A Longitudinal Evaluation of Restraint Reduction within a Multi-site, Multi-model Canadian Continuing Care Organization*

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RÉSUMÉ

Bien que la documentation américaine sur la réduction de l'usage des moyens de contention soit relativement importante, les travaux de recherche publiés sur cette même question sont moins nombreux sur les pensionnaires d'un établissement canadien de soins de longue durée. Les statistiques des plus importants établissements de ce type financés et exploités au Canada ont mis au jour des attitudes révélatrices envers les moyens mécaniques de contention. Durant les quatre années d'une étude comportant une campagne visant à réduire l'utilisation de moyens mécaniques de contention, la prévalence organisationnelle est passée de 24,68 % à 16,01 %. Il existait une variabilité substantielle en matière de contention parmi les 11 centres de l'organisation (échelle de 0 à 39,86 % des pensionnaires faisant l'objet de contention) et tous sauf un ont pu réduire la contention mécanique. Des facilitateurs particuliers à la réalisation et au maintien de la réduction de la contention sont indiqués, notamment les établissements de petite taille, la fourniture de soins spécialisés (par ex., maladie d'Alzheimer), et un « champion » résidant sur place. Des obstacles particuliers, comme la grande taille d'un établissement et un champion résidant à l'extérieur font aussi l'objet de discussion.

ABSTRACT

While American literature on sustaining restraint reduction is relatively robust, there is a lack of research published on the same issue in Canadian continuing care (CC) settings. Statistics from Canada's largest publicly funded and operated CC organization have revealed telling patterns in mechanical restraint use. Over a 4-year study period during a campaign to reduce mechanical restraint use, the organizational prevalence dropped from 24.68 per cent to 16.01 per cent. There was substantial variability in restraint prevalence among the organization's 11 centres (range: 0–39.86% of residents restrained) and all but 1 was able to achieve mechanical restraint reduction. Specific facilitators to achieving and sustaining restraint reduction are identified, including small facility size, provision of specialized care (e.g., Alzheimer's disease), and an on-site *champion*. Specific barriers, such as large facility size and an off-site champion are also discussed.

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The detrimental effects of using mechanical restraints on elderly people are well documented (Evans & Strumpf, 1989) and diverse. Their use is associated with increased agitation (Werner, Cohen-Mansfield,

Braun, & Marx, 1989), increased confusion and cognitive decline (McHutchinson & Morse, 1989), apathy (Mion, Frengley, Jakovcic, & Marino, 1989), higher rates of infection and pressure sores (MacPherson, Lofgren, Granieri, & Myllenbeck, 1990), skin lacerations (Dunbar, Neufeld, Libow, Cohen, & Foley, 1997), and even death (Miles & Irvine, 1992). A substantial body of literature (e.g., Ejaz, Folmar, Kaufmann, Rose, & Goldman, 1994; Levine, Marchello, & Totolos, 1995; Sundel, Garrett, & Horn, 1994) has focused on the decline in restraint use in the United States since the Nursing Home Reform Act (as part of the Omnibus Budget Reconciliation Act [OBRA-87]) came into effect, but very few published studies have examined this same issue within Canadian continuing care (CC) facilities (Mackey & Rossy, 2002). A systematic review of articles on restraint reduction by Canadian authors (Godkin & Onyskiw, 1999) highlights this disparity: Only 1 Canadian study was included among the 15 studies that met the review's selection criteria. However, complex CC facilities in Ontario have yielded some promising results in least-restraint practice: The median of the physical-restraints quality indicator dropped from 26.9 per cent to 19.6 per cent over 4 fiscal years (Hospital Report Research Collaborative, 2005) and Powell, Mitchell-Pedersen, Fingerote, and Edmund (1989) reported early success in one Winnipeg hospital.

