

Commentary: Interventions Based on Learning Principles Can Supplant Seclusion and Restraint

Robert Paul Liberman, MD

Regulatory and administrative imperatives, when paired with staff training in humanistic, verbally mediated interventions can reduce the frequency of seclusion and restraint but can be associated with increases in the frequency and severity of staff injury, with concomitant tension and apprehension in the treatment setting. Even when educational programs for staff are made available for patient-centered, therapeutic, and persuasion-based modes of de-escalation, aggression, destructiveness and self-injury may continue to occur or even increase. Administrative contingencies can lead to less reporting of such incidents by staff with consequential, adverse effects on their morale and the unit milieu. Given the neurocognitive deficits, learning disabilities and lengthy histories of inadvertent reinforcement of provocative and aggressive behavior among persons with developmental and serious psychiatric disorders, basic principles of learning are needed to teach alternatives for belligerent behavior. Examples of behavior therapies that have been documented as effective in reducing aggression and self-injury include differential reinforcement of other behavior, social skills training, teaching interaction, social learning modalities, and time out from reinforcement. These evidence-based behavioral interventions must be superimposed on optimal, diagnostically driven, and monitored pharmacotherapy. When evidence-based, person-centered, and recovery-oriented biobehavioral interventions are made available to inpatient units, favorable clinical outcomes with reductions in the use of seclusion and restraint are likely.

J Am Acad Psychiatry Law 39:480–95, 2011

The fine review article by Recupero and her colleagues¹ in this issue of *The Journal* offers a comprehensive and critical appraisal of the legal, regulatory, and clinical concerns related to seclusion and restraint in psychiatric hospitals and units. In their review they conclude that top-down legislating for reductions in seclusion and restraint paired with demands for regular reports of the use of seclusion and restraint rarely result in less use of these modalities.² However, as pointed out by Recupero and colleagues, successful reduction in seclusion and restraint is more likely to ensue when administrative directives are implemented concomitantly with re-education of staff in the use of positive therapeutic and educational interventions.^{3–10}

Dr. Liberman is Distinguished Professor of Psychiatry at the David Geffen-University of California at Los Angeles School of Medicine, and Director, UCLA Psychiatric Rehabilitation Program of the Semel Institute of Neuroscience and Human Behavior, Los Angeles, CA. Address correspondence to: Robert Paul Liberman, MD, Semel Institute of Neuroscience and Human Behavior, 760 Westwood Plaza, Los Angeles, CA 90024; E-mail: rpl@ucla.edu.

Disclosures of financial or other potential conflicts of interest: None.

There is a critical topic, however, that is often ignored in publications on strategies to reduce the use of seclusion and restraint; that is, pressures to reduce seclusion and restraint may lead to less reporting of aggressive and destructive incidents, but at the cost of increased staff injuries, trepidation, and tension experienced by staff and patients. The basic concern in controversies over the use of seclusion and restraint is not targeting these modalities for reduction or elimination but rather identifying a spectrum of interventions that will result in a reduction of frequency and severity of aggression, property destruction, suicidality, and interference with the therapeutic and rehabilitative hospital milieu.

Unfortunately, the current zeitgeist for eliminating seclusion and restraint resembles an ideological and value-laden argument and does not determine what is best for reducing the frequency and seriousness of aggression and other intolerable behaviors, for patients' therapeutic outcomes, for the safety and security of the full complement of patients and staff on a treatment unit, and for the quality and rehabilitative capacity of the hospital's psychosocial treat-

ment programs. Pressures from state and hospital managers to report reductions in the use of seclusion and restraint without a boomeranging of increased frequency or intensity of aggressive and destructive acts may understandably result in line-level staff's reducing their frequency of incident reports. Wanting to look good and meet key policy goals would be enough to inhibit clinical staff from disappointing their bosses, especially when performance evaluations are at stake. Considerable underreporting of incidents of aggressive and destructive behavior has indeed been described.^{11,12}

In fact, as Recupero and colleagues¹ point out, there is limited evidence in the literature for actual reductions in incidents of aggression, self-injury, intrusive agitation, and destructive behavior that may follow as consequences of legislative and hospital directives, as well as introduction of new modes of verbal de-escalation and debriefing aimed at reducing the use of seclusion and restraint. In fact, there are studies that have shown an increase or no change in violent behavior among inpatients when seclusion and restraint were decreased and verbally based therapeutic interventions were introduced.^{13–18} Except for one study of the use of behavioral learning principles to teach effective self-control to aggressive patients, there is no evidence of unequivocal success in the reduction of these aversive events when these incidents are reliably measured by independent and unbiased assessors.¹⁹

Beyond the scant evidence suggesting that incidents of assault and property destruction are diminished subsequent to reductions or elimination of seclusion and restraint, there are no empirical studies that document directly observed improvements in the therapeutic milieu and prosocial behavior of patients when staff members are trained in verbal crisis intervention, de-escalation, and staff-patient collaboration. We should avoid making value judgments on what appear to be coercive, restrictive interventions to our eyes and gain the perspective of service users who have been exposed to these procedures.

For example, in a German study,²⁰ inpatients who received either seclusion or restraint subsequently, on discharge, expressed positive views of those interventions as most appropriate for their condition at the time of application. In another study,²¹ 166 inpatients who were treated on three admission wards in The Netherlands and were subjected to involuntary medication and seclusion in the context of emer-

gency situations were given questionnaires at the time of discharge that elicited their retrospective feelings about their involuntary treatment. Forty-five percent expressed a preference for seclusion in terms of its helpful impact. Their positive views of seclusion derived from the experiences they found helpful while in seclusion: reduced stimulation and conflict, a calming environment, gain of cognitive control over emotional overarousal, and secure and restful surroundings. Looking back on their experiences, 76 percent of secluded patients could understand why the involuntary intervention was applied and, in retrospect, felt it was effective and would acquiesce in it if needed in the future. In another study, 44 percent of 86 patients who had been secluded while inpatients reported that the most helpful element in their experiences in seclusion were peace and quiet. This compared with 19 percent who had no positive comments about their experiences in seclusion.²²

While most anecdotal, personal accounts by patients of their experiences in seclusion and restraint are negative, these reports are possibly skewed by a selection bias, with few patients being queried who retrospectively viewed their experiences in a therapeutic light. This is the case, especially when individuals who had experienced seclusion or restraint early in their years of psychiatric treatment are not queried years later when they had recovered and shifted to voluntary, continued treatment of their disorders. After all, the therapeutic responses of patients with long-term, disabling mental disorders resemble a trajectory with relapses and remissions, including the eventual acquisition of insight and adherence to treatment. Over time, collaboration and positive therapeutic relationships with treatment providers resulting in clinical improvements may yield fresh insights on how past treatment experiences, however unpleasant at the time, started a trajectory leading to progress toward recovery.

