

Bourbonnais, A., Ducharme, F., Landreville, P., Michaud, C., Gauthier, M.-A. et Lavallée, M.-H., An action research to optimize the well-being of older people in nursing homes: Challenges and strategies for implementing a complex intervention, *Journal of Applied Gerontology*. doi: 10.1177/0733464818762068. Copyright © [2018] (Bourbonnais). Reprinted by permission of SAGE Publications. <http://journals.sagepub.com/doi/10.1177/0733464818762068>

An action research to optimize the well-being of older people in nursing homes: Challenges and strategies for implementing a complex intervention

Anne Bourbonnais, RN, PhD

Associate Professor, Faculty of Nursing, Université de Montréal

Chairholder of the Research Chair in Nursing Care for Older People and their Families,

Centre de recherche, Institut universitaire de gériatrie de Montréal

PO Box 6128, Station Centre-Ville,

Montréal, QC, Canada, H3C 3J7

ORCID's ID: 0000-0002-6823-4044

Anne Bourbonnais is Associate Professor in the Faculty of Nursing at Université of Montréal and Chairholder of the Research Chair in Nursing Care for Older People and their Families. Her research program aims to improve the well-being of older people living with Alzheimer's disease and of their relatives.

Francine Ducharme, RN, PhD

Dean, Faculty of Nursing, Université de Montréal

PO Box 6128, Station Centre-Ville,

Montréal, QC, Canada, H3C 3J7

ORCID's ID: 0000-0003-4413-9293

Francine Ducharme is Full Professor and Dean in the Faculty of Nursing at Université de Montréal. She conducts research at the Institut universitaire de gériatrie de Montréal. Her expertise lies in evaluating interventions for caregivers of older people living at home or in long-term care facilities.

Philippe Landreville, PhD

Full Professor, Faculty of Social Science, Université Laval

Pavillon Félix-Antoine-Savard

2325, rue des Bibliothèques

Québec, QC, Canada, G1V 0A6

ORCID's ID: 0000-0002-0704-8870

Philippe Landreville is Full Professor in the School of Psychology at Université Laval. He specializes in clinical geropsychology and his main research interests include mood and anxiety disorders in late life, as well as the behavioral and psychological symptoms of dementia.

AN ACTION RESEARCH TO OPTIMIZE THE WELL-BEING OF OLDER PEOPLE

Cécile Michaud, RN, PhD

*Adjunct Professor, School of Nursing, Université de Sherbrooke
Campus de Longueuil,
150 Charles LeMoyne,
Longueuil (Quebec), Canada, J4K 0A8
ORCID's ID: 0000-0001-8113-2766*

Now retired and acting as an Adjunct Professor, Cécile Michaud served as Full Professor in the School of Nursing at Université de Sherbrooke. Her expertise is in research methodologies, health promotion, and learning.

Marie-Andrée Gauthier, RN, MSc

*Assistant Head Nurse in the Infection Prevention and Control Service, Centre intégré de santé et de services sociaux de la Montérégie-Ouest
200, boulevard Brisebois
Châteauguay (Quebec), Canada, J6K 4W8
ORCID's ID: 0000-0001-7989-6644*

Marie-Andrée Gauthier holds a master's in nursing from Université de Montréal. She served as the coordinator of a study assessing an intervention approach based on the meanings of screams of older people living with Alzheimer's disease. She is currently Assistant Head Nurse at the Centre intégré de santé et de services sociaux de la Montérégie-Ouest.

Marie-Hélène Lavallée, RN, MSc

*Clinical Nurse Specialist, Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal
4565, chemin Queen-Mary
Montréal (Quebec), Canada, H3W 1W5
ORCID's ID: 0000-0003-1755-3544*

Marie-Hélène Lavallée holds a master's in nursing from Université de Montréal. She is a Clinical Nurse Specialist at the Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal, who has always worked with older people. She coordinated the research described in this article.

Correspondence should be addressed to:

Anne Bourbonnais, RN, PhD

Associate Professor, Faculty of Nursing, Université de Montréal

Chairholder of the Research Chair in Nursing Care for Older People and their Families,

Research Centre, Institut universitaire de gériatrie de Montréal

PO Box 6128, Station Centre-Ville, Montréal, Quebec, Canada, H3C 3J7

Tel: 1-514 343-6111, ext. 2734

Fax: 1-514 343-2306

Email: Anne.Bourbonnais@UMontreal.ca

IRB protocol number: CER IUGM 13-14-01-1

Acknowledgments

We wish to thank the older people, their families, and the nursing home caregivers and managers who generously took part in this study.

Funding Acknowledgment

This study was funded by the Alzheimer Society of Canada.

Declaration of conflict of interest

None

Abstract

Few studies have been conducted on strategies to promote the implementation of complex interventions in nursing homes (NHs). This article presents a pilot study intended to assess the strategies that would enable the optimal implementation of a complex intervention approach in NHs based on the meanings of screams of older people living with Alzheimer's disease. An action research approach was used with 19 formal and family caregivers from five NHs. Focus groups and individual interviews were held to assess different implementation strategies. A number of challenges were identified, as were strategies to overcome them. These latter included interactive training, intervention design, and external support. This study shows the feasibility of implementing a complex intervention to optimize older people's well-being. Our paper shares strategies that may promote the implementation of these types of interventions in NHs.

Keywords: Intervention implementation; nursing homes; complex intervention; dementia; action research

Background

Nursing homes (NHs) have unique characteristics, given they are not only healthcare facilities, but also homes to the people receiving care. Since people living in these facilities generally have multiple and serious disabilities, care is complex (Banerjee, 2007; Centers for Medicare & Medicaid Services, 2015). NHs are also noteworthy for the type of staff they hire. While registered nurses typically act as clinical leaders, nurses' aides account for the vast majority of the team (Berta et al., 2005; Jones et al., 2004). The organization of nursing care in NHs is frequently based on routines that develop habits. These repeated actions become automatic for staff members and, therefore, it can be difficult to modify them (Nilsen, Roback, Broström, & Ellström, 2012). Given these characteristics, if the quality of care in NHs is to be optimized, strategies to implement novel and complex interventions must be found (Jones et al., 2004). This article presents the results of a pilot study that implemented a complex intervention in NHs. We will present both the key literature on this type of intervention implementation, and an example of a complex intervention.