Previous research indicates that restraint use varies greatly between facilities. Studying regional patterns in restraint use in 13 Toronto chronic care facilities, Hirdes, Mitchell, Ljunggren, & Schroll (1999) found considerable variation between facilities, ranging from approximately 10 per cent to as high as 70 per cent. In a study of restraint use in 10 American states, Phillips et al. (1996) found restraint levels varied from 21.85 per cent to 50.1 per cent. Interestingly, Burton, Greman, Rovner, Brant, and Clark (1992) reported that, within 1 year, restraint levels varied from 46 per cent to 79 per cent in eight nursing homes operated by a single, private, for-profit corporate entity. These findings suggest that facility factors may be partially responsible for the variation; indeed, others (i.e., Castle & Fogel, 1998; Sullivan-Marx, Strumpf, Evans, Baugarten, & Maslin, 1999) have demonstrated that large facility size—particular staffing mixes and high occupancy rates—tend to be associated with higher levels of restraint use. The current study presented an opportunity to analyse the longitudinal process of restraint reduction in a Canadian context and to provide more information on facility factors that may influence restraint use.

CapitalCare, located in Edmonton, Alberta, operates 11 CC centres and is Canada's largest publicly funded and operated CC organization. In 1990, the organization implemented a *least-restraint* policy to ensure that the possible over-use of mechanical restraints was avoided and to maintain the quality of life and personal safety of its residents. The policy defines mechanical restraints as ''an appliance placed on or near the body, that cannot be removed by the person, and that restricts freedom of movement or behaviour'' (CapitalCare, 1999). Most importantly, the policy stresses that all possible alternatives should be attempted before using a restraint, and, in order to assist staff, it includes a list of questions that should be answered before applying a restraint (e.g., Is this resident hungry, thirsty or constipated?) and a list of alternatives to restraint (e.g., using bed alarms or placing a mattress on the floor if the patient is at risk for falling, re-evaluating medications, employing assistive devices currently in use, and cognitive stimulation).

Restraint-Reduction Initiative

CapitalCare's Dementia Care and Restraint Reduction Committee (DCRRC) devised a restraint-reduction program in order to implement the least-restraint policy. Education was the foundation for this program; others have shown that facilities in which education is offered have a greater decrease in restraint use (Evans et al., 1997) and that education about restraints may increase employees' readiness for change (Mahoney, 1995). A 3-hour education session on restraint reduction covered the following topics:

- what constitutes a mechanical restraint
- the least-restraint philosophy
- the potential negative effects and dangers of mechanical restraints
- the benefits of not using mechanical restraints (Strumpf, Robinson, Wagner, & Evans, 1998)
- the importance of educating families and involving family members in removing restraints (Ejaz, Rose, & Jones, 1996)
- the use of individualized care as the most important alternative to restraint

The training session was mandatory for all care staff (including nurses, managers, dietitians, therapists, administrators, and housekeepers) at CapitalCare's six traditional-style CC centres. Staff at the Alzheimer care and care housing centres (all of which had been restraint-free for many years) were strongly encouraged to attend. The session content was then incorporated into the organization's mandatory 2-day training on dementia care, which is held several times a year for new and existing staff. In 2003, restraint-reduction educational posters were displayed in the six traditional-style facilities to promote restraint reduction further.

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Restraint-Reduction Champions

Members of the DCRRC also acted as *champions* of restraint reduction for their centres. The importance of champions for organizational change has been well documented (McDonnell, Wilson, & Goodacre, 2006; Rycroft-Malone et al., 2002; Locock, Dopson, Chambers, & Gabbay, 2001). These champions are role models for new staff, providing support to care staff, families, and residents as restraints are removed and offering ongoing education about the benefits of a least-restraint environment. Along with care managers and administrators in each centre, champions set the pace of restraint reduction. Specific processes vary by centre and champion but most include routine chart audits (i.e., completing the process and documentation outlined in the policy before adding a restraint), restraint rounds, brainstorming sessions to seek solutions to unusual situations, incorporating restraint discussions as part of regular meetings (i.e., with unit clerks, Licensed Practical Nurses [LPNs], Registered Nurses [RNs], and care managers,) and holding pre-admission and annual resident reviews. Importantly, they publicize the successes of restraint reduction. They also facilitate policy and practice changes that have the potential to reduce restraints. For example, the organization stopped using certain types of chairs that were considered restraints because it was discovered that wheelchairs accommodated residents more comfortably. In addition, bowel routines were reviewed for residents who required the use of a commode or restraints to remain upright. Most of these residents lacked the upper body strength to remain upright and were uncomfortable, distressed and/or in pain when restrained on a commode. Their decreased cognitive capacity meant that they were unable to alert a nurse. Therefore, in order to maximize residents' comfort, these residents were no longer toileted and incontinence products were used. The restraint-reduction champions and a corporate best practice committee began monitoring new technologies and the literature on the use of alternatives to restraints, such as low-rise beds, bed and chair alarms, tumble mats, and so on.

