



Dementia is a common condition that places its victims at risk for injury. This article provides an overview of home safety for those with dementia. A conceptual approach to this management challenge is the Home Safety / Injury Model described by Hurley and colleagues. I focus on two common safety concerns: wandering and falls. Unfortunately, most recommendations are based on "common sense" (i.e., what seems reasonable). Whether these approaches actually decrease the likelihood of harm is largely unknown. It is anticipated that future research will lead to evidence-based recommendations.

Key words: dementia, home safety, wandering, falls

Home, Safe Home: Minimizing the Risks for the Cognitively Impaired in the Community

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Introduction

Dementia affects 8% of older Canadians (65 years of age or greater).¹ Approximately one-half of older Canadians with dementia live in the community at large and, of this group, a third reside alone.² The cognitive, functional, and behavioural manifestations of dementia can place the older individual with dementia at risk for harm. Trying to balance respect of autonomy with personal and public safety is challenging for the clinician.³ Unfortunately, little data is available on which to derive evidence-based recommendations. This paper discusses an approach to increasing the home safety of cognitively impaired older adults.

Risks for Injury in the Home

Relatively common risks for injury in the home for those with dementia include wandering, falls, fire from smoking or leaving the stove on, and access to potentially harmful items like knives and firearms. With regard to the latter, an American study found that firearms were present in most (60.4%) households that had a demented member.⁴ Gun ownership did not become less likely when the dementia was severe or if the demented individual had behavioural and psychological symptoms. Only 16.9% of families reported that guns were stored in an unloaded state.

Continuous supervision 24 hours a day, seven days a week would be one strategy to deal with these risks, but this is often not feasible in the general community. Caregivers may take chances, leaving the person with dementia alone

for prolonged periods of time. Deciding whether this represents a reasonable risk requires careful consideration. Questions to ask about the person with dementia in trying to weigh the degree of danger would include asking whether s/he

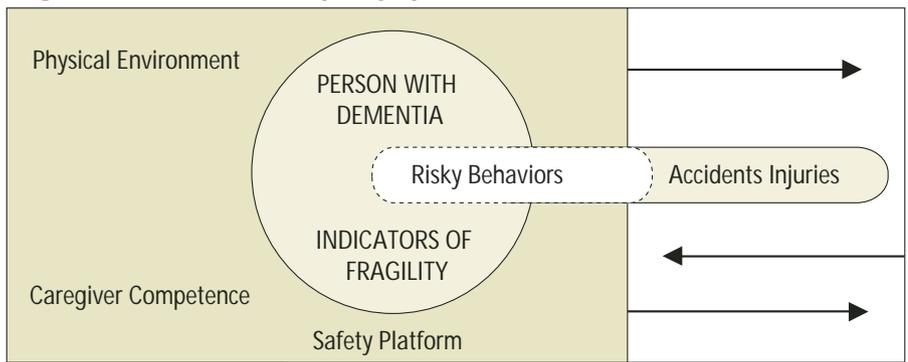
- becomes confused or unpredictable under stress
- recognizes a dangerous situation (e.g., fire)
- knows how to use the telephone in an emergency
- knows how to get help
- stays content within the home
- wanders and becomes disoriented
- shows signs of agitation, depression, or withdrawal when left alone
- attempts to pursue former interests or hobbies that might now warrant supervision (e.g., cooking, repairs, woodworking)⁵

General Approach to Home Safety

It is possible to screen for some of the home safety risks encountered by those with a dementia. Louise Poulin de Courval and colleagues developed, tested, and validated the Safety Assessment Scale to determine the likelihood for select accidents (i.e., fires/burns, malnutrition, food poisoning, nonadherence with medications, wandering, hypo/hyperthermia) in individuals suffering from a dementia.⁶ According to their website (<http://www.clsccote-desneiges.qc.ca/sas/>), scores of 11 to 14 indicate a moderate risk while those 15 or higher denote a high risk for an accident.

A good general reference for caregivers is the National Institutes of Health

Figure 1: The Home Safety / Injury Model



Source: Hurley AC *et al.*, 2004. Used with permission.

brochure, “Home Safety for People with Alzheimer’s Disease.”⁵ The recommended guiding principles for caregivers are think prevention, adapt the environment, and minimize danger. General and specific (room-by-room and behaviour-by-behaviour) suggestions are made to improve safety. In the rest of this paper we’ll focus on two common home risks: wandering and falls.

A general reference for the health care provider is the paper by Dr. Hurley and colleagues, which outlines a Home Safety/Injury Model (see Figure 1).⁷ The model consists of three components: the person with dementia whose condition is complicated by factors such as comorbidities, age-associated changes in physical functioning, and/or the effects of medications; the safety platform, which is composed of the physical environment and the capabilities of the caregiver; and “risky behaviours” that may place the person with dementia outside the boundaries of the safety platform, putting him/her at risk for accidents and injuries. The goal of management would be a safe home environment that meets the person’s basic needs despite his/her cognitive impairment and the presence of potentially risky behaviours. Interventions could be targeted to the patient (and the patient’s behaviours), the caregiver, the environment, or the interactions among them.

