

The use of physical restraint in acute and sub-acute settings: A snapshot of the evidence

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Question

What is the current evidence around the physical restraint in acute and sub-acute settings?

Search methods

PubMed was used to search for relevant all articles. No limits were set regarding year or language however, study type was limited to the highest level of evidence (systematic review papers) were searched for this review. Details of search terms in Appendix 1.

Summary of findings

The use of physical restraints in health care institutions has been challenged for more than 2 decades by nurses and health professionals who considered the practice overused, unethical, and inappropriate in many cases (Lach et al., 2016). Physical restraints have not been shown to prevent the key problems for which they are used most often (i.e. falls or pulling out devices), and continue to be associated with negative outcomes for patients, including death (Lach et al., 2016). There is a general lack of clarity over the best-practice of physical restraint, and this is mainly due to the lack of data and poor study quality (Benbenbishty et al., 2010). It is also clear that practices vary across hospitals, settings and countries (Benbenbishty et al., 2010).

The evidence of reviews is piecemeal in regards to when, what, how and why restraints are used. However, to best illustrate the current literature summaries of the evidence have been grouped by clinical setting (i.e. critical care) or patient category (i.e. developmental disability). Links to national and international guidelines have also been provided at the end of the document.

Critical Care setting (Lach et al., 2016)

In the critical care setting, restraint use has declined and varies widely among hospitals, as do reporting measures. However, studies continue to document that it is a routine practice in the United States, as well as Europe, South Africa, and the Middle East other countries. Researchers have consistently found wide variability in restraint use both within hospitals and across hospitals.

Decision making

Patient safety is a significant concern for nurses and the dominant influence on nurses' decision making about restraint use. Prevention of falls is a primary reason for restraint use on medical–surgical units, whereas preventing removal of medical devices and confusion are primary reasons in critical care settings. Figure 1 refers to an algorithm that has been developed to assist in the decision-making of restraint-free care.

Interventions

Several reports of successful quality improvement initiatives with education or combined with other interventions have identified approaches to move toward restraint-free care. Below are tables that refer to interventions (Tables 1 & 2). Facilities must also address other patient care issues related to restraints, particularly falls, extubation, and delirium, as nurses often resort to restraints to address these problems because they do not perceive they have alternative options.

Figure 1. Decision algorithm for promoting restraint-free care (Lach et al., 2016). Note. PTSD = posttraumatic stress disorder; MD = medical doctor; APN = advanced practice nurse; PT = physical therapist; OT = occupational therapist.