Method

This study examined the efforts to reduce mechanical restraint use in 11 facilities operated by CapitalCare in the Edmonton area—6 traditional-style CC centres (ranging in size from 149 to 296 beds); 3 small, purpose-built Alzheimer care centres (36 beds each); and 2 life-lease care housing facilities (42 and 78 suites, which provide a level of care similar to that in traditional centres).

Restraint data from four annual data collections (February 2003 [time 3], February 2004 [time 4], February 2005 [time 5], and February 2006 [time 6]), involving approximately 1,200 cases per year, were analysed to examine the trends in restraint use within the organization (see Table 1). These data collections were selected for the current study because restraint tracking and data collection methods were revised in 2003, making comparisons to restraint data from previous years (2001 and 2002) problematic.

Data were collected from all residents living within all of CapitalCare's facilities (with the exception of sub-acute and transition units, which often measure lengths of stay in days rather than months or years), using a restraint-tracking form developed by the organization with assistance of the researchers.[1] The form contains 14 categories to indicate the use of a device with the potential to restrain a resident, as well as information about the resident's cognitive status and degree of mobility in bed. Facility care and administrative staff completed the restraint-tracking form on a regular basis in the course of their duties. An up-to-date copy of the form was submitted annually on a specific date to CapitalCare's research unit (originally in hard copy but, by time 6, all electronically) as part of the ongoing evaluation of restraint-reduction efforts. In order to ensure reliability, care managers and administrators checked the data before they were submitted for analysis and again after a preliminary analysis was completed. Laurin, Voyer, Verreault, & Durand (2004) found that staff reports of restraint use yield valid and reliable data. In addition, staff often worked in small groups, using the restraint-tracking form to strategize the removal of specific restraints on specific residents. Therefore, it was clinically important for the forms to be accurate.

Electronic searches of health records databases were completed on or near the date of each restraint data collection to identify all residents with at least 1 of a possible 26 International Classification of Disease-9 (ICD-9) diagnostic codes indicative of cognitive impairment. This list was developed by CapitalCare clinicians and contains such diagnoses as dementia (294.8), cognitive impairment (298.9), Alzheimer's disease (294.1), Pick's disease (331.1), and so on.

For data analysis, CapitalCare's least-restraint policy was operationalized such that residents were considered restrained if they had (a) any of the devices listed on the restraint-tracking form, and (b) cognitive impairment (i.e., one of the ICD-9 diagnostic codes mentioned above). For analysis, the assumption was

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Table 1: Restraint variability by centre and time

