intervention derived from behavioral momentum theory (see Mace et al., 1988). During the high-probability request sequence, the trainer delivers a rapid succession of high-probability requests followed by a low-probability request (Bross et al., 2018). The high-probability requests are requests with which the individual is highly likely to comply (i.e., 80% or more of the time) whereas the low-probability requests are those with which the individual is unlikely to comply (i.e., less than 50% of the time). The trainer should provide praise contingent on compliance with each type of request and consider providing tangible reinforcement for compliance with the high-probability request (Cooper et al., 2020). Whenever possible, the intervention should involve varying the high-probability requests as much as possible because invariant requests (i.e., always the same) may reduce the persistence of the observed effects (Davis & Reichle, 1996).

Researchers widely consider the high-probability request sequence as an empirically-supported intervention for improving compliance (Banda et al., 2003; Brosh et al., 2018; Maag, 2019). Humm et al. (2005) have shown that parents may effectively implement the high-probability request sequence with minimal training, which is an advantage of the approach. In a recent application, Planer et al. (2018) compared the effects of high-probability requests that were relevant or irrelevant to the low-probability requests in children diagnosed with autism

spectrum disorder. Their findings indicated that more relevant high-probability requests typically led to better compliance. One benefit of using the high-probability request sequence is that the intervention does not require the implementation of extinction. On the other hand, practitioners may struggle in identifying high-probability requests with individuals who engage in challenging behavior or fail to comply following all types of requests.

Graduated Exposure

Graduated exposure involves gradually and systematically subjecting individuals to stimuli that they are attempting to avoid (Jones, 1924). Although mainly used for the treatment of phobias, researchers have also applied graduated exposure to both improve passive and active compliance (Carter et al., 2019; Cromartie et al., 2014; Ellis et al., 2006; Rapp et al., 2005; Schmidt et al., 2013; Szalwinski et al., 2019). In an example of active compliance, Schimdt et al. (2014) trained a 16-year-old adolescent with autism and intellectual disability to comply with requests to participate in activities in different rooms in a school. The researchers gradually increased the duration of time spent in these rooms as well as the duration spent engaging in activities. This gradual exposure led to the adolescent complying with the requests despite low levels of reinforcement. In an example of passive compliance, Cromartie et al. (2014) taught a woman with intellectual disability and schizoaffective disorder to comply with blood draws by gradually exposing to different steps involved in the procedure. The previous examples show how practitioners may use graduated exposure in situations where the individual exhibits avoidant behavior related to the stimuli they must be engaged with for compliance. The systematic nature of graduated exposure is also its main weakness: the gradual transition from one step to another may make progress slow and take a lot of time.

Noncontingent Reinforcement

Noncontingent reinforcement (NCR) is a procedure that delivers preferred stimuli on a time-based schedule that is independent of the behavior. Put differently, a trainer provides the individual with a preferred stimulus on a regular or continuous basis regardless of the occurrence of behavior. This method alters engagement in the behavior by reducing the motivation to access the reinforcer (Cipani, 2018). Behavior analysts widely accept NCR as an empirically supported intervention to reduce undesirable behavior in individuals with developmental disabilities (Carr et al., 2009). In this population, noncompliance often occurs concurrently with the undesirable behavior; hence, NCR shows promise as a compliance training treatment procedure.

Researchers have shown that NCR interventions are effective at increasing compliance with wearing medical devices in children with developmental disabilities (DeLeon et al., 2008; Nipe et al., 2018; Richling et al., 2011). For example, Richling et al. (2011) have increased passive compliance with wearing prostheses by providing noncontingent access to preferred stimulation (e.g., music, tangibles, attention) to two children with multiple disabilities. In an example of active compliance, Ingvarsson et al. (2008) reported that NCR (e.g., noncontingent delivery of an edible item) alone was sufficient to increase compliance and reduce the rate of challenging behavior in a demand context. In situations where the target behavior is maintained by negative reinforcement (e.g., escape from tasks), a break from tasks can be delivered independent of behavior, which is termed noncontingent escape. Kodak et al. (2003) examined the effects of noncontingent escape in reducing challenging behaviors and increasing compliance in children with disabilities and showed that providing a brief break from tasks reduced challenging behavior and increased active compliance. Interventions based on NCR are relatively simple to implement and changes in the target behavior can occur quickly. A drawback with the intervention is that specific replacement behavior (i.e., compliance) is not taught using NCR;

therefore, this procedure is often used in combination with other interventions designed to teach specific functionally-matched replacement behavior (Cook et al., 2019).