Unintended Consequences of Efforts to Reduce or Eliminate Seclusion and Restraint

Proponents of reinforcement theory would suggest that social interactions and conversational interactions aimed at calming and talking down patients who are escalating or overtly aggressive may inadvertently increase the likelihood of future escalations of anger and aggression.²³ For example, many hospitals have implemented a procedure for controlling anti-

social and suicidal behaviors by assigning clinical staff to sit with disturbing patients at their bedside, talking with them in an effort to calm them while keeping them under observation. This approach often has the effect of increasing the future incidence of harmful behaviors while also tying up staff members who otherwise could be providing much needed psychosocial treatment and rehabilitation to the large number of cooperative patients. After all, if you were a patient in a closed institution with too few staff for personalized attention, wouldn't it be understandable for you to ratchet up your aggressive, menacing, or intractable behavior knowing that it would result in a one-on-one, *tête-à-tête* in the comfort of your bed without any performance expectations?

Therefore, because of the higher level of aggressiveness in current patient populations of psychiatric hospitals, overly ambitious regulations by mental health administrators to reduce seclusion and restraint to a nil level by using verbally mediated interventions may paradoxically increase the number of assaults on staff and patients. As noted above, increased episodes of aggressive behavior could occur without its being reported to the quality assurance monitor because line level staff would not want to "rock the boat" or bring attention to their difficulties in reducing seclusion and restraint. One cannot avoid the fact that seriously mentally ill persons being hospitalized in civil and forensic psychiatric hospitals have higher rates of violence than the general population²⁴⁻²⁸; therefore, changes in policy and practice should have unequivocal documentation that they are associated with less aggressive, destructive, and self-injurious behavior. It is difficult to justify the use of verbally mediated, therapeutic interventions for de-escalation or crisis management when violent behaviors occur impulsively in very brief moments of high emotional arousal. Patients may strike out suddenly and without provocation at their imagined persecutors in misperceived self-defense. Similarly, angry, destructive tantrums and physical attacks often are triggered without warning by denial of requests or routine frustrations.²⁹

Agencies, hospitals, and regulatory bodies such as the Department of Justice Civil Rights Division and Protection and Advocacy organizations, as well as family members, advocacy organizations such as the National Alliance on Mental Illness (NAMI) and the Brain and Behavior Foundation, should be vigilant regarding the detrimental side effects of regulatory

constraints on seclusion and restraint. Violent behavior by the seriously mentally ill is one of the most important determinants of societal stigma, especially when physically abusive behavior by patients toward employees reaches newspapers and television.³⁰ Furthermore, the most common target for violence by the mentally ill are family members^{31,32}; thus, abolishing seclusion and restraint without having a more effective way of reducing future violence may simply rebound against families after the individual is released from hospital.

An example of the problematic aftereffects of a reduction in restrictive interventions came to light after the publication of an article by administrators of the Pennsylvania state hospital system that described a significant reduction in the use of restrictive interventions and "culture change that rejects the use of seclusion and restraint which has no clinical value" (Ref. 5, p 1119). Recupero and her colleagues pointed out that, despite a reported decrease in the application of seclusion and restraint in Pennsylvania state hospitals, "the rate of staff injury was not reduced by a decrease in the use of R&S" (Ref. 1, p 467).

In response to a communication in *Psychiatric Services* that I wrote questioning whether an increase or decrease in violence toward staff and patients occurred as seclusion and restraint were reduced in Pennsylvania state hospitals,³³ I received many letters from staff members of the Pennsylvania state hospital system that described the adverse consequences of administrative requirements for reducing these interventions. These letters, from experienced mental health professionals, gave numerous examples of the untoward effects of regulatory strictures aimed at eliminating seclusion and restraint.

Describing the most common type of aggressive episodes as sudden assaults that were unprovoked and without warning signs, they explained that verbal de-escalation efforts were impossible to implement. Moreover, when these incidents occurred, staff members from throughout the hospital were called to assist in the temporary physical restraint of the aggressive individual, accompanied by considerable shouting and swearing. Complying with the newly introduced policies restricting the use of seclusion and restraint, the assaultive individual was then released and, still overstimulated, resumed aggressive acts resulting again in tumult and more injuries to staff and patients. This type of event raises the emo-

tional temperature on the unit and interrupts planned and scheduled therapeutic activities that are one of the recommended policies for preventing aggressive and destructive acts. Safety on the ward is compromised, with patients and staff stressed, preoccupied, and vigilant. These staff members attested to the value of selective and discriminating use of seclusion and restraint as the intervention of last resort that would enable them to carry out their mandate to offer patient-centered psychosocial services with continuity and comfort.

Increased violence among patients and from patients toward staff have been reported at state psychiatric hospitals in California that attempted to implement positive methods of interpersonal communication and other patient-centered, humanistic modes of responding to impending or actual acts of aggression. At Napa State Hospital, for example, a nurse was murdered in December 2010 by a patient who had repeatedly engaged in aggression and sexual assault. This incident occurred several years after the hospital was mandated to reduce seclusion and restraint and introduce a “recovery model” with training of staff in verbal crisis management and de-escalation strategies. Efforts were made to introduce more positive programs that empowered patients to choose the types of interventions that would be used in behavioral emergencies, such as aggressive incidents. Unhappily, these changes in hospital culture and ward atmosphere were ephemeral and difficult to translate into improved psychosocial practices.

