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Using the Performance Diagnostic Checklist-Human Services (PDC-HS) to Enhance Data Collection Procedures in Residential Treatment Settings for Clients with Significant Behavioral Challenges

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ABSTRACT

Staff members working in three residential homes serving persons with developmental disabilities participated in the current study. Each residence was selected based upon poor staff performances related to consistent, accurate data collection. Written daily narratives compiled by the staff on each shift were compared to designated behavioral data collection forms in each residence to determine the degree of correspondence between the two measures. The written measures were entered digitally in the intranet system that was accessed by all staff. The Performance Diagnostic Checklist- Human Services (PDC-HS) was used to assess each of the environments with respect to their data collection behavior. The PDC-HS indicated the use of antecedent based strategies with the staff in the homes in order to increase their data collection behavior. A multiple baseline design across three separate residences was employed to examine the efficacy of the identified interventions. The results demonstrated significant increases in data collection across each of the residences that participated in the study.

KEYWORDS

Performance Diagnostic Checklist-Human services; task clarification; prompting; data collection; severe aggression

The Performance Diagnostic Checklist (PDC) has been used across a variety of different organizational settings, including restaurants, coffee shops, department stores, and more (Austin, 2000; Eikenhout & Austin, 2005; Austin, Weatherly, & Gravina, 2005; Rodriguez et al., 2005). Through interviews, the PDC analyzes different variables including antecedents, processes, knowledge and skills, and consequences. Using this analysis, researchers and management teams can identify areas with skill deficits and appropriately determine which intervention will increase desired employee skills. The checklist has since been refined and revised for the human services field (Carr & Wilder, 2016; Carr et al., 2013). The revised checklist provides a performance analysis to determine variables that are linked to performance deficits within the human services sector. It helped to identify appropriate interventions based on the area or areas where performance deficits were present, as opposed to areas

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where performance was adequate. The four domains in the Performance Diagnostic Checklist- Human Services (PDC-HS) are *Training, Task Clarification and Prompting, Resources, and Consequences/Effort and Competition*. The PDC-HS uses the number of "no" responses provided in the assessment to determine which components are required. Identification of areas in which behavior is lacking may be beneficial in developing interventions that are specific and individualized.

While the PDC-HS is still relatively new in the field of organizational behavior management (OBM), it has shown some early promise. Ditzian et al. (2015) used the PDC-HS to determine where deficits were present among workers in a center-based autism treatment facility. The PDC-HS indicated a lack of appropriate consequences maintaining poor staff performance and suggested the use of graphed feedback that was effective in increasing staff performance when compared to the ineffective non-PDC-HS intervention. Melendez et al. (2020) also used the PDC-HS to assess and improve employee performance when conducting mand training during in-home applied behavior analysis services. The PDC-HS indicated that the training section yielded the highest number of "no" responses and that an intervention related to training was needed. Behavior Skills Training (BST) was utilized as a function-based intervention that increased employee performance as a result.

Wilder et al. (2020) conducted a review of seven articles (6 published articles and 1 manuscript in review) utilizing the PDC-HS and found that the *Performance Consequences, Effort, and Competition* domain was indicated most often. They recommend that future studies examine who is completing the tool during interviews (behavior analysts, consultants, employees), to further evaluate the reliability and validity of the PDC-HS, and to gather more data related to indicated and non-indicated interventions.

A surprising lack of literature exists related to antecedent manipulations in the workplace. Examples of antecedent manipulations include setting events and prompting procedures to change behavior. It is often difficult to find interventions with only an antecedent component as it can be difficult to isolate antecedents from consequences in complex situations (Warman et al., 2019). Utilizing tools that identify areas correlated with performance deficits may be effective in creating individualized interventions to increase employee performance among direct care staff through the use of function-based treatment.

The purpose of the current study was to evaluate an intervention to improve data collection procedures among direct care staff in several group homes within a company that served individuals with high-risk behavioral needs. Prior to the implementation of this intervention, behavioral documentation was not being completed by staff and was often relayed orally to the team serving the individual without a thorough written record of the resident's

aggressive incident. The PDC-HS was used to identify an appropriate intervention strategy for use with direct care staff to increase their completion of data collection forms across three separate residences.