Self-Monitoring

In behavior analysis, one common form of compliance is treatment adherence (Allen & Warzak, 2000; Dunbar-Jacob & Mortimer-Stephens, 2001). Treatment adherence generally refers to a patient or caregiver correctly following and implementing the recommendations of a professional (i.e., compliance with treatment). One method to improve adherence is the use of self-monitoring, which involves measuring or recording one's own behavior (Kanfer, 1970). Researchers have shown that self-monitoring may improve compliance with treatment in a population with a variety of problems such as asthma, AIDS, and cardiac illness (e.g., Burke et al., 2011; Janson et al., 2009; Oldridge & Jones, 1983; Safren et al., 2001). In a behavior analytic example, Wadsworth et al. (2015) showed that students diagnosed with developmental disabilities could learn to self-monitor their compliance with requests. The results of the study suggested that self-monitoring may have facilitated the maintenance of compliance over time. As with choice, one of the strengths of self-monitoring is that the intervention encourages self-determination. That said, some researchers have suggested that self-monitoring alone is insufficient to maintain changes in behavior in some populations (Fritz et al., 2012).

Consequence-Based Interventions

Consequence-based interventions typically involve increasing the future occurrence of compliant behavior by manipulating stimuli that follow its occurrence. That is, the behavior change agent manipulates events or stimuli contingent on engagement in a specific behavior. Examples of consequence-based interventions include differential reinforcement of alternative

behavior, differential reinforcement of other behavior, functional communication training, guided compliance, escape extinction and public posting.

Differential Reinforcement of Alternative Behavior

Differential reinforcement of alternative behavior (DRA) involves “Providing greater reinforcement, along at least one dimension, contingent on the occurrence of one form or type of behavior, while minimizing reinforcement for another form or type of behavior” (Vollmer et al., 2020, p. 2). During DRA for compliance, the trainer typically provides a reinforcer to an individual contingent on the occurrence of a compliant behavior and minimizes reinforcement for noncompliance. Although often combined with escape extinction (see section on the same topic below), a recent review by Trump et al. (2019) concluded that DRA without the use of extinction is an effective treatment option.

Researchers have recognized DRA as a well-established treatment to increase compliance during mealtimes (food acceptance) in individuals with developmental disabilities who exhibit challenging behavior (Petscher et al., 2009), and have shown that DRA procedures continue to be effective without an extinction component (Athens & Vollmer, 2010; MacNaul & Neely, 2018). Recently, Briggs et al. (2019) indicated that robust treatment effects can be developed using DRA without the use of extinction by manipulating a combination of magnitude and quality of reinforcement for active compliance, and these effects can be maintained with reasonably lean schedules of reinforcement. Thus, DRA procedures may be easily implemented by caregivers because durable effects can be achieved even when destructive behaviors continue to occasionally result in a functional reinforcer and reinforcement for compliance is thinned (Briggs et al., 2019; Dowdy et al., 2018).

Functional Communication Training

A very common variation of DRA is functional communication training (FCT). In FCT, the trainer teaches and reinforces an alternative communication response. If a student does not respond to instructions delivered by the teacher in order to escape from demands, an example of FCT could involve teaching the student to ask for a break instead of running away when they are asked to complete their work. FCT was initially defined by Carr and Durand (1985) and continues to be a valuable, well-established treatment for problem behavior (Kurtz et al., 2011; Petscher et al., 2009). The emphasis in many research studies is to increase appropriate communication without extinction (Johnson et al., 2004; Schindler & Horner, 2005). Although FCT has been shown to produce immediate effects, less research has examined the generalization and maintenance of this intervention over time (Neely et al., 2018).

Differential Reinforcement of Other Behavior

Differential reinforcement of other behavior (DRO), also referred to as differential reinforcement of zero occurrences or omission training, involves delivering a reinforcer in the absence of the specified target behavior within a predetermined interval (i.e., whole-interval DRO) or at a specific moment (i.e., momentary DRO). If undesirable behavior occurs, the interval restarts and reinforcement is withheld. The intervals continue to increase as long as the individual refrains from engaging in the target behavior until the terminal time interval is reached.

Researchers have used DRO interventions as part of medical treatment packages (Cuvo, Godard, et al., 2010; Cuvo, Reagan, et al., 2010; Shabani & Fisher, 2006) and alone (Carton & Schweitzer, 1996; Dufour & Lanovaz, 2020) to increase passive compliance with medical procedures (e.g., dental examination, blood draws, wearing heart rate monitors, and physical examinations). A DRO procedure may be useful for instances where noncompliance evokes

challenging behavior (e.g., self-injury, aggression), when response blocking or escape extinction is unrealistic, or when NCR alone is unsuccessful (Dufour & Lanovaz, 2020; Hagopian & Toole, 2009). As with NCR, one of the main disadvantages of DRO is that the procedure does not specifically teach an alternative behavior (especially in the case of active compliance). Moreover, individuals untrained in behavior analysis may find DRO under dense schedules challenging to implement.

