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Reduction of restraint of people with intellectual disabilities: An organizational behavior management (OBM) approach

Don E. Williams [a,*], Deborah L. Grossett [b]

[a] Richmond Behavioral Consulting, 5218 Virginia Drive, Richmond, TX 77406-8516, USA
[b] The Center, Houston, TX 3550 West Dallas Houston 77019, USA

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ABSTRACT

We used an organizational behavior management (OBM) approach to increase behavior intervention plans and decrease the use of mechanical restraint. First, recipients were tracked as a member of the priority group if they engaged in frequent self-injurious behavior or physical aggression toward others and/or if they had been placed in mechanical restraint as a result of the problem behaviors. Second, a behavior data monitoring and feedback system was put in place. Third, organizational contingencies for the use of mechanical restraint or the occurrence of frequent self-injurious behavior or physical aggression toward others were initiated. Over the course of 17 months, behavior intervention plans were more than doubled to 124 and mechanical restraints decreased by almost 80%. This study represents the first to use an organizational behavior management (OBM) to reduce restraint with people who have intellectual disabilities.

Restraint as applied to people with intellectual disabilities refers to any actions to limit the movement of an individual. Because restraint can be highly restrictive, poses a risk of injury, and can result in death (e.g., Weiss, 1998), its use must be minimized, reduced, and eliminated if possible.

All forms of restraint are not dangerous; however, attempts to ban restraint in terms of policies and legislation define restraint broadly to include any attempt to control any behavior, thereby limiting all restraint that may be dangerous and even restraint that is not dangerous. The effect of such a limiting of even non-dangerous restraint is unknown, but it will require more communications with physicians to seek orders for restraint. As an example of non-dangerous restraint, the blocking of eye gouging by grabbing a child's wrist does not place that child at risk of death, but there is a chance of injury. The use of physical restraint on the floor presents a higher risk of injury and the possibility of death. Restraint usage is—or should be—one of the most important, closely managed areas of clinical practice in behavioral services The use of restraint has a rather small risk of injury to recipients with intellectual disabilities (Spreat, Lipinski, Hill, & Halpern, 1986; Tilli & Spreat, 2009; Williams, 2009); however more research is needed to determine if current research is representative of other facilities and programs. Such research will be difficult because many facilities serving people with intellectual disabilities are eliminating planned restraint (i.e., therapeutic restraint as a component of a behavior intervention plan) and limiting the use of restraint to emergencies. As Luiselli (in press) pointed out, if brief restraint is included as one part of a behavior intervention plan, the restraint is therapeutic. Substantial research supports the therapeutic value of restraint used in behavior interventions (Harris, 1996; Luiselli, in press; Matson & Boisjoli, 2009). In comparing therapeutic restraint to emergency restraint, Luiselli argued that therapeutic restraint as a part of a planned behavior intervention plan eliminates the subjective decisions that have to be made by caregivers, and provides them with explicit criteria for the use of restraint.

* Corresponding author. Tel.: +1 281 342 2345.
E-mail addresses: dwms887@gmail.com, wmsdj1@att.net (D.E. Williams).

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The argument made by Luiselli (in press) also refers to research demonstrating that injuries are *more likely* to occur in emergency restraints than in planned restraint (Spreat et al., 1986; Tilli & Spreat, 2009; Williams, 2009). While more research is needed to ensure these findings are representative, the decision to eliminate therapeutic restraint is contrary to the current research.

In using restraint, according to Luiselli (in press) a facility must commit to a strong "systems level supervision and oversight" (p. 19) consisting of "clearly articulated policies governing physical restraint" (p. 19), a continuous quality improvement program following a behavioral safety management approach, and clinical supervision of caregivers with ongoing direct observations using intervention integrity assessmen (i.e., on-site monitoring to ensure staff or families are conducting the intervention plan correctly, and instant feedback is given), competency-based staff training and staff supervision program.

If restraint is in use at a facility, there are a number of ways to reduce its use. A restraint reduction plan should be in place where successful data-based results are achieved. Luiselli (2009) observed that there are few studies that contain specific steps to demonstrate how reductions in restraint can occur for people with intellectual disabilities.

Given the lack of systematic restraint reduction studies published with people who have intellectual disabilities as well as the lack of specific steps taken to achieve reductions in restraint, we decided to share an approach to restraint reduction which appeared in an earlier version as part of a monograph chapter that is now out of print (Williams, Weir, Hargrave, Parker, & Marek, 1984). This study used a multi-faceted organizational behavior management (OBM) approach to reducing restraint.

