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Rehabilitating Patients With Dementia Who Have Had a Hip Fracture

Part II: Cognitive Symptoms That Influence Care

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Objective: The objective of this study was to identify the cognitive symptoms that HCPs find difficult to manage in dementia patients, and the strategies that they report using when patients exhibit these symptoms. **Subjects and Methods:** One hundred thirty-three HCPs (ie, nurses, therapists, dieticians, social workers) in 7 GRUs in Ontario, Canada, completed a questionnaire focused on the frequency of cognitive symptoms that persons with dementia experienced after hip fracture surgery and on the strategies HCPs used to manage these symptoms. **Results:** The data collected indicate that HCPs perceived patients' memory impairment, lack of insight, and lack of ability to carry out purposeful movement to be the main symptoms that interfere with their ability to rehabilitate patients. Fifty percent of nursing staff and 100% of allied HCPs listed strategies they used when patients exhibited these cognitive symptoms. Strategies staff used when patients displayed cognitive symptoms included providing visual and verbal reminders, adjusting the environment and routines, and offering consistent routines and supervision. **Conclusions:** The findings from this study indicate that HCPs on GRUs caring for patients with cognitive impairment who have had a hip fracture frequently encounter cognitive symptoms that hinder their care delivery. Rehabilitation staff require knowledge about how to assess patients for the presence of cognitive symptoms and about strategies for dealing with these symptoms when they are present. **Key words:** *cognitive symptoms, dementia, hip fracture, rehabilitation*

HIP fractures are a major cause of disability and mortality in the older adult

population. These fractures, which are a leading cause of hospital admission and prolonged length of stay,¹ lead to an increased utilization of health services.² Older persons with dementia face an increased rate of falls and fractures^{3,4} because of limited attention span, impaired insight into safety, environmental hazards, and lack of body awareness.⁵ Furthermore, the rehabilitation of patients with dementia is complicated by cognitive and

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communicative problems typical of the disorder.⁶

Cognitive impairment has been shown to negatively influence rehabilitation outcomes of patients who have had a hip fracture.⁷ Often, they do not attain their prefracture level of functioning, which leads to subsequent admission to chronic or institutional care.⁸ Dementia of the Alzheimer's type is the most common form of neurodegenerative dementia⁹ and one of the most pervasive health problems for older persons. The disease involves progressive cognitive impairment that ultimately affects all aspects of a person's life, including the ability to relate to others and the environment, and the ability to care for oneself.¹⁰ Persons who suffer from dementia experience a variety of cognitive symptoms that challenge functional gain by interfering with mobility and care. Memory problems, loss of spatial orientation, loss of recognition, language impairments, lack of insight or judgment, loss of ability to perform purposeful movements, and loss of ability to initiate activities are common manifestations of dementia.¹¹

Moreover, these symptoms affect the patients' ability to care for themselves in basic activities of daily living (ADL), and likewise make the rehabilitation process a challenge, as healthcare professionals (HCPs) may unwittingly encourage dependency behaviors¹⁰ by perceiving patients as not able. For example, some patients with dementia may have ideomotor apraxia, which threatens their ability to initiate an activity. If an HCP asks the patient to comb his or her hair and he or she does not respond, the HCP may assume that the patient is unable to undertake this action, or that they do not understand the request. This perception may lead to a maintenance rather than a rehabilitative focus of care, which, in turn, would lead to further dependency. The end result would be functional decline (ie, the inability to complete major day-to-day activities), which is a major contributor to poor healthcare outcomes for persons with dementia.¹²

To enhance the care delivered to patients with dementia, it is important to explore

HCPs' perspectives on delivering rehabilitative care to these patients. To date, no research has been conducted in rehabilitation settings to examine whether HCPs perceive cognitive symptoms of patients with cognitive impairment to be an obstacle to rehabilitation care. Furthermore, it is not clear what strategies HCPs use to deliver care when these patients exhibit such cognitive symptoms. The purpose of this article is to report the findings of part of a larger, descriptive study examining HCPs' perspectives on rehabilitative care of patients with dementia who have had a hip fracture. The 2 main research questions that guided this part of the study were: (1) what cognitive symptoms most frequently interfere with rehabilitation of persons with dementia who have had hip fracture surgery, and (2) what strategies are used when patients experience cognitive symptoms during their rehabilitation care? A previous article analyzed the HCPs' perceptions about the frequency of behavioral disturbances during rehabilitative care for persons with dementia following hip fracture surgery and the strategies staff used to minimize them. That first article, published as part I of this series, addressed the methods and the theoretical underpinnings for the overall study, as well as reported on the demographics of study participants.