	Time 3 (Feb 2003)		Time 4 (Feb 2004)		Time 5 (Feb 2005)		Time 6 (Feb 2006)	
	N	% Restrained	N	% Restrained	N	% Restrained	N	% Restrained
Traditional	**1,032**	**30.33%**	**1,029**	**25.17%**	**1,000**	**26.80%**	**929**	**19.65%**
Centre A	145	27.59%	144	21.53%	104	12.50%	52	9.62%
Centre B	261	37.16%	286	31.47%	281	39.86%	280	18.71%
Centre C	136	3.68%	119	4.20%	131	3.05%	118	1.69%
Centre D	273	37.73%	269	34.20%	270	38.52%	271	35.93%
Centre E	74	33.78%	72	23.61%	73	21.92%	72	13.89%
Centre F	143	30.07%	139	17.27%	141	13.48%	136	11.76%
Alzheimer Care	**111**	**0.00%**	**107**	**0.00%**	**105**	**0.00%**	**105**	**0.00%**
Centre G	37	0.00%	36	0.00%	36	0.00%	35	0.00%
Centre H	36	0.00%	35	0.00%	34	0.00%	34	0.00%
Centre J	38	0.00%	36	0.00%	35	0.00%	36	0.00%
Care housing	**125**	**0.00%**	**121**	**0.83%**	**120**	**3.33%**	**118**	**1.69%**
Centre K	80	0.00%	78	1	75	4	78	0
Centre L	45	0.00%	43	0	45	0	40	2
CapitalCare Total	**1,268**	**24.68%**	**1,257**	**20.68%**	**1,225**	**22.20%**	**1,149**	**16.01%**
CapitalCare% Residents with a Dementia Diagnosis	**861**	67.90%	**898**	71.44%	**867**	70.80%	**786**	70.20%
CapitalCare% Restrained Residents	**313**	24.68%	**260**	20.68%	**271**	22.20%	**184**	16.0%
CapitalCare% Full Bed Rails	**270**	21.29%	**282**	22.35%	**221**	18.04%	**171**	14.88%

made that residents with cognitive impairments were unable to provide the informed consent necessary for accepting the use of a restraint (Department of Health and Human Services, 2000) and lacked the *executive function* required to ask for a device to be removed. Therefore, residents with a dementia diagnosis as well as a restraining device were considered restrained, regardless of whether the device was intended to protect or assist (e.g., maintain posture) the resident. However, such an assumption, made for analytical purposes, must be treated with caution; it is not meant to suggest that a diagnosis of cognitive impairment automatically means an individual is unable to provide informed consent for treatments or interventions.

If a resident was indicated as *not mobile in bed* on the restraint-tracking form, the following devices were not considered restraints: a specialty chair with belt, a specialty chair without belt/recliner, or a full lap tray. This was because these devices give otherwise bedridden residents the opportunity to leave their beds, potentially improving their quality of life (Department of Health and Human Services, 2000). However, bed rails were considered restraints for these individuals.

Although there is growing consensus that bed rails act as mechanical restraints and that their use should be minimized, in the current study, the prevalence of bed rails is reported separately from the prevalence of mechanical restraints (Brush & Capezuti, 2001; Capezuti, Maislin, Strumpf, & Evans, 2002; Dimant, 2003; Hammond & Levine, 1999; Marcy-Edwards, 2005).

Results

Figure 1 illustrates several trends in mechanical restraint use among the different types of facilities included in the study. The organizational prevalence of restrained residents decreased from 24.68 per cent to 16.01 per cent from time 3 to time 6. The majority of the organization's restrained residents lived in the six traditional-style CC centres, which had a prevalence of restrained residents ranging between 30.33 per cent (time 3) and 19.65 per cent (time 6) over the 4 years of the study. The three Alzheimer care centres were restraint-free throughout the study period, whereas the two care housing facilities showed very low mechanical restraint use, with slight variations over time. Figure 2 reveals an interesting pattern: When facilities were grouped on the basis of size rather than care style, large facilities (over 150 beds, $n = 4$) had much higher restraint use than small (under 150 beds, $n = 7$) over time. The mean restraint prevalence for large centres ranged from 33.14 per cent at time 3 to 19.01 per cent at time 6, whereas the mean for small centres ranged from 5.35 per cent at time 3 to 2.94 per cent at time 6.

