Clinical Investigation

# REASONS FOR RESTRAINT DISCONTINUATION: A QUALITATIVE SURVEY OF NURSES IN A TERTIARY CARE TEACHING HOSPITAL

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**BACKGROUND: Restraints are associated with injury, falls, delirium, deconditioning and strangulation. Reasons for the application of restraints are well reported. However, less data on reasons for restraint discontinuation are reported.**

**METHODS: A questionnaire was sent to 320 nurses; 127 responded. Nurses were asked if they had applied restraints, if they had been involved in the decision to remove restraints and to comment on the factors associated with the discontinuation of restraints.**

**RESULTS: Most nurses have applied restraints and have been involved in the decision to stop them. Factors associated with the withdrawal of restraints include improvement in patient condition, availability of family, availability of support staff and sitters, discontinuation of invasive devices, family objection, and the use of chemical restraints.**

**CONCLUSIONS: Nurses are central in removing restraints. Involving families, and timely removal of lines, may facilitate timely restraint discontinuation. There is still a reliance on chemical restraints as a substitute for physical restraints.**

*Key words:* Restraints, agitation, cognitive behavior, elderly, nursing care

Restraints are commonly applied in acute care hospitals and nursing homes. Restraints have been associated with falls,[1-3] immobility, deconditioning, and urinary incontinence.[4] In addition, restraints may contribute to cognitive impairment,[5] precipitate delirium,[6] and worsen agitation.[7] Finally, restraints may cause death.[8-10]

There has been considerable study of the reasons for restraint application. MacPherson et al[11] surveyed both nurses and physicians about the reasons for restraint application. They found that the main reasons for restraint application were to prevent falls and to protect medical devices.[11] Tinetti et al[12] found that the major reasons for restraining residents of nursing homes were agitated behaviour and unsteadiness.

There have been attempts made to minimize restraint use, which have demonstrated benefits.[1] These efforts have generally been aimed at reducing the new application of restraints. Fewer efforts have been aimed at reducing the amount of time that a patient spends restrained. In the rare situations where restraints cannot be avoided, efforts at promptly removing restraints are important. This may minimize the time spent in restraints and the complications associated with restraint use.

Little data are available regarding the reasons for the discontinuation of restraints. Schnelle et al[13] found that nurses' perceptions of patient aggressiveness and unpleasantness predicted a failure to remove restraints. Few other studies have been reported. As part of an administrative program to investigate restraint use, and to minimise restraint use at the Health Sciences Centre, we conducted a qualitative survey of nursing staff. The objective of this survey was to investigate the reasons for restraint discontinuation from a nursing perspective.

## METHODS

The Health Sciences Centre is a large tertiary care hospital in Winnipeg, Manitoba. It provides primary care to adults and children. In addition, it serves as the major referral centre for Manitoba and for parts of northern Ontario. The Least Restraints Resource team (now the Patient Behavioural Management Committee) conducted a survey of nurses in the Health Sciences Centre. This was conducted as an administrative measure to investigate the reasons for discontinuation of restraints at the Health Sciences Centre, and to investigate possible measures to ensure timely removal of restraints. The initial intent was not research. However, as the results have general applicability, we have elected to publish the findings.

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An open-ended questionnaire was sent to a random sample of 320 nurses working on general medical, surgical, adult and children's intensive care, and emergency wards at the Health Sciences Centre (Figure 1). A total of 127 responses were received (response-rate of 40%). The response-rate was higher among nurses working in medical and surgical units. Responses were anonymous, although some nurses elected to sign their names.

All data from the survey were analyzed separately by both authors (PStJ and LN). Categories were created from the responses: patient-related reasons, social reasons, treatment-related reasons, health-systems-related reasons, and interpersonal reasons. Responses were grouped into these categories. Themes emerging within each category were recorded and analyzed. The percentage of nurses citing a reason within each theme was determined.