A variation of DRO that uses a functional reinforcer rather than an arbitrary reinforcer is differential negative reinforcement of other behavior (DNRO). When using DNRO procedures, the aversive stimulus is removed (i.e., negative reinforcement) contingent on the absence of the target behavior for a specified time period. A DNRO procedure allows the individual to avoid an unpleasant event by engaging in a range of behaviors if the target behavior does not occur. Researchers have shown that DNRO interventions are effective at increasing passive compliance with wearing medical devices (e.g., medical alert bracelet) in children with developmental disabilities, reducing challenging behavior in the presence of aversive music, and improving behavior during haircuts (Buckley & Newchok, 2006; Cook et al., 2015; Schumacher & Rapp, 2011; Wheatley et al., 2020). The DNRO intervention provides regular access to escape throughout the intervention; however, the procedure requires constant monitoring for occurrences of challenging behavior, and expertise in schedule thinning (Geiger et al., 2010). Since access to escape is unlikely to be under the individual's control, DNRO is most appropriate for increasing passive compliance to an aversive event (e.g., an invasive medical procedure).

Guided Compliance

Guided compliance involves systematically providing more intrusive prompts in response to noncompliance (Lipschultz & Wilder, 2017). Typically, the trainer implements a least-to-most

prompting procedure, which has been evaluated as effective for children with and without developmental delays (e.g., Tarbox et al., 2007; Wilder & Atwell, 2006). The traditional three-step prompt hierarchy (i.e., vocal, model, physical) is often used in guided compliance interventions to increase active compliance. The procedure begins with the delivery of a verbal prompt (e.g., an instruction) and more intrusive prompts are methodically introduced if noncompliance persists. Next, the trainer provides a gestural or model prompt, culminating with a physical prompt when necessary in which the individual is physically guided through the task.

Teachers, caregivers, and researchers have successfully implemented this intervention (Reisener et al., 2014; Smith & Lerman, 1999; Wilder, Myers, Nicholson, et al., 2012). While the three-step guided compliance procedure is effective, Wilder and Atwell (2006) also found that the effectiveness of the procedures may largely depend on individual characteristics. Wilder, Myers, Fischetti, et al. (2012) found that modifications to the procedure may be required to reach acceptable levels of compliance for some children. These modifications included omitting the model prompt and decreasing the inter-prompt interval, and the use of differential reinforcement in the form of delivering a highly preferred item contingent upon compliance with the first vocal prompt (Wilder et al., 2020). Guided compliance, like other compliance training procedures, can be an effective intervention, but the function of noncompliance must be first identified. If the function of noncompliant behavior is to gain access to social attention, guided compliance may cause an increase in undesirable behavior (Kern et al., 2002; Wilder et al., 2008) and may be more difficult to implement because the procedure may require the use of prompt fading to lessen the dependence on prompts from others (MacDuff et al., 2001).

Escape Extinction

Extinction generally involves withholding a reinforcer contingent on engagement in a target behavior that was previously reinforced by this same reinforcer (Cooper et al., 2020). If the behavior is maintained by escape (which is often the case with compliance issues), the procedures are referred to as escape extinction. For example, the implementation of escape extinction to increase compliance may involve preventing an individual from escaping an activity, task or demand. The trainer maintains the activity, task, or demand until the individual complies. Escape extinction has been successfully applied as part of a multi-component treatment package to treat selective and inadequate food intake in children (Bachmeyer, 2009) and is often an addition to compliance training for individuals with developmental delays who exhibit challenging behavior (Cook et al., 2015; DeLeon et al., 2008; Iwata et al., 1990; Piazza et al., 1997; Zarcone et al., 1994). For example, Zarcone, Iwata, Vollmer et al. (1993) observed no improvement in compliance or challenging behavior maintained by escape from tasks until extinction was implemented.

A benefit of escape extinction is that it can be combined with other procedures (e.g., demand fading, DNRO) used during compliance training to improve outcomes (Geiger et al., 2010; Lipschultz & Wilder, 2017). The use of extinction may lead to a temporary increase in challenging behavior (i.e., extinction burst) or evoke aggressive behavior (Lerman et al., 1999). The implementation of escape extinction often requires high effort, which may result in lower treatment integrity. Thus, appropriately trained professionals are needed to confirm the maintaining variables, carry out the treatment, and ensure the safety of the individuals involved (Cook et al., 2019; Geiger et al., 2010; McConnachie & Carr, 1997).

Group Contingencies

In all previous interventions, the trainer delivered (or withheld) the consequence contingent on engagement in individual behavior. An alternative to this approach is the implementation of group contingencies, which involve the delivery of reinforcing stimuli for the behavior of the group (Hayes, 1976). Three types of group contingencies exist: independent, dependent, and interdependent (Cooper et al., 2020; Theodore et al., 2004). In independent group contingencies, the trainer implements the same contingency for all members of the group, but only those members who contact the contingency receive reinforcement. In dependent group contingency, the whole group receives reinforcement contingent on the performance of an individual or of a subgroup. In interdependent group contingencies, all members of the group must achieve the criteria set out in the contingency for the group to access reinforcement.