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Figure 1: Proportion of CC residents restrained by type of facility

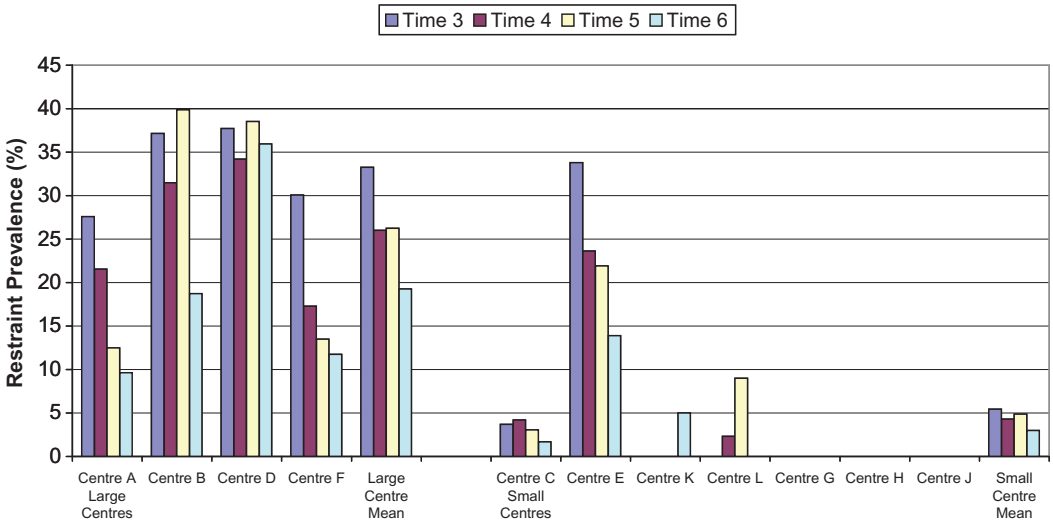

Figure 2: Prevalence of restrained residents by CC centre size

Figure 2 also provides a detailed breakdown of the prevalence of restrained residents within the six traditional style CC centres (i.e., A-F) over time. Centre C maintained a very low rate of restraint use relative to the other traditional care centres in the study, with prevalence rates ranging between 1.69 per cent and 4.20 per cent of residents restrained. Centres A, E, and F gradually reduced the prevalence of residents with mechanical restraints between time 3 and time 6. In contrast, the organization's two largest traditional care facilities, centres B and D, maintained a relatively high level of mechanical restraint use. Centre D's high restraint prevalence (37.73% at time 3 and 35.93% at time 6) was maintained over time, while centre B's prevalence was stable between time 3 (37.16%) and time 5 (39.86%) but dropped dramatically at time 6 (18.71%).

In addition, the data were analysed by examining the prevalence of restrained residents based on their length of stay (Figure 3). *New* residents were those only present at the current data collection point, whereas *familiar* residents were those present at the current and two previous data collection points (i.e., at time 6, a familiar resident would have been present at time 4, time 5, and time 6). Therefore, comparison was only possible between residents who, at time 5 and 6, were considered new or familiar. There was a drop in the percentage of both

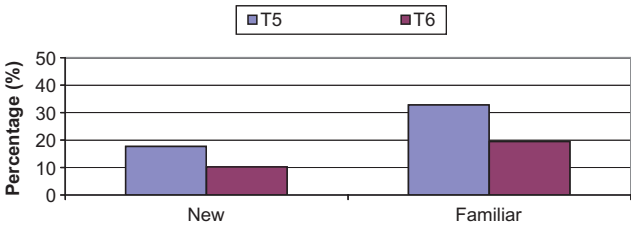

Figure 3: Prevalence rates of new and familiar residents restrained

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new and familiar residents restrained over the study period: 17.70 per cent of new residents were restrained at time 5 compared with 10.20 per cent at time 6, and 32.80 per cent of familiar residents were restrained at time 5 compared to only 19.40 per cent at time 6.

The prevalence of full bed rails was also examined over the 4 years of the study. At time 3, 21.29 per cent of residents had two full bed rails in use (or one bed rail was in use, with the bed pushed against the wall). An increase was noted at time 4 (22.35%), but the prevalence rate had dropped to 14.88 per cent by time 6. There were also variations in bed rail use depending on the type of facility; specifically, traditional care centres tended to be higher (ranging from 26.12% at time 3 to 16.50% at time 6), care housing facilities varied slightly between 0 and 4.96 per cent over the study's duration, and the three Alzheimer care centres did not report any residents with full bed rails in use over the 4-year study period.

