Managing aggression in a psychiatric hospital using a behaviour plan: a case study

S. W. BISCONER¹ PhD, M. GREEN² RN MS, J. MALLON-CZAJKA³ LPN & J. S. JOHNSON⁴ DSA-III

¹Phsychology Associate II, ²Registered Nurse Manager I, ³Behavior Specialist, ⁴Direct Service Associate III, Eastern State Hospital, Williamsburg, VA, USA

Introduction

In psychiatric hospitals, nursing is chiefly responsible for maintaining a safe and therapeutic milieu. When a patient is aggressive, the patient not only endangers the safety and well-being of vulnerable and fragile peers, but also endangers his or her own safety. Continued aggression makes finding placement in the community more difficult and increases the length of hospital stays (Giles et al. 2005). Use of restrictive interventions for behaviour problems [e.g. pro re nata (PRN) medication, seclusion, restraints, 1:1 special observation] generally is accepted as necessary in psychiatric hospitals (Forster et al. 1999, Morrison et al. 2002). However, these interventions reduce the quality of life for the patient and reduce the effectiveness of the therapeutic milieu (Bellus et al. 1999). Best psychiatric nursing practice is focused on reducing the use of restrictive interventions for behaviour problems (Visalli et al. 1997, Morrison et al. 2002, Donat 2003, Jonikas et al. 2004). Less restrictive behaviour interventions provide nursing staff with a consistent response to behaviour problems that may help reduce patient injury (Morrison et al. 2002).

Less restrictive interventions also may reduce staff injuries (Morrison et al. 2002). Between one-third and two-thirds of staff injuries occur while putting patients into seclusion and restraints (Forster et al. 1999). Use of 1:1 special observation to maintain safety of a patient and his or her peers can be an inefficient use of nursing staff, particularly in a time when there are severe nursing staff shortages and tight budgets. Nursing staff working overtime to cover for 1:1 special observation may be less alert and possibly less responsive to patient needs during their second

This paper focuses on the critical role of nursing in implementing a behaviour plan in a psychiatric hospital. The plan was implemented with a 40-year-old man with a long history of aggression towards others and self. The study used a single-subject research design with baseline and intervention phases (AB Design). Data were collected on (1) frequency of incidents of aggression towards others and self; (2) use of restrictive interventions to manage aggression (i.e. restraints, pro re nata medication, 1:1 special observation); and (3) frequency of staff injury. The data show a decrease in frequency of aggression towards others and self, a concurrent reduction in the use of restrictive interventions to manage aggression, and a decrease in incidents of staff injury. The behaviour plan helped staff maintain a safe and therapeutic milieu. The behaviour plan has given the patient an opportunity to learn positive replacement behaviours and skills, and the opportunity eventually to leave the hospital to live in a less restrictive community home.

Keywords: aggression, behaviour plan, intellectual disabilities, mental illness, psychiatric hospitals, psychiatric nursing

Accepted for publication: 15 February 2006
shift, and therefore, more vulnerable to personal injury (Kindy et al. 2005). Use of restrictive interventions can result in financial costs due to staff and patient injury, lost work time due to staff injury, overtime to cover 1:1 special observation, and tort liability brought by patients or staff following injury (Forster et al. 1999).

Front-line nursing staff is the most likely victim of assault by an aggressive patient (Owens et al. 1998, LePage et al. 2003). Nurses working on psychiatric units become victims of violence in the workplace more often than any other hospital-based healthcare position (Kindy et al. 2005). In 2001, six per cent of total American workforce injuries resulting in lost work days were attributed to assaults on nurses (Centers for Disease Control 2002, Kindy et al. 2005). Studies have documented that between 57% and 88% of nurses have experienced verbal or physical assault on the job (Delaney et al. 2001, Kindy et al. 2005).

Bellus et al. (1999) reviewed several factors that may contribute to aggression in psychiatric settings, including lax ward structure, unclear ward rules, inconsistent implementation of ward rules, and unclear staff roles. The authors report that milieu-based behavioural therapy, in this case a token economy (based on the concept of earning reinforcers for positive behaviours and losing access to reinforcers for inappropriate behaviour), can reduce aggression, help define patient expected behaviours, and help improve behavioural self-control, self-direction, and social competencies.

