Interventions for reducing the use of seclusion in psychiatric facilities

Review of the literature

CADEYRN J. GASKIN, STEPHEN J. ELSOM and BRENDA HAPPELL

Background The authors of a recent systematic review concluded that the use of non-pharmacological containment methods, excluding restraint and seclusion, was not supported by evidence. Their focus on randomised, controlled trials, however, does not reflect the research that has been, or could be, conducted.

Aims To find empirically supported interventions that allow reduction in the use of seclusion in psychiatric facilities.

Method We reviewed English-language, peer-reviewed literature on interventions that allow reduction in the use of seclusion.

Results Staff typically used multiple interventions, including state-level support, state policy and regulation changes, leadership, examinations of the practice contexts, staff integration, treatment plan improvement, increased staff to patient ratios, monitoring seclusion episodes, psychiatric emergency response teams, staff education, monitoring of patients, pharmacological interventions, treating patients as active participants in seclusion reduction interventions, changing the therapeutic environment, changing the facility environment, adopting a facility focus, and improving staff safety and welfare.

Conclusions Reducing seclusion rates is challenging and generally requires staff to implement several interventions.

Declaration of interest None.

Although some researchers have argued that the use of seclusion (the solitary confinement of psychiatric patients in bare rooms) can be of therapeutic value (Cotton, 1995), can prevent injuries and can reduce agitation (Fisher, 1994), this practice has been described as a form of social control over people already experiencing exclusion from the community (Morall & Muir-Cochrane, 2002) and is frequently harmful or traumatic to patients (Frueh et al, 2005). Despite general movements in ethical principles and international law towards treating psychiatric patients within the least restrictive environment possible (Muir-Cochrane & Holmes, 2001), seclusion is still legally permitted (e.g. United Nations, 1991; Parliament of Victoria, 2006). Reducing the rates of seclusion requires the availability of feasible alternatives. Recently the authors of a systematic review concluded that current non-pharmacological practices for the containment of the behaviours of people who are disturbed or violent (excluding restraint and seclusion) were difficult to justify because their use was not supported by evidence from randomised controlled studies (Muralidharan & Fenton, 2006). Owing to their complexity, interventions to reduce seclusion rates do not lend themselves to evaluation using randomised controlled trials. There are many studies, however, in which researchers have used other methods to investigate the changes made in psychiatric settings to reduce the use of seclusion. We reviewed this literature.

METHOD

The first author (C.J.G.) searched a number of databases (Academic Search Premier, Biomedical Reference Collection, CINAHL, Medline, Pre-CINAHL, PsycINFO) using the terms seclusion WITH mental OR psychiatric. When permissible by the individual databases, the search was limited to papers published in English and in peer-reviewed journals. In view of the considerable changes within the mental health service delivery system during the past 20 years, the search was restricted to papers published during this period. With this search strategy, 501 papers were identified; C.J.G. then read the abstracts and selected those papers in which the authors reported on interventions to reduce seclusion rates. Opinion-based papers (e.g. commentaries, letters to editors) were excluded, as were papers in which the interventions were solely based on changes to medications, and those in which seclusion rates pre- and post-intervention were not provided. From this search, 40 papers appeared to meet the inclusion and exclusion criteria. These papers were sourced and read to ensure they did meet the criteria; only 16 were agreed to do so (Kallogera et al, 1989; Mistral et al, 2002; Taxis, 2002; Donat, 2003; Donovan et al, 2003; Fisher, 2003; D’Orilo et al, 2004; LeBel et al, 2004; Schreiner et al, 2004; Sullivan et al, 2004, 2005; Smith et al, 2005; Bowers et al, 2006; Fowler, 2006; Greene et al, 2006; Regan et al, 2006). A common reason for the exclusion of papers at this stage was that no information on seclusion rates or on the reduction in seclusion rates was reported. The first author (C.J.G.) also scanned the reference lists of the selected papers to find additional papers that were not identified in the original search. From the selected papers we extracted data on the types of facilities (including the populations they treated), study designs, interventions and findings.

RESULTS

Interventions to reduce rates of seclusion

Most of the studies on this topic are descriptions of how staff in psychiatric settings have developed complex interventions to reduce rates of seclusion. These interventions emerged following pressures, in either the internal or external environments, to reduce seclusion rates. Because the environments within these psychiatric facilities seem to have been quite heterogeneous, so too have been the approaches to reducing seclusion rates. We have synthesised the essences of each intervention, and this information, along with the outcomes of the changes, is presented in a data supplement to the online version of this paper. To
compare and contrast the interventions, we looked for common and unique features in the changes that were made in these psychiatric facilities. Although we discuss each feature separately, it is not our contention that any one of them would be sufficiently powerful in itself to reduce rates of seclusion; rather, successfully reducing seclusion rates may require the systematic use of several of these interventions—and possibly others—in response to the practice environments within psychiatric facilities. The interventions that we identified include state-level support, state policy and regulation changes, leadership, examinations of the practice contexts, staff integration, treatment plan improvement, increased staff to patient ratios, monitoring seclusion episodes, psychiatric emergency response teams, staff education, monitoring of patients, pharmacological interventions, treating patients as active participants in seclusion reduction interventions, changing the therapeutic environment, changing the facility environment, adopting a facility focus, and improving staff safety and welfare.

