2005

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Behavioral Interventions
Behav. Intervent. **20**: 91–99 (2005)
Published online in Wiley InterScience (www.interscience.wiley.com). **DOI**: 10.1002/bin.174

ENHANCING STAFF PERFORMANCE MEASURES IN AN ACQUIRED BRAIN INJURY SETTING: COMBATING THE HABITUATION TO ORGANIZATIONAL BEHAVIORAL INTERVENTIONS

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The current study examines the utility of a range of behavioral strategies involving group and individual performance feedback for direct care staff in an in-patient acquired brain injury setting. We first assessed the level of staff completion of behavioral programs for persons with brain injury who resided in one of two residential houses. A weekly percentage score for the entire house was obtained that reflected the completion of behavior programs in each residence. In a multiple baseline fashion across houses we varied the types of feedback intervention introduced to staff, which included in-service training on the importance of completing behavior programs, a weekly public posting of overall program completion by house, and a weekly public posting of completion of programs by specific staff members. Copyright © 2005 John Wiley & Sons, Ltd.

INTRODUCTION

One of the most important predictors of successful participant outcomes in brain injury rehabilitation settings is the work performance of direct care staff. The type of interaction that direct care staff engage in with the person with brain injury may greatly strengthen or weaken the overall injury improvement. If direct care staff choose to ignore supervisory instructions of running clinical and rehabilitative programs with a participant, that participant may not receive the quality of care which has been promised to him/her or expected by higher-level management. However, if those same direct care staff comply with supervisory instructions regarding the running of programs, the person with a brain injury and the organization as a whole stand to benefit. For the person with brain injury, they may return to pre-injury levels

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of functioning more quickly. For the organization, they may earn a greater reputation of being a quality care provider. In the long run, the behavior of the direct care worker may make or break the overall success of a human service organization. It is therefore critical to ensure that direct care staff members are carefully monitored and contingencies are put in place within the organization to effectively control their behavior of running participant programs.

Unfortunately, when evaluated across a variety of human service settings, the performance of direct care workers has been repeatedly shown to be less than optimal. Staff–participant interactions are often limited (Burgio, Whitman, & Reid, 1983) and take the form of demands rather than casual correspondence. When attempts are made at carrying out behavior programs, treatment integrity frequently suffers (Gresham, 1989; Witt, Noell, LaFleur, & Mortenson, 1997). The time staff spend interacting with each other may greatly exceed the time that staff spend interacting with the participants (Iwata, Bailey, Brown, Foshee, & Alpern, 1976). However, it is promising to note that when environmental contingencies are rearranged to promote positive behavior change in the direct care worker they are often successful (see, e.g., Reid & Parsons, 1995).

One of the most popular and well established methods of improving staff performance is the use of feedback. Feedback is described as a form of communication in which the sender expresses a message to the receiver regarding the suitability of their prior performance (Ilgen, Fisher, & Taylor, 1979). There are a variety of types of feedback that have been successfully utilized in organizational settings, ranging from individual employee public or private feedback to large scale publicly posted work team/group performance feedback (Stack, 1992). One of the most desirable features of performance feedback is that it can often be delivered immediately (Daniels, 1989) and costs little if anything to the organization (Iwata et al., 1976).

There have been many uses of performance feedback within and beyond human service settings (see, e.g., Austin, Lutrey, & Rohn, in press; Reid & Parsons, 1995). At times, performance feedback has also been used in conjunction with other behavior analytic intervention procedures such as monetary reinforcement programs (see Dixon, Hayes, and Stack, 2003, for a review), instructional control programs (Runnion, Watson, & McWhorter, 1978), aversive contingencies such as threatening job loss (Repp & Deitz, 1979), and in-service training programs aimed at identifying key job duties (Clark, 2001). However, documentation of any form of performance feedback with an organization serving persons with brain injury is lacking in the published literature. Due to the rehabilitative nature of brain injury care provision, when direct care staff fail to consistently run participant programs they may in fact be impeding eventual attainable levels of functioning for that participant. It is for this reason that program completion is so important to ensure.

Therefore, the purpose of the present study was to evaluate various contingencies of reinforcement to improve the work performance of direct care staff within a neurological/behavioral program for persons with brain injury. Specifically, we investigated the role that various forms of feedback would have on work performance of the direct care worker. Four methods of performance feedback were sequentially instated across settings using a multiple baseline design.

METHOD

Participants

The participants involved in the study were full and part time direct care staff as well as PRN staff members. The full time staff members comprised about 80% of this staffing pool, and part time and PRN staff comprised the remaining 20%. Each of the residences averaged three or four staff members present for the day and evening shifts, with that number decreasing to around two staff members on the overnight shifts. The total number of staff members involved in the study was 30. The majority of the staff members were hired from the surrounding local small town college community. Ages ranged from 22 to 51 years old. The numbers of men and women were equal, 15–15. The primary duties of the staff members were to provide for the daily needs of the participants as well as following through with clinical programs written by the clinical team. This team consisted of graduate trained behavior analysts, a nurse, a speech-language pathologist, two rehabilitation therapists, and two case managers.