## RESULTS

Of the 127 respondents, 121 stated that they had applied restraints, and 106 had initiated restraint discontinuation. Table 1 shows the categories and themes from the responses. Examples of responses within each category and theme are also shown. The percent of respondents citing each of these reasons is shown in Figure 2.

Improvement in the patient's cognition or behaviour was the most commonly cited reason for stopping restraints. Related to this, a large number of respondents reported that they initiated restraint discontinuation when the patient was no longer a threat to staff or other patients. Adverse events or important contra-indications to restraints were another commonly cited reason for stopping restraints. Reasons such as injury, pain, discomfort, and low platelets were all cited as reasons for stopping restraints. Some nurses stated that they had initiated restraint discontinuation, as the restraints increased agitation. Finally, restraints were stopped in some instances where the patient became extremely unstable, such as a cardiac arrest.

Social factors were also very important in the decision to stop restraints. In particular, the availability of friend and/or family was important. Many nurses said that when family were present, agitation lessened, and the patient could be observed without being restrained. Numerous nurses reported that family objected to the use of restraints, and asked that they be discontinued. Also, some nurses felt that restraints may make the family uncomfortable,

Discontinuing Physical Restraints

The Least Restraint Resource Team at Health Sciences Centre is interested in learning more about the reasoning process nurses use when discontinuing physical restraints. Through our recent 6-week audit, we learned about many of the factors (ie. pulling at lines, ambulation contraindicated, cognitive changes) which nurses took into account when instituting some type of physical restraint on a patient.

However, we also learned that we have little knowledge of factors that nurses take into account when deciding to discontinue physical restraints. We are asking your help by completing this questionnaire on what factors you would consider when discontinuing physical restraints on a patient?

Unit _____ Years of Practice as an RN _____

Have you ever cared for a patient in a physical restraint?
(jacket, lap belt, wrist restraint, etc.)
Yes _____ No _____

Did you ever initiate discontinuing physical restraints?
Yes _____ No _____

Thinking about that situation, what made you decide to discontinue the use of restraints? (This could include patient or family factors, clinical indicators, personal reasons). Please list as many as you can remember.

_____
_____
_____
_____
_____
_____
_____

**Figure 1. Questionnaire used in nursing survey of reasons for discontinuation of physical restraints at the Health Sciences Centre.**

and therefore removed them. Nursing staff on all wards reported that the availability of family and friends facilitated prompt discontinuation of restraints.

The removal of invasive devices was also a common reason for restraint discontinuation. Many nurses stated that they often stopped restraints when the intravenous line, the endotracheal tube, the urinary catheter, or the central line was discontinued. Invasive devices tend to be uncomfortable, and cognitively impaired people became agitated and pulled at them. With the discontinuation of the lines, the agitation lessened, and the restraints could be stopped. In many instances, particularly in intensive care settings, restraints were required in order to ensure that important lines were not pulled out. Nurses working in surgical and intensive care settings were particularly likely to report this as a reason for stopping restraints, compared to nurses working in medical or rehabilitation settings. Another treatment-related reason for restraint discontinuation was the substitution of chemical restraints for physical restraints. Some nurses reported that when the patient was adequately sedated, paralysed, or "haldolized", restraints could be stopped. This was a particularly common response among intensive care and surgical nurses. In intensive care settings, restraints may be required

**Table 1. Categories of Reasons for Restraint Stopping**
(Nursing Responses were grouped into categories and examples of these categories are given)

**PATIENT FACTORS**

**Improvement:** Improvement in the patient's cognitive status or behaviour to the point that restraints are not required
- Patient no longer agitated or confused
- Patient's mental status improved for the past week (e.g. from being confused, to alert and oriented)

**Drugs Wore Off:** alcohol or medications wore off
- Discontinued restraints in a man who was in ETOH withdrawal and initially had been in 4-point leather restraints)
- ETOH, drugs have worn off, patient now cooperative

**Mobility Safe:** Ambulation is safe, and fall risk is small
- Physical function has improved (ie. can transfer better)
- Patient being able to walk by self