State-level support
Although most research was conducted at facility, unit or ward level, authors of one study reported on how the efforts made by a State Mental Health Authority (SMHA) were associated with reductions of seclusion rates in 70 institutions under its influence (LeBel et al., 2004). The SMHA assisted staff at child and adolescent in-patient facilities to reduce restraint and seclusion through frequent licensing and contract monitoring visits, in which strength-based care was discussed with staff, including the use of an individualised crisis prevention plan safety tool; assisting the organisation of peer-to-peer support for staff at the facilities to change workplace cultures and implement initiatives to reduce the use of restraint and seclusion; holding a state-wide best practice conference on restraint and seclusion reduction; requiring staff at each facility to develop a strategic plan incorporating strength-based care; facilitating restraint and seclusion grand rounds, in which conference presentations were made and SMHA staff assisted facility staff to develop their strategic plans and strength-based approaches; organising a conference, during which strategic plans and performance data relating to reduction of the use of restraint and seclusion were presented; and linking with other state agencies serving children and adolescents and enhancing supports for children and adolescents with histories of trauma. The reduced seclusion rates seem to have stemmed from the SMHA providing such support to institutions, rather than the SMHA changing regulations or policies and requiring institutions to adapt. During the 22-month period of the intervention the SMHA made no change to its regulations or policies.

State policy and regulation changes
Changes in state policy and regulations can sometimes shape interventions designed to reduce the use of seclusion. In the two studies where the involvement of the state in the area of seclusion practices had changed, there was increased emphasis on having tighter controls on when and how seclusion may be used, greater oversight of seclusion episodes through the appointment of an independent advocate for consumers, the introduction of a ‘recovery approach’ to caring for patients (Smith et al., 2005) and the requirement for post-seclusion debriefings with staff and patients. These changes necessitated, or formed part of, initiatives within the psychiatric facilities to reduce rates of seclusion.

Leadership
Although leadership would have had some impact on the design, implementation and monitoring of all the interventions included in this review, several authors described some of the leadership behaviours that contributed to organisational changes. External to psychiatric facilities, chief psychiatrists and community advocates for psychiatric patients can influence the policies and practices of those facilities (Smith et al., 2005). Internally, the management of these facilities were involved with setting new expectations for staff to reduce the use of seclusion (Sullivan et al., 2005), reviewing seclusion policies (Kalogiera et al., 1989; Fisher, 2003), publicly advocating for seclusion reduction (Fisher, 2003; Sullivan et al., 2005), changing systems of practice to make seclusion reduction a priority (Schreiner et al., 2004), providing staff with resources to enable seclusion rates to be reduced (e.g. education; Schreiner et al., 2004), introducing an audit tool to capture information about each restraint or seclusion episode (Taxis, 2002) and modelling crisis de-escalation techniques (Schreiner et al., 2004).

Examinations of the practice contexts
Some psychiatric facilities formally established the context in which staff intended to make changes (Fisher, 2003; Schreiner et al., 2004). Through such an evaluation, systemic weaknesses that contributed to patients being secluded could be identified. Tools such as staff surveys (Fisher, 2003), collecting baseline data on the use of seclusion, interviews with staff and patients, and observations of crisis events on units (Schreiner et al., 2004) have informed the development of interventions that have contributed to decreases in seclusion rates. Once weaknesses had been highlighted, programmes were designed to improve how staff manage crises or potential crises.

Staff integration
During three of the interventions, management enhanced the focus on reducing seclusion rates through employing new staff (Smith et al., 2005) or by increasing the extent of cross-disciplinary collaboration (Donovan et al., 2003). In the first of these studies (Smith et al., 2005), new staff became available for employment owing to the closures of other facilities across the state. These new staff were already challenging the use of restrictive procedures in the facilities at which they were previously employed and, therefore, were able to contribute positively to efforts to reduce the rates of seclusion. In the other study (Donovan et al., 2003) an interdisciplinary committee was established to oversee the development of the programme to reduce the use of seclusion. This committee comprised administrators and staff who had different roles within the hospital (e.g. counsellors, nurses, physicians, psychologists and social workers). This cross-disciplinary involvement helped engender widespread support for the reform of seclusion and restraint practices.

Treatment plan improvement
In one study the authors described how initiatives were undertaken to improve the patients’ treatment plans (Donat, 2003). The hospital management created a behavioural consultation team to work with all areas within the hospital to provide input into treatment plans from a behavioural perspective. There was also an increase in
the number of quality standards for assessing behaviour plans (from 16 to 44) and the introduction of an additional set of 54 quality standards for formal behavioural assessments.

**Increased staff to patient ratios**

In two studies improvements in the staff to patient ratios were part of the agenda for change (Donat, 2003; Smith et al, 2005). During 5 years of an intervention in a public psychiatric hospital, the ratio of staff (including all facility staff) to patients increased from 2 to 1 in the first month to 3:3 to 1 in the last month (Donat, 2003). The authors did not report, however, how staff to patient ratios changed in the wards. At Pennsylvania State Hospital the staff to patient ratios on hospital units improved over a 10-year period, through decreasing the number of patients on a typical unit (from 36 to 32 or fewer) and increasing the number of staff per unit (from one licensed nurse and three psychiatric aides to two licensed nurses and four psychiatric aides; Smith et al, 2005). The authors contend that this change in the staff to patient ratio contributed to staff being able to provide more sensitive care than they had been able to give in the past and to a safer environment for both staff and patients.

