

Physical Restraint Use

Indexing Metadata/Description

- › **Procedure:**Physical Restraint Use
- › **Area(s) of specialty:**Acute Care, Geriatric Rehabilitation, Neurological Rehabilitation
- › **Description/use:**
 - Physical restraint is defined as the “direct application of physical force to a patient, with or without the patient’s permission, to restrict his or her freedom of movement.”^(#) The Center for Medicare and Medicaid Services (CMS) mentions limiting the movement of specific parts (arms, legs, body or head).^(#) Other definitions specifically mention that the restraint also can limit the patient’s access to his or her own body^(#)
 - Restraint can be provided by a human, can be mechanical, or both^(#), or can be the use of a binding material (e.g., tight sheet)^(#)
 - Examples of physical restraints are provided in *Guidelines for Physical Restraint Use*, below
 - Physical restraints are differentiated from chemical restraints, which limit movement due the effect of a drug, and seclusion, which is when a patient is put involuntarily into a room alone and prevented from leaving^(#)
 - Physical restraints should only be used in situations in which the practice can be clinically justified or when patient behavior threatens physical safety of the patient, staff, or others^(#)
 - Physical restraints used improperly can cause accidental injury or death^(#) and may be considered an infringement on patients’ rights^(#)
 - Physical restraints should never be used for coercion, punishment, discipline or staff convenience^(#)
 - Physical restraints should be used as a last resort, only when less restrictive methods have been found to be ineffective^(#)
 - The American Nurses Association has published nurse guidelines to provide suggestions for less restrictive strategies when patients are prone to initiate removal of medical therapy devices (e.g., catheter, ventilator)
 - Possible consequences of physical restraint use in older adults include lower cognitive and ADL performance, higher walking dependence, falls, pressure ulcers, and urinary and fecal incontinence^(#)
 - Accreditation of hospitals in the United States requires that the hospital have a plan in place to reduce the use of physical restraints^(#)
 - This *Clinical Review* will examine the attitudes toward and current use of physical restraints and discuss interventions to reduce the use of physical restraints. Physical therapists can play an important role in the intervention choice and/or can treat the complications from physical restraint use
- › **ICD-9 codes:**
 - V49.87 Physical restraint status
- › **ICD-10 codes:**
 - Z78.1 Physical restraint status

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› **G-codes:**

• **Mobility G-code Set:**

- G8978, Mobility: walking & moving around functional limitation, current status, at therapy episode outset and at reporting intervals
- G8979, Mobility: walking & moving around functional limitation; projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
- G8980, Mobility: walking & moving around functional limitation, discharge status, at discharge from therapy or to end reporting

• **Changing & Maintaining Body Position G-code Set:**

- G8981, Changing & maintaining body position functional limitation, current status, at therapy episode outset and at reporting intervals
- G8982, Changing & maintaining body position functional limitation, projected goal status, at therapy episode outset , at reporting intervals, and at discharge or to end reporting
- G8983, Changing & maintaining body position functional limitation, discharge status, at discharge from therapy or to end reporting

• **Carrying, Moving & Handling Objects G-code Set:**

- G8984, Carrying, moving & handling objects functional limitation, current status, at therapy episode outset and at reporting intervals
- G8985, Carrying, moving & handling objects functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
- G8986, Carrying, moving & handling objects functional limitation, discharge status, at discharge from therapy or to end reporting

• **Self Care G-code Set:**

- G8987, Self-care functional limitation, current status, at therapy episode outset and at reporting intervals
- G8988, Self-care functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
- G8989, Self-care functional limitation, discharge status, at discharge from therapy or to end reporting

• **Other PT/OT Primary G-code Set:**

- G8990, Other physical or occupational primary functional limitation, current status, at therapy episode outset and at reporting intervals
- G8991, Other physical or occupational primary functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
- G8992, Other physical or occupational primary functional limitation, discharge status, at discharge from therapy or to end reporting