Clinical staff members at this hospital have complained, held public demonstrations, and testified at legislative hearings that violent behavior had dramatically increased with the influx of mentally disordered offenders and restrictions on the use of seclusion and restraint. Violent incidents increased even though the hospital received abundant funds to revamp the culture toward a recovery-oriented program.³⁴

A report mandated by oversight by the federal government indicated that patients at Napa committed 75 physically aggressive acts against staff in a single six-month period ending in early 2009. In the same period one year later, after verbal de-escalation and crisis intervention training had been implemented hospital-wide, there were nearly four times as many assaults. The report also showed that patient-on-patient aggression more than doubled during that

same time, even though reports of seclusion and restraint significantly declined.³⁵ As a result of these untoward effects of programs initiated to provide alternatives to seclusion and restraint, patients of Napa State Hospital have been under a virtual lockdown with severe restrictions on their grounds passes.

California’s Metropolitan State Hospital, also impelled to reduce seclusion and restraint by the Justice Department, implemented staff training in verbal communication for de-escalating patient agitation, property destruction, anger, and fights, while offering patients choice of treatment goals and services and self-government. As seclusion and restraint interventions diminished during the eight years from 2003 to 2011, injuries to staff and patients skyrocketed. In June 2011, 150 clinicians demonstrated outside the hospital demanding more safety. In 2010, there were 2,438 assaults on patients and 1,324 on staff members. This hospital was recently cited by the California Division on Occupational Safety and Health for failing to address adequately the “hazards posed to hospital employees by patients with assaultive behavior.”³⁶

At Atascadero State Hospital, the U.S. Justice Department’s Division of Civil Rights required the state to reduce seclusion and restraint because it was interfering with patients’ right to treatment. The California Department of Mental Health was required to increase staffing, implement staff training in verbal crisis management and de-escalation strategies, and, at the same time, optimize the treatment environment to facilitate patients in identifying their own personal goals and preferences in choosing treatment options. Paradoxically, aggressive incidents against staff and patients increased from 64.1 incidents per 100 patients in 2005 to 116.2 incidents per 100 patients in 2008.³⁷

The California Legislative Committee on State Hospital Safety reported that in 2010 there were 6,700 victims of aggressive incidents and 5,100 injuries at the state mental hospitals, with 1,100 of those to staff. That’s a rate of 14 injuries per day overall with more than 3 per day to staff members. As a result of the unexpected increase in violence and staff injuries in league with reduction in seclusion and restraint, the California Department of Mental Health was held responsible and abolished in favor of a Department of State Hospitals, and a legislative review was undertaken by the state.³⁸

One Suit Does Not Fit All: Linking the Person to the Treatment

Putting into perspective the aforementioned clinical obstacles to reducing seclusion and restraint requires an understanding of the changes in patient populations of state mental hospitals. For example, there are no more California state hospitals that offer treatment to civilly committed patients. These beds have been closed, with patients discharged to very large, locked, privately owned institutions for the mentally disabled or to board-and-care homes.³⁹ Patients who have been discharged into community-based residential facilities tend to be more tractable and passive, as a result of their negative symptoms. When necessary, they are usually hospitalized for very brief stays in locked psychiatric units of general hospitals for treatment of episodes of aggression, suicidality, or agitation. Seclusion is used for relatively short periods when it becomes necessary to control threatening, provocative, or aggressive behavior evinced by these patients. Because these individuals do not have lengthy histories of physical aggression, they tend to be responsive to interpersonal strategies that emphasize verbal interventions.^{40,41}

In community-based facilities that are developed as alternatives to hospitalization, sometimes referred to as crisis homes, the patients are not severely psychotic or cognitively compromised.⁴² They have insight into their illnesses and are readily treated with psychotherapeutic and supportive services by well-trained clinicians for brief periods of residential care. They may be suicidal, but those with aggressive and destructive behavior are screened out and referred to hospitals and do not require seclusion or restraint.

Because of the limited number of psychiatric beds available in general hospitals and private psychiatric hospitals, patients with severe mental illness residing in community facilities are now being admitted for violent behavior. In one review of 31 such hospitals offering relatively short-term inpatient services, upward of 50 percent of the patients had recent histories of violent behavior before hospitalization, and 23 percent of patients exhibited aggression during their inpatient hospitalization, most requiring seclusion and restraint to terminate the violent episodes.⁴³ Even in academic hospitals, 80 percent of staff members were assaulted during the study period, and more than 25 percent of staff members had to restrain patients daily.⁴⁴

Steven Sharfstein, a past president of the American Psychiatric Association and Chief Executive Officer of the Sheppard Pratt Health System in Baltimore, has written:

While a small number of patients pose the highest risk of aggression and use of restraint and seclusion, not admitting these patients will expose more individuals with severe mental disorders to homelessness, violence toward family members and those in the community, criminalization and incarceration in jails and prisons. Elimination of restraint and seclusion should be a goal, but it may be difficult to accomplish if we endeavor to treat individuals with acute psychosis who have a history of violence and whose recent violent behavior has led to hospitalization. Safety is the top priority. Without safety, there is no treatment [Ref. 45, p 197].