**Monitoring seclusion episodes**

Psychiatric facilities commonly collected data on episodes of seclusion and these data were used for clinical, educational, managerial, and publicity purposes (Kalogierra et al, 1989; Taxis, 2002; Donat, 2003; Donovan et al, 2003; Fisher, 2003; Schreiner et al, 2004; Smith et al, 2005). Management used these data to detect both general seclusion patterns over time and to identify outlier patients (Schreiner et al, 2004). Data on general patterns were used to facilitate interhospital comparison of the use of seclusion (Smith et al, 2005), to enable performance to be compared with unit and hospital goals (Donovan et al, 2003) and to inform the development of staff education programmes (Taxis, 2002). In an adolescent in-patient unit (Schreiner et al, 2004) and a public psychiatric hospital for adults (Donat, 2003), one of the foci for staff was on analysing outlier data. At the public hospital, for example, the criteria for the review of patients with multiple episodes of seclusion or restraint were modified so that they were evaluated after fewer episodes or less time in seclusion or restraint (Donat, 2003). The necessity for patients to exceed six episodes or 72 h of restraint or seclusion within 1 month before a review would occur was replaced with the criteria of two episodes or 8 h during 1 week.

In contrast to most of these facilities, in which staff monitored data on seclusion and restraint, members from a development committee in a child and adolescent psychiatric hospital were involved with observing the behaviours of staff and patients on hospital wards (Donovan et al, 2003). These observations were undertaken to ascertain the frequency with which aspects of an intervention to reduce the use of seclusion and restraint were carried out. Using data gained from these observations, committee members also provided staff with additional education about aspects of the intervention that staff were not employing effectively or that concerned staff, reinforcement of the intervention’s philosophy and support for staff skill development.

Post-event analyses were a further method by which seclusion episodes were monitored (Fisher, 2003). In a state psychiatric hospital, changes in policies at state and hospital levels required that all episodes of seclusion be subject to post-event analyses, which staff involved in the seclusion or restraint, along with their supervisors, conducted. The focus of these analyses was on ascertaining how staff handled the events, on what staff could have done differently to avoid placing patients in seclusion or restraints, and on developing plans to try to prevent such episodes recurring.

**Psychiatric emergency response teams**

In several state hospitals (Smith et al, 2005) and in a psychiatric emergency service (D’Orio et al, 2004), staff introduced psychiatric emergency response teams for behavioural emergencies. To become a member of one of these teams, staff participated in additional training to enhance their skills to manage crisis situations in such ways that they refrain from using restrictive procedures. To defuse crisis situations, staff primarily used their skills in verbal de-escalation by way of violence prevention skills, therapeutic communication, mediation and conflict resolution.

**Staff education**

The education of staff was central to the efforts of many organisations to reduce seclusion (Kalogierra et al, 1989; Taxis, 2002; Fisher, 2003; D’Orio et al, 2004; Schreiner et al, 2004; Sullivan et al, 2004, 2003; Smith et al, 2005; Bowers et al, 2006; Greene et al, 2006). Education was focused on two main areas: the implementation of new models of care and alternative behavioural interventions to seclusion. New models of care came from the authors’ work on the development of high-therapy, low-conflict wards (Bowers et al, 2006) or on collaborative problem-solving (Greene et al, 2006). Education in alternative behavioural interventions tended to have several components. The educational programme at one state psychiatric facility, for example, involved learning to identify the behavioural indicators of impending violence, to collaborate with others and to use verbal de-escalation techniques, to intervene in a crisis, to employ diversional activities, to consider the ethics involved with restraint and seclusion, to improve documentation skills, to apply therapeutic interventions with patients who had personality disorders, and the use of medications with aggressive patients (Taxis, 2002).

Some of this education occurred in one-to-one discussions and during problem-solving exercises. Staff at this facility also used information gained through their evaluations of restraint or seclusion episodes to design targeted education to address areas of concern.

On one adolescent in-patient unit, part of the education involved members of the committee responsible for implementing the intervention modelling de-escalation techniques for other staff (Schreiner et al, 2004). The members of the committee were demonstrating how these techniques could be put into practice. This modelling was supported through training at in-service meetings, reviews that debunked myths about seclusion and restraint, continued reinforcement of strategies to reduce the use of restraint and seclusion, and providing staff who were key decision-makers in crisis situations with additional training in patient-specific de-escalation strategies and in early crisis intervention.

**Monitoring of patients**

In one study the monitoring of patients was increased through the installation of an additional camera (D’Orio et al, 2004). This increase in the number of cameras in operation (from four to five) was in response to members of the safety committee perceiving
that patients were being inadequately monitored.

**Pharmacological interventions**

Although we excluded studies from this review in which the prime focus was on the evaluation of pharmacological intervention, some researchers stated that changes in pharmacological interventions (chiefly the introduction of second-generation antipsychotics) occurred as part of several changes within the psychiatric facilities (Fisher, 2003; Smith et al, 2005). In one state psychiatric hospital, two aspects of the pharmacological treatment of patients were emphasised (Fisher, 2003): first, clozapine was used more frequently to control aggressive behaviour; second, in their care of individual patients who showed no signs of improvement with established pharmacological solutions, staff continued to try other pharmacological treatments which had only received support from a few trials or case studies.