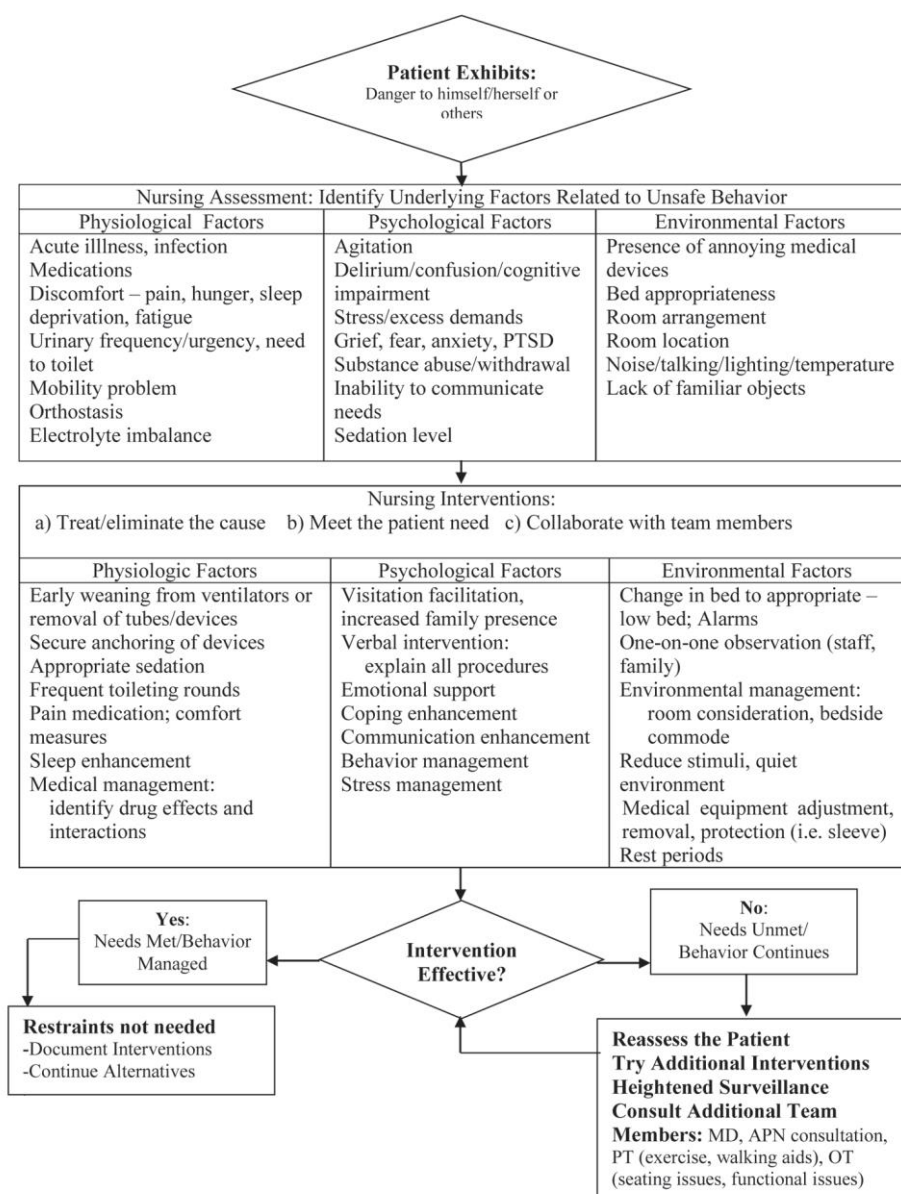


Table 1. Nursing interventions to reduce the need for restraints (Lach et al., 2016)

Approach	Intervention
Physical/Physiological	
Eliminate bothersome treatments or devices as soon as possible	<ul style="list-style-type: none"> • Facilitate weaning to decrease the duration of mechanical ventilation • Move to oral feedings or medications instead of intravenous (IV) and nasogastric routes
Implement measures to reduce treatment interference and disguise equipment	<ul style="list-style-type: none"> • Ensure appropriate, secure anchoring of tubes • Use long sleeve robes or gowns or IV skin sleeves to hide catheter sites • Guide the patient to feel tubes or equipment for familiarity • Overdress wounds and use abdominal binders to cover wound dressings • Keep IV solution bags and tubing out of the patient’s field of vision
Implement evidence-based fall prevention and injury prevention measures	<ul style="list-style-type: none"> • Tailor fall interventions to patient’s specific risks (e.g., assistive devices, lighting, no-slip shoes, bed alarm, hip protectors, sitters)
Provide appropriate pain management	<ul style="list-style-type: none"> • Offer pain medication regularly and in time for it to take effect prior to potentially painful procedures, such as bathing, ambulating, or other activities, as pain can contribute to

	agitation
Address elimination needs proactively	<ul style="list-style-type: none"> • Conduct frequent toileting rounds • Use equipment, such as bedside commode • Develop individualized voiding schedules
Psychological	
Maximize communication	<ul style="list-style-type: none"> • Explain devices, goals of care • Use active listening to elicit patient's feelings, concerns, and fears • Use translators, family as needed
Include family in care	<ul style="list-style-type: none"> • Provide familiarity • Ask to bring pictures or other familiar objects
Provide distractions and activities	<ul style="list-style-type: none"> • Television • Music per preference • Activities, exercise, puzzles • Squeeze ball, towels, or other for using hands
Address confusion, delirium, and agitation	<ul style="list-style-type: none"> • Reorient confused patient • Use techniques to promote relaxation (e.g., massage, therapeutic touch, music, warm drinks), provide rest periods • Verbally redirect target behaviour • Introduce self every time when entering patient's room • Provide reality links (e.g., radio, calendar, clock)
Environmental	
Remove hazards	<ul style="list-style-type: none"> • Remove clutter, items, spills, or equipment that could cause injury
Support appropriate sensory input	<ul style="list-style-type: none"> • Ensure patient has eyeglasses and hearing aids when possible so he/ she can interpret the environment • Provide adequate lighting
Provide increased surveillance as dictated by patient condition and risks	<ul style="list-style-type: none"> • Conduct frequent nursing rounds or checks • Place patients in an area where they can be observed frequently • Provide one-on-one companionship and constant observation (explore family, staff, sitters, friends, volunteers) • Consider delirium room ward with continuous observation
Reduce excessive or annoying environmental stimuli	<p>Monitor:</p> <ul style="list-style-type: none"> • Noise • Glare • Temperature • Lighting

Table 2. Healthcare facility approaches to restraint reduction (Lach et al., 2016)