Method

Subjects

Thirty direct care staff from three separate residences were subjects in the present study. Staff were assigned to one of three eight-hour shifts, designed to provide around the clock care to individuals with intensive behavioral needs. The staff in the present study ranged in age from 26 to 52 years. Female staff accounted for 60% of the staff members across all 3 of the residences in the study. Approximately 70% of the staff in the study had been with the organization for at least 3 years. All of the staff possessed a high school diploma with 20% being enrolled in college coursework. The manager from each group home gave the researcher the weekly schedule for staffing along with each staff member's cell phone number so that they could be contacted during their shift. Direct care staff were required to record a narrative of instances of challenging behavior in the company's intranet system in addition to recording a behavior tracking sheet kept in the residence.

Setting and materials

The study was conducted across three community based residential homes located in a large Midwestern town in the United States. The residences typically had a single floor with a kitchen, two restrooms, a dining area, living room, and separate single client bedrooms.

Performance diagnostic checklist- human services (PDC-HS)

The first author completed the PDC-HS while interviewing the house manager at each residence. A doctoral-level behavior therapist also separately completed the form and took data on its components. The inter-observer reliability of the findings from each of these administrations of the PDS-HS was 100%. The PDC-HS consists of four domains including: *Training, Task Clarification and Prompting, Resources, and Consequences/Effort and Competition*. Each domain includes four to six questions that target employee performance. Each item that received a "no" during scoring correlated with an intervention that could potentially be used to improve performance (Carr et al., 2013). Each of the three residences had indicated deficits in the *Task Clarification* section of the PDC-HS, and two of the residences had additional deficits in the *Performance Consequences/Effort and Competition* domain. Results of the PDC-HS are shown in Figure 1.

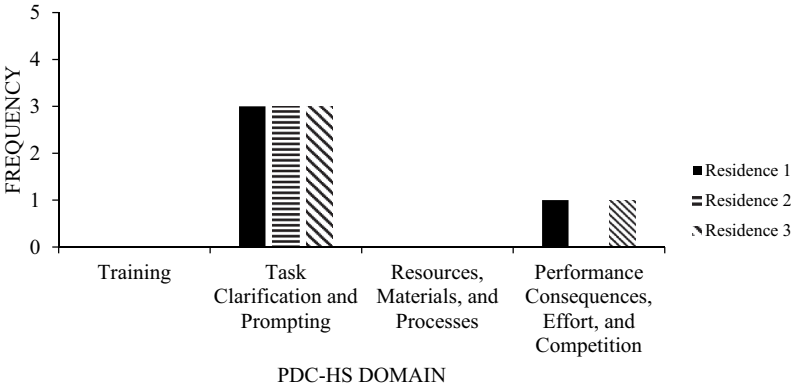

Figure 1. Human Services (PDC-HS) scores for each residence. The "no" responses from each category are represented across each domain of the assessment.

A multiple baseline across settings design was implemented in the current study (Miltenberger, 1997). The intervention was introduced in each of the three residences in a sequential fashion. The "untreated" residences remained in the baseline phase during this sequential introduction of the intervention to determine if the intervention produced a change in staff behavior.

Data collection and interobserver agreement

Dependent measures

Daily staff narratives.

The staff members working in each of the residences in the study were required to complete a narrative-based report on the activities that occurred during their shift as well as any instances of aggressive behavior observed by the staff. The documentation was entered via their cell phone or tablet on the organization's intranet. The information was password protected and compliant with all established privacy laws governing such information. This information could be accessed through each client's portal on the organization's website. All staff received training on how to access the intranet system and were provided with examples of staff narratives during orientation prior to data collection.

Descriptive analysis data forms.

Each of the residences in the study were provided data sheets that were to be completed after each occurrence of aggressive behavior in the home. Staff were responsible for indicating the time of the episode, identifiable antecedents, specific behaviors, location, and the use of the individual's behavior support plan for de-escalation.

A doctoral-level behavior analyst (BCBA-D) along with a doctoral level behavior therapist scored the narratives and descriptive analysis data sheets to determine the degree of agreement of the behavioral episodes that were noted each week. Each observer scored the daily staff narrative in the intranet system as well as the descriptive analysis data form in order to evaluate the agreement of the recording of the behavioral episodes on the form. Each home was scored for each week of the study across the baseline and intervention phases. The issues documented in the narrative accounts were compared to those recorded on the descriptive analysis data forms in order to compute a weekly accuracy score for the documentation of these issues across each week in the study. Reliability checks were conducted on 50% of the data scored when both researchers compared the data collection from both the narrative accounts and descriptive analysis data forms during both the baseline and intervention phases. The first author conducted the other 50% of the data comparison calculations alone. Reliability scores ranged from 97%-100% with an average reliability of 98% across all three residences. The formula used to calculate interobserver agreement was the number of agreements observed divided by the total number of agreements + disagreements multiplied, by 100.

