

The Development of an Intradisciplinary Staff Training Intervention on the Optimal Management of Behavioural and Psychological Symptoms of Dementia: A Qualitative Study

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Keywords

Neurocognitive disorder · Behavioural and psychological symptoms of dementia · BPSD management · Staff training · Qualitative study

Abstract

Introduction: Behavioural and psychological symptoms of dementia (BPSDs) are a group of highly prevalent symptoms in residents with a neurocognitive disorder, including agitation and depressive symptoms. Caregiving staff often mention knowledge and skills deficits regarding optimal BPSD management. While several staff training on BPSDs management exist internationally, their transferability to other clinical contexts is limited, owing to methodological challenges. Therefore, to address this implementation gap, there is a strong need for training based on high-quality research to strengthen existing evidence, and ensure feasibility and reproducibility. **Methods:** This qualitative study, part of a larger research project, occurred in 2022 on long-term care (LTC) centre unit and an alternate level of care (ALC) hospital unit located in the Province of Quebec, Canada. This study aimed to (1) evaluate the needs and perceptions of staff care-

givers regarding BPSD management, (2) identify the training content and modalities to prioritize according to experts, (3) develop intradisciplinary training on BPSD management, and (4) pretest the preliminary version of the training. Objectives one and two were evaluated using focus groups and objective four using individual cognitive interviews. Qualitative interview data was audio-recorded with participants' consent, transcribed verbatim, and thematically content analysed using an established method. **Results:** Overall, thirteen caregivers participated in objective one (8 from the LTC unit, and 6 from the ALC unit). The main staff training need identified on each site was the management of resident's aggressive behaviours. Staff verbalized a preference for virtual training. Objective 2 involved a panel of eight experts. Experts recommended the use of an online training platform, and certain training models and indicators. Based on caregivers' and experts' input, five interactive online staff training capsules lasting from 20 to 25 min each and an algorithm guiding the evaluation and management of BPSDs were created. The training capsules and the algorithm were iteratively improved following cognitive interviews with 4 caregivers from the participating sites. **Conclusion:** An interactive virtual staff training on BPSD management was created

based on staff and expert consultation. The next step in the investigation will be to evaluate the feasibility and acceptability of the training.

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Introduction

Behavioural and psychological symptoms of dementia (BPSDs) are a group of highly prevalent symptoms in residents with a neurocognitive disorder (NCD), including agitation [1–3] and depressive symptoms [2–6]. These symptoms are expressions of unmet needs (e.g., related to physiological needs, physical and social environment) as the NCD limits the persons' capacity to communicate their needs effectively [7]. Therefore, BPSDs are meaningful manifestations of unmet needs that have many important consequences on the resident with a NCD, such as reduced quality of life [5, 7, 8] and increased mortality [2]. The suboptimal management of these symptoms also has negative consequences on staff (e.g., increased stress [9] and distress [10, 11]) and the healthcare system (e.g., increased costs [12]).

Recent research on BPSD management demonstrates the efficacy of many non-pharmacological interventions (e.g., sensory-focused strategies [13–16], person-centred care [13, 14, 17]). However, caregiving staff mention knowledge and skills deficits regarding optimal BPSD management [18], indicating the existence of an important implementation gap. Therefore, staff training appears necessary.

The research team conducted a recent systematic review that demonstrated the need for the creation of staff training on BPSD management that incorporates structured protocols, communication techniques and person-centred bathing strategies [19]. These results were congruent with many recent specific systematic reviews [20–23]. Our review also emphasized the need for high-quality research, use of transparent methods to allow reproducibility [24], and utilizing staff that's accessible daily on long-term care (LTC) units for feasibility and cost-effectiveness reasons [19].

Consequently, the objectives of this study are to (1) evaluate the needs and perceptions of staff caregivers regarding BPSD management, (2) identify the training content and modalities to prioritize according to experts in the field, (3) develop an intradisciplinary training on BPSD management, and (4) pretest the training's preliminary version using cognitive interviews, to allow its improvement. We opted for qualitative research methods as we wished to gain a deeper understanding of subjective perceptions and experiences of staff working with BPSD clientele.

Methods

Settings

This study was conducted between March and May 2022 on two units at the *Centre intégré universitaire de santé et de services sociaux de l'Estrie – Centre hospitalier universitaire de Sherbrooke*, located in the Province of Québec (Canada). The first unit was a LTC unit and the second was a hospital unit regrouping an alternate level of care (ALC) clientele, with the majority requiring LTC placement.

Study Design

This qualitative study is part of a larger two-phase pilot study aiming the development and preliminary evaluation of staff training on BPSD management. This article reports on Phase 1, the development of the training. The detailed results of Phase 2, pertaining to the training's feasibility and acceptability, will be reported in another publication (Carrier et al. [19], forthcoming).