Because of the high restraint prevalence in the traditional care centres, the mean number of restraints being used on residents was also examined. Residents in three centres (A, C, and E) were restrained with a mean of approximately 1 restraint over time. Two centres (F & B) showed a gradual reduction in the mean number of restraints used with residents from time 3 (1.42 and 1.84, respectively) to time 6 (1.00 and 1.29, respectively), whereas centre D maintained a high mean number of restraints in use, from 1.54 at time 3 to 1.57 at time 6.

Discussion

This study reveals telling patterns in mechanical restraint use and identifies specific facilitators and barriers to the efforts to sustain restraint-reduction efforts. The collection of a large amount of restraint data from different models of CC over 4 years provides a broad perspective on mechanical restraint practices in various care environments.

Perhaps the most interesting finding is the large variation among the three types of care centres operated by CapitalCare (see, also, Hirdes et al., 1999). The restraint prevalence in the residential Alzheimer centres and the care housing facilities was very low and fairly static (0 to 3.33%), whereas prevalence rates at the traditional-style CC centres were relatively high and varied greatly (1.69% to 39.86%) in the same time-frame. This may be explained by the staffing mixes used in the Alzheimer care centres and care housing facilities (a small number of RNs and/or LPNs oversee multi-skilled workers) being different than in the traditional model of care. Zinn (1993) found that environmental factors or conditions such as low staffing ratios or funding levels were associated with a greater use of labour-saving practices, including higher restraint use. Facility size may also play a role; the highest restraint use was noted in the two largest centres, B (296 beds) and D (275 beds). Rantz et al. (2007) found that small facilities of 60 beds were more likely to have good resident outcomes. They suggest that larger facilities need to be organized into small clusters of units so they can function like small care centres within the larger whole. Several researchers (Castle & Fogel, 1998; Sullivan-Marx et al., 1999) have found that in addition to large facility size, factors such as staffing mix, high occupancy rates, and the presence of Alzheimer special care units tend to differentiate facilities that use restraints from those that are restraint-free. The traditional centres in the current study tend to house residents with more cognitive impairment, poorer mobility, and decreased performance on activities of daily living, all of which have been reported as key resident characteristics leading to restraint use (Hamers, Gulpers, & Strik, 2004; Phillips et al., 1996). Thus, the organizational and staffing characteristics of the traditional-style care facilities, as well as the poorer health of the residents within them may contribute to higher rates of mechanical-restraint use.

Alternatively, smaller centres may benefit from more visible support from their centre's restraint-reduction champion. Golden-Biddle, Hinings, Casebeer, Pablo, & Reay (2006) note that change is managed more successfully if encouraged at the local (i.e., centre or unit) level. Locock et al. (2001) also note that local opinion leaders in health care settings may act as a vehicle for change, especially when they are able to relate to others and give others confidence that they can also change. Tellingly, the champion at the only centre that did not experience a restraint reduction (D) did not meet these criteria: she was off-site, managing another part of the health care campus. Because she was not a local leader, she was not able to walk through the large centre casually and observe progress (or the lack thereof), talk informally with care staff on restraint issues, or publicize successes throughout the centre. In addition, because the champion managed a restraint-free centre based on a different model of care, staff at centre D may not have considered her a credible champion and may not have believed restraint reduction was possible in their environment.

The reason for the large drop in restraint use experienced at centre B, in particular, between time 5 (39.86%) and time 6 (18.71%) may have been due to a

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change in organizational culture (Verbecke, Volgering, & Hessels, 1998) that created an environment more supportive of restraint reduction. Specifically, several staffing changes occurred, including the appointment of a *best practice leader*, whose job description allows more opportunity to integrate championing restraint reduction within her current duties (the designated champion for the campus is also a care manager of a unit and is not always able to set aside sufficient time for championing restraint reduction). As a result, more time and resources were available for targeted unit level interventions. In addition, the administrator asked that restraint reduction be approached unit by unit. As Rantz et al. (2007) suggest, the administrator and the best practice leader began to treat units like small care centres functioning within a larger whole. As restraints were removed at the unit level, the *success stories* were told at every opportunity, contributing to a marked change in staff attitudes; restraints were now seen as restricting rather than protecting residents (Hantikainen, 2001). As in results noted by Mahoney (1995), management at centre B felt that these focused interventions resulted in nursing staff's taking greater pride in their work and proactively minimizing restraint use.