The professional literature presents numerous examples of non-restrictive behaviour plans that have effectively reduced aggression in adults with mental illness and intellectual disabilities (see LePage et al. 2003, Longo & Bisconer 2003, Giles et al. 2005, Hornsveld 2005). For example, Longo & Bisconer (2003) implemented a behaviour plan for a low-functioning, non-verbal elderly man with schizophrenia and physical aggression towards staff. A careful functional assessment of his behaviour showed that staff was entering his ‘personal space’ without his permission to, for example, remove his meal tray or take his blood pressure. In response, the patient was hitting or attempting to hit staff with his fist. A simple intervention was implemented. Staff was trained to consistently ask the patient’s permission to enter his personal space (Can I take your meal tray now?). The patient was consistently able to grant or deny permission by nodding ‘yes’ or ‘no.’ Also, staff offered patient a simple reinforcer (soda) twice a day for absence of physical aggression. Incidents of aggression stopped within a month and have remained close to zero now for several years.

This paper focuses on the critical role of nursing in implementing a behaviour plan. The plan was implemented for an adult male with a history of aggression since early childhood. The plan was implemented in a public psychiatric hospital located in the USA. The hospital’s therapeutic programme was based on a psychosocial rehabilitation model (e.g. Liberman et al. 1989, Kuehnel et al. 1990). Psychosocial rehabilitation focuses on teaching and reinforcing skills and behaviours that help patients successfully transition from institutions to more integrated community settings (Sheth 2005). In this institutional setting, patients attended groups and activities in a therapeutic mall. The purpose of groups and activities was to (1) build knowledge of symptoms and treatment of mental illness; (2) develop coping, relapse prevention, and anger management skills; (3) understand the importance of abstaining from alcohol and drugs; and (4) learn to exercise, relax, and enjoy leisure time activities.

Within the framework of the psychosocial rehabilitation model, the behaviour plan is used to ensure the consistent implementation of behavioural interventions and to address three critical issues: (1) reduction of aggression in a man with a life-long history of serious aggression towards others and self; (2) effective management of aggression while reducing use of restrictive interventions; and (3) reduction in nursing staff injury and lost workdays.

Method

Research design

This study used a single-subject research design consisting of a 3-month baseline period followed by a 39-month treatment period (AB Design) (Gravetter & Forzano 2003; Ray 2003). Incidents of aggression towards others and self (target behaviours); use of restrictive interventions (restraints, PRN medication, 1:1 special observation); and incidents of staff injury were counted for baseline and treatment periods. The treatment consisted of a behaviour plan. The behaviour plan was developed based on a careful functional assessment of target behaviours (Ball 1993, Iwata 1995, O’Neill et al. 1997).

Setting

The behaviour plan was implemented on a ward consisting of 20 patients, males and females, ages 23–64 years. Most patients had a chronic and persistent form of mental illness (i.e. schizophrenia, schizo-affective disorder, dementia), as well as complex medical problems (e.g. diabetes mellitus, hypertension, wounds, AIDS) requiring daily treatment by an internal medicine physician and skilled nursing staff. This ward also accepted patients with behaviour problems
related to dementia, intellectual disabilities and personality disorder.

Subject
Sam is a 40-year-old well-nourished, physically healthy Caucasian man. His psychiatric diagnoses are schizoaffective disorder bipolar type on Axis I, mild mental retardation on Axis II, and seizure disorder on Axis III. Sam receives an atypical antipsychotic, two mood stabilizers/seizure medications, and an anxiolytic. His full scale IQ is 58, verbal IQ is 55, and performance IQ is 58 on the Wechsler Abbreviated Scale of Intelligence. Sam is an outgoing, energetic, friendly and engaging man. He seeks out and enjoys interaction with staff and his mother. He does not establish friendly relationships with his peers. He routinely has incidents of attacking peers and accusing peers of pestering him, stealing from him, or bothering him. He has never had a girlfriend. He has never been married. He has never been employed. In terms of aggression towards others, he will chase, push, punch, kick, scratch, hitting with an open hand or closed fist, spitting at, and throwing objects at others.