On the other hand, with most state hospitals now assuming forensic functions in treating the criminally mentally ill with longstanding violent behavior, selective use of humanely administered seclusion and restraint has been essential. As emphasized by Recupero and her colleagues, these procedures should follow the guidelines and principles of professional associations, legal decisions, guidelines of accrediting bodies, and federally mandated standards for the least restrictive interventions.⁴⁶ Interventions for agitation and aggressive behavior should be hierarchical, beginning with the least restrictive and intrusive and using the most restrictive, such as seclusion and restraint, when all other treatment approaches have failed. A panoply of interactional methods are available, albeit very difficult to teach to staff, especially when institutional practitioners have ingrained ideas regarding the management of assaultive behavior. However, as experts have recommended, seclusion and restraint may be used to prevent imminent harm to patients or staff or to prevent serious disruption of the treatment setting or significant damage to property.⁴⁷⁻⁵⁰

Learning-Based Behavior Therapies Reduce Aggression

Individuals who are aggressive have had their lengthy histories of self-injurious, assaultive, angry, provocative, tantrum-throwing, and destructive behavior positively reinforced by a variety of environmental responses to their aberrant behavior. The most common reinforcers are various types of social responses that are contingent on the individual's aberrant behavior: for example, attention, compliance with the patient's requests (e.g., cigarettes, food, drinks, or a desired chair or TV program), argu-

Table 1 Stepwise Behavior Analysis of Aggression

Identify antecedents of aggression or of stimuli correlated with the behavior's onset. An example is when a patient becomes frustrated and angry when staff members refuse his unreasonable requests.
Specify the aggressive behavior in operational terms so that all will agree when it occurs (e.g., shouting threats and expletives with fists clenched, angry facial expression, and shoving or hitting).
Note the immediate consequences of the aggression that may be inadvertently maintaining it. Staff members can congregate in a show of force and speak to the patient in a soft tone of voice, reassuring him that he will be all right if he de-escalates by sitting down and relaxing.
Inventory the patient's social, personal, and cognitive strengths and deficits and conduct a survey of personally relevant reinforcers for him. Reinforce the patient's positive qualities, using reinforcers that are appropriate to his values and preferences while ignoring provocative behavior.
Identify alternative ways of reducing anger and aggression in the current and future episode. Implement positive programming, differential reinforcement for behavior other than threats and anger, and social skills training to improve the patient's ability to express his frustration in words and to ask staff members to explain how and when he can have his request honored.

ments, fights, expressions of concern and worry, fear, intimidation, solicitude, commands, and even the shouting, physical contact, and struggles that accompany seclusion and restraint. These social reinforcers, which are consequences of the individual's ecologically inappropriate behavior, increase the likelihood of belligerent behavior occurring in the future. Antecedents in the social environment that may evoke the unacceptable behavior are also relevant elements that increase the likelihood that the behavior will develop. These antecedents, termed discriminative stimuli in operant learning, can be the denial of privileges, desired foods, cigarettes, a favored chair or TV program, or a request that the individual comply with ward rules or procedures.

Behavior therapy interventions are based on an educational model, focusing on the interactions between individuals and the antecedents and consequences of their behavior in their social environments. While neurodevelopmental vulnerability sets the stage for many persons who display abnormal behavior, aggression and its congeners are learned over many years of reinforcement contingencies and are shaped, exacerbated, or effectively reduced and eliminated by systematic changes of environmental antecedents and consequences of those behaviors.

Thus, the aim of interventions based on behavioral learning principles is to alter the contingencies of reinforcement such that individuals have their prosocial and cooperative behaviors reinforced and strengthened. Before selecting an intervention that is most likely to be effective, a practitioner using the framework of behavior analysis inquires: What antecedent and consequent factors in the environment, as well as symptoms and emotional arousal in the individual, are implicated in the causes of aggression? How often does the aggressive behavior occur, under

what conditions, in whose presence, and with what forms of interaction with the social and physical environment?

The next essential step, after some of the factors that may be motivating the antisocial behavior are identified, is to monitor and graph the frequency of the behavior. This latter strategy not only provides a baseline against which to measure the efficacy of subsequent interventions, but gives further evidence for the antecedents and reinforcing consequences of the behavior. For example, if the aggressive behavior occurs only during the evening, candidates who may be implicated in the cause of the antisocial behavior are nursing staff who may be subservient and show signs of trepidation, avoidance, or provocation; who may be less experienced than those working during the daytime and may tend to comply with the patient's demands, to avoid confrontation; or who are less likely to engage patients in planned and scheduled psychosocial activities that are intrinsically rewarding.

The third step in the use of behavior therapies involves selecting and implementing one or more interventions that are likely to result in a diminution of the aggressive or self-injurious behavior. A *sine qua non* of behavior therapy is the empirical evaluation of any interventions that are selected. Such an evaluation requires a reliable and operational definition of the problem behavior and its monitoring throughout the treatment period until effective programming brings the disturbing behavior under control and prosocial behavior takes its place. The step-wise behavior analysis approach to aggressive behavior is listed in Table 1, and examples of some of the therapeutic techniques are shown in Table 2.

Four of the best documented interventions for replacing aberrant with appropriate behavior are social

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Table 2 Examples of Behavioral Interventions for Reducing Aggressive and Destructive Behavior in Children, Adolescents, and Adults

Positive programming	Planned and scheduled activities that are pitched toward successfully engaging the patient in appropriate behavior can displace frustration, angry interactions, and various types of aggression. Abundant reinforcement should be given to the patient for interacting appropriately in the activity.
Differential reinforcement of alternative, competing, and other behaviors	Staff gives social and tangible reinforcement to the patient for any behavior or interactions that are not aggressive or preludes to aggression. In practice, reinforcement is delivered after a specific interval has passed without aggression. For example, a person with frequent aggression might be on an every-15-minute schedule for reinforcement, with the time between reinforcements gradually lengthened as the frequency of aggression declines.
Stimulus control	A special location or signal is established when a patient engages in abusive, threatening, or obscene talking, and the patient is instructed to go to that location when such behavior occurs. The person remains in the designated area for as long as the provocative behavior continues. The individual is typically ignored during this time, but as soon as the intolerable behavior ceases, the patient returns to the planned and scheduled activities, during which social interactions take place and abundant reinforcement is given for appropriate behavior. In this technique, the special location becomes the stimulus for inappropriate behavior, and the environment in the rest of the unit or classroom gradually loses its stimulus value for the unacceptable behavior. A feasible and effective stimulus-control procedure is time out from reinforcement, in which the stimulus is a chair situated at the end of a corridor facing the wall. Patients can use this procedure for self-control and cooling off by taking a time-out when experiencing anger, arousal, or frustration. On a psychiatric unit for aggressive patients, this stimulus-control procedure was successful in reducing and eliminating violent behavior in 74% of the patients.
Contingent observation	Patients who demonstrate anger and verbal abuse or engage in destructive acts are instructed to sit quietly for a predefined period on the perimeter of a group activity. They watch peers and staff interact in appropriate ways and benefit from vicarious learning.
Overcorrection and teaching interaction	This technique combines instructional control with social skills training. A patient who is assaultive or destructive of property is instructed to make amends in an excessive, or overcorrecting, manner. A patient who breaks a chair is given some duct tape and is required to patch and fix the chair and also polish or dust all of the other chairs in the area. Then, the patient meets with a clinician, who asks the patient to identify the reasons for the destructive behavior. A collaborative behavioral analysis of the situation is done, in which antecedents and consequences of the aggression are examined for their role in the untoward event.