Setting

All aspects of this study were conducted at two residences within a NeuroBehavioral treatment program for adults with acquired brain injuries and severe unwanted behaviors. The number of staff members working in each residence ranged from 15 to 20 throughout the duration of the study.

Experimental Design

A multiple baseline design across residences was employed followed by sequential treatments. Each successive treatment condition was instated when the prior began to lose its effectiveness in maintaining the staff behavior of completing behavior programs.

Dependent Measures

The primary dependent measure employed in the study was completion of written behavioral programs in both of the residences. These programs were written by the behavior analysts, placed in each residence within each participant's treatment manual, and accessed by the staff any time throughout the day. The treatment manuals were used to document a variety of activities for that participant including brief narrative summaries, self-care, and problematic behavior emissions that may have occurred. The written behavioral programs were typically one page in length with concise directions at the top of the form to aid staff in filling them out.

Each of the observers in the present study utilized a data collection form that tracked how many programs were available to be filled out on a given day within a given residence and how many were actually noted as having been completed. A weekly ratio was then computed for number of actual programs completed within each residence and the number of possible programs completed.

Procedure

Phase 1: Baseline

Data were gathered from the treatment manuals in each of the residences. No feedback was given to staff. In order to control for any reactivity effects that might have occurred, the following measures were taken. If questions were asked, the observers stated that they were just reviewing files to increase their familiarity with the participants in the residence. They also explained that they were behavior analysis students who were working with the first author in learning more about acquired brain injury and severe unwanted behavior. Weekly average program completion scores were computed.

Phase 2: Staff In-Service

The investigators provided a PowerPoint presentation at a weekly mandatory staff meeting. The meeting was a forum to discuss staffing issues and programmatic detail. The in-service provided a detailed rationale of the necessity of behavioral programming and its role in the rehabilitation of individuals with acquired brain injuries and severe unwanted behaviors. A number of examples of existing behavioral programs were provided and discussed. There was also an opportunity for staff to provide feedback as to methods that they felt would best facilitate completion of the behavioral programs in their residence.

Phase 3: General Public Posting

Weekly graphs of each residence's performance were provided in a high visibility area of the staff office. The graphs depicted the average program completion scores for the participants in that residence and were updated weekly.

Phase 4: Specific Public Posting

In addition to the weekly graphs described above, specific detail was added on a second graph placed in the staff office. The second graph depicted individual completion scores for each of the participants in the residence. These were presented in the form of bar graphs. Each of the graphs was placed in the residence at the same time each week, showing the previous week's performance.

Phase 5: Staff Accountability

Each residence used in the study had two shift supervisors who were responsible for monitoring staff behavior. At this point, each supervisor was instructed that their staff's completion of behavior programs was their responsibility and that feedback would continue to be given in a weekly fashion. Additionally, these staff members were each directly assigned to complete half of the participants' behavior programs themselves (within their residence). They were also instructed to follow up with other shifts and staff members to ensure that the other half of the participants' programs were completed.

Reliability

The first author and a graduate student intern served as reliability observers throughout the course of the study. They would check the weekly completion of the behavioral programs in each residence by computing programs available to be filled out divided by those that were actually filled out. A weekly percentage score was then calculated for each residence. Reliability data were determined based upon the number of agreements on the weekly percentages for each residence divided by the number of disagreements. This number was then multiplied by 100 to compute a percentage. Reliability measures ranged from 83 to 100%, with an average of 98%.

RESULTS

Figure 1 displays the weekly percentage of behavioral programs completed in each residence. During baseline conditions Residence 1, depicted in the top portion of the