• **Other PT/OT Subsequent G-code Set:**

- G8993, Other physical or occupational subsequent functional limitation, current status, at therapy episode outset and at reporting intervals
- G8994, Other physical or occupational subsequent functional limitation, projected goal status, at therapy episode outset, at reporting intervals, and at discharge or to end reporting
- G8995, Other physical or occupational subsequent functional limitation, discharge status, at discharge from therapy or to end reporting

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G-code Modifier	Impairment Limitation Restriction
CH	0 percent impaired, limited or restricted
CI	At least 1 percent but less than 20 percent impaired, limited or restricted
CJ	At least 20 percent but less than 40 percent impaired, limited or restricted
CK	At least 40 percent but less than 60 percent impaired, limited or restricted
CL	At least 60 percent but less than 80 percent impaired, limited or restricted

CM	At least 80 percent but less than 100 percent impaired, limited or restricted
CN	100 percent impaired, limited or restricted
Source: http://www.cms.gov	

› **Reimbursement:**No specific issues or information regarding reimbursement have been identified

Indications for Physical Restraint Use

› **Indications for the use of physical restraints:** ^(#)

- As an adjunct to planned care, component of approved protocol, part of standardized practice
- Agitation, confusion, aggressive behavior
 - In a study conducted in Taiwan, researchers found that mental status, family visits, walking ability, being restrained, and getting to and off the toilet were five independent factors associated with agitated behaviors inpatients with dementia^(#)
- Staff worker fear that patient will dislodge and remove therapeutic medical devices
- Staff worker fear that an immobilized or unsafe patient will attempt to get out of bed
- Reasons given by medical staff for physical restraint use^(#)
 - As an adjunct to planned care, component of approved protocol, part of standardized practice
 - In response to dangerous behaviors – violent, aggressive behaviors that place the patient at risk for harming himself/herself or others
 - As a prevention of patient disruption of medical devices, lines and therapy
 - These disruptions can lead to infection and trauma due to repeated application/insertion of device
 - Patients emerging from comas or suffering from acute delirium are often at risk to receive upper-extremity restraints due to random, repetitive movement that can often lead to trauma (e.g., hitting bedrails) or the removal of lines^(#)
 - In response to confused patient who might do something dangerous
 - To prevent falls

Guidelines for Use of Physical Restraints

› Hospitals are required to follow the following standards for accreditation with respect to physical restraint use in patients with non-behavioral health issues:^(#)

- Limit use of physical restraint
 - Have in place written policies and procedures on the use on physical restraints
 - Use of physical restraints must be initiated by individual order or approved written protocol
 - Patients in physical restraints must be monitored
 - Hospitals must use performance improvement processes to identify ways to lower use of physical restraints
- › The following standards are required for accreditation with respect to physical restraint use in patients with behavioral issues:
- Hospital must define its approach to the use of physical restraints
 - Written policies and procedures guide the use of physical restraints
 - Staffing levels and assignments are designed to minimize use and maximize safety in the use of physical restraints
 - Staff are competent in minimizing use of physical restraints and know how to maximize safety when they are used
 - Hospital obtains information about patient that minimizes use of physical restraints
 - Use of physical restraints is reserved for emergencies
 - A licensed independent practitioner orders the use of physical restraints
 - A licensed independent practitioner evaluates and sees the patient
 - Orders for physical restraint use are time-limited
 - The American Nurses Association Nursing Standard of Practice (Protocol 23.1: Physical Restraints and Side Rails in Acute and Critical Care Settings) states that orders for physical restraint need to be renewed every 24 hours for non-violent behavior and every 4 hours for violent or self-destructive behavior^(#)
 - Patients who are in physical restraints are reevaluated
 - Clinical leaders are informed of extended use or multiple episodes of physical restraint use