Implementation of interventions in nursing homes

Few studies have addressed the challenges and useful strategies of introducing interventions in NHs (Berta et al., 2005; Huijbregts et al., 2012; Jones et al., 2004). In a study aimed at developing and assessing a multifaceted educational and behavioral intervention for pain management, Jones et al. (2004) discussed a few of the challenges they encountered. They included lack of staff participation, staff turnover, and communication problems between physicians and caregivers. Similarly, Resnick, Quinn, and Baxter (2004) examined the feasibility of implementing clinical guidelines for managing falls and pain in NHs. During their study, they identified challenges such as the need to repeat information and to renew caregivers' motivation.

Blackford, Strickland, and Morris (2007) identified a few of the most appropriate strategies for use in NHs during a clinical project implementing an advanced care planning intervention. Two of their strategies were obtaining organizational support and using local leaders. Huijbregts et al. (2012) implemented and assessed the effects of mental-health guidelines in NHs. While no objective specifically addressed the assessment of their devised implementation strategies, Huijbregts et al. found that interprofessional rounds and brainstorming sessions on action plans helped staff adopt the proposed guidelines.

In a realist review, a type of systematic literature review that aims to explain the relationship between the context of an intervention, how it works, and its outcomes (Pawson, Greenhalgh, Harvey, & Walshe, 2005), Caspar, Cooke, Phinney, and Ratner (2016) identified factors reinforcing changes in practice. These included coaching and

mentoring, as well as team meetings. Other authors briefly discussed certain aspects related to the implementation of clinical guidelines (Berta et al., 2005). These authors recommended the use of various strategies targeting individual, organizational, and environmental aspects.

Sterns, Miller, and Allen (2010) mentioned the importance of the nature of the change they wished to implement in practice. They conducted a study in NHs identifying three ascending levels of complexity in obtaining change in practice. They concluded that change is more complex to achieve when: 1) a high number of individuals are involved in the decision-making process for an intervention; and 2) the impact of this intervention is not predictable. Therefore, the more complex the intervention, the more demanding the implementation and the more effort required to change habits. This definition of a complex intervention is similar to that given by the Medical Research Council (2008). This Council defines it as an intervention with several elements, the complexity of which varies depending on the possible outcomes and the degree of tailoring involved.

Example of a complex intervention

An example of a complex intervention is an intervention approach that we developed (hereinafter called 'the approach') to manage the screams of older people living with Alzheimer's disease or a related disorder (ARD). This approach calls for family and formal caregivers to work as partners in a systematic problem-solving approach that includes reflecting, decision-making, planning, and taking concerted action to reduce screams of older people and increase everyone's well-being (Bourbonnais & Lavallée, 2014).

We developed this approach because screaming is a frequent, persistent, and disturbing behavior in NHs. It can be defined as a cluster of vocal behaviors (e.g. moaning and calling-out) that feel inappropriate to others (Barton, Findlay, & Blake, 2005; Beck et al., 2011; Cohen-Mansfield, Marx, & Werner, 1992). Thirteen to 60% of older people living with ARD in NHs scream (von Gunten, Favre, Gurtner, & Abderhalden, 2011; Youn et al., 2011; Zuidema, Koopmans, & Verhey, 2007). These screams have many meanings that can indicate an ill-being, e.g. physical or emotional needs, pain, lack of stimulation, or overstimulation (Bourbonnais & Ducharme, 2010; Sloane et al., 1997). To manage these behaviors, many authors have called for the development and implementation of individualized interventions based on the understood meanings of these behaviors (Corbett, Smith, Creese, & Ballard, 2012; International Psychogeriatric Association, 2012; Kales, Gitlin, & Lyketsos, 2014; Kovach, Kolanowski, & Gilmore-Bykovskiy, 2017; Moniz-Cook et al., 2012; Testad et al., 2014). Our complex intervention approach facilitates the use of such individualized interventions.

Specifically, the approach is based on five principles: i) partnership between the older

person, his or her family, and formal caregivers; ii) identification of the meanings of the screams; iii) use of many interventions; iv) tailoring of interventions; and v) active team-based reflection. These principles are operationalized in six steps: 1) combining strategies to identify the meanings of the screams (e.g. deductive strategies); 2) identifying the possible meanings of the screams (e.g. pain, stimulation); 3) associating categories of interventions with each meaning (e.g. biosensory, socioaffective); 4) imagining specific interventions for each intervention category (e.g. simulated presence, massage); 5) assigning people to each intervention (e.g. a family member); and 6) readjusting interventions. To carry out these systematic problem-solving steps, the family and formal caregivers of an older person who screams meet at least once a month over three months (Bourbonnais & Lavallée, 2014).

Before we could assess the efficacy of our complex approach, we had to ascertain the possibility of implementing it in NHs. While the literature offers some insight into implementing a few relevant strategies, it does not describe how to adapt them to a complex intervention. Furthermore, the perspective of family caregivers has received little attention in the literature, despite the fact that they are affected by this implementation.

Goal

The pilot study presented here aimed to assess strategies useful in implementing a complex intervention based on the meanings of screams of older people living in NHs with ADRD. The preliminary effects of this approach are presented elsewhere (Bourbonnais et al., submitted; Bourbonnais et al., 2017).