Approach	Intervention
Identify a task force or quality improvement team or committee to increase buy-in of stakeholders	<ul style="list-style-type: none"> • Assess organizational supports and barriers • Assist with educational activities • Solicit input from staff on successful interventions • Engage staff in continuous quality improvement and practice redesign to reduce restraint use
Monitor the use of restraints	<ul style="list-style-type: none"> • Collect data by unit and facility • Collect data across days of the week and times of the day • Compare to national benchmarks • Provide feedback to units and staff
Provide staff education	<ul style="list-style-type: none"> • Inservices, training, simulations • Laminated card with suggested restraint alternatives and approaches • Promote sharing of successful interventions among staff • Interdisciplinary consultations
Provide adequate staffing	<ul style="list-style-type: none"> • Consider assignments (i.e., consistent assignment for patients with cognitive impairment) • Address patient needs for surveillance (i.e., consider delirium room ward with continuous observation)
Provide readily available equipment and supplies to support alternative interventions	<ul style="list-style-type: none"> • Diversion or distraction activities (e.g., magazines, puzzles, cards, squeeze balls, markers and paper) or equipment identified by staff • Low bed, reclining chair, bedside commode, and other furniture • Consider other equipment, such as cushions, bed/chair alarms, hip protectors, and skin sleeves, to support interventions

Consultations	<ul style="list-style-type: none"> • Resource nurses with expertise who can help in challenging situations (advanced practice nurses, clinical nurse leaders) • Interdisciplinary team (i.e., physician for medical consultation; pharmacist for medication issues; physical therapy for gait/balance issues; occupational therapist for seating issues) • Regular rounds to address patient care challenges
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Acute care setting (Evans et al., 2002; Evans et al., 2003)

Physical restraint of patients in acute care has been common practice. However, physically restraining is associated with injuries and there are many types of restraints used in this setting. In addition to this, it has been reported that cases of injury are under reported when physical restraint is applied. Below is a summary of the injuries, types and recommendations for the use of restraints in the acute care setting Table 3.

Table 3. Injury and restraint type

Injury type	Restraint type
Nerve injury	Vest restraints
Sudden death	Bedrails
Asphyxiation	Waist restraints
Death	Wrist restraints
Nosocomial infection	Other e.g. gerichairs', 'geritables', bed sheets, gauze, swabs, bandages
Falls	

Restraint minimisation programs

There has also been some focus in the literature on programs used in an attempt to minimise the use of restraints. Generally speaking, these strategies did reduce the need for restraint, encouraged staff to use nonrestraint measures, or contributed towards creating an environment that supported restraint reduction. The findings of a range of different types of study show that restraint minimization is most commonly achieved through the combination of staff education and a programme of multiple restraint-minimization activities.

The programs include:

- Reduce the use of bedrails to restrain through policy change and education
- Restraint education
- Pre-restraint planning outlining expectations and outcomes
- Abolition of restraints
- Alternative to restraint assessment
- Stereotyped patient protocols developed for specific clinical situations
- Learning from others via visits to restraint-free wards

Under-reporting

It has been suggested that there are ethical, humanitarian and financial imperatives to finding out what is going wrong, collate and analyse the information and devise strategies to prevent the problems (Runciman 1999). However, it appears that there has been only minimal sharing of information addressing restraint-related injuries in the literature. While investigations of records, such as those kept by coroners, have identified deaths linked to restraint devices, these have not been matched by primary reports in the health care literature. There is also scant information about nonfatal restraint related injuries. This suggests that restraint-related injury is under-reported.

Recommendations

Based on the evidence of physical restraints in acute care, the following recommendations were made:

1. As there are risks associated with the use of restraint:
 - Physical restraint should only be used as a last resort;
 - Physical restraint should only be used when potential benefits outweigh potential harm.
2. As prolonged use of restraint may increase risk:
 - The need for continued physical restraint should be assessed regularly.

3. As multiple restraint devices may increase risk:
 - Only the minimal level of physical restraint should be used to ensure a person's safety.
4. As some injuries are related to attempts to exit the device:
 - The physically restrained person should be continuously observed and isolation should be avoided.

In addition, it seems prudent to offer two further general recommendations:

- If physical restraint devices are used, then manufacturers' recommendations must be followed.
- Health care workers should be educated about the dangers of physical restraint, correct application of restraining devices and safe management of the restrained person.

Inpatient psychiatric (Scanlon, 2010)

Inpatient psychiatric is another setting that physical restraint is commonly used in. There have been a range of restraint reduction programs outlined in the literature and seven clear strategy types emerge and have been summarised below:

Policy change/leadership

Policy change involves the restriction or regulation of seclusion or restraint from a federal, state, authority or service level. Leadership involves people from senior positions (at all levels from frontline management, to hospital executive and senior government officials) demonstrating a commitment to and support for efforts to reduce (or eliminate) seclusion and restraint.

External review/debriefing

External review committees provide detailed analysis of seclusion or restraint events with the purpose of making recommendations to prevent future episodes. Such committees have proven to be successful in reducing events. Post-incident debriefing also allows for formal review and can involve staff or staff and consumers/families. These debriefing sessions focus predominantly on the situations leading to the use of seclusion or restraint and how these can be prevented in the future. The inclusion of consumers and families appears to be the most effective approach as this allows for collaborative actions to develop more effective crisis management strategies.