- Patients using physical restraints are assessed and assisted in meeting criteria for the discontinuation of restraint use
 - The physical restraint should be discontinued at the earliest possible time^(#)
- The patient is monitored by the hospital during patient restraint use
- The hospital discontinues physical restraint use when the patient meets criteria for their discontinuation
- Patients are debriefed after physical restraint use
- Hospitals must use performance improvement processes to identify ways to lower use of physical restraints
- › Examples of physical restraints are:^(#)
 - Wrist, ankle or waist restraints
 - Geri-chairs, which may restrict patient movement with use of seat belts, ties, incline of chair
 - Wheelchair seatbelts if considered inaccessible or unusable by patient. Wheelchair trays if used to limit patient movement
 - Tucking in a sheet so tightly that a patient cannot move
 - Keeping all rails up so that the patient cannot get out of bed
 - Using an enclosure bed
 - In correctional systems - handcuffs, hog-ties if used inappropriately
 - The term physical restraint also does not apply to forensic restrictions and restrictions imposed by correction and law enforcement authorities for security purposes^(#)
 - In certain situations: mitts, full side rails, reclining chairs (if tilt limits ability to move)
- › Items not considered physical restraints include devices used to immobilize a patient temporarily during a diagnostic procedure, orthopedic supportive devices, devices for treatment purposes (e.g., mitts for constraint-induced movement therapy (CIMT), helmets or age-appropriate equipment (e.g., strollers, cribs)^(#)
- › Numerous complications have been associated with physical restraint use, including the following:^(#)
 - Death
 - Physical or psychological injury
 - Falls
 - Researchers who conducted a case-control study in the United States examining fall-risk factors concluded that patients who were placed in restraints were 2–4.7 times more likely to fall, with the critical period being right after the patient is placed in a physical restraint^(#)
 - 252 “cases” who fell during a hospital stay were compared with 250 “controls” matched to “cases” in terms of hospital length of stay. No information was given for the reason for use of restraints
 - Secondary to immobility: deconditioning, venous thromboembolism, development of ulcers, pneumonia

Contraindications/Precautions to Physical Restraint Use

- › As use of physical restraints is often initiated due to patient-initiated device removal, the following assessment parameters should be considered:^(#)
 - If there has been an abrupt change in perception, attention, or level of consciousness,
 - assess for life-threatening impairments
 - consider respiratory and neurological signs and symptoms, fever and sepsis, hypoglycemia, alcohol or substance withdrawal, or fluid or electrolyte imbalance
 - notify physician immediately, or send to ER
 - Consider baseline or premorbid cognitive function, history of dementia or depression, possible drug-drug interactions, and current laboratory values
 - Consider fall risk – intrinsic, extrinsic, and situational factors
- › Physical restraints should never be used for coercion, punishment, discipline or staff convenience^(#)
- › Use of physical restraints^(#)
 - in supine, increases risk of aspiration
 - in prone, increases risk of suffocation
 - in chest vest, increases risk of suffocation if patient slips through bedrails
 - can be source of psychological trauma that may resurface later
- › See specific **Contraindications/precautions to examination** and **Contraindications/precautions** under Assessment/Plan of Care

Examination

Contraindications/precautions to examination

> Contraindications/precautions to examination

- Examination should be stopped if patient is showing signs of increased agitation, infection, difficulty breathing, or complains of chest pain
- Physical restraints should be ordered by a licensed independent practitioner and renewed on a regular basis^(#)
- If patient shows signs of agitation or confusion, causes should be considered and addressed
- Pain caused by physical restraints should be respected and addressed
- Based on status of patient, a caregiver may need to be consulted to obtain a full medical history

> History

• History of present illness/injury

–Mechanism of injury or etiology of illness:

- For what reason has the patient been referred to physical therapy? Is the patient currently in a physical restraint or has he or she been referred for the complications of long-term restraint use? What kind of physical restraint was/is being used?
- What is/was the stated reason for the use of physical restraint with this patient?
 - Use of physical restraints should be based on current behavior. A history of violence or a previous fall alone is not enough to support the use of a restraint^(#)
- Consult chart to determine how long the restraint has been in place and who ordered the use of physical restraint. Is it on continuously or is there a wearing schedule?
- Has the patient been trying to get out of bed on his or her own when it is medically not appropriate or safety is an issue?
- Has the client threatened to hurt himself, staff, others?