METHODS

Setting and sample

The study population, which was defined as all HCPs working on any GRU in Ontario, included registered nurses, registered practical nurses, nurse practitioners, physiotherapists, occupational therapists, speech-language pathologists, social workers, recreational therapists, and dieticians. Respondents were employed full-time or part-time on the GRU. All 8 existing GRUs in Ontario were contacted, and the study was explained. One GRU administrator declined having his staff to participate, because the unit's strict admission criteria allowed very few patients with dementia to be admitted. The HCPs from the

Table 1. Cognitive symptoms questionnaire and definitions presented in questionnaire

Cognitive symptoms	Definition
Memory problems	Patient has difficulty remembering information, forgetfulness, and lack of carry-over.
Loss of spatial orientation	Patient has difficulty finding destinations within the environment (eg, patient cannot find his or her room).
Loss of recognition	Patient does not recognize caregivers. Patient does not recognize objects such as a walker or a toothbrush. Patient does not recognize the environment (eg, own room).
Loss of purposeful movements	Patient is unable to do things on his or her own (eg, dress himself or herself without help, eat independently, start activities on his or her own).
Language impairments	Patient has difficulties speaking/cannot speak. Patient is not able to express needs. Patient is not able to understand instructions/commands. Patient has lost the ability to read and write.
Lack of insight or judgment	Patient does not recognize need for therapies. Patient attempts self-transfer when not physically able.
Loss of ability to initiate activities	Patient is not able to start activities/conversations on his or her own without prompting.

7 remaining GRUs were asked to complete a questionnaire. Based on the full complement of staff on all 7 units, the potential sampling population totaled 200 HCPs.

Questionnaire development

A questionnaire was developed on the basis of principles described by Dillman.¹³ The questionnaire was composed of 20 questions. Of specific relevance to this article was one question that had 7 subsections designed to measure the frequency of several cognitive symptoms during care (Table 1), with a corresponding section asking HCPs open-ended questions about the strategies they utilized when patients exhibited these symptoms. Additional information regarding the questionnaire development, procedures, and analysis of the overall study is provided in the article, that is, part I of this series.

RESULTS

Sample characteristics

See Table 2 in part I of this series for the characteristics of the respondents.

HCPs' perceptions of the cognitive symptoms interfering with care and the number of strategies reported

All respondents indicated that the following patient cognitive symptoms interfered with care: memory problems, loss of spatial orientation, loss of recognition, language impairments, lack of insight or judgment, loss of ability to perform purposeful movements, and loss of ability to initiate activities (Table 2). However, the proportion of staff that reported on the basis of the symptoms and the respondents' discipline that individual symptoms influenced care varied between 60% and 100%. Overall, the cognitive symptoms that were endorsed as interfering with rehabilitation care by the highest proportions of both nursing staff and allied HCPs, respectively (Table 3), were (a) memory problems (96% and 100%), (b) lack of insight or judgment (94% and 92%), (c) and loss of purposeful movements (92% and 89%).

Although most HCPs indicated that patients displayed cognitive symptoms during their care. Only 45% to 60% of nursing staff who reported patients' memory problems,

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Table 2. Number of HCPs reporting that cognitive symptoms interfered with rehabilitation care*

Cognitive disturbance		Nursing (n = 96)	Allied health (n = 37)
Memory problems	Does not interfere with care	4 (4.2)	0 (0)
	Does interfere with care	92 (95.8)	37 (100)
Loss of spatial orientation	Does not interfere with care	11 (11.5)	11 (29.7)
	Does interfere with care	85 (88.5)	25 (67.6)
Loss of recognition	Does not interfere with care	30 (31.3)	15 (40.5)
	Does interfere with care	66 (68.7)	22 (59.5)
Loss of purposeful movements	Does not interfere with care	8 (8.3)	3 (8.1)
	Does interfere with care	88 (91.7)	33 (89.2)
Language impairments	Does not interfere with care	16 (16.7)	12 (32.4)
	Does interfere with care	80 (83.3)	24 (64.9)
Lack of insight/judgment	Does not interfere with care	6 (6.25)	2 (5.4)
	Does interfere with care	90 (93.75)	34 (91.9)
Loss of ability to initiate activities	Does not interfere with care	12 (12.5)	14 (37.8)
	Does interfere with care	84 (87.5)	22 (59.5)

*Values given are number (percentage).

lack of insight, and lack of purposeful movement as interfering with rehabilitation care listed a strategy to minimize these symptoms compared with 97% to 100% of HCPs. A sub-analysis revealed that registered nurses reported twice as many strategies as registered practical nurses for all 3 cognitive symptoms.