Methods

We used an action research study (Heron & Reason, 1997). Action research is characterized by a participant-led cyclic process that allowed for simultaneous implementation and assessment of the approach. This process included: 1) reflecting on implementation of strategies (reflect); 2) planning the use of these strategies (plan); 3) using these strategies (act) and; 4) observing the impact of the strategies (observe) (Waterman, Tillen, Dickson, & de Koning, 2001). Once a cycle was completed, it was repeated to further refine the strategies. Three cycles were completed in the study. During this process, we used the qualitative outcome analysis method described by Morse, Penrod, and Hupcey (2000) as study design. This design is based on the use of multiple sources of data to qualitatively assess the implementation of an intervention.

Initial implementation strategies

Our initial strategies to implement the approach were based on theories on changing practices and forming new habits (Bandura, 1977, 1986; Nilsen et al., 2012; Rochette, Korner-Bitensky, & Thomas, 2009; Sladek, Phillips, & Bond, 2006; Wood & Neal, 2007).

Moreover, as recommended by Blackford et al. (2007), the managers of each NH were committed to participating in the implementation. Clinical nurse specialists and nursing directors were partners. One of our main implementation strategies was the use of local leaders, who were caregivers recognized by their peers for their leadership and role modeling. This strategy is known to overcome the difficulties of implementation and promote changes in habits (Bellg et al., 2004; Bero et al., 1998; Blackford et al., 2007; Capezuti, Taylor, Brown, Strothers, & Ouslander, 2007). Formal caregivers working in care units where the approach was to be implemented were offered a seven-hour training session. This workshop was attended by registered nurses (RNs), licensed practical nurses (LPNs), nurses' aides, and head nurses working the three shifts in the same NH. As part of this training, the approach's principles and steps were explained, exercises based on a case story were led and a handbook was provided. We trained 210 formal caregivers. All completed a post-training assessment questionnaire.

These NHs' management teams also gave us access to the care units in order to provide case story synopses to support formal caregivers (Bellg et al., 2004; Huijbregts et al., 2012). During these synopses, we outlined the main elements of the approach with examples. We offered 20 synopses of 30 minutes each to approximately 100 formal caregivers. The synopses were conducted by the study coordinators who are RNs with master's degrees. Besides managing the research project and training the formal caregivers, these study coordinators accompanied the nursing care team in implementing the approach with 13 older people with severe cognitive impairment who screamed on a daily basis (8 of whom were women, with a mean age of 87 years). To help the care teams, the study coordinators monitored the implementation's obstacles and facilitating elements. We adapted these implementation strategies to participants' feedback. The changes we made to implementation strategies during the study are described in the Results section.

Sample

The sample consisted of 19 formal and family caregivers from five NHs located in Montréal, Canada. The majority were formal caregivers who had been identified by their peers as local leaders (n=13) and who were RNs, LPNs, nurses' aides, special education instructors, or managers. These local leaders were the most directly involved in the action research process. A local leader was identified for each of the 13 older persons. The other participants (n=6) consisted of three other formal caregivers and three family caregivers who participated in applying the approach with an older person. Each family caregiver was knowledgeable about the older person's life story and visited the NH at least once a week. The other formal caregivers were involved in the care of the same older person at least three times a week, without being local leaders for the project. This sample provided us with data saturation.

Considering the cognitive impairment of older people, family members who consented to their care gave consent for their participation in the approach. Family members also gave their consent before taking part in the study. Head nurses helped identify formal caregivers who might have been interested in being involved in data collection. Formal caregivers who wished to participate gave their free and informed consent. The management teams informed other formal caregivers of the study and encouraged them to apply the approach, but these caregivers were free to attend or not attend training sessions and no data were collected directly about them. This research protocol was approved by the Internal Board Review recognized by the five NHs involved in the study (# CER IUGM 13-14-01-1).

Data collection

To assess the implementation strategies of the approach, we used four data collection methods: focus groups, individual semi-structured interviews, study coordinators' journals, and documentation of observations and interventions by the nursing care team.

As mentioned previously, each action research cycle included reflection, planning, acting, and observing. At the end of each cycle, we held a focus group to share observations on the efficacy of the implementation strategies and to reflect on changes to introduce in the following cycle. Three focus groups were held, each with four to six local leaders and lasting approximately 90 minutes. To foster the sharing of strategies, the first two focus groups were composed of the leaders from different settings. The third focus group was made up of leaders from the same NH, but from different care units. These leaders participated in only one focus group, except for one leader who participated in two. An interview guide was used. An example of a question is "What implementing strategies could be used to overcome obstacles?"

To complete the data from the focus groups, we conducted individual semi-structured interviews with family and formal caregivers. We carried out the interviews three months after we began implementing the approach with each older person. The interview guide included questions on the implementation process, such as "In your opinion, what was the most helpful strategy in getting family and formal caregivers to use the approach?" The average length of these interviews was 35 minutes.

Study coordinators documented their observations on the implementation once a week over the course of the project. They used an open-ended questionnaire to evaluate the implementation's fidelity to the six principles described in the "Complex Intervention" section above. Members of the care team documented in a notebook or on observation grids their observations of the meanings of the screams and the interventions they carried out as a result. The means used varied depending on the local culture. Table 1 shows the distribution of participants according to method of data collection, role, and setting.

Data analysis

We based our data analysis on the strategies proposed by Miles, Huberman, and Saldaña (2014). We audio recorded and transcribed all individual and group interviews. Based on the five principles of the approach, we aggregated the data on the fidelity of the study coordinators' open-ended questionnaires and on care teams' notes and observation grids. We conducted a content analysis on all data. A member of the research team performed an inductive data codification that was reviewed by another. We then regrouped data to highlight patterns of similarities and differences. Themes and sub-themes emerged from the patterns. They were iteratively refined as the raw data collected was reread. We conducted this process separately for the individual and the group interviews. Then, we integrated the themes from both types of interview.