learning programs, positive programming, differential reinforcement of other behavior, social skills training, and time out from reinforcement. Behavior therapy interventions to decrease aggression, destructive behavior, provocativeness, self-injury, and threats of assault are among the best validated services for reducing violence among persons with mental disorders.^{51–61}

Positive Programming or Activity Scheduling

When psychiatric hospitals establish a rich array of planned and scheduled positive reinforcement activities, patients' prosocial behaviors vastly increase and their antisocial behaviors with consequent need for seclusion and restraint markedly diminish.^{62,63} Positive programming displaces aggressive behavior with scheduled activities that provide reinforcement for individuals' participation. Reinforcement comes from social interaction, the satisfaction of completing constructive pursuits, and the positive reactions from staff members. In addition, the enterprises

must have recreational, educational, skills development, and avocational or work value. It is important to include in the array of activities those that are meaningful to the individuals for whom they are designed. Boring or unpleasant activities that are not keyed to the level of a person's functioning or to personally relevant goals are not likely to supplant aggressive or provocative behavior.

One recent and popular means of organizing a comprehensive approach to activity scheduling is the treatment mall.^{64,65} Treatment malls are centralized areas in state psychiatric hospitals that feature a full range of programs in spaces that have been renovated and are designed like a shopping mall. Patients and staff spend four to six hours per day in the mall, away from their residential units, selecting the shops that offer activities that are appealing to them. Patients are encouraged to choose the shop that can actively engage them in psychosocial rehabilitation. The most effective malls use behavioral learning principles to teach skills to patients that are relevant to their

posthospital functioning in the community. They include stores where patients can buy clothes and items for their personal hygiene and recreation, beauty and barber shops, a post office, a bank, a computer training center, and a job club. Successful malls are developed by committees consisting of patients, patient advocates, clinical staff, and administrative personnel, to make sure that the services provided are appropriate and consequential for community reintegration. In addition, strong administrative and financial support and a safe and secure mall environment are critical to the rehabilitative value of a mall.

Social Learning Therapy

This behavior therapy approach is variously termed token economy, credit incentive system, contingency contracting, and contingency management. A motivational system is developed, often in collaboration with patients, that organizes the social environment and determines which adaptive behaviors of each of the individual patients is to receive generalized rewards contingent on the observation of the patient's prosocial behavior by staff. To make the rewarding of positive behavior more effective, a staff member gives praise or social reinforcement along with tokens, credits for credit cards, or points delivered to patients immediately following the appearance of the desired behavior that will bring the patient's behavior closer to the normal range.

The behaviors identified as positive and targeted for reinforcement may vary from patient to patient. Many of them occur at a low frequency but are incompatible with aggression. Thus, one female patient received praise and credits for socializing affably with staff and other patients, behaviors that are incompatible with aggression. This person exchanged her credits monthly for time in community and home visits, as well as attending a motion picture and purchasing some new clothes. The points, credits, or tokens are generalized reinforcers, just as money is for those living in the community, and can be exchanged for a wide variety of rewarding foods, personal items, clothes, CDs, and DVDs, use of a computer, extra private time in a relaxation room, time in a massage chair, a private TV or stereo, access to a cell phone, and accelerated discharge planning. Patients can select and purchase the rewards that are meaningful for them with the credits they earn.

Exhibiting adaptive behaviors that are incompatible with aggressiveness leads to the receipt of credits that have triple motivational value: patients value the credits themselves just as those living in the community value the money they earn apart from what it can be used to buy; the tangible, exchange value of the credits for the wide array of privileges and tangible items; and social reinforcement in genuinely expressed praise and recognition to patients for their demonstrating positive, therapeutically relevant behaviors. Staff are prompted by the delivery of credits to give appropriate acknowledgment for desirable behavior that can accelerate individuals' discharge into community life. To highlight the special value of social praise, staff members are urged by program managers to focus on patients' strengths by catching patients doing positive things and giving them credits and positive verbal feedback for their accomplishments.

Positive reinforcement for adaptive behavior displaces aberrant behaviors such as aggression, self-injury, and property destruction. In one rigorously controlled study, adaptive behaviors, such as interpersonal and self-care skills and engagement in therapeutic activities (including work), increased more than 220 percent from program entry, while hostility, belligerence, and aggression decreased four-fold. The comparison group that received milieu therapy showed an overall increase in appropriate behavior of 70 percent and a decrease of aggression of only 18 percent.¹⁸ In this study, as well as those cited below, the frequency of use of seclusion and restraint was markedly reduced and in some cases eliminated.