Data use

The collection and reporting of seclusion and restraint data is essential and has been a key element of many programmes. This strategy provides staff with an effective feedback loop, allows for benchmarking, promotes healthy 'competition' between units and highlights the organizational commitment to change (especially where data are widely reported, both within the service and to the broader community).

Training

Training strategies have focused on supporting skill development and attitudinal change. Formal training to increase de-escalation and crisis management skills is considered essential and additional in vivo support and modelling during crisis situations has proven beneficial. Training to promote attitudinal change is also essential as without substantial shifts in staff attitudes, efforts to reduce the use of seclusion and restraint are unlikely to be successful. Debunking myths surrounding the use of seclusion and restraint as 'interventions' to promote safety and compliance is of particular importance.

Consumer/family involvement

Consumer and family involvement seeks to empower consumers and families with a stronger voice and can take several forms. This can be direct involvement in the treatment planning and review process, collaborative development of crisis management strategies, or review of precursors to and outcomes of crisis situations.

Increase in staff ratio/crisis response teams

These strategies are based on the concept that providing more staffing resources assists in the management of crisis situations. One programme reported on increasing staff numbers as part of a broad-based reduction programme that saw substantial reductions in restraint. Other programmes have established 'crisis response teams' consisting of behavioural experts or staff from other units who provide additional assistance in managing crisis situations. Increased interaction between staff and consumers is generally associated with lower rates of restraint and the reduction of adverse events.

Programme elements/changes

A range of ward or unit level changes have also been implemented to support seclusion and restraint reduction efforts. Such changes seek to modify the therapeutic milieu of the ward or unit by: (i) reducing ambient distress levels within the ward or unit; or (ii) providing support to modify interaction style between consumers and staff. Such programme changes have frequently been based on formal behavioural or cognitive-behavioural approaches to care planning and interaction.

Other changes include: (i) implementation of early intervention strategies and least-restrictive crisis management approaches (almost all programmes); (ii) use of sensory approaches to care; (iii) modifying the environment; (iv) increasing involvement in day programmes; (v) changing the ward routine; and (vi) implementing token economies.

Developmental disabilities (Gaskin et al., 2013)

In patients with developmental disabilities, patients who have been agitated and aggressive and self-harm have been the focus of physical restraint. It is possible to reduce the use of restraints on people with developmental disabilities, particularly with people who are restrained to prevent self-harm. There is sufficient evidence to suggest that the provision of support using less restrictive practices is an achievable outcome. Researchers have demonstrated that the use of restraint can be reduced for people with developmental disabilities who display agitation and aggression, as well as those who self-harm. However, there is a general lack of wide-scale trials, and most did not gain ethics approval.

Agitated and aggressive patients

Initiatives that have been used to reduce the use of restraint with persons who were agitated and aggressive included:

- A medication plan to enable night-time sleeping, which prevented daytime drowsiness
- Performing an antecedent assessment and modifying antecedent conditions
- Establishing behaviour-specific criteria for the application of restraint and using antecedent-control approaches
- Building rapport, discussing transition processes, collaborating on behavioural support plans, and changing prescribed medications.

Patients who self-harm

Initiatives that were used to reduce the use of restraint with persons who self-harmed without restraints included:

- Allowing a person to choose which staff member she would work with during the afternoon shift
- Fixed time release from restraint rather than behaviour contingent release
- Behavioural assessment and treatment (alternative sensory reinforcement, sensory extinction treatment)
- A progressive programme that involved relaxation training, increasing time out of restraint, generalising the reduction in restraint use to other settings, and training in using hands for other activities
- The systematic fading of restraints.

Organisation-wide initiatives

Organisation-wide initiatives used to reduce the use of restraint included:

- Conducting a training programme on reducing aggression
- Providing staff with behavioural training and mindfulness training
- Implementing organisational behaviour management, which involved using behavioural plans, monitoring and reporting relevant data, and establishing organisational contingencies for mechanical restraint.

Guidelines

Local

[Ambulance Queensland Clinical Practice Guidelines](#)

[Department of Health Victoria](#)

[Ministry of Health New South Wales](#)

[Nurse and Midwives Board of Western Australia](#)

[South Australian Nurses and Midwives Guideline](#)

[Tasmanian Guideline](#)

United States

[Agency for Healthcare Research and Quality](#)

United Kingdom

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Appendix 1: Search terms

Table 4. Search terms

Topic	Search terms
Physical restraint	Physical Restraints OR Restraints, Physical OR Physical Restraint OR Immobilization, Physical OR Physical Immobilization
Acute and subacute setting	Acute care OR Care, acute OR Care, Subacute OR Cares, Subacute OR Subacute Cares OR Sub-Acute Care OR Care, Sub-Acute OR Cares, Sub-Acute OR Sub Acute Care OR Sub-Acute Cares
Filtered for reviews only	