**Treating patients as active participants in seclusion reduction interventions**

Some staff at psychiatric facilities enlisted the support of patients in their efforts to reduce seclusion rates (Mistral et al, 2002; Schreiner et al, 2004). The staff at one adolescent in-patient unit gained support from patients through discussing the goal of seclusion reduction with them and emphasising the positive outcomes that might eventuate from reducing the use of seclusion and restraint on the unit (Schreiner et al, 2004). Staff also reviewed standard therapeutic de-escalation strategies with patients and introduced a reward system for patients based on the number of seclusion and restraint episodes. On a high-care psychiatric ward, staff worked with patients to reduce the use of seclusion through clarifying therapeutic aims with patients and implementing rules with regards to drinking alcohol, using illicit substances, smoking and the upkeep of the environment. Patients seemed to internalise the rules for the upkeep of the environment and began enforcing these rules with fellow patients.

In an adult psychiatric service, management placed an expectation on staff that they allow patients to choose interventions to be used in managing their aggression (Sullivan et al, 2005). In consultation with patients, clinicians completed a patient violence assessment tool, which had sections requiring detail on the relevant histories of patients and precipitants to their violence; how patients tended to display agitation, aggression and violence; and interventions that patients might find useful at times when they potentially could lose control.

**Changing the therapeutic environment**

Making changes to the therapeutic environment was a common way in which staff at psychiatric facilities tried to reduce seclusion rates (Kalogjera et al, 1989; Mistral et al, 2002; Taxis, 2002; Donovan et al, 2003; Fisher, 2003; Sullivan et al, 2004, 2005; Smith et al, 2005; Bowers et al, 2006; Fowler, 2006; Greene et al, 2006; Regan et al, 2006). Staff at some of these facilities adopted new therapeutic frameworks to guide practice. These frameworks included a collaborative problem-solving approach (Greene et al, 2003) at a child in-patient psychiatric unit (Greene et al, 2006); a working model for the development of high-therapeutic, low-conflict psychiatric wards (Bowers et al, 2006); an ‘ABCD’ (autonomy, belonging, competence, doing for others) programme at an adolescent psychiatric hospital (Donovan et al, 2003); the use of dialectic behaviour therapy (Linehan, 1993) at a state psychiatric hospital (Fisher, 2003); a therapeutic management protocol on three in-patient adolescent psychiatric units (Kalogjera et al, 1989); a philosophy of child- and family-centred care (Ahmann & Johnson, 2000) at a child psychiatric unit (Regan et al, 2006); and treatment based on therapeutic community principles (Jansen, 1980) at a high-care psychiatric ward (Mistral et al, 2002). In addition, staff at an adult psychiatric service shifted their treatment paradigm from one of staff fear and control to one of patient empowerment and collaborative relationships (Sullivan et al, 2005).

Staff at some facilities improved the therapeutic environments through increasing the frequency with which they communicated with patients about their needs (Sullivan et al, 2004) and their care (Mistral et al, 2002). On a daily basis at an in-patient acute psychiatric care unit, for example, staff assessed patients’ mental states and their risks of committing violent or harmful acts to themselves or to others (Sullivan et al, 2004). These assessments were used in the development of 24 h individual service plans for patients.

In two facilities the debriefing of patients following episodes of seclusion was part of the changes made to practice (Fisher, 2003; Sullivan et al, 2004). In a psychiatric hospital, for example, debriefing occurred between the patients who were placed in seclusion and their treatment teams (Fisher, 2003). These debriefings focused on the patient’s and team’s views of the patient’s behaviours that led to the seclusion and on planning to avoid recurrences of such behaviours.

In a rare example of a single intervention being used in an attempt to reduce the use of seclusion, staff at a residential treatment centre for adolescents informed patients that they could request aromatherapy if they were feeling agitated (Fowler, 2006). This intervention appeared to have a positive effect on the number of seclusions, because there were more of these episodes in the 3 months prior to the use of aromatherapy (n = 29) than during the 3 months following the introduction of this treatment (n = 20).

**Changing the facility environment**

Authors of three studies reported that facility environments were changed to reduce the likelihood that patients would be placed in seclusion (Mistral et al, 2002; Taxis, 2002; Regan et al, 2006). In two of these facilities the physical environment was improved (Mistral et al, 2002; Taxis, 2002), whereas in the other facility the opening hours of the unit were extended to 24 h per day for parents, in keeping with the philosophy of child- and family-centred care (Regan et al, 2006).

**Adopting a facility focus**

In one study, the objectives of the intervention were broader than focusing on reducing the numbers of episodes of seclusion and restraint (Mistral et al, 2002). Through taking a broader approach to improving how a psychiatric facility operates, the use of seclusion and restraint may be reduced. Staff on this ward timetabled a schedule to improve how the ward operated. Regular staff meetings were held to discuss practical issues on the ward and monthly meetings were held between community and ward staff. In addition, meetings were conducted with an outside facilitator to analyse the root causes of ward issues and to produce possible solutions.