At one state hospital's social learning program for extremely disabled and treatment-refractory patients, levels of improvement in 219 patients over 20 years were 75 percent for social interaction, 80 percent for self-care skills, and 83 percent for work and leisure skills. During the same time period, assault and property destruction declined by 73 percent and verbal aggression by 86 percent. This unit admitted the most aggressive patients in the State of California.⁶⁶ A social learning program in a Missouri forensic hospital for mentally ill offenders brought about a 92 percent reduction in aggressive behavior from a stable, three-month baseline.⁶⁷ At a Veterans Affairs Medical Center, a unit employing a token economy for assaultive, mentally ill veterans reported an 83 percent decrease in assaults over a two-year period.⁶⁸ Social learning programs are considered one of the

best-validated, evidence-based, psychosocial services for persons with schizophrenia, especially those with histories of aggressive or destructive behavior.^{69,70}

Differential Reinforcement of Other Behavior

When behaviors other than aggressive, destructive, or self-injurious ones are targeted for frequent contingent reinforcement with attention, praise or tangible rewards, the desirable, alternative behaviors increase and antisocial ones diminish. For example, at Virginia's Western State Hospital, the introduction of a differential reinforcement program of behavior other than aggression over a five-year period led to a decrease in the use of seclusion and restraint from 30 per month to 3 per month⁷¹ with a marked reduction in incidents of aggressive and destructive behavior. Similar results have been described for developmentally disabled persons living in community residences or developmental centers.^{72,73}

Social Skills Training and the Teaching Interaction

Social skills training is a strengths-based approach to rehabilitation, guided by patients' choice, empowerment, behavioral principles, learning activities and operationally defined skill areas.^{74,75} Training in social and independent living skills is a technique of teaching that is highly structured, systematic, and continuously evaluated by completion of homework assignments that require patients to put into real-life practice what they have learned in the training locale. Learning activities include the following behavioral principles: motivational enhancement, observational learning and social modeling, role-play practice of the skills, problem-solving sequences, and homework assignments.⁷⁶

The effectiveness of social skills training has been amply documented as a means of developing anger management capabilities that enable individuals to control their frustration, explosiveness, and aggression through the development of alternative ways of communicating to meet their needs and reaching their personal goals in normative and appropriate ways. Building alternative, personally effective ways of communicating and solving problems that engender appropriate assertiveness (versus passivity or aggression) and learning to make positive requests are key social skills that can be effectively taught to persons who previously have been achieving their needs by intimidation.⁷⁷⁻⁸⁰

A severely autistic young male came to a state hospital's social learning program from another state hospital where he was about to be remanded to one of the chronic wards. Echolalia predominated in his speech and he made incessant demands for all manner of things. When he failed to obtain his request, he pushed, shoved, spit, and hit staff members. With social skills training, he was taught to make positive requests such as, "It would make me happy if I could speak with you for a few minutes," or "I would appreciate your letting me do some work to earn credits." He was prompted to practice simple communications similar to these 10 to 20 times a day, was given abundant praise for gradually improving his conversational requests, and gained compliance from nursing staff with the requests. He also was able to earn \$1 per day if he did not engage in any threats or aggressive behavior, losing 10 cents for each threat, episode of loud shouting, or physical contact with staff members. Within six months of daily skills training and the monetary contingency contract, he was ready for discharge to a small community home in a nearby city. He has lived there as a full-fledged citizen, working at part-time jobs, taking public transportation to vocational and recreational activities, making friends in the neighborhood, and voting.

Review articles, meta-analyses of the literature on randomized controlled studies, and practice guidelines have confirmed the evidence-based, recovery-oriented effectiveness of social skills training for the seriously mentally ill. This modality has been widely disseminated throughout the world, with demonstrated effectiveness, when cultural adaptations are made.⁸¹⁻⁸³

The teaching interaction is a specific variant of social skills training that is used to equip individuals to learn alternative and socially acceptable ways to meet their needs, sustain their self-esteem, and maintain their cooperation and involvement in therapeutic activities, even after explosive, turbulent, provocative, and aggressive behaviors have occurred or agitation or anger are occurring with aggression imminent in the immediate future.^{84,85} The multistep teaching interaction trains patients in social skills on the spot whenever they engage in an aggressive act. The steps involve praising an aggressor's earlier positive behavior and willingness to participate in an educational procedure aimed at preventing future violence. The clinician asks the patient to describe the

current inappropriate behavior and its precipitants and then gives positive and corrective feedback. This step is followed by a problem-solving process whereby alternative, prosocial behaviors are elicited from the patient that would gain the same desired outcomes but without violence. Then, modeling and role-playing are used to encourage the patient to demonstrate one or more of the more appropriate alternatives to aggression, followed by additional positive reinforcement, sometimes with the use of tangible rewards as well as praise. The method has been found to be effective for children, adolescents, and adults who show aggressive behavior, conveying empowerment to these individuals by ensuring that they can meet their needs and reach their personal goals.

Time Out From Reinforcement

This technique, based on functional behavior analysis, is a contingency management technique that reduces psychophysiological hyperarousal, intrusion into others' personal space, and other threatening and aggressive behavior. The patient and staff agree to a quieting sequence when the patient shows aberrant behavior. Through psychoeducation shortly after admission to the hospital, the staff briefs the patient regarding the rationale and steps involved in time out. To ensure that the patient understands what he is approving, the staff member asks the patient to repeat the rationale for the time-out procedure.

The procedure, wherein the patient removes himself from an emotionally charged situation to a quiet location for a specified period of time, is initiated by a staff member or the patient. Situations that trigger a time out are those involving an argument, escalation of anger, increased tension and anxiety, onset of warning signs of psychosis, or exacerbation of psychotic symptoms. The location can be the patient's room, a chair situated in an area of the ward that permits solitude and insulation from noise, or a room set aside for this purpose with availability of soothing music and a comfortable chair. The time-out period is usually 10 to 20 minutes or somewhat longer until the patient experiences a reduction of arousal, anger, and tension and becomes more comfortable. When the individual has calmed down, he returns to interpersonal locales on the ward and resumes the activities, socialization, or tasks that were interrupted. The recovering person uses this experience to increase

self-control and awareness of the stimuli that elicited emotional distress, anger, or aggression. Time out is often paired with training exercises in social skills geared to learning more constructive alternatives for future use when increasing frustration, symptom exacerbation, or overarousal leads to provocative, escalating, or aggressive behavior.⁸⁶

For more than 25 years, this procedure was effectively implemented to preempt or terminate aggressive behavior at the UCLA-Camarillo State Hospital Clinical Research Unit. Aggressive, out-of-control patients entered a quiet area located in an unfrequented part of the inpatient unit. Patients were expected to remain in the quiet area until they were calm for two minutes. Staff members characteristically checked on the well-being and arousal level of the patient but avoided inadvertently reinforcing the aggressive or destructive behavior that instigated time out. Observations of the quieting response of the patient can also be monitored by closed-circuit television.