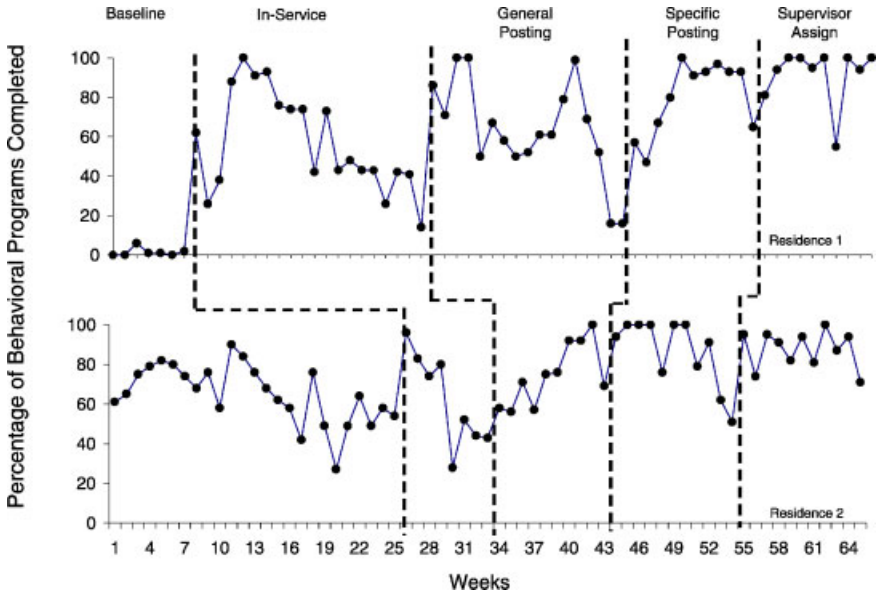

Figure 1. This figure shows the percentage of total behavior programs completed by staff members in each house across the baseline and changing experimental conditions of the present experiment.

figure, documented completing an average of 1.4% of the possible behavioral programs. The number of completed programs quickly rose to 100% after the in-service training was presented to the staff members. However, after six weeks, the percentage of programs completed began to decline, and fell to approximately 15%. A similar pattern of rising and then falling percentages of programs completed occurred again when the general posting of the weekly completion averages was placed in clear, high traffic areas throughout the residence. Specifically, there was a rise to 100% programs completed initially after the intervention was instated, and a gradual decline over the course of four months to 15%. When the feedback was changed to a specific posting of individual participant completion scores, again a rise and fall of the percentage of programs completed occurred. Initially scores rose to 100% and yet eventually dropped to only 60%. The last form of feedback, which required the supervisors to complete one-half of all programs themselves and be responsible for their staffs' completion of the other half of all programs, resulted in a relatively steady high percentage of completion. Scores rose to 100% and remained around 85% completion throughout this feedback condition.

Residence 2 displayed a similar response pattern throughout the sequence of interventions that were employed. During baseline conditions, the percentage

of behavior programs completed actually declined from roughly 70% to 50%. The in-service training maintained a relatively higher level of program completion for about three weeks, 80%, and then dropped to 45%. As was the case with Residence 1, the percentages of programs completed during the specific feedback and supervisor accountability phases maintained higher levels of performance in Residence 2 than the previous interventions or baseline conditions.

DISCUSSION

The results obtained from the two residences displayed similar patterns of responding. Staff members in each residence altered their behavior of completing behavior programs every time a new type of intervention was put into place. However, the effects of the specific intervention waned over time, and produced a decrease in the percentage of programs completed on a weekly basis. One explanation would be that the novelty of the intervention component wore off or that there were no reinforcing or punishing contingencies in place for following or not following the instructions of 'complete behavior programs'. Another reason for the lack of stability within each treatment component is that the feedback of seeing client names or weekly percentage scores on a graph did not function as a reinforcer or a discriminative stimulus for staff to alter subsequent behavior. This type of habituation may be quite common in human service settings and it is recommended that more efforts need to be taken to ensure the durability of staff training/ intervention methods. The present study assessed behavior change over the course of 65 weeks, which may be considerably longer than other performance feedback studies. As a result, the robustness of the various forms of performance feedback should be taken with caution and may only provide clear information about immediate behavior change. Future research on the maintenance of organizational behavior change is warranted.

While the use of public posting has become a common practice in management and training of staff due to the ease of application and limited cost, the residential supervisors in this study commented that they believed additional incentives would have produced a bigger impact on the behavior from their employees. Future research should investigate the added value a financial contingency might have for direct care workers in brain injury rehabilitation. Cost-controlled lottery opportunities may hold promise, whereby staff completing behavior programs at a specified level could earn lottery tickets redeemable for extra time off, additional money, or both. Initial investigations into this area claim success (Cook & Dixon, under review), and warrant exploration in organizations serving persons with brain injury.

One significant limitation to the present data is that the research design could not control for a sequence effect of the independent variables. It is quite possible that as staff became more familiar with the increased attention placed on programs completed they would have reduced their variability in responding on a week-by-week basis, and the specific posting or supervisor assignment conditions would not have been necessary. Future research should explore this possibility by randomizing the presentation of the differing feedback conditions across residences to control for a possible history effect.

The number of persons suffering from brain injury in America is continuing to rise. Recent analyses suggest that persons with brain injury account for 2% of the total United States population and that a new case of brain injury occurs every 21 seconds (Brain Injury Association of America, 2003). The rise in the number of persons suffering from this debilitating disorder suggests that more behavior analysts need to become active in ensuring adequate and exceptional clinical care. Furthermore, as our data suggest, without designing and continually modifying organizational interventions to ensure that direct staff comply with treatment recommendations, even the best behavior analytic treatment plans will have little impact on the people they are designed to help.

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