2. Aggression towards self: Behaviours that directly cause, or attempt to cause, physical harm to self including hitting self with open hand or closed fist, banging head against wall or other hard object.

Functional assessment
Functional assessment interviews were conducted by the treatment team psychologist and behaviour specialist with Sam, Sam’s mother, previous service providers, and current nursing staff and treatment team members. The functional assessment consisted of (1) identification and definition of target behaviour; (2) distant setting events and immediate antecedents predicting target behaviour; (3) consequences or outcomes maintaining target behaviour; (4) current functional behaviour; (5) environmental modifications that reduce target behaviour; and (6) best skills training strategies (see O’Neill et al. 1997). Following are target behaviour definitions.

1. Aggression towards others: Behaviours that directly cause, or attempt to cause, physical harm to others including chasing, pushing, kicking, scratching, hitting with an open hand or closed fist, spitting at, and throwing objects at others.

Known antecedents and interventions
Sam’s target behaviour escalated when the ward was noisy and disruptive. In addition, Sam had a long history of difficult relationships with roommates. To address these problems, Sam was assigned to a single room. Staff helped him make his room a safe and inviting setting that included pictures on the walls and preferred personal items (e.g. reading materials, pictures, stuffed animals, hats). Sam was encouraged to use his room when the ward became noisy and disruptive.

Sam’s target behaviour escalated when he attended large therapeutic groups or groups he found boring. To address this problem, Sam’s schedule was designed to include small groups that he enjoyed including arts and crafts, exercise walks, basic education, house keeping, pet therapy, horticulture and others. He received individual social skills training with the behaviour specialist three times a week and individual sessions with the psychologist three times a week to review treatment progress and practice positive social and communication skills.

Sam needed frequent reinforcers to maintain positive behaviour. As such, reinforcers were provided several times a day for completion of expected behaviours and absence of target behaviours.

Behaviour plan
The treatment team psychologist and behaviour specialist developed the behaviour plan in collaboration with Sam, Sam’s mother, nursing staff, team psychiatrist, social worker and recreational therapist. Following is a description of the plan.

Problem
Sam may become aggressive towards others and self if he (1) is unable to communicate his thoughts or needs; (2) perceives that peers or staff are bothering him; (3) is denied access to preferred items or activities; (4) wants to avoid peers or staff; and (5) wants to avoid a task or activity.

Goal
The goal is to decrease aggressive behaviour and increase positive behaviour so that Sam can leave the hospital and live in the community.
Target behaviours to decrease
Sam is expected to show a decrease in aggression towards others and self.

Target behaviours to increase
Sam is expected to show an increase in socially appropriate behaviour: (1) learn to voice needs, concerns, frustrations; (2) use appropriate verbal greeting; (3) do not touch others without permission; (4) tolerate a reasonable delay in gratification or reinforcement; (5) complete activities of daily living independently and in a timely manner; and (6) ask for a break from an activity as needed. Individualized social skills training focused on target behaviours to increase.

Reinforcers
Sam identified numerous items and activities that were reinforcing (e.g. diet sodas, hot chocolate, stickers, badges, wrist watches, hats, Walkman, religious items, staff helper during meals or laundry, walks with staff). Sam received reinforcers three times a day for completion of expected behaviours and absence of target behaviours. Also, Sam could earn a weekly community outing to a restaurant, movie, shopping centre, or park for completion of expected behaviours and absence of target behaviour.

Finally, verbal praise routinely was offered by staff for positive behaviour (e.g. Sam, you’re doing great today, your bedroom looks clean and tidy, you did so well in arts and crafts group today).

Documentation
The expected behaviour checklist, staff instructions, and target behaviour checklist are presented in the Appendix. The expected behaviour checklist was used to document positive behaviours Sam engaged in everyday, while the target behaviour checklist was used to document incidents of target behaviour. Nursing staff completed both forms. Staff recorded patient’s status at least three times a day in order to determine whether he earned his reinforcer. Staff recorded incidents of target behaviour as they occurred.

