

*ENHANCING FREQUENCY RECORDING BY
DEVELOPMENTAL DISABILITIES TREATMENT STAFF*

DENNIS B. MOZINGO AND TRISTRAM SMITH

UNIVERSITY OF ROCHESTER SCHOOL OF
MEDICINE AND DENTISTRY

MARY R. RIORDAN AND MAXIN L. REISS

BEHAVIOR MANAGEMENT CONSULTANTS, INC.
TALLAHASSEE, FLORIDA

AND

JON S. BAILEY

FLORIDA STATE UNIVERSITY

We evaluated a staff training and management package for increasing accuracy of recording frequency of problem behavior in a residential care facility. A multiple baseline design across the first and second work shifts showed that 2 of 8 participants increased their accuracy following in-service training, and all 8 improved during a condition with supervisor presence and feedback. Improvements were maintained when feedback was removed and generalized to activity periods when neither supervisor presence nor feedback was provided. Other staff behavior was not adversely affected by the intervention package.

DESCRIPTORS: staff management, frequency recording, feedback, data collection, developmental disabilities

A cornerstone of applied behavior analysis is precise data collection to support objective evaluation of interventions in educational and human service environments (Baer, Wolf, & Riskey, 1968). However, little research is available on the reliability of data obtained from staff who provide ongoing service delivery in community settings. To address this issue, we assessed staff accuracy in recording frequency of problem behavior displayed by persons with developmen-

tal disabilities in a residential care facility. We then examined whether accuracy improved with standard behavior-analytic methods for improving staff performance (in-service training followed by performance feedback from supervisors; Reid, 1998). We then conducted probes to evaluate generalization and maintenance.

METHOD

Participants and Setting

Participants were 8 paraprofessional direct-care instructors (DCI) in a residential treatment setting for persons with developmental disabilities. DCIs were women (except BD), aged 22 to 60 years old, with 1 month to 11 years 9 months experience in developmental disabilities. Each DCI worked during either the first or second shift, and each was assigned to either Treatment Group 1 (3 women with profound mental retardation) or Group 2 (2 men with profound mental retardation).

The study was completed in partial fulfillment of the requirements for the PhD by the first author at Florida State University. We thank Terry Revell and Matt Revell for their support of the research. In addition, thanks to the staff and consumers who participated in the study. We also thank David McAdam for his helpful comments on the final manuscript.

Requests for reprints and all other correspondence can be addressed to Dennis B. Mazingo, Department of Pediatrics, School of Medicine and Dentistry, University of Rochester, 601 Elmwood Ave., Box 671, Rochester, New York 14642 (e-mail: Dennis_Mazingo@urmc.rochester.edu).

doi: 10.1901/jaba.2006.55-05

Design and Procedure

A multiple baseline design was applied across staff on the first and second shifts in each treatment group. During baseline, DCIs followed their usual routines. Supervisors, who included the senior behavior analyst (the first author) and two female DCI supervisors, were present and gave performance feedback, although they did not follow a specific protocol for doing so.

The first intervention was a 45- to 60-min in-service training session that consisted of a lecture by the first author on frequency data collection, followed by distribution of materials to ensure that each DCI had one pouch card with accurate definitions and space to enter data for each person with target problem behaviors. Each card was 8 cm by 13 cm; data were recorded on the occurrence of a behavior and the time (indicated by wall-mounted digital clocks with large numbers).

The second intervention was a systematic procedure for supervisor presence and feedback. At the onset of each session, the supervisor entered the observation area, observed for 6 min, and recorded each target behavior that occurred on his or her own set of pouch cards. The supervisor then approached the DCI one at a time, compared the DCI's data entries to his or her own entries and gave feedback, including (a) a statement of agreement that the target behavior did or did not occur, (b) praise for agreements, (c) prompts to practice by copying the supervisor's entry if there were disagreements, and (d) reminders to continue to make entries throughout the work shift. The final condition involved supervisor presence without feedback. During this condition the supervisor entered the observation area, made entries on his or her pouch cards, and left at the end of 6 min without providing feedback.