**Safety:** Patient poses no threat to self or others
- Potential for injury to self or others diminished
- Safety is no longer an issue for the patient or staff members. Patient no longer posing threat to safety of self and others

**Worsened Behaviour:** Restraints stopped because they worsened behaviour
- Patient's agitation increased when in restraints per nurses observation and documentation. Patient's agitation increased with being held down
- Physical restraints made patient more agitated

**Adverse Event/Significant Contraindication:** Restraints were stopped as there was an adverse event from the restraints, or because there was a significant potential contra-indication
- Patient's condition prevents safe use of restraint because of low platelets
- Patient had a tendency to wiggle, and restraint is harmful because strangulation could occur

**Patient Unstable:** Patient was unstable, and did not require restraints.
- Patient became less oriented and comatose

**SOCIAL FACTORS**

**Family/Friends Available:** Restraints were stopped as family or friends had a calming influence, or could observe a patient
- Family member available to be present with patient
- When family is present, then they can hold patient's hands

**Family Objections**
- Family requests that restraint be taken off while they are visiting
- The family is strongly against use of restraints

**TREATMENT-RELATED REASONS FOR RESTRAINT DISCONTIUNATION**

**Chemical Restraint:** Restraints were stopped, as the patient was chemically restrained or sedated
- When the chemical restraints (Haldol, Ativan) have taken effect
- Patient adequately sedated ("Haldolized")

**Invasive Monitoring:** Restraints stopped as invasive and uncomfortable lines were removed
- Patient was no longer in danger of pulling out lines, endotracheal tube, catheters, etc., as these pieces of equipment were discontinued
- Restraints removed when any lines or tubes that were in jeopardy of being pulled out were discontinued. Often, when tubes were removed, the patient's agitation diminished as tube causing discomfort was gone
- Restraints removed because nurse believed patient was not a threat for pulling his invasive lines. Patient then pulled his nasogastric tube and small bowel feeding tube and extubated himself while nurse was on break.

**SYSTEM-RELATED**

**Transfer to a Different Setting:** Restraints were stopped when a patient was transferred to a different ward
- New patient came from Emergency Room with restraints, but was alert and appropriate; therefore they were removed

**Sitter/Observer:** Restraints were stopped, as there was an attendant who could stay with the patient
- We do not restrain patients 99% of the time. We have used sitters instead for the past year
- The increased availability of obtaining a "sitter" has helped considerably in my decisions to unrestrain a patient

**INTERPERSONAL FACTORS**

**Gut Feeling, Trust:** Restraints were stopped, because the patient was trusted by the nurse, or because of subjective feeling of the nurse
- I was never really comfortable with the idea of tying up someone's hands… to begin with
- I hate them. I am also very hesitant to even use restraints… Restraints are cruel tactics to the elderly and I DO NOT advocate their use
- Disregard for patient dignity
- Gut feeling…I *dislike* physical restraints, but realize that they are necessary at times