Strategies HCPs reported to deal with patients' cognitive symptoms

Content analysis revealed 11 strategy patterns that staff used when caring for patients who exhibited memory problems, lack of

insight, and lack of purposeful movement. These included the following: (1) use relational approaches (ie, reassuring the patient that they can do the therapy, explaining the therapy, and providing positive feedback); (2) use reminders (visual and verbal); (3) use simple instructions; (4) adjust the environment; (5) schedule activities; (6) provide consistent routines; (7) involve the family in care; (8) reorient the patient to person, place, and time; (9) adjust daily routines; (10) involve other team members; and (11) supervise the patient.

Table 3. Proportion of staff who identified a cognitive symptom as interfering with care and who indicated a strategy to minimize the impact of the symptom on care*

Cognitive disturbance		Nursing	Allied health
1. Memory problems	Does interfere with care	92 (95.8)	37 (100)
	Reported strategies	45 (49.5)	37 (100)
2. Lack of insight/judgment	Does interfere with care	90 (93.75)	34 (91.9)
	Reported strategies	53 (60.2)	36 (97.3)
3. Loss of purposeful movement	Does interfere with care	88 (91.7)	33 (89.2)
	Reported strategies	40 (45.5)	22 (100)

*Values given are number (percentage).

Table 4. The most commonly cited strategies (>3) for the 3 most frequently cited symptoms*

Strategies	Nursing	Allied health
Memory problems	<i>n</i> = 113	<i>n</i> = 119
Relational approaches	6	10
Reminders (visual and verbal)	58	51
Simple instructions	8	10
Adjust environment	3	2
Schedule activities	8	7
Consistent	5	19
Family involvement	2	9
Reorient to person, place, and time	14	3
Adjust routines	1	6
Team assist	0	1
Supervise patient	8	1
Lack of insight/judgment	<i>n</i> = 94	<i>n</i> = 95
Relational approaches	13	4
Reminders (visual and verbal)	15	26
Simple instructions	1	0
Adjust environment	34	15
Schedule activities	1	4
Continuity	0	0
Family involvement	1	9
Reorient to person, place, and time	2	6
Adjust routines	9	14
Team assist	2	6
Supervise patient	16	11
Loss of purposeful movements	<i>n</i> = 59	<i>n</i> = 59
Relational approaches	5	6
Reminders (visual and verbal)	18	7
Schedule activity	0	3
Adjust environment	0	4
Physical assistance	14	7
Breakdown tasks	7	2
Family involvement	3	2
Provide assistive devices	5	6
Adjust routines (ADL retraining)	1	10
Continuity	1	3
Team assist	2	6
Supervise patient	3	3

*ADL indicates activities of daily living.

The most commonly identified strategies for dealing with memory problems, lack of insight/judgment, and loss of purposeful movement, and the number of HCPs who reported using these strategies are listed in Table 4. To manage memory problems, the largest proportion of nurses and allied HCPs re-

ported the strategy of using reminders. Verbal reminders included informing patients about what exercises they were doing throughout the session and the rationale for doing them. Visual reminders included a written schedule left at patients' bedsides to help remind them about their activities for the day and

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placing signs over patients' doors or at their bedsides to remind them where their beds were located. The next most common strategy for dealing with memory problems that nurses and allied HCPs listed, respectively, was reorienting the person to time and place and using a consistent approach, such as providing repeated instructions and consistent cues. Other strategies for managing patients' memory problems included repeating simple instructions, using effective relational approaches, and involving the family. Staff mentioned that building a relationship with patients, so that the patients could recognize and trust them, could help facilitate rehabilitation care. Some mentioned the importance of family involvement to help reinforce the therapists' recommendations during inpatient rehabilitation as well as after discharge.