Table 1: Distribution of participants by method, role, and setting

<i>Settings (n=13 older people)*</i>	<i>Formal caregivers acting as local leaders Group interviews</i>						<i>Caregivers Individual interviews</i>			<i>Total participants</i>
	<i>RN</i>	<i>LPN</i>	<i>Nurses' aides</i>	<i>Education instructors</i>	<i>Nursing managers</i>	<i>Total leaders</i>	<i>Family</i>	<i>Formal</i>	<i>Total caregivers</i>	
Setting A (n=1)			1 (b)			1			0	1
Setting B (n=1)			1 (a)			1	1	1	2	3
Setting C (n=3)		1 (c)		2 (c)	3 (c)	6			0	6
Setting D (n=4)	1 (a et b)		1 (b)			2			0	2
Setting E (n=4)	1 (a)	1 (b)	1 (a)			3	2	2	4	7
	2	2	4	2	3	13	3	3	6	19

Legend:

* *Number of older people who received the approach during the implementation*

- a) First group interview
- b) Second group interview
- c) Third group interview

Results

Sociodemographic characteristics

Sociodemographic characteristics are presented in Table 2. The formal and family caregivers who participated in the study were mainly women (14 out of 19), reflecting their preponderance in NHs. Many types of formal caregivers participated in the study, either as or not as local leaders. They were registered nurses, licensed practical nurses, nurses' aides, special education instructors, and head nurses. They worked on the day or evening shifts. They had more than 17 years of work experience on average. The three family caregivers who participated in the study had different family ties as well as different visiting patterns with their older relative. This led to different perspectives on the implementation.

Table 2: Sociodemographic characteristics

Formal caregivers acting as local leaders	n=13
<i>Age</i>	
– Mean (\pm standard deviation [SD])	46.5 years (\pm 10.2)
<i>Gender</i>	
– Women	8
– Men	5
<i>Type of caregivers</i>	
– RN with a university diploma	2
– LPN	2
– Nurses' aides	4
– Special education instructors	2
– Nursing managers	3
<i>Shift</i>	
– Day	10
– Evening	3
<i>Experience</i>	
– Mean (\pm SD)	17.3 years (\pm 7.2)
Other formal caregivers	n=3
<i>Age</i>	
– Mean (\pm SD)	45.7 years (\pm 13.7)

AN ACTION RESEARCH TO OPTIMIZE THE WELL-BEING OF OLDER PEOPLE

<i>Gender</i>	
– Women	3
<i>Type of caregivers</i>	
– RNs with a technical diploma	2
– Nurses' aides	1
<i>Shift</i>	
– Day	2
– Evening	1
<i>Experience</i>	
– Mean (\pm SD)	16.3 years (\pm 12.1)

Family caregivers **n=3**

<i>Age</i>	
– Mean (\pm SD)	59.3 years (\pm 18.3)
<i>Gender</i>	
– Women	3
<i>Civil status</i>	
– Married	1
– Single	2
<i>Number of years of study</i>	
– Mean (\pm SD)	16.0 years (\pm 1.7)
<i>Relation to the older person</i>	
– Spouse	1
– Daughter	1
– Niece	1
<i>Frequency of visits</i>	
– Daily	1
– At least once a week	1
– About once a month	1
<i>Duration of visits</i>	
– Less than 30 minutes	1
– About an hour	1
– More than two hours	1

Findings

We identified four types of challenges during the implementation of the approach. These challenges stemmed from: 1) the nature of the approach; 2) the formal caregivers' skills; 3) the organization of the work itself; and 4) some features of the approach. Strategies for overcoming each type of challenge were also identified.

1. Challenges related to the nature of the approach. Participants mentioned that the process of the approach required them to make an inhabitual effort to reflect on and find other possibilities of interventions. This likely influenced the involvement of some formal caregivers, who were uncomfortable with this reflective process.

The continuous process was a second challenge related to the nature of the approach. At times, formal caregivers expressed their discouragement at having to start the process of identifying the meanings of screams and the interventions required over again. Third, the aim of the approach is not to make the screams disappear, but rather to increase overall well-being and shifted everyone's perspective on the behaviors which, in turn, might or might not have decreased the frequency of the screams. This was a challenge for formal caregivers who sometimes wanted miracle solutions to solve the screaming "problem." One local leader said:

We have to keep wiping the slate clean and trying to find a strategy for whatever is happening at a given moment [...]. [A behavior] could disappear and a new one reappear next month. You never know. [...] There are no miracle cures. We are continuously starting from scratch (local leader 3, line 850).

Strategies for overcoming challenges related to the nature of the approach. To help formal and family caregivers overcome these challenges, we applied and adjusted the strategies planned during the action research cycles. For instance, an assessment questionnaire, completed by 210 formal caregivers after the seven-hour workshop, showed a 97–100% satisfaction rate. The use of a case story was the most appreciated aspect of this workshop. Caregivers also found it useful to group formal caregivers from the same NH in the workshop. However, the workshop's length was the least-appreciated aspect, and participants would have liked it to be one hour shorter. This length had been set so that RNs could fulfill the Board of Nursing's minimum annual requirement for continuous education credits.

We also offered several case story synopses directly in the five NH care units. Given the challenge of the approach's continuous process, these summaries highlighted how the approach's iteracy was designed to improve well-being. After the first action research cycle, we noted that these short synopses, which reached a large number of caregivers,

were enough to prompt the use of the approach. Consequently, we decided to provide these synopses only instead of the seven-hour workshop in two of the five NHs.

Finally, as recommended in the literature, local leaders were formally identified in each care unit where the approach was implemented. Their role was to help their peers. During the first focus group, however, these local leaders indicated that their peers tended to rely on them to implement the approach, thus limiting their own participation. The local leaders therefore suggested they not be formally identified. Instead, they recommended working with the most engaged formal caregivers who could serve as informal role models for the others. They also suggested greater involvement by the head nurse, as this excerpt illustrates: *“Yes, and also because she [the head nurse] really shows how the entire staff has to participate. The focus should not be on the leaders” (local leader 3, line 508).*

During the following two cycles of action research, at least one local leader was identified in each unit. They were recruited based only on their interest in the project without being assigned any formal role. We also developed tools to help the head nurses ensure follow-up. These strategies also helped us to take into account more effectively the organization of nursing care in NHs (e.g. the many nurses’ aides and routine-based care).