Procedures

Baseline

Data were collected in each of the homes in the study at the end of each week. Staff were not informed of the purpose of the study, nor were they given any feedback related to which forms were filled out and which ones were incomplete. Each of the forms described below were collected and an aggregate score for each residence was computed based upon the agreement scores between both data collection systems.

Prompting intervention

An antecedent manipulation was implemented in the form of a prompting procedure. Each of the staff in the home carried a cell phone that was used for communication throughout the course of the day. A text message was sent by a supervising behavior analyst to staff members that were on shift based on a schedule provided by the manager at each of the residences. The text message was sent near the end of their shift reminding them to fill out the daily staff narrative and descriptive analysis data form for instances of aggressive behavior that occurred in the home for the client(s) they were responsible for. The text message read, “Please remember to document any instances of aggression that occurred on your shift today on the behavior tracking sheets.”

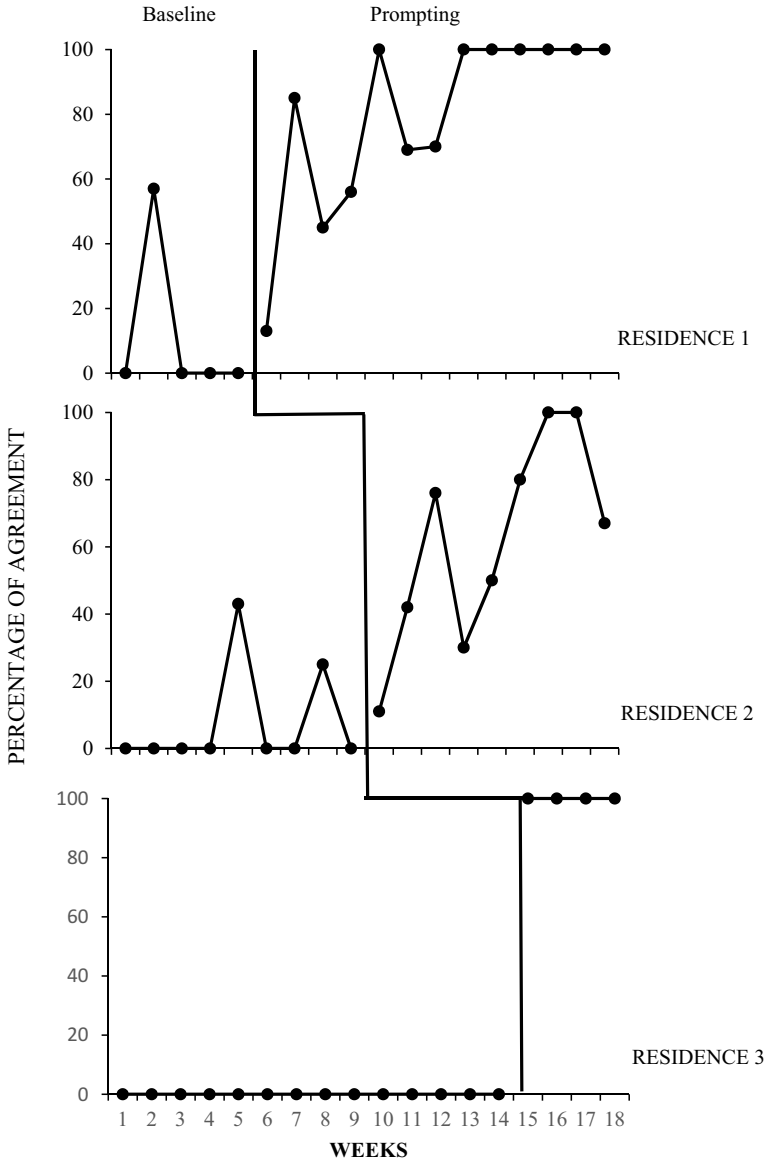

Figure 2. Percentage of agreement of data collection across the three residences in the study. Data points indicate the percent agreement between the staff member's written narratives and the descriptive analysis data sheets that were filled out upon the display of aggressive behavior.