Wandering

There is no precise, widely accepted definition for wandering.⁸ The term has

been used to describe a number of behaviours such as pacing/aimless movement, trying doors, attempting to leave a dwelling, successfully leaving a dwelling/elopement, and getting lost. Wandering, however defined, can be associated with stress in both the person with dementia and that person’s caregiver(s). It can place the demented individual at risk for physical harm from injury or exposure. The reported prevalence of wandering in community-dwelling seniors with dementia ranges from 17.4 to 63%.⁸ This behavioural challenge becomes more common as dementia progresses in severity.⁸⁻¹⁰ It might be more common in Alzheimer’s disease as compared to vascular dementia.⁸ Biomedical factors, psychological attributes, and person-environment interactions, singly or in combination, are felt to contribute to its development. In a given person, though, the etiology is often uncertain. Various classification schemes for wandering have been proposed. For example, Hussian described four types of wandering patterns in institutionalized individuals: akathisiacs, exit seekers, self-stimulators, and modelers.¹¹

Wandering is not always a bad thing. If defined as pacing/aimless movement it is a form of physical activity. Within limits and in a safe environment it can be beneficial. It becomes a concern when there is a risk for injury because of elopement or getting lost. To control wandering, the interventions tried include medications, activity programs, behavioural modification, and environmental

manipulation, *none of which have been shown definitely to work.* This is not surprising in view of the uncertainty of definition, the diverse contributing factors, and the challenges in designing rigorous trials for this problem. Medications are not viewed as first-line therapy because of questionable effectiveness and the risk of side effects.¹² Exercise programs may have a dampening effect on wandering but the supportive evidence is weak. The utility of behavioural interventions also remain unproven. Environmental manipulations are the mainstay of therapy.

The standard environmental approach aims to provide space that allows the person with dementia to move safely around while preventing elopement. The use of physical restraints is discouraged. Locking exit doors should only be done when a caregiver is physically present in the dwelling. A recent review of subjective barriers (e.g., patterns on the floor or door, mirror on the door, camouflage of door or doorknob) concluded that there was no proof that they prevented wandering.¹³ Bells or buzzers can be installed on exit doors. Electronic tagging devices for wanderers, like those used for prisoners under house arrest, are being evaluated by researchers.¹⁴ Caregivers often report that costs and inability to otherwise implement home modifications prevent them from following through on environmental recommendations.⁷

To provide some protection if elopement occurs, an identification bracelet with the person’s name and an emergency phone number should be obtained for those with dementia at risk for wandering. *The Safely Home—Alzheimer Wandering Registry* of the Alzheimer Society of Canada should be considered for these individuals. This nationwide, voluntary program assists police in finding the person if they go missing and safely returning them home. Once a person is registered, he/she will be provided with an identification bracelet and his/her caregiver will receive a booklet. Information on the demented person would be stored in a confidential police database. The information would include a personal history, physical characteristics, and locations the person is

known to visit. If the registrant elopes, the caregiver would notify the police. The database would then be accessed, hopefully making it easier to find the missing person. When found, the identification number on the bracelet would allow the police to determine where the registrant lives and whom to contact. More information is available on the Society's web site (www.alzheimer.ca).

Falls

Falls occur frequently in individuals suffering from a dementia.¹⁵ The annual incidence of falls for this group of seniors is estimated to be between 70 and 85%—approximately twice that of cognitively intact seniors. Explanatory factors for this high incidence include the type of dementia (higher risk with vascular dementia and dementia with Lewy bodies compared to Alzheimer's disease), gait and balance abnormalities, medications (e.g., psychotropics), neurocardiovascular instability (e.g., postural hypotension, carotid sinus hypersensitivity), and environmental factors. Studies suggest that environmental hazards are common among fallers with cognitive impairment.^{16,17}

Intervention studies to date have been disappointing. Multifactorial interventions and exercise have been found to be effective in preventing falls among individuals living in the community¹⁸ but most studies excluded people suffering from a dementia. Two randomized controlled trials (RCTs) provide some information on whether these standard approaches work in demented individuals living in the community. The first was an RCT of physiotherapy for older patients with dementia admitted to a respite unit.¹⁹ No benefit from the intervention was seen. The second study was an RCT designed to determine whether a multifactorial intervention after a fall in older patients with cognitive impairment and dementia was effective in decreasing the likelihood of future falls.²⁰ Patients were recruited from an emergency department. Areas assessed included medical diagnoses, medications, mood, cardiovascular system (e.g., postural hypotension, carotid sinus hypersensitivity), mobility,

and the environment. Identified fall risk factors were modified where possible and patients in the intervention group received a three-month supervised home-based exercise program that was to be continued for the course of the study. In the subsequent year the intervention was not effective in preventing falls. More work is needed to discover what works with this particular group of patients. Pending further research, it would be reasonable to continue trying to identify fall risk factors (e.g., environmental hazards, use of psychotropics) coupled with an effort to modify them.

Conclusion

At the present time, minimizing safety concerns for demented patients in the community is limited by our lack of knowledge. We need to know more about what leads to dangerous behaviours, how to identify high-risk situations, and what works in minimizing the likelihood of harm for the person with dementia. We are generally limited to taking a common-sense approach and doing what seems reasonable, or extrapolating from what works for non-demented individuals to this group of seniors. Unfortunately, these heuristics do not always work.²¹ Hopefully, the future will bring greater clarity on who should be treated, when, and what we should do.

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