Researchers have repeatedly shown that group contingencies may be an effective method to improve compliance with rules within a group setting (Joslyn et al., 2019; Pokorski et al., 2017). In an example of interdependent contingencies, Swiezy et al. (1992) required that preschool children cooperate in pairs; each child in the pair had to meet a different criterion and reinforcement was contingent on both children achieving their criterion. The intervention increased instruction-following in all participants. In a more recent example of group contingencies, Deshais et al. (2019) compared the effects of independent and randomized dependent contingencies on compliance with academic tasks. The randomized dependent contingency involved randomly and anonymously selecting the subgroup of participants whose behavior controlled the contingency. Although both group contingencies were generally effective, the researchers found that independent contingencies were typically equally or more effective than randomized dependent contingencies to increase compliance. Group contingencies have the advantage of being more easily applicable to a larger number of students. In contrast,

practitioners must remain wary of potentially stigmatizing effects when a single individual systematically prevents others from accessing the reinforcer.

Public Posting

Public posting is a consequence-based strategy used to increase compliance or performance of a skill. During public posting, the trainer provides a consequence in the form of feedback about a behavior (e.g., score, graph, chart) that is posted in a public area where others may see (Nordstrom et al., 1991). Researchers have demonstrated the efficacy of public posting to treat compliance or adherence issues in multiple settings, such as improving student and teacher behavior in school settings (Gross & Ekstrand, 1983; Holland & McLaughlin, 1982), improving employee behavior (Hutchison et al., 1980), increasing compliance (e.g., hygiene) in individuals with developmental disabilities (Blount & Stokes, 1984), and increasing citizen compliance with laws (e.g., obeying speed limits; Ragnarsson & Bjorgvinsson, 1991; Van Houten et al., 1980). The benefits and drawbacks of public posting are similar to those described for group contingencies: this type of intervention is easy to implement with groups of individuals but carries the risk of stigmatization. To address this issue, public posting should be used for participants of a similar level or the goal should be adapted so that it is based on the individual rather than the group.

Practical Considerations

For clarity, the treatment section of this paper presented each antecedent-based intervention and each consequence-based intervention separately. Researchers in behavior analysis often test interventions separately so that they can isolate their specific effects (Cooper et al., 2020). In practice, behavior analysts often combine interventions in a treatment package to increase the likelihood the treatment will produce the desired change in behavior. For example,

Lalli et al. (1995) showed that a treatment package involving the manipulation of the antecedents, functional communication training, and extinction increased compliance with tasks in children and adolescents diagnosed with developmental disabilities. When choosing which components to include in a treatment package, practitioners should carefully consider the advantages and disadvantages of each.

A second practical consideration is the effort and resources required for training individuals who will be implementing compliance training. Simply explaining the procedures to the trainee is often insufficient to teach others (e.g., caregivers, teachers) to implement behavioral interventions to increase compliance (Miles & Wilder, 2009; Reisener et al., 2014). Behavior analysts must implement systematic procedures to teach others to implement behavioral interventions with high integrity (Brock et al., 2017). Compliance is no exception and we refer the reader to Chapter 24 to monitor treatment integrity as well as Chapters 35 and 36 to learn more about how to conduct effective training with both caregivers and staff.

Finally, the practice of behavior analysis involves continuous monitoring of the intervention to examine whether the individual is making progress (Cooper et al., 2020). Behavior analysts should bear in mind that they can never perfectly predict whether an intervention will be effective to improve compliance for a given individual prior to its implementation. Rigorously monitoring the effects of the intervention using valid measures of behavior (Chapter 19) and the use of single-case designs (Chapter 20) appears essential when adopting an evidence-based practice. The implementation of the assessments and interventions should systematically rely on the previous approach to determine whether compliance training was effective in producing socially significant changes for the individual receiving treatment.

Conclusion

Researchers have validated the effects of multiple antecedent-based and consequence-based interventions to support practitioners in conducting compliance training. These studies have applied compliance training in a variety of populations including children with and without disability, adolescents in residential juvenile facilities, workers in employment, elderly patients, and citizens in general. These applications show the breadth and contribution of applied behavior analysis to solving issues related to compliance. Behavior analysts have numerous options at their disposal to treat compliance. Although the advantages and disadvantages of each intervention should guide selection, the main criterion to judge the effectiveness of a treatment for a given individual remains the direct implementation and assessment of its effects within a single-case design. By using a systematic approach to compliance training, behavior analysts may not only improve their practice and research, but also promote the learning, health, social inclusion, and well-being of those who benefit from their services.

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