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RESEARCH REPORTS

Improving the Quality of Staff and Participant Interaction in an Acquired Brain Injury Organization

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Weekly observations of direct-care staff in a facility for persons with brain injury yielded less than optimal interactional style with facility residents. Following an observational baseline, staff were asked to self-rate a 15-min video sample of their interaction behavior with participants on their unit. They were then asked to compare their self-ratings to those of a supervisor, as well as view a video exemplar of appropriate positive interaction behavior. Elements of their interactional style were highlighted and specific feedback was provided on how to improve their performance. Interaction style was then reevaluated via an unobtrusive observer and yielded positive gains for all participants. Subsequent on-the-job feedback sustained performance gains.

KEYWORDS video modeling, staff training, performance management, brain injury

A major concern in human services settings is the quality of direct-care staff performance, including staff interactions with the residents. A great deal of research has been conducted to determine practical and effective methods for improving direct-care staff behavior. Verbal and written feedback have been used frequently because they are relatively cost-effective means for intervention (e.g., Reid & Parsons, 1995). Another approach has been to

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pair verbal feedback with verbal praise or approval delivered by managers (e.g., Brown, Willis, & Reid, 1981). An additional form of feedback, video modeling in combination with verbal feedback, has increasingly been used in the behavior analytic literature to teach complex independent living skills to individuals with disabilities. This technique can involve videotaping appropriate sequences of tasks and having an individual watch the tape as a model for the appropriate behavior. Managers then discuss the aspects of the performance that were appropriate, as well as those that need improvement (Embregts, 2002). Studies looking at instructional sequences have found video modeling to be superior to in vivo modeling (e.g., Charlop-Christy, Le, & Freeman, 2000) and thus it may hold utility for such success in a more organizational setting.

The use of video-based training in staff instruction is an area that has received some attention in the literature (Nicol, Sweeney, McHugh, & Bagg, 2005). The ability to have staff actually view the behavior that they are being trained on can be a crucial component in their ability to perform the task in the future. The use of instructional methods presented via lecture has long proved to be ineffective in imparting crucial skills to staff members. The present study examined the effects of occupational behavior management techniques on the training of positive interaction skills to staff members in a post-acute acquired brain injury setting. The study investigated the effects of video modeling and feedback on staff interactions throughout the facility.

METHOD

Participants, Setting, and Materials

Three full-time staff members that had been employed at the facility approximately 9 months served as participants. These specific staff were chosen due to supervisor feedback and observations that their frequency of interaction with the residents with brain injury was well below that of their coworkers. Additionally, each supervisor was asked if the particular staff member could benefit from the training provided in the study, and answered affirmatively.

The study was conducted in a secure residence for adults with acquired brain injuries and severe unwanted behavior. The residence was part of a post-acute neurobehavioral treatment program. The residence had a staffing pool that ranged from 15 to 20 staff members. The ratio of males to females was 50:50. All of the staff had one supervisor who provided oversight and did all of the scheduling for the residence.

All videotaping with staff took place with the camera mounted on a tripod in a public area of the residence. The residence also contained cameras mounted to monitor staff and participant activity that were placed there by

the facility. All staff were notified of the presence of the cameras prior to the time that they were employed at the facility and gave their consent to be taped at any point during their employment.

Dependent Measures

PEARL ACTIVE TREATMENT SCALE

The primary dependent measure that was employed in the study was a treatment scale that was utilized to rate the quality of staff–participant interactions (McMorrow, 2003). The scale was comprised of five separate areas that rated various aspects of a quality interactional style that were felt to be crucial to rehabilitation success. The five areas that were measured were as follows:

Positive. Was the staff member engaging in positive interactions with the participant? This was measured by staff counting the statements that were made by staff during the observation period and scoring them as positive if they were supportive of the participant and included praise or other components that were favorable. Examples of such statements would be, "I heard that you had a great evening last night, great job," or, "You performed your morning routine with very few problems today, congratulations." Some nonexamples that were provided included any directives given that were sarcastic or that delivered negative feedback to the participant such as, "What kind of shirt is that, don't you know that those colors don't match? What is wrong with you?

Early. Did the staff member intervene early enough to avoid a bigger behavioral episode? This element of PEARL was scored as occurring if the staff intervened verbally or physically as participants started to engage in some of the precursor behaviors to their behavioral chains of aggression. Early responding meant that the staff intervened prior to significant aggressive behavior being displayed. This element was scored as not applicable (N/A) if no issues of inappropriate behavior or aggression were noted. The frequency counts of this element were then displayed as percentages for this element after the element according to the description above.

All. Was the staff member interacting with as many of the participants as possible? This element of PEARL utilized a formula that looked at the number of participants that were within a 6-ft radius of the staff member. If the staff member had five participants within 6 feet of him/her during the observation period, but interacted with only two of them, he or she was scored with a 40% for that interval ($2/5 \times 100 = 40$).