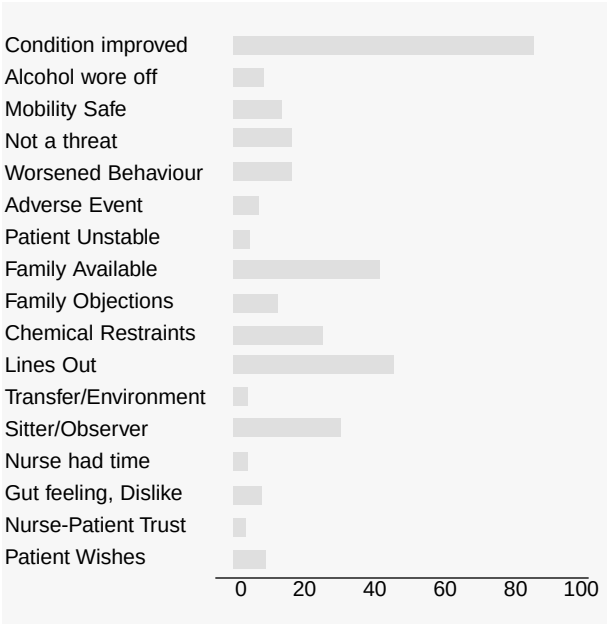


**Figure 2. Reason for stopping restraints.**

to keep lines secure, but, with sedation, there is less need for restraints. However, in many other settings, chemical restraints were used as a substitute for physical restraints. Chemical sedation in these settings also carries significant risks, and may not always be appropriate.

Reasons related to the health-care delivery were also important: many nurses stated that they were able to discontinue restraints when a sitter was available to stay with the patient. Sitters (constant attendants) are health-care workers hired by the hospital to observe patients. They do not provide care. Sitters could watch the patient and also could calm some patients. Nurses working on medical wards cited the importance of sitters much more frequently than nurses working on surgical units.

The transfer of patients to different environments was also cited as a reason for stopping restraints. Several nurses in the emergency department stated that once the patient was transferred to a quieter unit, the restraints were no longer needed.

Other reasons for stopping restraints were personal and inter-personal reasons. While relatively few nurses cited personal discomfort about using restraints as a reason for stopping restraints, these responses were strongly worded. Several nurses stated that they felt guilty whenever they applied restraints, and several more stated that they hated using restraints.

## LIMITATIONS OF THE STUDY

This study has several limitations. First, it is a small study, involving only 127 nurses. The response-rate was relatively low. However, the response-rate was acceptable in order to draw some conclusions without major bias. Second, the data were gathered for administrative purposes, not for research purposes. The main focus of the study was not to provide generalizable knowledge, but rather to provide knowledge specific to the Health Sciences Centre. Thus, the generalizability of these findings is not clear. This is particularly true for smaller hospitals with fewer critically ill patients. Third, the questionnaire sent to nurses was a follow-up to previous surveys of nurses investigating reasons for restraint application. The findings of this previous survey were stated in the introduction to this survey. This may have biased some of the responses. In particular, it may have influenced responses towards citing the removal of lines. Finally, there may have been bias in the creation of themes and categories. In order to minimize this possible bias, data were analyzed by two reviewers.

## DISCUSSION AND CONCLUSION

The majority of nurses have been involved both in the decision to apply restraints and in the decision to stop restraints. Numerous factors facilitated the removal of restraints. First, improvement in the condition of the patient was associated with restraint removal. If improvement is recognized early, restraints may be removed in a timely manner. Frequent monitoring of restrained individuals is critical in reducing restraint-related complications. This ongoing monitoring of patient condition may include assessments of the need for restraints. Restraint-reduction policies may involve frequent reassessment of the indications for restraint use.

The involvement of families and friends was also associated with restraint removal. Families and friends may help to lessen the agitation of some patients. Indeed, the involvement of friends and families is an important part of the management of delirium. Families could be asked to stay with patients who might otherwise require restraints. This may allow for a reduction in the use of restraints. In addition, it may help to improve a patient's quality of life.

The removal of invasive devices was associated

with restraint removal. Invasive devices may worsen the behaviour of patients with cognitive disorders. A complication of tube feeding is increased agitation, which could lead to restraint use.[14] Removing invasive devices (feeding tubes, IV lines, etc.) in a timely manner may reduce the need for restraints. Efforts at reducing restraints should include focussing on the actual need for indwelling catheters, intravenous lines, and other invasive devices.

Unfortunately, chemical restraints are often substituted for physical restraints. This is especially true in emergency, intensive care and surgical units. In rare situations, reliance on chemical restraints may be appropriate. In intensive care units, sedation is often necessary in order to improve the comfort of intubated patients. However, in many situations, the substitution of chemical restraints for physical restraints may not be appropriate. Chemical restraints have also been associated with adverse events, such as falls. Medication use should generally be aimed at the control of symptoms rather than at sedating or immobilizing a patient.