–Course of treatment

- **Medical management:** Consult the diagnosis associated with the use of physical restraints for information regarding medical and surgical management. According to policies and guidelines, a licensed, independent practitioner needs to prescribe the physical restraint and opportunities to remove physical restraints must be continuously considered^(#)
- **Medications for current illness/injury:** Depending on the diagnoses, patient may be on medications for pain, agitation, recovering from anesthesia, or on other medications. Also may be on antipsychotic drugs or other medications used in psychiatric conditions
 - Side effects and possible drug-drug interactions should be considered
- **Diagnostic tests completed:** Usual tests will depend on diagnoses
- **Home remedies/alternative therapies:** Document any use of home remedies (e.g., ice or heating pack) or alternative therapies (e.g., acupuncture) and whether they help or not
 - Individualized music therapy has been suggested as an alternative therapy for decreasing physical restraint use because of its calming effect^(#)
- **Previous therapy:** Document whether patient has had occupational or physical therapy for this or other conditions and what specific treatments were helpful or not helpful
- Aggravating/easing factors:** (and length of time each item is performed before the symptoms come on or are eased) – document for pain and other symptoms (agitation, aggressiveness, confusion, etc.)
- Body chart:** Use body chart to document location and nature of symptoms
- Nature of symptoms:** Document nature of symptoms (constant vs. intermittent, sharp, dull, aching, burning, numbness, tingling). Note if any specific symptoms of pain are associated with the application and use of physical restraints (e.g., shoulder pain due to upper extremity restraint use while movement not under patient's volitional control)
- Rating of symptoms:** Use a visual analog scale or 0-10 scale to assess symptoms at their best, worst, and at the moment (specifically address if pain is present now and how much)
- Pattern of symptoms:** Document changes in symptoms throughout the day and night, if any (AM, mid-day, PM, night), especially if increase in evening (e.g., sun downing); also document changes in symptoms due to weather or other external variables
- Sleep disturbance:** Document number of wakings/night. Does the use of physical restraints cause patient to wake up when trying to change sleeping position? Does the patient have any other sleep problems, especially ones that might contribute to confusion and agitation?