Reinforce. Did the staff member provide praise or other forms of reinforcement for displays of appropriate behavior? The *Reinforce* element of PEARL was similar to the *Positive* element, with the main difference being that

Reinforce was based upon the staff member's response to the participant's behavior as opposed to a general statement as described in the *Positive* element. Scoring was the same as described above.

Look. Was the staff member looking for opportunities to teach appropriate behavior whenever possible? The *Look* component recorded instances of staff interaction or statements that provided alternative appropriate response examples to the participant either verbally or through modeling based upon the display of inappropriate behavior. An example of the *Look* element would be a staff member reviewing appropriate male–female interactions if the participant had made a sexually inappropriate comment or tried to fondle a staff member. Scoring for this element was the same as described above.

The recording forms that were utilized in the study allowed the experimenters to record individual instances of each of these elements in order to compute an overall PEARL score for each observation period. The manner in which the behaviors were recorded can be seen in the Appendix.

The behaviors that PEARL is comprised of were part of the day-to-day operation of the units, and the specific training that was given to all of the direct-care staff when they were hired was related to what each of the elements of PEARL were. The PEARL scale was a component of the performance monitoring system utilized by the facility to provide feedback to staff related to one aspect of their job performance. This feedback was given every 3–6 months to staff as their performance appraisals were due. The feedback was provided by the supervisor that worked within the residence. For the purposes of the present study, the recording frequency was specified to include the observed frequency of each of the five behaviors across individual 5-min intervals. The observed frequency of responses in each of the areas then comprised the score for that area. A cumulative PEARL score was obtained by taking the average of all five of the areas that were scored.

Procedure

Phase 1: Baseline

All three staff member participants were observed in 10-min periods of interaction with the residents of the facility. Observations took place in various rooms of the house, primarily the kitchen and living room. Observations were taken by a student intern at the facility (a graduate student in Behavior Analysis) who was regularly in the house performing tasks and participating in skill-building programs with the residents. Data were collected unobtrusively via a video camera hidden in the backpack/book bag of the student. No data collector noted any detection by the staff member that data on his/her behavior was being recorded. Videotapes were later played back and PEARL scores were obtained from the footage in 2-min

partial interval recording sessions. Baseline continued until a stable level of PEARL scores was obtained for each participant.

Phase 2: Initial videotape feedback and model training (video 1)

In a multiple-baseline fashion, each participant was scheduled to meet with the chief behavior analyst and was shown the videotape of interactions that they had with residents during the past baseline condition. Participants were then asked to fill out a PEARL form while watching a single video session and were asked to indicate what they believed their PEARL score was for the interaction that they had just viewed. After doing this, they were asked to watch a video of a clinical team member engaging in an interaction with a participant. They were to then assign a PEARL score for that interaction. In addition to the PEARL scores they were asked to assign, they were also asked to provide a definition of what they felt staff defined as good PEARL behaviors, as well as what they believed would improve overall PEARL scores for their residence. The chief behavior analyst provided verbal feedback, discussing the discrepancy between the participant's scoring of their PEARL score and the behavior analyst's scoring of the interaction. The chief behavior analyst also highlighted aspects of the video of the model performance that exemplified the appropriate way to interact with the residents.

Phase 3: Follow-up video feedback and PEARL tickets (video 2)

A second videotape of staff interactions was presented after each participant's data had stabilized in Phase 2. In a meeting with the chief behavior analyst, staff were again presented with a videotape of a 10-min interaction that had taken place after the previous feedback meeting of Phase 2. They were allowed to score themselves and provide written feedback on Figure 1 that accompanied the first videotape. However, during this condition, they were not shown a video of the model.

Following this initial meeting, all subsequent observation sessions of Phase 3 included immediate on-the-job feedback from an experimenter (a chief behavior analyst or a student intern) in the form of a written PEARL form (Figure 1). In other words, staff saw their data immediately after the observation period had ended.

Data Collection and Interobserver Reliability

Frequency or event recording was utilized in this study whereby each instance of the behavior was scored if it occurred in the 5-min interval. Reliability scores were obtained for one third of the total observations in the