2. Challenges related to formal caregivers’ skills. A skill-based challenge we encountered was formal caregivers’ difficulty initiating partnership with the families. They were accustomed to answering families’ questions and providing information on the older person’s health, but they felt less comfortable contacting family members proactively to discuss a behavior. Another challenge was that some formal caregivers would just wait for a colleague to apply the approach. Those most actively involved were strongly committed to reducing the screams. A third skill-based challenge was formal and family caregivers’ expectations to observe rapid improvement. More particularly, they expected the screams to stop.

Because when you say ‘he’s speaking a little more, he’s trying to express himself (...),’ but it is as if for them he hasn’t necessarily made any progress [with the approach]. For them, well, it’s not a big deal. Everyone can say ‘I am not doing well,’ but not in this case. This guy’s come a long way. And we forget that. So, maybe in the future we should insist on this point, on the small progress. And precisely 100% [disappearance of screams] is not going to happen. But it’s important the staff understands that the little things are important (local leader 3, line 671).

Strategies for overcoming challenges related to formal caregivers’ skills. To address these challenges using participant suggestions, we added a few strategies to those already planned. First, we created guidelines for formal caregivers to initiate partnership

with families. Once the process began, this partnership was facilitated. Second, we designed a poster with the highlights of the approach's goals, and head nurses also promoted them. Third and finally, the study coordinators visited the NHs frequently to guide the teams in learning the abilities required to apply the approach.

3. Challenges related to work organization. We encountered several challenges related to the organization of work in NHs. The greatest of these challenges was turnover in the care teams. For example, one NH has systematic team rotations every three months. As a consequence, the new staff members were not familiar with the approach. Lack of time, high resident-to-caregiver ratios, and numerous unexpected events were also mentioned as obstacles to implementing the approach. Finally, transfer of information on the meanings of screams and on interventions often proved difficult between shifts.

Strategies for overcoming challenges related to work organization. The study coordinators greatly contributed to overcoming these challenges by working actively with the head nurses and local leaders. They also helped the teams identify how to foster transfer of information in ways tailored to their local NH culture.

Given these difficulties, the literature was reviewed with a view to the most efficient handover of information between shifts. Very little was found on best practice for ensuring continuity of care between shifts, other than a combination of written and oral strategies (Alvarado et al., 2006). During this study, certain NHs used a notebook to communicate in addition to oral reporting. A few formal caregivers simplified a tool to chart the approach's key elements, which resulted in an increased implementation of the approach. A formal caregiver gives the following opinion of the new simplified tool:

Every day, we charted the notes according to the approach. At the beginning, the tool was more difficult, with more information. But then we simplified the document. It works better when it is easy and more to the point [...] Every time we had an interaction with a resident, we documented it (formal caregiver 1, line 36).

These strategies did not eliminate organizational challenges, but hurdles were mitigated.

4. Challenges related to some features of the approach. Participants identified some features of the approach as being a challenge to implement and strategies that mitigated these challenges. For instance, although the meetings with family caregivers planned as part of the approach were deemed to be useful, their logistical organization was a challenge. The family caregivers were not always available, and some lived far from the NH. The frequency of these meetings was therefore reduced. Lack of flexibility was observed in the organization of meetings, as the following excerpt illustrates:

I attended some of the meetings. But the last two had to be in the afternoon [to accommodate the formal caregivers]! This was more tiring for me. But, of

course, they have to take their work and everything else into account as well (family caregiver 1, line 21).

Another challenge was that continuity in the implementation of the approach required staff to meet regularly. There were not many formal meetings between caregivers working the different shifts. An additional challenge was that not everyone respected the intervention plan. One of the local leaders expressed the importance of communication between shifts in this way:

We get nowhere in the NH if we don't have good teamwork. We have to communicate. Everyone has to play their role well, you know? That's how information is transferred and how we can be leaders in the team and make it work (local leader 3, line 351).

Strategies for overcoming challenges related to some features of the approach. To stimulate teamwork, participants highlighted the importance of support from outside of the care unit for the implementation of the approach. They considered that the study coordinators' role, as well as external support, was key to its successful implementation. This help was also deemed necessary to ensure the sustainability of the implementation. Local leaders suggested case stories be drafted for continuing education and for training trainers on the approach:

Sometimes, you know, there's a routine, all goes well, no one is screaming. Everything's calm in the unit (laughter). [...] But six months down the road, when things have been calm for six months and you have fallen into a routine, and all of a sudden, oops! It's lost. That's why it would be interesting to have some case story synopses (local leader 3, line 271).

Family and formal caregivers felt the approach design helped its implementation. Given the complexity of the approach, they appreciated its structure and clarity. Despite its many principles and steps, the approach was considered to be easy to understand: *"The fact that it was more like uhm, how can I say it... Demystified! It was demystified, and everything was well explained. The approach was easy to understand"* (formal caregiver 1, line 383).

Although meetings with families were difficult to organize, formal caregivers found them useful because they led to increased knowledge of the older person. Family caregivers showed a keen interest in participating in these meetings and felt more at ease getting involved in their relative's care after implementing the approach. Once they experienced these benefits, formal and family caregivers were more motivated to make an effort and find a time to meet.

Both family and formal caregivers highlighted the importance of involvement in obtaining positive results. In fact, overt recognition of caregivers who were committed to the

approach was seen as encouraging more active involvement. The head nurse was a key in this recognition. When she listened to her team, pointed out the advantages of the approach, or facilitated meetings, we observed greater overall involvement. In sum, the design of a complex intervention and support from the head nurse helped formal and family caregivers implement the intervention.