- Other symptoms:** Document other symptoms patient may be experiencing that could exacerbate the condition and/or symptoms that could be indicative of a need to refer to physician (e.g., dizziness, dyspnea in certain positions, thrombosis-related symptoms, arrhythmias)
- Respiratory status:** Note any use of supplemental oxygen, mechanical ventilator. Note if hypoxia is mentioned as a possible cause of confusion and agitation
- Barriers to learning:**
 - Are there any barriers to learning? Yes/No
 - If Yes, describe
- **Medical history**
 - Past medical history**
 - **Previous history of same/similar diagnosis:** Has patient ever been required to wear physical restraints in the past? Have chemical restraints been used in the past to control patient’s behaviors?
 - **Comorbid diagnoses:** Ask patient/caregiver about other problems including diabetes, cancer, heart disease, complications of pregnancy, psychiatric disorders, orthopedic disorders, etc.
 - **Medications previously prescribed:** Obtain a comprehensive list of medications prescribed and/or being taken (including over-the-counter drugs)
 - **Other symptoms:** Ask patient about other symptoms he/she may be experiencing
 - Possible consequences of physical restraint use in older adults are urinary and fecal incontinence^(#)
- **Social/occupational history:**
 - Patient's goals:** Document what the patient/caregiver hopes to accomplish with therapy and in general. Explore reasons why patient/caregiver believes physical restraints were/are being used
 - Vocation/avocation and associated repetitive behaviors, if any:** (e.g., does the patient participate in recreational or competitive sports?) Are there activities that the patient is unable to do now due to deconditioning? Is the patient employed? What kind of roles does the patient have within the family?
 - Functional limitations/assistance with ADLs/adaptive equipment:** Document if applicable. Are the current functional limitations/assistance with ADLs/adaptive equipment due to current or past use of physical restraints?
 - Living environment:** stairs, number of floors in home, with whom does patient live, caregivers, etc.; side rails on bed? Identify if there are barriers to independence in the home; any modifications necessary?
- **Relevant tests and measures:** While tests and measures are listed in alphabetical order, sequencing should be appropriate to patient medical condition, functional status, and setting
 - **Anthropometric characteristics:** Document weight, height and BMI. Note any anthropometric measurements (e.g., wrist, ankle, waist circumference) that might affect fit of physical restraint being used or considered. Does patient require special size?
 - **Arousal, attention, cognition** (including memory, problem-solving):
 - Note if alert and oriented to person, place, time
 - The Mini-Mental State Examination (MMSE) can be used to screen for cognitive impairment
 - Ask patient if he or she understands movement restrictions
 - One possible consequence of physical restraint use in older adults is lower cognitive performance^(#)
 - If appropriate, both the Confusion Assessment Method for the ICU (CAM-ICU) and the Intensive Care Delirium Screening Checklist (ICDSC) are the most valid and reliable methods for delirium monitoring^(#)
 - See *Clinical Review...ICU delirium*. Topic ID Number T908172 for more information on ICU delirium
 - See *Clinical Review...Dementia, Delirium, and Depression in Older Adults*. Topic ID Number T908762 for more information
 - **Assistive and adaptive devices:** Patients might use assistive devices such as a wheelchair or walker depending on strength, balance, and coordination status. Assess appropriateness of device and safety in using device
 - **Balance:** Note static and dynamic balance. Berg Balance Scale (BBS) can be utilized
 - **Behavior status and safety:** ^(#)
 - Note any monitoring of agitation, confusion, aggressiveness by staff
 - Neurobehavioral Rating Scale–Revised (NRS-R) – 29-item instrument designed to measure numerous cognitive and behavioral constructs (i.e., memory, attention, communication, mood, agitation)
 - Agitated Behavior Scale (ABS) – measures type and degree of agitation
 - **Cardiorespiratory function and endurance:** Assess vital signs at rest and with activity

- Assess cough for effectiveness and assess sputum if productive
- Tests of endurance may include Borg Rating of Perceived Exertion (RPE) Scale and timed measurement of distance walked, if possible (e.g., six minute walk test – 6MWT)
- Orthostatic hypotension is common in critically ill patients. Early physical therapy examinations for this type of patient need to include blood pressure responses to postural changes^(#)
 - See *Clinical Review... Orthostatic Hypotension*. Topic ID Number: T908170for more information on orthostatic hypotension
- **Circulation:** Check circulation in all extremities by palpating peripheral pulses, especially if physical restraint is in use
- **Cranial/peripheral nerve integrity:** Test if appropriate to diagnosis
- **Functional mobility** (including transfers, etc.): FIM can be utilized as appropriate;measures functional mobility and ADL function. Commonly used in inpatient rehabilitation settings
- **Gait/locomotion:**
 - If patient is ambulatory, assess gait, looking at speed, symmetry, weight-bearing (as indicated by physician). Note any tendency to wander in confused or agitated patient. If appropriate, assess wheelchair mobility
 - 10-meter walk test (10MWT) can be used to measure gait speed. The Dynamic Gait Index (DGI) can be used to assess safety with ambulation
 - Possible consequences of physical restraint use in older adults are higher walking dependence and ongoing issues with falls^(#)
- **Joint integrity and mobility:**Assess for contractures or hypomobility due to immobility (no pulling involved) or hypermobility from pulling on restraints
- **Motor function** (motor control/tone/learning): Assess tone and ability of patient to move limbs on verbal command
- **Muscle strength:**Assess limb muscle strength with manual muscle testing (MMT) as indicated. Patient may have decreased strength due to sarcopenia, prolonged immobility or from injury
- **Observation/inspection/palpation** (including skin assessment):
 - Note any skin breakdown, redness, warmth in area where physical restraints are/were applied^(#) or in general, due to pressure areas
 - Palpate for any tender areas around use of restraints
- **Perception** (e.g., visual field, spatial relations): Assess as applicable to diagnosis
- **Posture:** Note posture in sitting and standing
- **Range of motion:** Note manual dexterity and range of motion when restraints are not in use to evaluate if ROM allows patient access to lines, devices. If ROM limited, patient may not require restraints as cannot access due to ROM limits. Assess range of motion on all joints
- **Self-care/activities of daily living** (objective testing): Test as able in the acute care setting
 - A possible consequence of physical restraint use in older adults is lower ADL performance^(#)
- **Sensory testing:** Note any visual deficits that may increase the patient’s risk of falls