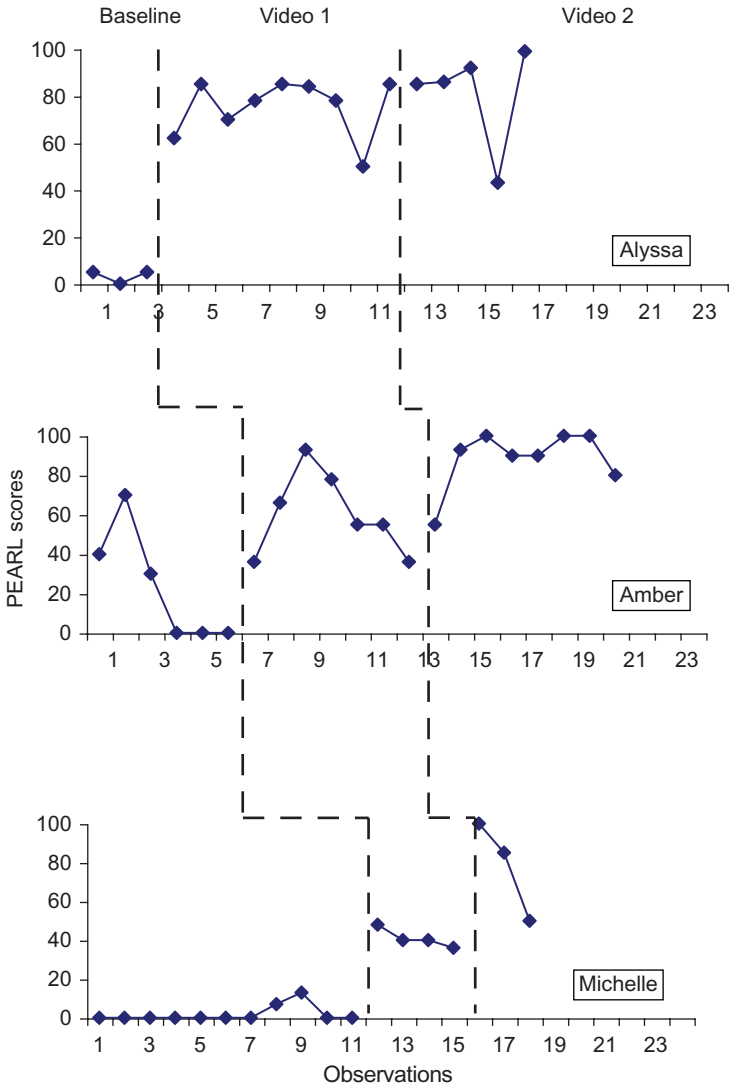

FIGURE 1 PEARL scores per observation period across the three staff members involved in the study.

study. The primary experimenter and three graduate students in Behavior Analysis and Therapy served as the reliability observers. Each of the observers was trained to an 80% correct criteria using videotapes of staff–participant interactions that were made in the residence in which the study was to be conducted. Interobserver reliability was calculated by computing the agreements plus the disagreements for each interval and dividing this number by the number of agreements (Agreements+Disagreements/Agreements). The reliability scores ranged from 70% to 100%, with an average reliability score of 98%.

RESULTS AND DISCUSSION

Figure 1 displays PEARL score performance for each of the three staff participants in the present study. Alyssa averaged only 8% PEARL behaviors during the baseline phase of the study. Once the videotape 1 intervention was put into place, her average score on PEARL behaviors increased to 75%. After the phase change to videotape 2, she averaged 81% PEARL behaviors across the phase. The second staff member who was involved in the study, Amber, had a much lower baseline average of PEARL behaviors displayed. Amber averaged 0% PEARL behaviors during her baseline observations. This increased to 2% during the first phase of video feedback (video 1). After completion of the video 2 phase, she had averaged 59% PEARL behaviors. Michelle displayed almost identical baseline percentages as Amber did. Michelle scored an average of 2% on PEARL behaviors documented during the baseline phase. This percentage increased to 32% once the video 1 intervention phase was put into place. These scores were increased again to 64% once the video 2 intervention was implemented.

The results of the present study expand the prior literature related to performance feedback (Reid & Parsons, 1995) as well as prior investigations using video-based training materials (Charlop-Christy et al., 2000). Furthermore, the current investigation suggests that coupling feedback with video modeling and self-recording of one's own behavior can be a successful method to improving the quality of staff–client interactions in residential care facilities. While the methods described here are not new to the field of behavior analysis, the application of them in an organizational setting is rather unique and has merit beyond the context of the present study. Future research could utilize similar methods for employee–customer interactions in retail sales, therapist–client relationships, or supervisor–staff member relations. With much of the success in the field of organizational behavior being the interaction between two or more individuals, understanding how to operationalize the interaction, and then use methods to improve upon it, seem critical for improving performance of the employee and ensuring the best service for the consumer.

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APPENDIX Sample PEARL Observation System Form. *Note*. The experimenters filled these out on a daily basis through the course of the study. The same forms were used to be handed out to staff in the form of PEARL slips during the video 2 intervention phase.

PEARL
STAFF
OBSERVATION
FORM

CIRCLE ONE:

Baseline
Intervention

COMPONENT	Interval 1	Interval 2	Interval 3	Interval 4	Interval 5
POSITIVE					
EARLY					
ALL (based on max. part. in room during observation period)					
REINFORCE					
LOOK					

SCORE →