Interventions for reducing the use of seclusion in psychiatric facilities

Review of the literature

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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 (Morrall & 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 (Kalogjera *et al*, 1989; Mistral *et al*, 2002; Taxis, 2002; Donat, 2003; Donovan *et al*, 2003; Fisher, 2003; D'Orio *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

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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 inpatient 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 (Kalogjera *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

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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 (Kalogjera *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 (Kalogjera *et al*, 1989; Taxis, 2002; Fisher, 2003; D'Orio *et al*, 2004; Schreiner *et al*, 2004; Sullivan *et al*, 2004, 2005; 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

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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-therapy, 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

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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.

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