1. Method

1.1. Participants and setting

A restraint reduction plan was implemented at a large state facility for persons with intellectual disabilities that provided residential services for 925 persons. Participants ranged from 13 to 65 years of age and from profound to mild levels of mental retardation. Sixty percent were diagnosed with profound intellectual disabilities, 22.26% with severe ID, 13.90% were moderate ID, and 3.76% had mild ID.

1.2. Procedure

1.2.1. Baseline

A facility-wide survey of mechanical restraint usage was conducted by the first author in conjunction with the Medical Director. This was based on a daily report of the use of emergency mechanical restraint. Each unit team including psychologists and RN's along with the physicians and other team members reviewed the list to verify accuracy. The first month's data were calculated by dividing the total number of restraint orders by the census and these data was used as the baseline data point. Each month's data point were calculated in the same fashion.

1.2.1.1. Identification of and tracking of priority group. First, each of the six residential unit teams was instructed to identify and provide available data for recipients who frequently engaged in SIB or physical aggression toward other, those who had been placed in mechanical restraint for SIB or aggression, or for wound healing. Once these individuals were identified in the "priority group," the unit psychologist was provided consultation on program development by the first author and also by members the Peer Review Committee, which included behaviorally trained psychologists and administrators as well as the medical director.

Behavior intervention plans typically involved differential reinforcement; however, for hand mouthing, the following interventions were typically used: response blocking plus response interruption (handwiping to remove saliva, ensure sanitation), and redirection. Reprimands were usually ineffective. The use of differential reinforcement, hand blocking, handwiping, and redirection typically worked well for individuals with hand mouthing. Objectives were set for the development, implementation, and evaluation of behavior intervention plans. These objectives had action steps, methods, target dates so that in a period of several weeks each recipient on the priority list would have a behavior intervention plan developed in line with the requirements of the Behavior Peer Review and Human Rights Committees.

1.2.1.2. Behavior data monitoring and feedback system. Each recipient identified as a priority was evaluated monthly by the unit psychologist and team and the first author using a Behavior Data tracking sheet that included: number of injuries due to SIB, number of injuries inflicted on others with aggressive behavior, number of mechanical restraints, psychotropic drug dosages, and direct observation assessment of SIB or aggression. Monthly reports were then submitted by the psychologists. Recipient names were added to the priority list if they engaged in aggression or SIB with such intensity and or frequency to result in emergency mechanical restraint or prescription of psychotropic medications. This data-based monitoring or tracking system was the key to ensure that where mechanical restraints were decreased or eliminated, recipients with self-injurious or aggressive behavior did not suffer increased target behaviors that caused more injuries as a result of using no restraint.

The first author, the medical director, and the assistant superintendent served as a management coordination team to review monthly progress reports. Consultation and feedback to the psychologist from the first author ensured compliance

with the planned objectives. Staff resources were reallocated when necessary, to ensure adequate resources were deployed to support the organizational plan.

1.2.2. Organizational contingencies

An analysis of the organizational contingencies for use of mechanical restraint revealed none were in place. Each team functioned totally independently of any centralized oversight. As in most institutional settings, teams could request medical orders for use of mechanical restraint as crisis intervention measures as long as staff complied with procedural guidelines regarding their use. To change the organizational practices, the following contingencies were put into policies and procedures.

1. *If mechanical restraints are applied to a recipient to prevent or stop SIB, enhance wound healing, and/or control physical aggression, a behavior intervention plan must be developed and implemented with the goal of reducing the reliance on restraint to manage problem behavior*. In wound healing, consultation with medical specialists on wound healing provided information that allowing the wound open air facilitated wound healing provided that hand mouthing could be prevented. Also, the mitten restraints used did not provide open air to the wounds, so this was changed
2. *If a recipient causes injuries to self or others through problem behavior, a behavior program must be developed and implemented to reduce injuries to self or others*.

Psychologists and team members who complied with the above contingencies promptly received positive feedback (Prue & Fairbank, 1981; Reid & Whitman, 1983). Others in partial compliance received positive and corrective feedback.

2. Results

As shown in Fig. 1, the use of mechanical restraint was reduced by almost 80% over a 17-month period from 0.54 per month to 0.11 per month.

The number of behavior intervention programs increased systematically from 59 to 124 over the same period. Injuries caused by aggression toward others and aggression toward self remained approximately the same, demonstrating for this facility that restraint reductions did not result in a corresponding increase in injuries.