We expected challenges would arise in implementing the approach. Some of the strategies we had anticipated were effective and other new ones were developed with participant feedback. Although it was impossible to eliminate all constraints, adjustments to the strategies made it possible to implement the approach and obtain positive results for the well-being of older people, their families, and formal caregivers (Bourbonnais et al., submitted; Bourbonnais et al., 2017).

Discussion

This study has shown the main challenges of implementing a complex intervention to influence the practice of formal and family caregivers in NHs. It also identified several strategies for overcoming such challenges. Although not always perfect and sometimes of a global nature (rather than targeting the challenges directly), these strategies were sufficient in ensuring a reasonable level of fidelity in the application of the approach and to have positive impact on the well-being of older people, their families, and formal caregivers (Bourbonnais et al., 2017). These strategies provided information about the conditions that could be put in place for an optimal implementation of complex interventions in NHs.

Implementing the approach with the participants showed the importance of using a variety of strategies intensively to foster new habits. It also demonstrated the benefits of incorporating participant feedback into the implementation process. Doing so allowed the research team and participants to quickly adjust the strategies and subsequently assess their usefulness in overcoming the challenges encountered.

Identifying local leaders was a strategy for overcoming challenges stemming from the nature of the intervention. The literature clearly shows the importance of designated local leaders in the settings (Bellg et al., 2004; Bero et al., 1998; Blackford et al., 2007; Capezuti et al., 2007). However, our study found that this formal identification of local leaders was not effective when the whole team is expected to be involved. After adjusting this strategy, we relied on local leaders' informal influence on their colleagues. These leaders proved to be a tremendous help in identifying strategies to facilitate the implementation of the approach.

Local leaders were also helpful in finding solutions to challenges related to formal caregivers' skills, especially when it came to addressing formal caregivers' expectations of quick results. Such expectations are mentioned in the literature on culture change

(Dupuis, McAiney, Fortune, Ploef, & de Witt, 2016). According to Ronch (2004), they reflect a task-based culture. However, our complex intervention encouraged a relationship-centered care culture and response to individual needs. Therefore, this challenge could be seen as a sign that our approach encourages a shift in organizational culture and its implementation facilitates the creation of new habits among formal caregivers.

Also in relation to formal caregivers' skills, the implementation of our approach exposed the discomfort of several formal caregivers, including RNs, to initiate partnership with families. This discomfort was also mentioned in Bauer and Nay's (2003) literature review on partnerships in NHs, and in Duhamel, Dupuis, Martinez, and Goudreau's (2015) qualitative study. It would appear that partnership, which is inherent to complex interventions (Sterns et al., 2010), calls for a paradigm shift, which in turn requires support. We were able to support caregivers in forming this partnership, thanks to assistance from study coordinators and the creation of a guideline tool. Families' favorable reaction to this partnership was positive reinforcement for the NHs' teams.

We developed some mitigating strategies in response to the many work organization challenges encountered during the implementation of our approach. One was working with formal caregivers to develop and fine-tune tools, including a behavior observation grid and guidelines for establishing partnership with families. Our study also showed the importance of head nurses' and local leaders' active involvement in overcoming work organization challenges. We were able to confirm that these strategies brought about change in practices. These improvements motivated the teams to continue applying the approach.

Our findings on the importance of using multiple implementation strategies are consistent with Caspar et al.'s (2016) realist review on changes in practice in NHs. These authors concluded that training alone is insufficient to induce change in habits; education must be combined with measures directly modifying practice in the care units. Recognition of caregivers' positive efforts and increased motivation is also mentioned among the key factors of change. However, such encouragement is seldom applied in NHs, particularly with nurses' aides. All these strategies were not only present in our study but identified by the participants as being important.

Our study also showed the challenges of ensuring continuity of care in NHs, particularly between shifts. Our literature review of strategies for improving continuity of care showed that very little knowledge exists on this subject. Alvarado et al. (2006) indicated the importance of teams transferring information verbally and in writing by means adapted to their local culture. However, strategies specific to NHs and the reality of their care teams (generally made up of many nurses' aides) should be developed to increase continuity of care.

Finally, local leaders made suggestions for how to overcome challenges stemming from features of the approach and to ensure sustainability in its implementation. These included using the seven-hour workshop to train specific trainers, and the shorter case story synopses to train all formal caregivers. These results are in keeping with findings from Colon-Emeric et al.'s (2016) qualitative study on the sustainability of complex interventions in NHs. These authors mention the importance of educating trainers and the determining influence of local leaders in ensuring sustainability. These strategies could probably be adapted to other complex interventions in NHs.

Implications

Several characteristics of the approach implemented in our project—such as a continuous process and working in partnership—are similar to other complex interventions based on best practice that could be implemented in NHs. It could therefore be relevant to implement the strategies identified in our study in other NHs or senior living environments (e.g. assisted-living communities). The action research was useful in implementing this complex intervention; it may also be helpful in other settings.

Including case stories (either long workshops or short synopses) in caregivers' training should be considered to stimulate their learning and reflection on the proposed interventions. All formal caregivers should receive training to promote implementation. Our results also underscore the importance of recognizing formal caregivers' efforts and providing initial and ongoing intensive support. Such support clearly ensures sustainability in the use of the intervention.

Given the importance of partnership in NHs, be it among formal caregivers or with families, approaches such as the one we implemented should be encouraged in caring for older people with cognitive impairment. Further study is needed to develop strategies to promote partnership and continuity of care between shifts in NHs. These studies should be designed to examine formal caregivers' experience of continuity of care and develop strategies adapted to organizational constraints. The recruitment of local leaders in implementing complex interventions would seem to be essential. Although this strategy is frequently mentioned in the literature, little is known about how to integrate such a component into the implementation of specific projects. This should be further explored in the goal of maximizing the impact of such strategies.