Measurement and Interobserver Agreement

Trained student research assistants served as observers, a common practice in the setting that may have reduced staff reactivity. The main

dependent measure was percentage agreement between each DCI and observers regarding the occurrence of target problem behavior, including its time (to the minute), code, and number of tallies. Target problem behavior included physical and verbal aggression, self-injury, property destruction, disrobing, and pica. Data were also collected to confirm that the intervention did not have adverse effects on other staff duties and to verify that supervisors adhered to observation and feedback procedures (details available from the first author).

Primary observations of DCI data collection were conducted 4 to 5 days per week in classrooms and living, dining, and recreation rooms. Generalization observations, during which supervisors were absent, were performed 2 to 3 days per week in the hour following primary observations for Group 1 (second shift), 3 hr later for Group 2 (second shift), and 4 hr later for Groups 1 and 2 (first shift) in living, dining, and recreation rooms. All observations were 55 min long. Agreement between independent observers was assessed in 29% of sessions; the mean was 90% (range, 0% to 100% across sessions).

RESULTS AND DISCUSSION

The top two graphs of Figure 1 depict the percentage of problem behaviors recorded by individual DCIs in each of the two shifts, for each of the two treatment groups, during primary observation sessions. Data points represent DCI performance on days when target problem behaviors occurred, providing the opportunity to make frequency recordings. When 2 DCIs were present, data are shown for each. The mean number of target behaviors per session ranged from 1 to 4.3 across conditions for all shifts except Group 1 (second shift). This shift encountered problem behavior more often, with means ranging from 4.5 to 15 across conditions.

The results show that the in-service training had no effect on 5 of the 8 DCIs' frequency-