Complications of restraints can be minimized by avoiding restraint application as well as by minimizing the time spent in restraints. Restraints are occasionally required in order to ensure the safety of other patients and staff. When restraints are required, it is important to remove them as soon as possible. Further research is needed in order to determine how to stop restraints once they are applied.

## REFERENCES


1. Capezuti E, Strumpf NE, Evans LK et al. The relationship between physical restraint removal and falls and injuries among nursing home residents. J Gerontol Assoc Biol Sci Med Sci 1998; 53: M47-52.
2. Rubenstein LZ, Josephson KR, Robbins AS. Falls in the nursing home. Ann Intern Med 1994; 121: 442-51.
3. Tinetti ME, Liu WL, Ginter SF. Mechanical restraint use and fall-related injuries among residents of skilled nursing facilities. Ann Intern Med 1992; 116: 369-74.
4. Brandeis GH, Baumann MM, Hossain M et al. The prevalence of potentially remediable urinary incontinence in frail older people: a study using the Minimum Data Set. J Am Geriatr Soc 1997; 45: 179-84.
5. Burton LC, German PS, Rovner BW et al. Physical restraint use and cognitive decline among nursing home residents. J Am Geriatr Soc 1992; 40: 811-6.
6. Inouye SK, Charpentier PA. Precipitating factors for delirium in hospitalized elderly persons. Predictive model and interrelationship with baseline vulnerability. JAMA 1996; 275: 852-7.
7. Werner P, Cohen MJ, Braun J et al. Physical restraints and agitation in nursing home residents. J Am Geriatr Soc 1984; 37: 1122-6.
8. Miles SH, Irvine P. Deaths caused by physical restraints. Gerontologist 1992; 32: 762-6.
9. Miles SH. Restraints and sudden death. J Am Geriatr Soc 1993; 41: 1013.
10. Pedal I, Mattern R, Reibold R et al. [Sudden fatalities in mechanically restrained patients] Plotzliche Todesfalle mechanisch fixierter Patienten. Z Gerontol Geriatr 1996; 29: 180-4.
11. Macpherson DS, Lofgren RP, Granieri R et al. Deciding to restrain medical patients. J Am Geriatr Soc 1990; 38: 516-20.
12. Tinetti ME, Liu WL, Marottoli RA et al. Mechanical restraint use among residents of skilled nursing facilities. Prevalence, patterns, and predictors. JAMA 1991; 265: 468-71.
13. Schnelle JF, Simmons SF, Ory MG. Risk factors that predict staff failure to release nursing home residents from restraints. Gerontologist 1992; 32: 767-70.
14. Galindo CD. Tube feeding: complications among the elderly. J Gerontol Nurs 1993; 19: 17-22.


## Dr. Gordon Winocur Appointed Scientific Director, Alzheimer Society of Canada

**Dr. Gordon Winocur**

Steve Rudin, Executive Director of the Alzheimer Society of Canada is pleased to announce the appointment of Dr. Gordon Winocur to the position of Scientific Director. Dr. Winocur will be responsible for enhancing the ongoing development of the Society's dynamic research program and providing the Society with strong scientific leadership.

Dr. Winocur is a senior scientist at the Rotman Research Institute, Baycrest Centre for Geriatric Care as well as a Professor of Psychology at Trent University and Professor of Psychology and Psychiatry at the University of Toronto. Dr. Winocur's research focuses on changes in cognitive function associated with normal aging, neurodegenerative diseases (such as Alzheimer Disease) and focal brain damage. He has published extensively and lectured both in Canada and internationally.

The Alzheimer Society of Canada, established in 1987, is a not-for-profit health organization dedicated to helping those affected by Alzheimer disease. The Society funds research into finding the cause and cure of the disease, and into improved methods of caregiving. The Society also provides support and educational programs for people with Alzheimer disease and their caregivers, and promotes public education.