Staff training
Initial and ongoing staff training was the essential component of the behaviour plan. Nursing staff on all shifts, treatment team members, and therapeutic group facilitators were trained by the psychologist and behaviour specialist to (1) recognize specific setting events and antecedents known to precede target behaviour; (2) provide consistent verbal and physical response to target behaviour; (3) provide consistent prompting to complete expected behaviour; (4) provide consistent response when expected behaviour was not completed; (5) provide earned reinforcers consistently on time; and (6) provide genuine verbal praise for appropriate behaviour and absence of target behaviour. Shift charge nurses monitored nursing staff response and retrained as needed.

Behaviour specialist
The behaviour specialist played a critical role, working closely with psychology, nursing and Sam. The behaviour specialist (1) provided initial and ongoing training on behaviour principles and the behaviour plan; (2) provided social skills training to the patient; (3) ensured reinforcers were well stocked and available; (4) coordinated weekly off-grounds activities; and (5) monitored data collection and graphing.

Results
Figure 1 shows frequency of aggression towards others and self. The data are presented in 3-month intervals. A 3-month baseline period was followed by a 39-month treatment period. The data reflect the total number of incidents of aggression during each 3-month period. The data show an overall decrease in frequency of aggression when baseline phase is compared with treatment phase. However, Sam continued to engage in target behaviour for the duration of the treatment phase with periodic spikes in aggression noted during intervals 4, 6 and 9.

Figure 2 shows frequency of restrictive interventions and nursing staff injury. The data show an overall decrease in frequency of restraints, PRN medication, and 1:1 special observation when baseline phase is compared with treatment phase. However, there are noted fluctuations across the treatment phase. For example, use of PRN medication increased as incidents of aggression increased during intervals 4, 6 and 9. Also, during intervals 4 and 6, there was an increase in incidents of staff injury corresponding to an
increase in aggression. There is no clear explanation for these trends.

There were 25 incidents of nursing staff injury reported to the hospital administration. Nature of injury included concussions, contusions, fractures, lacerations and muscle injuries. Injuries were located on the head, face, neck, shoulder, arm, hand, finger, back, testicles and legs. Lost workdays ranged from 0 to 180 (Mean = 10.32, Median = 0, SD = 37.45).

Discussion

Results of this case study provide important information for nurses working in psychiatric hospitals. Maintaining a safe and therapeutic ward milieu is a primary and critical nursing responsibility. Reducing incidents of aggression using less restrictive interventions is considered current best nursing practice. Reducing incidents of staff injury and lost workdays due to injury is in everybody’s best interest. When a patient with severe aggression threatens the environment, a consistent therapeutic strategy must be implemented and maintained by nursing staff and all therapeutic disciplines. Historically, psychologists have written behaviour plans in psychiatric settings. Ideally, drafts of behaviour plans are reviewed and modified by nursing staff to ensure that proposed interventions can, in fact, be implemented safely and consistently. This requires open communication, collaboration, and cooperation among all therapeutic disciplines.

Ongoing staff training is the essential component to the effective implementation of behavioural plans. Staff in all disciplines must be trained to recognize specific setting events and antecedents known to precede target behaviour and then ensure that a consistent response to target behaviour is used by all staff on all shifts. In the current case, target behaviour continued to occur; however, incidents were effectively managed with minimal staff injury and minimal use of restrictive interventions. Also, the behaviour plan inevitably goes through modifications over time, as the patient improves or as program opportunities change. Changes are made based on discussions with the patient (and family as appropriate), nursing staff, and treatment team members, and are followed up with staff training.

The behaviour plan presented here can be adapted to persons residing in inpatient and outpatient settings. Linking expected behaviours and absence of target behaviours to a daily schedule or routine makes practical sense for the patient and staff implementing the plan. Also, the basic behaviour plan can be implemented with groups of patients living in the same setting, following a similar routine or schedule.

In summary, study results showed that a non-restrictive behaviour plan, when implemented consistently and with multidisciplinary collaboration and cooperation, resulted in a decrease in incidents of aggression, a concurrent reduction in the use of restrictive interventions to manage aggression, and a decrease in incidents of staff injury. Most importantly, the plan has offered Sam the opportunity to learn positive replacement behaviours and skills, and the opportunity eventually to leave the hospital to live in a less restrictive community home.