**Improving staff safety and welfare**

Staff at some psychiatric facilities instigated changes to practice to enhance the safety
and welfare of staff (Mistral et al., 2002; Sullivan et al., 2004). In one in-patient acute psychiatric unit, staff had reported experiencing burnout due to continuously caring for acutely unwell patients (Sullivan et al., 2004). To reduce this burnout, staff were rostered between caring for acutely unwell patients and caring for those who were less unwell. To improve staff safety on one ward at another facility, staff were educated in risk assessment and in techniques for controlling and restraining patients, and were issued with personal alarms (Mistral et al., 2002). In addition, if a patient assaulted a member of staff the incident was immediately reported to police. This action reinforced patients’ awareness of how serious it was to assault a staff member.

**Intervention outcomes**

The main variable of interest in this review is the number of seclusion episodes. In all but one study in which the researchers reported seclusion data (Bowers et al., 2006), the number of episodes of seclusion, or rate of seclusions, decreased with the implementation of the interventions (Mistral et al., 2002; Schreiner et al., 2004; Sullivan et al., 2004, 2005; Smith et al., 2005; Fowler, 2006). For the studies in which the data on seclusion are obscured through their combination with restraint data, the authors reported decreased use of seclusions and restraints with the implementation of the interventions (Kalogjera et al., 1989; Taxis, 2002; Donat, 2003; Donovan et al., 2003; Fisher, 2003; D’Orio et al., 2004; LeBel et al., 2004; Greene et al., 2006; Regan et al., 2006). Although none of this research had an experimental design, and therefore causation cannot be implied, the weight in number of these studies provides strong evidence that the use of seclusion in psychiatric facilities might be greatly reduced, if not discontinued entirely.

**DISCUSSION**

There is strong evidence that supports the use of interventions to reduce the use of seclusion in psychiatric facilities. The interventions we reviewed were complex and typically involved changing several aspects of the organisation. The impetus for change came either from external pressures (e.g. state law changes, chief psychiatrists, consumer groups) or from staff within the organisations. Such changes tended to be unique to each facility and in response to practices and policies that staff perceived as enabling the use of seclusion. Common features of the programmes for change at many of these facilities, however, were leadership, the monitoring of seclusion episodes, staff education and changing the therapeutic environment.

Our findings challenge the outcome of a recent systematic review in which it was concluded that the use of current non-pharmacological practices for the containment of the behaviours of people who are disturbed or violent (e.g. behavioural contracts, de-escalation, locking doors, special observations) were difficult to justify (Muralidharan & Fenton, 2006). Although these authors’ conclusion is understandable with respect to the literature selected using the narrow criteria of the systematic review (e.g. randomised controlled trials), it does not reflect the research that has been conducted, or could possibly be performed, in psychiatric settings. Designing randomised controlled trials to evaluate the efficacy of alternative, non-pharmacological containment strategies in settings where there is much variability in facilities, in organisational culture, and in patient and staff behaviour is fraught with difficulties. Investigating alternative containment strategies, implemented to reduce seclusion rates, requires psychiatric facilities to be the unit of analysis, rather than staff and patients within one section (e.g. a ward) of a psychiatric facility. Finding a sample of psychiatric facilities that are sufficiently homogeneous to allow a randomised controlled trial that would involve significant organisation change seems overly ambitious, if not totally unfeasible. A more pragmatic approach, such as using rigorously designed case studies, may be needed for this line of research.

Owing to the complexity of the interventions used in these facilities, it is difficult to assess which interventions – if any – were efficacious in producing the reduction in the use of seclusion. Even so, knowledge in the area of reducing the use of seclusion can advance further if researchers continue to report the interventions that are effective in psychiatric facilities. The literature would also benefit greatly from reports of any failed attempts to reduce the use of seclusion. Through sharing such experiences, researchers and practitioners will be able to develop sound strategies for the reduction of the use of seclusion in psychiatric facilities.