Assessment/Plan of Care

› **Contraindications/precautions**

- **Patients with this diagnosis are often at risk for falls and physical restraints may be in place for fall prevention; follow facility protocols for fall prevention and post fall-preventioninstructions at bedside, if inpatient. Ensure that patient and family/caregivers are aware of the potential for falls and educated about fall-prevention strategies. Discharge criteria should include independence with fall-prevention strategies if possible**
- › Clinicians should follow the guidelines of their clinic/hospital and what is ordered by the patient’s physician. The summary below is meant to serve as a guide, not to replace orders from a physician or a clinic’s specific protocols
- › **Diagnosis/need for treatment:** Physical therapists can provide information on alternative forms of restraint that are less restrictive.^(#) Physical therapists can also address the complications from the use of restraints, including skin breakdown, higher walking dependence, and lower cognitive and ADL performance^(#)
- › **Prognosis:**
 - Use of physical restraints in the rehabilitation of older adults alters the patient’s ability to participate fully in a rehabilitation program while jeopardizing his or her physical and emotional well-being, putting future placement at risk^(#)
 - Physical restraints can be a precipitating factor for delirium. See *Clinical Review* on Dementia, Delirium and Depression cited above

› **Referral to other disciplines:**

- A multidisciplinary approach is commonly used in the care of patients in the ICU and in long-term care facilities. Disciplines include nursing, medicine, PT, OT, respiratory therapy, psychology and social services^(#)
- Nursing
- Back to MD if showing increased signs of agitation
- Occupational therapist
- Nutritionist
- Pain specialist
- Psychiatrist

› **Other considerations:**

- Knowledge and attitudes of healthcare staff can be a risk factor for physical restraint use
 - Authors of a 2014 systematic review concluded that, despite the lack of evidence to support the use of physical restraints and the evidence on the adverse effects of restraint use, nurses in geriatric care use physical restraints when in doubt^(#)
 - Based on 20 quantitative surveys, 10 qualitative surveys and one mixed-method study
 - Authors of a 2011 thematic literature review concluded that the main reasons nurses used physical restraints with the geriatric population was due to “patient safety” and “nurses’ workload”^(#)
 - The authors stressed that it was important for nurses to understand the nursing culture that perpetuates the use of physical restraints
 - Authors of a 2012 systematic review of qualitative studies of nurses’ decision-making in cases of physical restraint concluded that context and nurse-related factors can hinder nurses from making ethical decisions on the use of physical restraints^(#)
 - In a 2012 systematic review, authors found that observed patient behavior and previous clinical experience were found to determine staff decisions about physical restraints and seclusion in adult psychiatric populations^(#)
 - Use of physical restraints should be based on current behavior of patient^(#)
- Authors of a 2013 systematic review looking at the characteristics which could lead to physical restraint found the following characteristics in nursing home residents who were physically restrained:^(#)
 - Low ADL scores
 - Severe cognitive impairment
 - Serious mobility impairments
 - Previous fall and/or fracture
 - Repeated verbal and physical agitation
 - As all included studies reported on individuals who were restrained already, it is difficult to know if these characteristics were decisive factors for implementing restraints or consequences of physical restraints