Acknowledgments

The authors wish to recognize the talented and devoted staff involved with this case study: Peter Lieblriedis, PsyD; Teresita Noveras, MD, Mary Russell, MSW, Bloise Bailey, CNA, Patricia Bailey, CNA, Shawna Cary, LPN, William Cloonan, LPN, Brenda Dixon, RN, Larry Ebron, CNA, Douglas Graves, CNA, Deborah Greene, RN, Robynn Joyner, LPN, Amelia Knight, CNA, Dianne Murchison, RN; Edie Rogers, CNA, Marcella Tazewell, CNA, Jeffrey Wilson, CNA, Jason Woods, CNA.

References

Delaney J., Cleary M., Jordan R. & Horsfall J. (2001) An exploratory investigation into the nursing management of aggression...

**Appendix**

Behaviour plan: expected behaviour data form and staff instructions

<table>
<thead>
<tr>
<th>Expected behaviours</th>
<th>Monday (Y/N)</th>
<th>Tuesday (Y/N)</th>
<th>Wednesday (Y/N)</th>
<th>Thursday (Y/N)</th>
<th>Friday (Y/N)</th>
<th>Saturday (Y/N)</th>
<th>Sunday (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make bed, clean and straighten room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathe every other day morning or evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brush teeth, groom hair, wear clean clothing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero target behaviours from last reinforcer yesterday to first reinforcer today</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning reinforcer at around 7:00 AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend all morning groups and activities</td>
<td>××</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero target behaviours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-day reinforcer after lunch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend all afternoon groups and activities</td>
<td>××</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathe every other day morning or evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brush teeth, groom hair, wear clean clothing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero target behaviours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evening reinforcers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return reinforcers at bedtime</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark “Y” (yes) or “N” (no) in each box to document whether Sam completed a task. If 100% expected behaviours is completed during each time period, reinforcer given.
Staff instructions
1. Staff offers Sam two prompts to complete each expected behaviour (e.g. Sam, its time to take a shower). If Sam ignores staff, staff offers a second prompt (e.g. Sam, this is your second prompt, its time to take a shower). If Sam ignores staff again, staff does not offer a third prompt. Staff marks that Sam did not complete the expected behaviour. Sam is not eligible for the next reinforcer if he does not complete 100% expected behaviours.
2. Sam can earn his morning reinforcers if he has had ZERO incidents target behaviour from the time of his last reinforcer (evening reinforcer) until his first reinforcer the next morning (morning reinforcer).
3. No sodas after 6 PM to reduce incidents of nocturnal incontinence.
4. Sam should be encouraged to bathe once every 24 h but at least three times per week per ward rules.
5. Sam can earn:
   • 3 morning reinforcers by completing morning tasks (e.g. hot chocolate, watch, religious item).
   • 1 mid-day reinforcer by attending groups (e.g. soda).
   • 3 evening reinforcers by completing afternoon and evening tasks (e.g. soda before 6 PM, Walkman, helping staff).
6. With exception of Walkman, Sam can keep non-edible reinforcers for 24 h but will have to earn them again the next day by completing expected behaviours.
7. On weekdays, Sam can earn his Walkman for an evening reinforcer and return it when he goes to bed.
8. On weekends, Sam can earn his Walkman for a morning reinforcer and return it when he goes to bed.
9. Sam loses access to next scheduled reinforcer following an incident target behaviour. He must complete expected tasks in order to earn the next reinforcer (e.g. hits peer at 10 AM, loses access to mid-day reinforcer but can earn evening reinforcer).

Behaviour plan: target behaviour data form

<table>
<thead>
<tr>
<th>Day</th>
<th>Shift</th>
<th>Aggression towards others</th>
<th>Aggression towards self</th>
<th>PRN</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Night</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PRN, pro re nata medication, R, restraints.
Place a vertical mark (|) in appropriate cell for each incident of target behaviour or use of PRN medication or restraints.