**REFERENCES**


INTERVENTIONS FOR REDUCING THE USE OF SECLUSION


### Summary of the studies reviewed

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<tr>
<td>Bowers et al (2006)</td>
<td>Two acute psychiatric wards</td>
<td>Application of the authors' working model for the development of high-therapy, low-conflict psychiatric wards. The model has three central factors: positive appreciation (moral perception in action, compassion), emotional regulation (suppression, emotional equilibrium) and effective structure (routine-direction, objects, conduct). These factors may be developed through psychiatric philosophy, moral commitments, cognitive-emotional self-management, technical mastery, teamwork, skill and organisational support.</td>
<td>Comparing the 3 months pre-intervention with the last quarter of the year-long intervention (outcomes were calculated as outcomes per shift to allow comparison), there were clinically significant reductions in the amount of conflict on the wards (e.g. absconding, aggression, self-harm). There was no significant decrease in the use of seclusion, however.</td>
<td>Given the reduction in the amount of conflict on the wards, the authors' working model may reduce the frequencies of seclusions in wards that use this patient management method.</td>
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<td>Donat (2003)</td>
<td>Adult public psychiatric hospital</td>
<td>Multiple interventions over a 5-year period, including changing the criteria for a case to be reviewed from patients exceeding six episodes or 72 h of restraint or seclusion within 1 month to two episodes or 8 h during 1 week; increasing the profile of the case review committee through changing its membership from direct care clinicians to the hospital director, heads of all major clinical departments, a consulting clinical psychopharmacologist and members of a team of behavioural consultants; introducing a team of behavioural consultants to provide advice on treatment plans; increasing the number of standards for behavioural assessments and plans; and improvement of the hospital-wide staff to patient ratio from 2:1 in the first month to 3.3:1 in the last month.</td>
<td>Seclusion and restraint use decreased 75% from the first year to the fifth year of the study.</td>
<td>Interventions based largely on the review of seclusion and restraint cases and enhancing the development and assessment of treatment plans seem to have been effective in reducing the numbers of seclusions and restraints.</td>
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<td>Donovan et al (2003)</td>
<td>Child and adolescent public psychiatric facility</td>
<td>The intervention was called 'ABCD' after the four core elements of the programme: autonomy, belonging, competence and doing for others. The implementation of ABCD involved cross-disciplinary collaboration; monitoring of seclusion and restraint rates, and comparing them with unit goals; a development committee observing the integration of ABCD within the units and providing staff with positive reinforcement, education and support.</td>
<td>Over 2 years the number of seclusion and restraint episodes decreased by 26%.</td>
<td>A seclusion and restraint reduction innovation, based on ABCD, seemed effective in reducing the numbers of these episodes.</td>
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<td>D’Orio et al (2004)</td>
<td>Psychiatric emergency service</td>
<td>Interventions were implemented to address two perceived weaknesses in the service: ineffectual management of problematic behaviours and inadequate monitoring of patients. In response to the ineffectual management issues, the managers implemented an emergency response team for behavioural issues, had staff retrained in the prevention of aggressive behaviour and developed a rating scale for use with identifying behaviours that could be precursors to violence or aggression. The monitoring of patients was improved by extending surveillance from four to five cameras.</td>
<td>The number of episodes of seclusion and restraint decreased from 65.2 per month for the 9 months before the intervention to 38.1 per month for the 9 months following implementation (the implementation lasted for 4 months between the two 9-month periods).</td>
<td>Identifying and then addressing perceived weaknesses appears an effective method of reduction of the use of seclusion.</td>
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<td>Authors</td>
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<td>Fisher (2003)</td>
<td>State psychiatric hospital</td>
<td>Multiple changes within the hospital, including public support from the hospital's executive director for the initiative of reducing restraint and seclusion rates; administering a survey to staff and patients about the use of restraint and seclusion within the hospital; the implementation of a new state curriculum that focused on identifying patient behaviours that could lead to aggressive behaviours and on using de-escalation methods, rather than on the use of restraints and seclusion; a greater focus on interpersonal respect, reinforced through a guest speaker on the topic, an 8 h education curriculum and hospital policy; the implementation of new state policy requiring restraint and seclusion post-event analysis, with involved staff and their supervisors, and debriefing with the patient and their treatment team; greater use of information management and data analysis to direct the staff's restraint and seclusion reduction efforts; the revised use of pharmacological interventions; and assisting patients to gain greater self-control through using Linehan's dialectic behaviour therapy</td>
<td>There was a 67% decline in the rate of seclusions and restraints over 3 years</td>
<td>An intervention based on an analysis of the hospital environment, staff education, interpersonal respect, strong feedback systems, changing treatments, and with support at senior management and state levels appeared effective in reducing seclusion and restraint rates</td>
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<td>Fowler (2006)</td>
<td>Adolescent residential treatment centre</td>
<td>Aromatherapy: participants could request a 'calming blend' of essential oils if they were feeling agitated. This blend was offered through hand massage or direct inhalation</td>
<td>There were 29 seclusions during the 3 months prior to aromatherapy and 20 such events during the 3 months following the introduction of aromatherapy</td>
<td>Aromatherapy may help to calm agitated patients and therefore reduce seclusion rates</td>
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<td>Greene et al (2006)</td>
<td>Child in-patient psychiatric unit</td>
<td>Implementation of collaborative problem-solving (CPS; Greene et al., 2003), a cognitive–behavioural approach for people who work with aggressive children and adolescents. The CPS has three main treatment goals: identification of cognitive factors that may lead to aggression in children and adolescents; building awareness among staff of the three common ways of handling unmet expectations (impose adult will, collaborative problem solve, remove expectations) and the consequences of these strategies on the adult–child interactions; and help adults and children develop their skills in CPS so that the frequency of aggressive outbursts decreases</td>