› **Treatment summary:**

- The entire healthcare team can provide input into the decision whether or not physical restraints should be used^(#)
- With their expertise in patient mobility, physical therapists (PTs) can provide important insights into the process of choosing appropriate physical restraints that optimize safety and prevent the negative effects of immobility^(#)
 - Prior to choosing physical restraint, PTs can identify any pre-existing ailments that would increase the likelihood of pain and/or injury when utilizing the physical restraint and consider safe alternatives^(#)
- Goal should be the least restrictive type of restraint possible^(#)
 - Examples^(#)
 - Limiting upper-extremity restraints
 - Snug-fitting diapers, abdominal binders can re-route lines in use and cover disconnected lines in patients with limited elbow, wrist and hand range of motion who are at risk for line removal
 - Padded mittens to reduce trauma to wrists and hands and to reduce grasp without restraining entire upper extremity
 - Limiting waist restraints
 - Instead of rear-closing seatbelts, use front-closing seatbelt with wedge that raises knees above hips and padded, removable lap trays
 - Limit unsafe transfers in early stages of rehabilitation by prioritizing safe, independent, wheelchair-level transfers
 - Consider bracing or splinting joints if joint protection is the only factor preventing safe transfer

- Behavior-management training for staff who care for combative or aggressive patients
- Supervision and observation of patients capable of safe mobility but continuing to present with agitation or restlessness
- Formal and informal interdisciplinary communication
- Access to bed and/or chair sensors may not reduce the use of physical restraints nor improve clinical outcomes of older adults with perceived fall risk^(#)
 - Based on a randomized controlled trial in Hong Kong of 90 patients in two geriatric wards specializing in stroke rehabilitation
 - Nurses in the intervention group were given access to bed-chair pressure sensors, which indicated when a patient moved from either surface
- Healthcare practitioners can make better decisions regarding choice of restraint when they receive education and training using interventions
- Research on physical restraint reduction in acute rehabilitation setting
 - In a prospective, continuous quality improvement study conducted in the United States, researchers found that a multicomponent restraint reduction program, focused on administrative support, education, consultation, and feedback, reduced restraint use in two acute rehabilitation units (stroke and brain injury) and also reduced fall rates, when compared to previous year's rates. Components of the program were the following:^(#)
 - Administrative support: gaining active support of director of nursing, nurse managers, and therapists prior to implementation
 - Education: Both informal and formal information sessions for all levels of nursing staff on hospital policy, demonstration of alternatives, trial basis of alternatives with demonstration of proper use, information on falls
 - Consultation: Clinical nurse specialists went on rounds with focus on patients who were restrained and identifying earliest time for removal of restraints
 - Feedback: Nurses' adherence was monitored and aggregate data was followed by the quality management department
- Research on physical restraint reduction in geriatric settings
 - Authors of a 2012 Cochrane systematic review found that there was insufficient evidence supporting the effectiveness of educational interventions that target nursing staff for preventing or reducing the use of physical restraints in geriatric long-term care^(#)
 - Overall methodological quality was low and results were inconsistent
 - The authors state that it remains unclear which components should be included in educational programs
 - A 6-hour training course attended by a "change agent" assigned to each facility resulted in a decrease in restraint use without a significant increase in falls, behavioral symptoms, or medication in nursing home residents^(#)
 - Based on a cluster randomized controlled trial of 333 nursing residents at 45 nursing homes in Germany
 - The training course included the following:
 - Awareness: one "change agent" being voluntarily restrained
 - Education: epidemiology, effects of restraint use, legal aspects, adapting and modifying environmental and organizational factors, fall prevention
 - Technical aids: encouragement of the use of sensor mats, hip protectors, anti-slip socks
 - Problem-solving tools: case reports, including multiple parties in decision-making (family caregivers, staff)
 - Intervention over 3-month period with support available through telephone
 - Main outcome was complete cessation of physical restraint use on 3 consecutive days, 3 months after the start of the intervention. Secondary outcomes were partial reduction in restraint use, percentage of fallers, number of psychoactive drugs, and occurrence of behavioral symptoms
 - Authors of another German randomized controlled trial concluded that a guideline- and theory-based multicomponent intervention reduced physical restraint use when compared to standard information in nursing homes^(#)
 - Based on 18 nursing home clusters in the intervention group (n=2,283) and 18 nursing home clusters in the control group (n=2,166)
 - Intervention involved group sessions for all nursing staff, additional training for key nurses, and supportive material for nurses, residents, relatives, and legal guardians. In the control group, head nurses received written information about use of physical restraints and methods to avoid using physical restraints
 - Outcome measure was direct unannounced observation by blinded investigator, 3 occasions during 1 day
 - Physical restraint use was similar at beginning (30-31%) but decreased significantly more to 22.6% in intervention group at 6 months as compared to 29.1% in control group