3. Discussion

Prior to the initiation of this project, the organization had no specific clinical goals other than to apply restraint to prevent injury in accord with state and federal regulations. The psychologists had not been hired or trained by a behaviorally oriented chief psychologist. The establishment of organizational goals, the consultation provided on alternatives to restraint (i.e., the development or revision of behavior programs), and the requirement for monthly status reports on the individuals subjected to restraint and the feedback provided. . ..all contributed to the reduction of restraint. Additionally, recruitment of several behaviorally trained behavior analysts along with improved behavior analysis skills development through the programmed leaning of each psychologist without formal behavioral training ensured basic competencies in behavior analysis.

The establishment of goals for reduction of restraint and the ongoing monitoring often resulted in administrative reallocation of staff resources to those individuals who had been restrained. Thus, this system proved helpful in using resources consistent with a plan to reduce restraint.

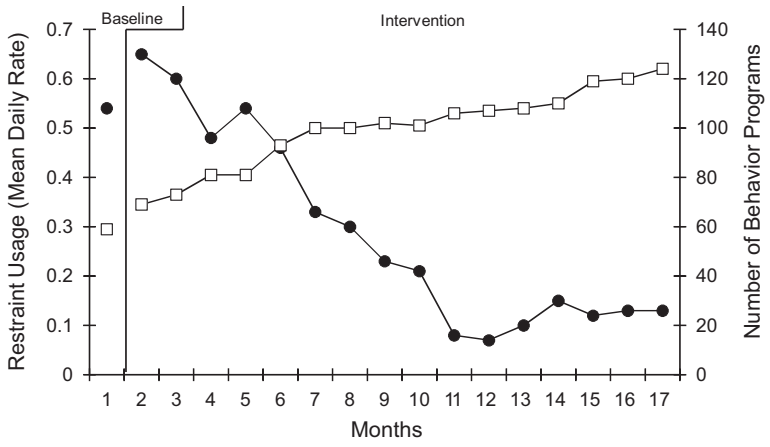

Fig. 1. Mechanical behavior programs.

This study also demonstrates that if facility leadership has a focus that is specific, measureable, and provides positive feedback along with necessary corrective feedback, resources can be better managed to actually accomplish objectives as important as reducing restraint.

The reductions in restraint were monitored closely to ensure that a truly individualized approach was taken, and that data served as our basis for evaluating the effect of the project on individuals served. The restraint reductions did not result in increased injuries, which should always be a concern in restraint reduction planning and evaluation efforts.

In clinical settings where individuals exhibiting dangerous behavior are served, despite the best of efforts to prevent all restraint, restraint is sometimes necessary to prevent injuries (Luiselli, in press; Luiselli, 2009; Matson & Boisjoli, 2009). Williams (2010) classified published restraint reduction efforts as consisting of five approaches: (1) restraint fading (the systematic withdrawal of mechanical restraint typically worn continuously as protective equipment to prevent severe self-injurious behavior (e.g., Lerman, Iwata, Smith, & Vollmer, 1994; Pace, Iwata, Edwards, & McCoch, 1986); (2) staff training programs (e.g., Allen, McDonald, Dunn, & Doyle, 1997), Singh et al. (2009) and Finn and Sturmey (2009); (3) assessment and modification of antecedent conditons (e.g., Luiselli, Kane, Treml, & Young, 2000; Luiselli, Dunn, & Pace, 2005), and (4) modification of the release criterion from restraint (see Luiselli, 2009; Luiselli, Pace, & Dunn 2006; Luiselli, in press); and (5) successful treatment (e.g., Foxx & Mindl, 2007). This study adds a sixth method for restraint reduction, organizational behavior management.

The role of the behavior analyst in staff training and supervision is critical (Bailey & Burch, 2011). Where restraint is used, effective, state-of-the-art staff training and supervision are essential components of a well-managed clinical program (Luiselli, in press). To achieve these results in restraint reduction, experienced behavioral psychologists and Board Certified Behavior Analysts must be on the staff or serving as consultants. Given shortages of these professionals, the recruitment of such staff should ideally precede the admissions of individuals with intellectual disabilities and behavior disorders that are classified as dangerous, high-risk. For facilities in operation serving individuals with dangerous, high-risk behaviors, without behaviorally trained staff as indicated above are placing individuals served and staff at risk.