Conclusion

The successful implementation of a complex intervention offers a positive experience to formal and family caregivers, which, in turn, can prompt them to provide care that improves the well-being of older people. Based on this motivation and success, the experience could then promote the adoption of other changes in practice that would

further improve quality of care. Considering the vulnerability of NH residents, ensuring the most efficient implementation of interventions is undoubtedly important in improving quality of life.

References

- Alvarado, K., Lee, R., Chrisoffersen, E., Fram, N., Boblin, S., Poole, N., . . . Forsyth, S. (2006). Transfer of accountability: Transforming shift handover to enhance patient safety. *Healthcare Quarterly*, 9(octobre), 75-79.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewoods, Cliffs, NJ: Prentice-Hall, Inc.
- Banerjee, A. (2007). *An overview of long-term care in Canada and selected provinces and territories*. Toronto: Women and Health Care Reform Group. Retrieved from http://www.womenandhealthcarereform.ca/publications/banerjee_overviewLTC.pdf.
- Barton, S., Findlay, D., & Blake, R. A. (2005). The management of inappropriate vocalisation in dementia: A hierarchical approach. *International Journal of Geriatric Psychiatry*, 20, 1180-1186.
- Bauer, M., & Nay, R. (2003). Family and staff partnerships in long-term care: A review of the literature. *Journal of Gerontological Nursing*, 29(10), 46-53.

Beck, C., Richard, K., Lambert, C., Doan, R., Landes, R. D., Whall, A. L., . . . Feldman, Z. (2011). Factors associated with problematic vocalizations in nursing home residents with dementia. *The Gerontologist, 51*(3), 389-405. doi:

10.1093/geront/gnq129

Bellg, A. J., Borrelli, B., Resnick, B., Hecht, J., Minicucci, D. S., Ory, M., . . .

Czajkowski, S. (2004). Enhancing treatment fidelity in health behavior change studies: best practices and recommendations from the NIH Behavior Change Consortium. *Health Psychology, 23*(5), 443-451. doi: 10.1037/0278-

6133.23.5.443

Bero, L., Grilli, R., Grimshaw, J. M., Harvey, E., Oxman, A. D., & Thomson, M. A. (1998).

Closing the gap between research and practice: an overview of systematic reviews of interventions to promote the implementation of research findings.

BMJ, 317, 465-468.

Berta, W., Teare, G. F., Gilbert, E., Soberman Ginsburg, L., Lemieux-Charles, L., Davis,

D., & Rappolt, S. (2005). The contingencies of organizational learning in long-term care: Factors that affect innovation adoption. *Health Care Management Review, 30*(4), 282-292.

Review, 30(4), 282-292.

Blackford, J., Strickland, E., & Morris, B. (2007). Advance care planning in residential

aged care facilities. *Contemporary Nurse, 27*, 141-151.

Bourbonnais, A., & Ducharme, F. (2010). The meanings of screams in older people living with dementia in a nursing home. *International Psychogeriatrics*, 22(7), 1172-1184. doi: 10.1017/S1041610209991670

Bourbonnais, A., Ducharme, F., Landreville, P., Michaud, C., Gauthier, M.-A., & Lavallée, M.-H. (submitted). Effects of an intervention approach based on the meanings of screams of older people living with Alzheimer's disease: A pilot study. *Aging & Mental Health*.

Bourbonnais, A., Ducharme, F., Landreville, P., Michaud, C., Lavallée, M.-H., & Gauthier, M.-A. (2017). *Évaluation pilote d'une démarche d'interventions basée sur les sens des cris de personnes âgées vivant avec la maladie d'Alzheimer en centre de soins de longue durée : Rapport de recherche [Pilot evaluation of an intervention approach based on the meanings of screams in older people living with Alzheimer's disease in long-term care facilities: A research report]*.

Retrieved from

http://www.chairepersonneagee.umontreal.ca/fileadmin/documents/Rapport_de_recherche-Projet_cris_2013-2016-final_avec_ISBN.pdf

Bourbonnais, A., & Lavallée, M.-H. (2014). *An intervention approach based on the meanings of scream of older people living with Alzheimer's disease in long-term care facilities*. Montréal: Centre de recherche de l'Institut universitaire de gériatrie de Montréal.

Capezuti, E., Taylor, J., Brown, H., Strothers, H. S., & Ouslander, J. G. (2007).

Challenges to implementing an APN-facilitated falls management program in long-term care. *Applied Nursing Research*, 20, 2-9.

Caspar, S., Cooke, H. A., Phinney, A., & Ratner, P. A. (2016). Practice change interventions in long-term care facilities: What works, and why? *Canadian Journal of Aging*, 35(3), 372-384. doi: 10.1017/S0714980816000374

Centers for Medicare & Medicaid Services. (2015). *Nursing home data compendium 2015 edition*. Retrieved from https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandCompliance/Downloads/nursinghomedatacompendium_508-2015.pdf.

Cohen-Mansfield, J., Marx, M. S., & Werner, P. (1992). Agitation in elderly persons: An integrative report of findings in a nursing home. *International Psychogeriatrics*, 4 (suppl. 2), 221-240.

Colón-Emeric, C., Toles, M., Cary, M. P., Jr., Batchelor-Murphy, M., Yap, T., Song, Y., . . . Anderson, R. A. (2016). Sustaining complex interventions in long-term care: A qualitative study of direct care staff and managers. *Implementation Science*, 11, 94. doi: 10.1186/s13012-016-0454-y

Corbett, A., Smith, J., Creese, B., & Ballard, C. (2012). Treatment of behavioral and psychological symptoms of Alzheimer's disease. *Current Treatment Options in Neurology*, 14(2), 113-125. doi: 10.1007/s11940-012-0166-9

Duhamel, F., Dupuis, F., Turcotte, A., Martinez, A. M., & Goudreau, J. (2015).