In a three-month period, the time-out procedure was evaluated in 12 patients who engaged in a total of 86 aggressive incidents. Seventy-five percent of the time-out interventions were effective in forestalling and preventing further aggressive behavior.⁸⁷ Time out from reinforcement has been used in myriad psychiatric settings for individuals with mental and developmental disabilities as well as by parents to teach self-control in their children.⁸⁸⁻⁹²

Pharmacotherapy for Aggressive Behavior

Provision of pharmacotherapy is an integral but insufficient modality for reducing the frequency of challenging behavior; hence, it has a place in efforts to reduce seclusion and restraint. Clinicians who espouse the biopsychosocial model of psychopathology understand that pharmacotherapy, like any single-modality treatment, is limited in scope because it focuses only on reducing symptoms and hypersensitivity to events in the environment. There are general principles for optimizing pharmacotherapy that interact with elements in the social milieu, such as involvement of the individual in scheduled therapeutic activities and use of reinforcement contingencies and learning-based strategies.⁹³

Installing a reliable measurement system for monitoring changes in the patient's targeted symptoms and challenging behaviors, as well as the patient's adaptive behaviors, is essential for effective and safe

pharmacotherapy for aggressive behavior.⁹⁴ There are many efficient and user-friendly scales, including the Brief Psychiatric Rating Scale (BPRS), the Positive and Negative Symptom Scale (PANSS), and even an idiographic Target Symptom Scale, that take less than five minutes to complete when the focal symptoms of each patient are identified and used for monitoring and feedback to the clinician. Only by graphing changes in the target symptoms and behaviors of concern can the responsible psychiatrist make decisions regarding the type and dose of medication that may or may not contribute to symptomatic and behavioral targets.

Reliable and quantitative measurement gives an empirical quality to the drug therapy of disturbing behaviors in mentally and developmentally disabled persons. Although this requires the responsible psychiatrist to measure regularly the few symptoms and behaviors that are of clinical concern, it is foreign to the training and practice of physicians in our field and, sadly, is not likely to be incorporated without external contingencies of reimbursement from insurance companies, licensing bodies, and systems of mental health services. Initial and ongoing monitoring of a limited number of the relevant target behaviors or symptoms of an individual patient, before and during trials of medications, will bring psychiatric practice closer to the empirical practice of all other medical specialties. It may take a few weeks or longer of any trial to conclude that any given drug and dose is or is not effective.

When symptoms of psychosis or mood disorders contribute to episodes of agitation, aggression, or self-injury, use of medications with proven therapeutic benefits for those symptoms are often helpful, especially when combined with positive programming and behavior therapies as described above. It is important, however, to ascertain whether the medication exerts its therapeutic effects on challenging behaviors because of sedative side effects. In addition, when aggressive patients are sedated or have their cognitive functions impaired by the medication, their responsiveness is limited to evidence-based psychosocial treatments requiring learning and memory.⁹⁵

Sedation and other side effects of antipsychotic drugs have been so detrimental to the functional capacity of older, cognitive-impaired patients with aggressive behavior, especially those with cognitive impairments or dementia, that the Food and Drug

Administration has informed psychiatrists and other physicians to use them sparingly and at very low doses. Unfortunately, sedative and other side effects including akathisia, akinesia, and tardive dyskinesia impair elders' cognitive functions over and above their neurobiological disorders. It is important for physicians prescribing these drugs to monitor the patient's response to the medication and to consider nonpharmacologic interventions as first-line treatments.

Geriatric patients, including those with dementia and aggressive behavior, have all too often been prescribed various antipsychotics that have the effect of quieting them at the expense of their ability to participate in social and recreational activities, scheduled routines, self-care functioning, and interactions with staff and relatives. This irrational use of pharmacotherapy has been particularly prevalent for aged and cognitively impaired elderly patients living in skilled-nursing or assisted-living facilities.⁹⁶

A host of candidate drugs for turbulent and episodically violent behavior have been identified in small, open trials. When an individual's aggressive behavior stems from well-diagnosed psychotic or mood disorders with psychopathology that predisposes to violence, appropriate treatment with antipsychotics, antidepressants, and mood stabilizers are indicated and are effective in reducing the risk of violent behavior. Apart from their being used rationally and effectively for well-documented diagnoses of major mental disorders, the only medications that have been shown to exert antiaggressive action in controlled trials are clozapine, lithium, and valproate.^{95,97}

Conclusions

With determined zeal, many state and federal agencies and professional organizations and regulatory bodies have advocated for the reduction and even prohibition of seclusion and restraint. As thoroughly documented by Recupero and her colleagues in this issue of *The Journal*,¹ pressures for reduction and abolition of seclusion and restraint derive from the view that the procedures are an intrusion on patients' rights, unethical, dangerous, and even life-threatening to those to whom they are applied. While this is true in some well-publicized situations, regulations and standards to improve the clinical appropriateness and safety of these restrictive procedures have been developed by many authoritative

organizations. The Joint Commission, the Centers for Medicare and Medicaid Services, the American Psychiatric Association, and the National Association of State Mental Health Program Directors have issued recommendations that would improve the safety of seclusion and restraint while developing verbally mediated interventions that could supplant their use.^{49,50}

While reforms on the use of seclusion and restraint are laudatory, there are three questions that must be asked and answered before the seclusion-and-restraint baby is thrown out with the bathwater: What are the favorable or adverse consequences of the use of alternative strategies of social and verbal intervention in lieu of seclusion and restraint for controlling aggression and destructive and intrusive behavior that interfere with planned and scheduled psychosocial programs on inpatient units? What are the adverse consequences on the safety, security, anxiety, stress, and right to treatment of those nonaggressive patients whose treatment plans are interrupted by repeatedly and unpredictably aggressive individuals for whom alternative talk therapy replaces seclusion and restraint? Are there modalities that have been shown to be effective in reducing aggressive behavior on inpatient units, as well as in limiting seclusion and restraint?