The finding that new residents were restrained less often than familiar residents suggests that care staff are more successful at refraining from placing restraints on new residents than removing existing restraints from familiar residents. However, the gradual reduction in the mean number of restraints on residents in most of the traditional–style care centres indicates that staff were able to reduce or minimize the number of devices in use.

The trend toward decreases at time 3 and time 4, an increase at time 5, and another decrease at time 6 was surprising. However, the process of restraint reduction is non-linear (Koch & Lyon, 2001), fluctuates over time and requires commitment from staff to incorporate restraint reduction as part of their normal routine. Therefore, when other pressures exist (i.e., fewer staff available or the demands of other initiatives), attention to restraints may be reduced.

The reduction in the prevalence of residents with full bed rails at time 6 was another encouraging and important finding. To our knowledge, only one other Canadian study has reported on the prevalence of full bed rails within Canadian CC facilities (Hirdes et al., 1999). In a reversal of the tendency to reduction in the use of mechanical restraints, the prevalence of residents with full bed rails actually increased at time 4. Consequently, the DCRRC placed a greater emphasis on reducing full bed rails within the organization. The decrease in the overall prevalence of residents with full bed rails at time 5 and time 6 suggests that these efforts made an impact, but further reductions are still believed to be possible. Another factor with implications for bed rail prevalence is the number of electric beds in each facility. Staff may feel more comfortable with leaving full bed rails off electric beds since they can be lowered nearly to the floor and therefore are less likely to cause serious injury if residents happen to fall out of bed. Consistent with this idea, centres with higher proportions of electric beds (the care housing facilities, the Alzheimer care centres, and centre C) all had bed rails prevalences lower than 11 per cent throughout the study period.

Strengths and Limitations

There are several limitations that must be addressed. For this study, only data on mechanical restraint use were collected, and as a result, no comparable examination of chemical restraint use was completed. While some researchers suggest that chemical restraints may easily be substituted for mechanical ones (i.e., Coleman, 1993; Garrard et al., 1991; Kane, Williams, Williams, & Kane, 1993), others have not found differences in medication usage between restrained and non-restrained residents (Hirdes et al., 1999). The absence of a space on the tracking form to record the number of *creative* restraints (such as bandaging that prevents mobility) may also be a limitation; however, a count of these types of restraints was completed in the year before the policy was revised and they were found to be small in number. They are strictly prohibited by the policy.

Additionally, correlations between restraint reduction and the incidence of falls or injuries among residents would be useful. Unfortunately, CapitalCare collects data on falls in such a way that such comparisons are impossible. However, several studies have shown no increase in serious injuries after the implementation of restraint reduction efforts (Godkin & Onyskiw, 1999).

A major strength of the study is that the data collection form served the clinical needs of the staff. It became a valued tool for tracking restraints and highlighting their restraint-reduction success because it made sense to the administrators, the champions, and care staff.

Conclusion

Initially, staff may find it difficult to reduce restraints. However, the current study found that restraint-reduction initiatives can be successful and sustained,

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ultimately improving the safety and quality of life of residents. Potential facilitators of the restraint-reduction process included providing staff with education and establishing someone local at the centre or unit level to champion restraint reduction. This study suggests that a champion is clinically more effective if she or he provides focused support to nursing staff and celebrates restraint success stories when and wherever possible. There is limited support for the strategy of addressing restraint reduction on a unit by unit basis. Future research should look systematically at the effects of staff education, champions, and care environments on restraint reduction based on different models of care or examine whether large facilities can be successful by reducing restraint use a unit at a time.

Note

1 If you would like a copy of the Restraint Reduction Tracking Form, please contact the authors and a copy will be sent.

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