Integrating the Illness Beliefs Model in clinical practice: A Family Systems Nursing knowledge utilization model. *Journal of Family Nursing*, 21(2), 322-348.
doi: 10.1177/1074840715579404

Dupuis, S. L., McAiney, C. A., Fortune, D., Ploef, J., & de Witt, L. (2016). Theoretical foundations guiding culture change: The work of the partnerships in dementia care alliance. *Dementia*, 15(1), 85-105.

Heron, J., & Reason, P. (1997). A participatory inquiry paradigm. *Qualitative Inquiry*, 3(3), 274-294.

Huijbregts, M., Sokoloff, L. G., Feldman, S., Conn, D. K., Simons, K., Walsh, L., . . . Khatri, N. (2012). Implementation of a mental health guideline in a long-term care home: A participatory action approach. *Journal of Research in Interprofessional Practice and Education*, 2.2, 134-151.

International Psychogeriatric Association. (2012). *The IPA complete guides to behavioral and psychological symptoms of dementia (BPSD) - Specialists guide*. Northfield, IL: International Psychogeriatric Association.

Jones, K. R., Flnk, R., Vojir, C., Pepper, G., Hutt, E., Clark, L., . . . Mellis, K. (2004). Translation research in long-term care: Improving pain management in nursing homes. *Worldviews on Evidence-Based Nursing*, 1(S1), S13-S20.

Kales, H. C., Gitlin, L. N., & Lyketsos, C. G. (2014). Management of neuropsychiatric symptoms of dementia in clinical settings: recommendations from a multidisciplinary expert panel. *Journal of the American Geriatrics Society*, 62(4), 762-769. doi: 10.1111/jgs.12730

Kovach, C. R., Kolanowski, A., & Gilmore-Bykovskyi, A. (2017). Approaches to affective, behavioral, and cognitive symptoms of individuals with dementia. *Journal of Gerontological Nursing*, 10(3), 102-105. doi: 10.3928/19404921-20170411-03

Medical Research Council. (2008). Developing and evaluating complex interventions: New guidance. Retrieved from <http://www.mrc.ac.uk/complexinterventionsguidance>

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3 ed.). Thousand Oaks, CA: Sage Publications.

Moniz-Cook, E. D., Swift, K., James, I., Malouf, R., De Vugt, M., & Verhey, F. (2012). Functional analysis-based interventions for challenging behaviour in dementia. *Cochrane Database of Systematic Reviews*(2), CD006929. doi: 10.1002/14651858.CD006929.pub2

Morse, J. M., Penrod, J., & Hupcey, J. E. (2000). Qualitative outcome analysis: Evaluating nursing interventions for complex clinical phenomena. *Journal of Nursing Scholarship*, 32(2), 125-130.

- Nilsen, P., Roback, K., Broström, A., & Ellström, P.-E. (2012). Creature of habit: accounting for the role of habit in implementation research on clinical behaviour change. *Implementation Science*, 7(53). doi: 10.1186/1748-5908-7-53
- Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2005). Realist review-A new method of systematic review designed for complex policy interventions. *Journal of Health Services Research and Policy*, 10(Suppl 1), 21-34.
- Resnick, B., Quinn, C., & Baxter, S. (2004). Testing the Feasibility of Implementation of Clinical Practice Guidelines in Long-Term Care Facilities. *J Am Med Dir Assoc*, 5(1), 1-8. doi: 10.1016/s1525-8610(04)70037-7
- Rochette, A., Korner-Bitensky, N., & Thomas, A. (2009). Changing clinicians' habits: Is this the hidden challenge to increasing best practices? *Disability and Rehabilitation*, 31(21), 1790-1794.
- Ronch, J. L. (2004). Changing institutional culture: Can we re-value the nursing home? *Journal of Gerontological Social Work*, 43(1), 61-82.
- Sladek, R. M., Phillips, P. A., & Bond, M. J. (2006). Implementation science: A role for parallel dual processing models of reasoning. *Implementation Science*, 1(12). doi: 10.1186/1748-5908-1-12
- Sloane, P. D., Davidson, S., Buckwalter, K., Lindsey, A., Ayers, S., Lenker, V., & Burgio, L. (1997). Management of the patient with disruptive vocalization. *Gerontologist*, 37, 675-682.

- Sterns, S., Miller, S. C., & Allen, S. (2010). The complexity of implementing culture change practices in nursing homes. *Journal of American Medical Director Association, 11*(7), 511-518. doi: 10.1016/j.jamda.2009.11.002
- Testad, I., Corbett, A., Aarsland, D., Lexow, K. O., Fossey, J., Woods, B., & Ballard, C. (2014). The value of personalized psychosocial interventions to address behavioral and psychological symptoms in people with dementia living in care home settings: a systematic review. *International Psychogeriatrics, 26*(7), 1083-1098. doi: 10.1017/S1041610214000131
- von Gunten, A., Favre, M., Gurtner, C., & Abderhalden, C. (2011). Vocally disruptive behavior (VDB) in the institutionalized elderly: A naturalistic multiple case report. *Archives of Gerontology and Geriatrics, 52*, e110-e116. doi: 10.1016/j.archger.2010.08.008
- Waterman, H., Tillen, D., Dickson, R., & de Koning, K. (2001). Action research: A systematic review and guidance for assessment. *Health Technology Assessment, 5*(23).
- Wood, W., & Neal, D. T. (2007). A new look at habits and the habit-goal interface. *Psychological Review, 114*(4), 843-863.
- Youn, J. C., Lee, D., Young, Jhoo, J. H., Kim, K. W., Choo, I. H., & Woo, J. I. (2011). Prevalence of neuropsychiatric syndromes in Alzheimer's disease (AD). *Archives of Gerontology and Geriatrics, 52*, 258-263. doi: 10.1016/j.archger.2010.04.015

Zuidema, S. U., Koopmans, R., & Verhey, F. (2007). Prevalence and predictors of neuropsychiatric symptoms in cognitively impaired nursing home patients.

Journal of Geriatric Psychiatry Neurology, 20, 41-49. doi:

10.1177/0891988706292762