<td>There were 281 episodes of restraint or seclusion in the 9 months before the intervention and one episode during the 15 months following the implementation of CPS</td>
<td>Collaborative problem-solving seems an effective approach to reducing seclusion when caring for children and adolescents</td>
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<td>Kalogjera et al (1989)</td>
<td>Three in-patient adolescent psychiatric units</td>
<td>Several interventions focused on the implementation of a therapeutic management protocol. Using therapeutic management, staff classified the adolescents' disruptive behaviours into four stages based on the severity of the acting out. Staff used verbal and behavioural interventions to try to control the adolescents' behaviours at each stage. Concurrent with the implementation of this protocol, staff adopted a new policy on seclusion and restraint, the hospital's seclusion and restraint committee reviewed such episodes and made recommendations for future practice, and in-service education on therapeutic management was provided for staff</td>
<td>Comparing two parallel periods of time pre-intervention (January to May 1980) and post-intervention (January to May 1981) showed a 64% decrease in the number of restraint and seclusion episodes and a 39% decrease in the number of patients needing seclusion and restraint</td>
<td>A therapeutic management protocol, along with a new policy, reviews of seclusion and restraint episodes and in-service training, seemed effective at reducing seclusion and restraint episodes</td>
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<td>LeBel et al (2004)</td>
<td>Acute psychiatric units in 60 private and general hospitals and 10 in-patient facilities within a State Mental Health Authority (SMHA)</td>
<td>Multiple interventions by the SMHA, including continued biannual licensing visits, annual clinic visits, and monthly telephone calls to discuss practice and strategies for the promotion of strength-based care and a safety tool; round table discussions on changing clinic cultures and how to implement innovative restraint and seclusion reduction strategies; a best practice conference incorporating presentations on restraint and seclusion reduction, aspects of child and adolescent strength-based models of care, and a role-play of a threatening and aggressive adolescent and a member of staff; the requirement that each clinic develop a strategic plan; restraint and seclusion grand rounds (first series) that incorporated presentations and assistance with refining strategic plans and strength-based approaches; a state-wide conference involving presentations of strategic plans and performance improvement efforts; restraint and seclusion grand rounds (second series) involved linking the efforts of the Departments of Mental Health with those of other child and adolescent state agencies, and to enhance the support for children and adolescents who had trauma histories</td>
<td>Comparing two parallel periods of time pre-intervention (June to August 2000) and post-intervention (June to August 2002) showed decreases in the number of restraint and seclusion episodes for adolescents' units (37.7%), children's units (65.9%) and mixed children and adolescents' units (67.0%).</td>
<td>A state- or district-wide approach to reducing episodes of seclusion may be effective</td>
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<td>Mistral et al (2002)</td>
<td>High-care psychiatric ward</td>
<td>Multiple interventions based on 'therapeutic community' principles, including improved communication (daily community meetings between staff and patients designed to enable patients to contribute to the planning of ward events, to disseminate information about daily ward activities, and to address barriers between staff and patients); more regular communication between staff and patients about their care plans and to explain the rationales for treatment changes; instigation of regular staff meetings to discuss practical issues, monthly meetings between community staff and ward staff, and weekly meetings, conducted with an outside facilitator, to explore the root causes of ward issues and to develop possible solutions; improved environment (funds were spent upgrading bathrooms and kitchens, laying new carpets, and painting bedrooms and communal spaces); improved safety (staff were issued with personal alarms and trained in risk assessment and techniques for control and restraint; patient assaults on staff were immediately reported to police); and clarity of aims and structure (rules were instigated with regards to drinking alcohol, using illicit substances, smoking and the upkeep of the environment)</td>
<td>The number of seclusions declined between 1996 (n=35), 1997 (n=21) and the first 9 months of 1998 (n=9)</td>
<td>Interventions based on improving the therapeutic environment for staff and patients may be effective at reducing the number of patients placed in seclusion</td>
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<td>Regan et al (2006)</td>
<td>Child psychiatric unit</td>
<td>Multiple interventions based on a shift in the unit’s treatment paradigm towards a philosophy of child- and family-centred care. Three changes to practice exemplified this shift: a collaborative problem-solving model was adopted in response to the children’s behavioural difficulties; the unit was open 24 h a day to parents; and protocols and procedures were adopted that were sensitive to the traumas the children may have experienced.</td>
<td>Prior to the intervention there were one or two episodes of restraint or seclusion each day on the unit. Staff had not used restraints since November 2001 (the year the changes were implemented) and had not used seclusion or chemical restraints since February 2002.</td>
<td>Implementing a philosophy that focuses on the needs of children and their families seems to have been effective in eliminating the use of seclusion.</td>
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<td>Schreiner et al (2004)</td>
<td>Adolescent in-patient unit</td>
<td>Multiple changes within the unit, including assessment of established restraint and seclusion practices (collecting of baseline data, interviews with staff and patients, observations of crisis events on the unit); changing the systems of the unit (making the reduction of restraint and seclusion a priority, describing the benefits to staff of fewer restraints and seclusions); staff education (in-service meetings, reviews that dispelled myths pertaining to seclusion and restraint, reinforcement of unit-wide strategies to reduce restraint and seclusion usage, providing key decision-makers in crisis situations with more training in patient-specific de-escalation strategies and early crisis intervention); modelling of crisis de-escalation techniques by members of the committee responsible for leading these changes; feedback and discussion of restraint and seclusion data to staff on the unit; meetings with patients about the goal of reducing restraints and seclusions, and the potential positive outcomes for patients; reviews of standard therapeutic de-escalation strategies with patients; introduction of a ward reward system for patients if the numbers of restraints and seclusions decreased by 25% during a specific period; focusing on outlier patients (re-evaluation of the treatments of patients restrained or secluded at least three times over a 30-day period, consideration of specific communication and behavioural strategies to help patients cope with crises, practising these strategies in non-crisis conditions); analysing and reacting to data showing restraint and seclusion use patterns.</td>