Results and discussion

Figure 2 depicts the percentage of agreement among the staff member's written narratives and the descriptive analysis data sheets filled out by the staff upon the display of aggressive behavior. During the initial baseline phase, levels of agreement were low for all three residences (M = 11.4% for residence 1, range, 0%-57%; M = 7.6% for residence 2, range, 0%-43%; M = 0% for

residence 3). During baseline, residence 1 only rose above 0% agreement on one occasion, residence 2 only rose above 0% during baseline on two occasions, and residence 3 never rose above 0%. Following the implementation of the intervention, an increase in the level of agreement was observed for all three residences. Residence 1 demonstrated variable levels of agreement with an upward trend reaching 100% agreement during the last three observations of the intervention phase (M = 79.8%; range, 13%-100%). Residence 2 demonstrated some variability with an upward trend (M = 61.8%; range, 11%-100%) and residence 3 demonstrated zero variability during the intervention phase, immediately increasing from 0% agreement during baseline to 100% agreement during intervention. During the intervention phase, agreement among behavioral documentation never returned to baseline levels and all three residences demonstrated an increase in level and trend.

The use of the PDC-HS was effective in identifying specific areas of need that, when addressed with an indicated intervention in the residential setting, produced increases in agreement among behavioral documentation for staff working in those settings. Each of the three residences that were depicted in this study displayed low percentages of agreement related to the behavioral data collected in each residence initially.

Though extensive training and modeling had been conducted in the residences prior to the intervention, the percentage of agreement that was observed during the baseline phase rarely rose above 40%. The PDC-HS was useful in identifying specific antecedent based interventions that could be applied with minimal time and effort in order to increase the percentage of agreement among behavioral documentation.

This intervention also facilitated significant increases in the agreement of the data collection across three residences with minimal involvement from the supervisors of these homes. Many OBM-based interventions target supervisor training and involvement to facilitate behavior change among staff. The present intervention was impacted behavior change in the absence of this supervisory presence, thus contributing to the social validity and ease of implementation of the methods described.

The positive outcomes that were achieved in the agreement of behavioral documentation were clearly observed in all of the residences that were involved in the study. However, follow-up data were not collected to examine the durability and maintenance of the gains that were observed during treatment. Future studies should conduct follow-up assessments to determine how well the gains that were achieved maintain over time and possibly generalize to other treatment settings. Additionally, it is possible that although the two behavioral documentation forms could yield 100% agreement, they might not represent what actually happened in each residence. Future studies should add a measure of accuracy through the use of video footage or additional observers. Lastly, the timing of the text message could have impacted staff

members' behavioral documentation. In this study, staff were sent a text message near the end of the shift. Depending on the time of the day that the aggressive behavior occurred, it is possible that aggression could have been far enough removed that it was not salient enough to change the behavior of the staff member at the time the text was received. A potential alternative to this would have been to randomly select times throughout the day in order to provide a more comprehensive prompting system to remediate the behavior of the staff on shift at these times.

The present findings underscore the utility of the PDC-HS as a cost effective tool to address a significant shortcoming of many behaviorally based treatment programs (i.e., accurate data collection). The costs of home repairs due to resident aggression in these residences were extensive, often exceeding $15,000 per year. The ability to provide interventions that are guided by more accurate data, and thus were more efficacious, helped to decrease these costs significantly. Such findings facilitate ongoing assessment and intervention by helping to ensure that the data used to guide treatment decisions are better informed. Providing clinicians with more accurate data from which to formulate their interventions benefits both the field and those that we serve. Function-based assessments such as the PDC-HS can improve staff performance through the identification of areas in need of intervention. This study demonstrated that the PDC-HS was effective in identifying deficits in *Task Clarification & Prompting* and suggested the use of prompts as a sample intervention. Though some "no" responses were noted in the consequences section of the form, the antecedent based interventions were more parsimonious based upon the fact that the presence of competing tasks could not be removed. Prompts in the form of text messages were more effective in increasing agreement among behavioral documentation, allowing for a more descriptive report of aggressive behavior displayed by individuals with severe behavioral challenges. This study adds to emerging literature on the PDC-HS showing its effectiveness in increasing behaviors of interest through function-based assessment and intervention.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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