For managing lack of insight or judgment, nursing staff and allied HCPs reported using very similar strategies. Because patients with dementia are not always able to understand the reason for their treatment, they sometimes try to walk without supervision too soon after their hip surgery. Adjusting the environment was one of the main strategies used to maintain patient safety. Nursing staff made use of bed alarms and lowered the beds closer to the floor, whereas allied staff ensured that the room and hallway were uncluttered. The use of reminders about the reasons for treatment and for requiring assistance when walking was an important strategy identified by both nurses and allied HCPs. Many respondents discussed the need to adjust their own routines when the patient had poor judgment, such as having a therapy session in the patient's room rather than in the gym. Supervising such patients was also seen as essential in ensuring that they were not injured while in the rehabilitation setting.

Only 45% of nursing staff who reported that patients' lack of ability to perform purposeful movements was a challenge to care provided any strategies for how they deal with it. Strategies they did report included pro-

viding visual and verbal reminders, providing physical assistance, and breaking down tasks into smaller steps so that patients could complete the task. In contrast, 100% of allied HCPs who identified this symptom provided strategies to deal with it. They focused on adjusting routines such as ADL retraining and building on patients' existing abilities to increase their independence level. Both nurses and allied HCPs used the strategy of providing assistive devices by promoting the use of assistive cutlery and plate guards to compensate for their patients' lack of ability for purposeful movement.

DISCUSSION

This study is the first research project aimed at identifying the cognitive symptoms that GRU staff find challenging when providing rehabilitation care to persons with dementia who have had a hip fracture. The study also reports on the proportion of nurses and allied HCPs who provided strategies for dealing with the cognitive symptoms that they identified as challenging, and describes the strategies they use.

Memory problems, lack of spatial orientation, loss of recognition, loss of ability to perform purposeful movement, language impairments, lack of insight or judgment, and loss of ability to initiate activities were identified as interfering with rehabilitation care. These symptoms of dementia affect the patients' abilities to carry out day-to-day life activities.¹⁰ Yet, rehabilitation professionals, nursing staff, and society are realizing that individuals with dementia can benefit from rehabilitation and are capable of new learning.¹⁴ If HCPs can identify and promote retained abilities and/or compensate for lost abilities, they can enhance the likelihood of successfully rehabilitating the patient.

The 3 cognitive symptoms that were identified as interfering with rehabilitation care by the largest proportion of nurses and allied HCPs were memory problems, lack of

insight or judgment, and loss of purposeful movements. Between 89% and 100% of respondents indicated that these symptoms influenced rehabilitation. Staff indicated that memory impairment reduces recall of instructions and carry-over of therapy routines. Patients' lack of insight leads to safety issues because walking without an aid or supervision may lead to falls. Impaired insight also affects patients' compliance with therapy because patients do not always understand the relationship between rehabilitation activities and functional outcomes that affect their everyday life. Loss of ability to carry out purposeful movements may limit patients' ability to engage in the rehabilitation interventions. Other HCPs have been expressed similar concerns about the impact of cognitive impairment on the rehabilitation process.^{10,14}

When the results about the proportion of nurses and allied HCPs who reported strategies to deal with cognitive symptoms were examined, similarities were noted with the findings reported in part I of this series. Specifically, the proportion of respondents who reported strategies to deal with cognitive symptoms differed substantially by the professional group. Depending on the cognitive symptom reported as interfering with care, between 97% and 100% of allied HCPs reported strategies they used, whereas only between 46% and 60% of nursing staff reported strategies to deal with patients' symptoms. Registered nurses reported using more strategies overall than registered practical nurses, and the former identified strategies for all categories of patient symptoms. This finding may suggest that not all HCPs providing direct patient care have equal knowledge about effective strategies for rehabilitating patients with dementia.

Impaired short-term memory, a cardinal symptom of dementia, is often the impetus that leads to diagnosis.¹⁵ Memory deficits can challenge a person's ability to remember planned rehabilitation exercises as well as safe transfer techniques and how to carry them

out. Despite the progressive deterioration of memory and intellectual functioning that persons with dementia experience, research has shown that individuals with mild to moderate dementia can learn new skills in the context of *procedural memory*, which is the ability to learn new skills that are used at an automatic, unconscious level.^{16,17} Yu and colleagues¹² hypothesized that motor rehabilitation benefits older adults with cognitive impairment because it involves procedural learning that often remains intact, even when other areas of cognition are compromised. Staff working in rehabilitation settings with persons with dementia should capitalize on procedural memory, the use of specific cueing methods, and spaced retrieval training¹⁴ to maximize independent functioning.