In the article by Recupero and her colleagues and in this commentary, efforts to answer these questions have elucidated the current state of the art. The professional adoption and maintenance of therapeutic innovations aimed at reducing the aberrant behaviors that have been the triggers for seclusion and restraint are problematic at best. Traditions die hard. They don't tiptoe out of the clinic or hospital or leave the door open to more humanistic and effective alternatives to seclusion and restraint. The replacement of traditional modes of seclusion and restraint with new, patient-centered, verbal encounters, aimed at de-escalation and early identification of prodromal indicators of aggressive behavior, should be supported by evidence from systematic evaluations of the actual and unbiased number of violent episodes.

The current zeitgeist in mental health service systems is the reduction or elimination of seclusion and restraint by substituting interventions of questionable efficacy in curbing aggressive, destructive, and self-injurious behavior. These program changes may have only the limited effects of political correctness, good feelings, and the self-interest of organizations,

regulatory bodies, legal authorities, and administrators of systems of mental health care, at the expense of staff safety and intrusions on recovery-oriented treatment programs. In 1982 the Supreme Court ruled that the use of restraint may deprive hospitalized individuals from liberties protected by the Due Process Clause,⁹⁸ but indicated that the use of restrictive interventions may be necessary and useful if they reflect the exercise of ethical and professional judgment as endorsed by certifying bodies.

During the past 30 years, the use of seclusion and restraint has increasingly been monitored by oversight and regulatory agencies to insure that appropriate professional standards are being followed. However, while judicial reviews of some examples of inappropriate use of restraint have sometimes resulted in damage awards, there are secondary clinical and legal risks associated with too vigorous efforts to reduce seclusion and restraint. These risks include an increase in injuries, some of which are unreported: for example, self-injuries, injuries to patients from patient-on-patient assaults, and assaults on staff. While the rate of restraint at Pennsylvania state hospitals⁵ declined by 60 percent from 1998 to 2000, apparent staff injuries with lost work time resulting from patient assaults increased by 30 percent.⁹⁹

As noted earlier, in California state hospitals, staff injuries secondary to mandated reductions in seclusion and restraint have led to major disruptions in the operation of those hospitals, demonstrations by staff, and changes in the state's operation and surveillance of these problems. Injuries to staff and patients that are secondary to reduction or termination of restraining procedures may also lead to legal challenges and damage awards to those injured. In state hospitals, dangerousness based on aggression is a common criterion for admission, and assault rates are very high. The suffering and disabilities experienced by victims of assault when seclusion and restraint have been markedly reduced may open state and community hospitals to legal, professional, and regulatory consequences.

Well-intentioned efforts have been made to control aggression, destructive behavior, and provocation that disturb the psychosocial programming of inpatient units, by using a wide variety of techniques to calm potentially violent situations. Some of these are verbally mediated crisis intervention, emotional de-escalation, and the collaboration of patients in the choice of the preferred emergency interven-

tions when they are needed. There is little evidence that engagement of aggressive and violent mental patients in verbal discussion of their feelings and insight into the conditions that appear to precipitate hostility succeeds in reducing the frequency of future assaults and property destruction.

In fact, as has been documented in this commentary, it has become increasingly clear, as verbal efforts at de-escalation and other patient-centered conversations become more widely embraced by mental hospitals, that reducing or eliminating the legitimate and professionally certified use of seclusion and restraint may be dangerous for staff and patients alike. The high emotional temperature that accompanies the implementation of seclusion and restraint with the arguing and struggling that accompany it often paradoxically increases the probability of the future occurrence of violent and destructive behavior.^{55,57,58,75} The same forms of aggression are likely consequences of the social attention and interpersonal fraternizing that are currently popular and recommended by mental health organizations.

However, there are evidence-based and humanistic alternatives to seclusion and restraint. They are founded on empirically supported principles of learning, as described in this commentary.

Successful implementation and maintenance of evidence-based alternatives to seclusion and restraint, such as those derived from behavioral learning principles, depend on considerable training of staff in these novel approaches. To be sustained over the years, system change should be open-ended, with new modes of treatment and rehabilitation that creatively and continually foster engagement of all stakeholders in problem-solving and decision-making. Changes in programming can be empirically validated by measures of their effects on the frequency of assaults, destructive behavior, belligerence, and self-injury, as well as in the frequency of the use of seclusion and restraint. Evaluation can also be reliably carried out for determining the effects of programmatic innovations on the emotional tone of the psychosocial milieu, patient and staff satisfaction, identification of problems by staff and patients alike, and therapeutic process and outcome.

The ultimate responsibility for training staff on competency criteria lies with clinical supervisors, managers, and top management of treatment units and hospitals. This placement of responsibility is true for meeting regulatory standards and ensuring

positive clinical outcomes of all types of therapeutic intervention: seclusion and restraint; various methods of staff-patient communication for preventing, de-escalating and reversing aggressive and self-injurious behavior; rational pharmacotherapy; and evidence-based, recovery-oriented, and person-centered psychosocial rehabilitation and behavior therapy procedures.

The key elements of introducing, training, and maintaining effective and humanistic interventions must be implemented with administrative support, role modeling by respected clinicians who serve as champions for change, job descriptions and performance standards consistent with criteria for proper use of the new and improved procedures, monitoring of staff behavior, periodic program evaluation, and continuous quality improvement.¹⁰⁰⁻¹⁰³ Collectively, these methods are the basis of effective organizational management. In the absence of an inpatient unit's incorporation of well-tested methods of organizational management, the success of even the most effective strengths-based, person-centered procedures for reducing challenging behaviors will prove transitory. In addition, staff training must be available to all new employees, with annual refresher programs of inservice training and periodic recertification of competencies and fidelity to the therapeutic procedures. By using sound teaching technologies, suffused by behavioral learning principles and incorporating social skills training into a collaborative and compassionate system of treatment, aggression, destructive behavior and self-injury can be substantially reduced and appropriate behavior strengthened.

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