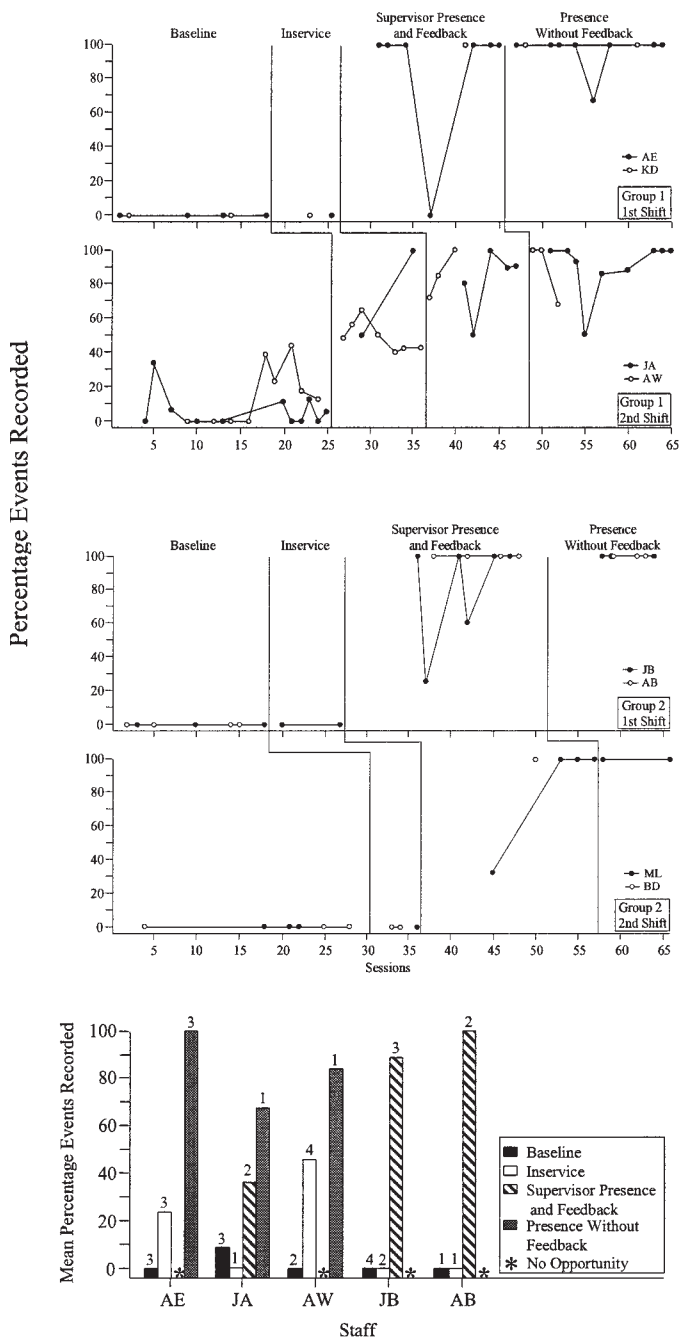


Figure 1. The top two graphs depict percentage of target problem behaviors recorded by direct-care instructors for Groups 1 and 2 across first and second shifts in primary observations. Data points represent sessions in which target problem behaviors occurred. The bottom graph depicts performance in generalization sessions; the numbers on top of each bar indicate the number of sessions in which target problem behaviors occurred.

recording performance (there was no opportunity to assess AB's performance in this condition). Supervisor presence and feedback led to immediate and marked improvements for those DCIs who did not respond to the initial training. The improvement in JA's frequency recording following the in-service training was maintained in the condition with supervisor presence and feedback, and AW showed additional improvement over that obtained with the in-service training. Improvements appeared to be maintained and perhaps increased during supervisor presence without feedback, although additional data are needed to confirm this finding. Group 1 (second shift) showed the greatest fluctuation in performance in the supervision conditions, perhaps due to the higher rate of problem behaviors that the group had to record.

The bottom graph in Figure 1 displays generalization data for those DCIs who had opportunities to respond in baseline and at least two experimental conditions. The number of sessions when problem behavior occurred is depicted above each bar. The data suggest that staff generalized accurate data collection to settings in which supervisors were absent, but this conclusion must be made with caution because of the small number of data points.

One implication of the findings is that the supervisor presence already inherent in the treatment environment did not lead to adequate frequency recording. Hence, the introduction of staff management techniques was apparently necessary. Also, consistent with other research (e.g., Gardner, 1972), in-service training by itself was ineffective in improving performance, suggesting that skill deficits alone were not the major factor that contributed to DCI baseline or post-in-service performance.

DCI performance improved substantially with a very brief supervisory period (6 min) followed by feedback. Thus, most frequency recording occurred when supervisors were not

present. Further, improvements were maintained even after feedback was abruptly withdrawn and may have generalized to sessions when supervisory techniques were never applied. Moreover, because target problem behaviors occurred in a minority of observation intervals, supervisor feedback regarding the nonoccurrence of problem behavior seems to have been enough to increase DCI frequency recording. Finally, it appears that high rates of problem behaviors (Group 1, second shift) resulted in more variable staff performance, suggesting the need for enhanced supervision (e.g., longer monitoring periods) or alternative methods of measuring problem behavior in such cases.

Supervisory techniques in other settings in which behavioral data are collected (e.g., classrooms) and with different types of data collection warrant further investigation. Another topic for research is whether in-service training is necessary or whether supervision and feedback alone are effective in improving staff performance. Nevertheless, the supervision methods in this study may be an efficient means of improving and maintaining staff recording of problem behavior, which may, in turn, support sounder evaluations of services for people with developmental disabilities.

REFERENCES

- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.
- Gardner, J. M. (1972). Teaching behavior modification to non-professionals. *Journal of Applied Behavior Analysis, 5*, 517-521.
- Reid, D. H. (Ed.). (1998). Organizational behavior management and developmental disabilities services: Accomplishments and future directions. *Journal of Organizational Behavior Management, 18*(2/3).

Received April 25, 2005

Final acceptance January 20, 2006

Action Editor, Dennis Reid