<td>There was a decrease in the monthly number of seclusions from the assessment phase (18.67 per month) to the intervention phase (12.14 per month).</td>
<td>An intervention based on changing the unit’s systems, staff education and implementing treatment interventions appeared to be effective at reducing the numbers of seclusions.</td>
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<td>Smith et al (2005)</td>
<td>Nine state hospitals</td>
<td>Multiple changes within the hospitals including a leadership push to reduce the use of seclusion from hospital staff, community advocates and chief psychiatrists; the state-wide introduction of the 'recovery approach' to caring for patients; improved collection of data on seclusion and restraint, and increased sharing of these data between hospitals; staff training in non-offensive crisis management; employment of new staff; greater patient advocacy from consumer organisations and the state appointment of independent advocates; state policy on the use of restraints and seclusion was revised to restrict the range of situations in which such procedures could be used and how they may be used; the introduction of psychiatric emergency response teams; reductions in the numbers of staff per unit and improvements in staff to patient ratios; the state-wide implementation of a new incident management system, which increased the number of performance indicators; the introduction of second-generation antipsychotic medications; and increased quantity and quality of treatment (e.g. increased use of therapy)</td>
<td>There was a decrease in the seclusion rate (episodes per 1000 patient-days) from 4.23 and 7.20 in 1990 and 1991 respectively to 0.28 in 2000</td>
<td>A concerted effort to change policy and practice, both internally and externally to hospitals, appeared effective in reducing the use of seclusion</td>
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<td>Sullivan et al (2004)</td>
<td>An in-patient acute psychiatric unit within a hospital</td>
<td>Multiple changes to nursing practice, including rotating staff so they treated people with different severities of illness, assessing patients' needs on a daily basis, providing nursing staff with education (e.g. de-escalation workshops) and debriefing patients following seclusion</td>
<td>Comparing the June to December 2001 period with a similar period 1 year later, the number of seclusions decreased from 48 to 31</td>
<td>An intervention based on nurse care, patient care and nurse education seemed effective in reducing the number of seclusions</td>
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<td>Sullivan et al (2005)</td>
<td>Adult psychiatric service of an inner city hospital</td>
<td>Multiple interventions including new expectations for staff (these expectations were that patient and staff safety would be increased through reducing the use of seclusion and restraints; that staff would support the patients' engagement in treatment through the use of aggression management interventions that the patients have chosen; that staff would intervene prior to patients losing control; that staff would assist patients to believe that they have control over their behaviours, even when crises occur, and that, with staff support, they can make appropriate choices; that staff would use creative support, rather than control, through employing new methods of intervention such as bending the rules and the respectful use of humour; that staff would address the ways in which patients from different cultural backgrounds express and control anger; that staff would make a paradigm shift from one of staff fear and control to one of patient empowerment and collaborative relationships; and that staff promote the message to patients that 'we are in this together' and 'together we can get through this'); the implementation of a patient violence assessment tool (with sections on the relevant histories of patients and precipitants to violence; how patients tend to display aggression, agitation and violence, either physically or verbally; interventions that patients might find useful at times when they potentially could lose control); and staff training (8 h crisis intervention course, alternatives to restraint and seclusion course, cultural diversity course)</td>
<td>The number of confinement episodes (restraint and seclusion combined) per 1000 patient-days decreased with the implementation of the intervention in 2001. For the years 1998 to 2003, the numbers of confinement episodes per 1000 patient-days were 10.9, 9.9, 12.8, 3.3, 1.7, and 3.2 respectively</td>
<td>An intervention primarily based on placing new expectations on staff regarding how they should engage with aggressive patients seemed effective in reducing the use of seclusion</td>
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<td>Taxis (2002)</td>
<td>State psychiatric</td>
<td>Multiple interventions during a 42-month period: assault programme and other individualised care programmes (an assault programme was developed to provide structured, individualised attention to patients to support them to develop non-violent coping skills; other specialised programs were also run); staff education (training in the assessment of behavioural indicators of impending violence, collaboration and verbal de-escalation techniques, crisis intervention, diversional activities, ethical considerations in restraint and seclusion, one-on-one discussions, problem-solving exercises, skills for improved documentation, therapeutic interventions with patients who had personality disorders, use of medications with aggressive patients); patient education (training for patients in self-care and self-monitoring during upsetting events, including anger reduction and stress management strategies; structured debriefing sessions following periods of restraint or seclusion); environmental alterations (redesigning the 'quiet room' to make it more comfortable, to give patients a place that is conducive to self-control and self-monitoring), communication feedback loop (evaluating all incidences of restraint or seclusion over a 14-month period, analysing these data and feeding the information back to charge nurses; from this information targeted educational interventions on less restrictive strategies could be developed and implemented); administrative and programmatic changes (implementation of an audit tool that addressed the areas of justification for restraint or seclusion, assessment of patients, care during restraint or seclusion, care immediately following the episode, and documentation)</td>
<td>There was a 94% reduction in the number of restraints and seclusions between June and August 1996 and December 1999 and February 2000</td>
<td>Interventions based on education, changing the physical environment, and evaluation and feedback appear to be effective in reducing the numbers of restraints and seclusions</td>
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Interventions based on education, changing the physical environment, and evaluation and feedback appear to be effective in reducing the numbers of restraints and seclusions.
Interventions for reducing the use of seclusion in psychiatric facilities: Review of the literature
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