- There were no statistically significant differences between the groups with respect to falls, fall-related fractures, and psychotropic medication prescriptions
- Research on physical restraint reduction in psychiatric settings
 - Authors of a 2011 systematic review found that there was a lack of high-quality and effective intervention studies examining how to reduce the use of physical restraints on inpatient psychiatric patients^(#)
 - An intervention designed to reduce seclusion and restraint use in a state psychiatric hospital was found to be effective^(#)
 - Based on a study in the United States covering 89,783 patient-days over a 3.5-year period

Problem	Goal	Intervention	Expected Progression	Home Program
Inappropriate physical restraint use	Appropriate use of physical restraint as last resort or no use of physical restraint	Education – participate in team decision-making regarding the use of physical restraint. See <i>Treatment Summary</i> above	Progress through graded levels of restriction, especially as strength, ROM, endurance improve	NA
Restrictive physical restraint use	If restriction required, least restrictive restraint utilized	Prescription, application of devices and equipment – taking into account patient’s pre-existing conditions, current examination, medical needs, and patient rights <i>See Treatment Summary</i> above	Frequent monitoring to determine appropriateness of current physical restraint with focus on least restrictive option	
At risk for skin breakdown	Minimize or prevent skin breakdown	Education – information on skin breakdown Prescription, application of devices and equipment : as appropriate	Educate family/ caregiver if need for continuing physical restraint	Provide written instructions if physical restraint use continues at home
At risk for decreased ROM, strength, ADLs, function, gait, endurance	Functional ROM, strength, ADL, gait, endurance	Therapeutic Exercise – prescription based on examination and length of immobility	Progress as tolerated	Develop home program based on goals and needs of patient

Desired Outcomes/Outcome Measures

- › Decreased use of physical restraint/least restrictive use
- › Decreased skin breakdown due to physical restraint use
 - Inspection

- › Improved ROM, strength, ADLs, gait
 - Goniometry, MMT, FIM, DGI, 10MWT

Maintenance or Prevention

- › Interacting with patients in a calm, positive, respectful and collaborative way and intervening early when conflict arises can diminish the need for physical restraints^(#)
- › The use of restraints and the efforts to reduce their use is a dilemma internationally^(#)
- › The use of physical restraints should always be considered as a last resort due to its known effects on patient dignity, human rights, autonomy, and well-being. It is felt that use of restraints can seriously undermine the values of nursing and patient care^(#)

Patient Education

- › See American Nurse Today recommendations for physical restraint use at <https://www.americannursetoday.com/use-restraints/>
- › From McGill University, “Patient Safety and Physical Restraint – what you need to know” http://www.muhealthpatienteducation.ca/DATA/GUIDE/349_en~v~patient-safety-and-physical-restraint.pdf
- › From California Pacific Medical Center, “Understanding Restraint Use” <http://www.cpmc.org/learning/documents/phyrestraint-ws.html>

Coding Matrix

References are rated using the following codes, listed in order of strength:

M Published meta-analysis	RV Published review of the literature	PP Policies, procedures, protocols
SR Published systematic or integrative literature review	RU Published research utilization report	X Practice exemplars, stories, opinions
RCT Published research (randomized controlled trial)	QI Published quality improvement report	GI General or background information/texts/reports
R Published research (not randomized controlled trial)	L Legislation	U Unpublished research, reviews, poster presentations or other such materials
C Case histories, case studies	PGR Published government report	CP Conference proceedings, abstracts, presentation
G Published guidelines	PPR Published funded report	

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