References

Allen, D., McDonald, L., Dunn, C., & Doyle, T. (1997). Changing care staff approaches to the prevention and management of aggressive behavior in a residential treatment unit for persons with mental retardation and challenging behavior. *Research in Developmental Disabilities, 17*, 101–112.

Bailey, J., & Burch, M. (2011). *Ethics for behavior analysts* (2nd ed.). New York: Routledge, Taylor & Francis Group. 359 p..

Finn, L., & Sturmey, P. (2009). An analysis of the distribution and social antecedents of restrictive behavioral practices in a community day services for adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 22*, 179–186.

Foxx, R. M., & Mindl, J. (2007). The long term successful treatment of the aggressive/destructive behavior of a preadolescent with autism. *Behavioral Interventions, 22*, 83–97.

Harris, J. (1996). Physical restraint procedures for managing challenging behaviors presented by mentally retarded adults and children. *Research in Developmental Disabilities, 17*, 99–134.

Lerman, D. C., Iwata, B. A., Smith, R. G., & Vollmer, T. R. (1994). Restraint fading and the development of alternative behavior in the treatment of self-restraint and self-injury. *Journal of Intellectual Disabilities Research, 38*, 135–148.

Luiselli, J. K., Kane, A., Treml, T., & Young, N. (2000). Behavioral intervention to reduce physical restraint of adolescents with developmental disabilities. *Behavioral Interventions, 15*, 317–330.

Luiselli, J. K., Dunn, E. K., & Pace, (2005). Antecedent assessment and intervention to reduce physical restraint (protective holding) of children and adolescents with acquired brain injury. *Behavioral Interventions, 20*, 51–65.

Luiselli, J. K., Pace, G. M., & Dunn, E. K. (2006). Effects of behavior-contingent and fixed-time release contingencies on frequency and duration of therapeutic restraint. *Behavior Modification, 30*, 442–455.

Luiselli, J. K. (2009). Physical restraint of people with intellectual disability: A review of implementation and reduction procedures. *Journal of Applied Research in Intellectual Disabilities, 22*, 126–134.

Luiselli, J. K. (in press). Therapeutic implementation of physical restraint. In J. K. Luiselli (Ed.), *The handbook of high-risk challenging behaviors: Assessment and intervention*. Baltimore, MD: Paul H. Brookes.

Matson, J. L., & Boisjoli, J. A. (2009). Restraint procedures and challenging behaviors in intellectual disability: An analysis of causative factors. *Journal of Applied Research in Intellectual Disabilities, 22*, 111–117.

Pace, G., Iwata, B. A., Edwards, G. L., & McCosh, K. C. (1986). Stimulus fading and transfer in the treatment of self-restraint and self-injurious behavior. *Journal of Applied Behavior Analysis, 19*, 381–389.

Prue, D. M., & Fairbank, J. A. (1981). Performance feedback in organizational behavior management: A review. *Journal of Organizational Behavior Management, 3*, 1–16.

Reid, D. H., & Whitman, T. L. (1983). Behavioral staff management in institutions: A critical review of effectiveness and acceptability. *Analysis and Intervention in Developmental Disabilities, 3*, 131–149.

Singh, N. N., Lancoini, G. E., Winton, A. S. W., Singh, A. N., Adkins, A. D., & Singh, J. (2009). Mindful staff can reduce the use of physical restraint when providing care to individuals with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 22*, 194–201.

Spreat, S., Lipinski, D., Hill, J., & Halpern, M. E. (1986). Safety indices associated with the use of contingent restraint procedures. *Applied Research in Mental Retardation, 7*, 475–481.

Tilli, D. M., & Spreat, S. (2009). Restraint safety in a residential setting for persons with intellectual disabilities. *Behavioral Interventions, 24*, 127–134.

Weiss, E. M. (1998). Deadly restraint: A Hartford Courant investigative report, October 11–15.

Williams, D. E. (2009). Restraint safety: An analysis of injuries related to restraint of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 22*, 135–139.

Williams, D. E. (2010). Reducing and eliminating restraint of people with developmental disabilities: An overview of recent research. *Research in Developmental Disabilities, 31*, 1142–1148.

Williams, D. E., Weir, H. F., Hargrave, R. L., Parker, C. M., & Marek, K. (1984). Effects of a facility-wide psychoactive drug evaluation/behavior management system. In J. C. Griffin, M. T. Stark, D. E. Wlliams, B. K. Altmeyer, H. K. Griffin (Eds.), *Advances in the treatment of self-injurious behavior*. Austin, Texas: Planning Council for Developmental Disabilities.