Cole and McChesney¹⁸ suggested using either compensatory or adaptation techniques to promote memory retention in patients with dementia, and, in this study, staff listed both strategies. Compensatory techniques include the use of daily activity logs, planning calendars, or multistep sequencing drills. Despite evidence in the literature attesting to their utility,¹⁹ the proportion of HCPs that reported these activities was low. Many staff reported using adaptation techniques, that is, focusing on modifying a patient's environment to stimulate memory. Cole and McChesney¹⁸ suggested examples such as labeling hygiene and grooming objects to reinforce appropriate recognition and object use and labeling walkways to enhance recall of paths.

Lack of insight or judgment, also referred to as impaired awareness of deficits, is a common feature of dementia.²⁰ Impaired insight or judgment in persons with dementia can lead to dangerous consequences or reduced capacity to benefit from rehabilitation. It is thought to pose a safety risk by preventing individuals from recognizing their deficits and avoiding dangerous situations, such as self-transferring when it is unsafe to do so.²¹ In addition, individuals who have a limited understanding of their impairments may be resistant

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to therapy or reluctant to learn behaviors that would compensate for their deficits.⁷ Thus, adjusting the environment and ensuring that the environment is safe when patients experience lack of insight was one of the common strategies nurses and allied HCPs mentioned in this study. Strategies GRU staff discussed included providing grab bars or handrails, lowering bed height, improving lighting, and using bed alarms, which have all been discussed in dementia care literature.²²

Lack of purposeful movement was the third most commonly reported cognitive symptom mentioned as interfering with care. The ability of persons with dementia to undertake purposeful movement may be affected by executive dysfunction and/or apraxia,¹⁰ which can result in a person's having difficulty initiating, sequencing, and following through with ADL such as feeding. Strategies that HCPs in this study suggested involved mainly visual and verbal reminders, physical assistance, breakdown of tasks, and ADL retraining. These strategies have been supported in the literature.¹⁰ However, knowledge and critical thinking skills are required to be able to identify when using one strategy would be preferable over another. For example, Wells and colleagues¹⁰ conducted a careful assessment of the dementia patient's ADL to determine the specific remaining abilities the person had retained and, in turn, to determine the type and level of intervention. Depending on the patient's remaining abilities, one suggested hierarchy entails beginning with verbal cueing (which may be enough), followed by step-by-step verbal instructions, then imitation and verbal instruction, and finally physical assistance.²³ Expert knowledge and skills, with an understanding of neurobehavioral correlations, are required for working with patients with dementia.

Implications for future research and policy

Researchers have not closely examined the rehabilitation process for persons with de-

mentia. Until dementia can be prevented or cured, promoting cognitive and functional capacities in this population remains both a clinical and a research priority. Neuroscience breakthroughs have not translated into clinical intervention studies; therefore, developing specific strategies for care of patients with cognitive impairment remains a priority for applied researchers.

Given the aging of our population, rehabilitation services for patients with cognitive impairment should be a priority for health-care decision makers. Elderly patients with hip fracture, in particular those with cognitive impairment, are underserved.²⁴ New models of care need to be developed, implemented, and evaluated, with an awareness of the rehabilitation processes required to care effectively for patients with cognitive impairment. Based on the results of the 2 studies reported in parts I and II of this series, a model of care has been developed and is currently being evaluated. It involves the following tenets of care, which are essential for effective care of persons with dementia, (*a*) know the person, (*b*) recognize retained abilities, (*c*) manipulate the environment, and (*d*) relate effectively. If implemented consistently with persons with dementia, the 4 tenets of care address all care situations rather than target specific challenging behaviors or cognitive deficits.

CONCLUSION

The findings from this study indicate that HCPs on GRUs caring for patients with cognitive impairment who have had a hip fracture frequently encounter cognitive symptoms that hinder their care delivery. This study indicates that cognitively impaired patients' cognitive symptoms can interfere with rehabilitation care. Rehabilitation staff require knowledge, skills, and effective strategies to manage these symptoms when caring for patients with dementia to ensure improved rehabilitation outcomes.

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