Specifically, Phase 1 involved four successive steps. *Step 1:* Focus groups with staff from the two study settings to identify the training needs in BPSD management (Objective 1). *Step 2:* A focus group with a panel of experts to identify the training content and modalities to prioritize (Objective 2). *Step 3:* Development of the preliminary version of the training by the research team (Objective 3). *Step 4:* Pretesting the training's preliminary version using cognitive interviewing, with caregivers from the target population, to identify factors that could impede comprehension or appreciation of the training (Objective 4). Phase 1 resulted in the creation of a training intervention that will be further pilot-tested in this study's second phase.

Participants, Sampling, Recruitment, and Selection Criteria

Sampling, recruitment, and selection criteria for the participants are shown in Table 1.

Data Collection

Focus Groups

Semi-structured virtual focus groups of six to eight participants were conducted with the three groups of participants separately (staff from both settings and the experts). These interviews were co-animated by the two first authors (D.C. and E.T.) using a semi-structured interview guide and were recorded in the digital audio-visual format (with participant consent). The data collected (staff and experts) related to the (1) training needs in BPSD management, (2) parameters of the training in development, and (3) indicators and tools aimed at measuring the potential effects of the training on the staff, and the most

Table 1. Sampling, recruitment, and selection criteria

	Caregiving staff			Experts
	cognitive interviews	focus groups (pre and post training)	training and questionnaires	
Sampling	Purposeful	Convenience	Convenience	Purposeful Snowball with previously recruited experts
Recruitment	Email	Email, with the help of the managers	Presentation of the study on the units	Email
Selection criteria	(1) daily care staff (registered nurse [RN], licensed practical nurse [LPN], orderly or service aid)			(1) have an expertise in the fields of geriatrics-gerontology, educational strategies, continuing education, or knowledge transfer/translation
	(2) be 18 years of age or older			
	(3) speak and understand French			
	(4) have access to a device (e.g., computer, smartphone) and the Internet			
	(5) working in a LTC unit other than the two study settings	(5) working in one of the two study settings		(5) working in the province of Quebec;
	(6) have access to a device (e.g., computer, smartphone) with a camera	–		(6) have access to a device (e.g., computer, smartphone) with a camera
	–	(7) FG after the training: having completed the training	–	–
FG, focus group.				

appropriate measurement times. The virtual method was prioritized due to the COVID-19 pandemic and the interview guide was adjusted as needed after each interview.

Cognitive Interviewing

Cognitive interviews are a type of in-depth interview that pay explicit attention to the mental processes that the respondents use, in this context, while following the preliminary version of the training. The goal of these interviews was to obtain participant feedback on the training regarding factors that could impede understanding or appreciation of the training, and various suggestions to allow its improvement [25]. These individual interviews were animated by the first author (D.C.), conducted through a virtual meeting platform, and recorded in a digital audio-visual format (with participant consent).

Field Notes

Field notes were used to note contextual and non-verbal aspects during focus groups, individual interviews and cognitive interviews. Reflexive notes, to consider the subjectivity of the researchers (e.g., point of view, feelings), were also taken.

Sociodemographic Data

During Steps 1, 2, and 4, a sociodemographic questionnaire was administered to the participants to assess the variables of sex, gender, age, number of years of experience and occupation.

Data Analysis

Focus group and interview data were transcribed verbatim and content-analysed alongside field notes and reflexive notes taken by the two co-animators (D.C. and E.T.). Data were qualitatively content-analysed using the six consecutive steps of Braun and Clarke [26]. D.C. and E.T. individually analysed data, then compared results. Discrepancies were resolved through consensus among research team members.

Results

One focus group and one individual interview were conducted with the LTC staff and one focus group with the ALC staff. Eight participants from the LTC unit participated in the interviews and five participants from

the ALC unit. Most staff from both units identified as women, varied in age and number of years of experience (online suppl. Table 1; for all online suppl. material, see <https://doi.org/10.1159/000541517>). Most staff participating in the focus group for the ALC unit were nurses, and job titles varied in the LTC unit (online suppl. Table 1). The interviews lasted between 90 and 120 min each. All interviews were conducted in French, the excerpts incorporated in this article were translated by the authors.

Training Needs and Caregivers' Perceptions regarding BPSD Management (Objective 1)

Training Needs

Globally, staff from both units did not feel optimally prepared to manage BPSDs.

"You know, I don't feel adequately equipped to intervene with certain patients or certain behaviours." (LTC Orderly 1)

The main training need identified by staff from both units was the management of aggressive behaviours, especially when providing hygiene care.

"What I find difficult is really the aggressivity, dealing with it, especially between patients and towards the caregivers too." (LTC Licensed Practical Nurse 2)

They also mentioned the need for training regarding non-pharmacological approaches to BPSD management. Staff from both units also mentioned a training need on the assessment tools available for the evaluation of BPSDs and possible confounding pathologies (e.g., delirium). The main tools available in both study settings for the assessment of BPSDs are the observer-rated clinical behavioural assessment grid (direct observation method) and the Cohen-Mansfield Agitation Inventory (CMAI; retrospective rating method). However, many nursing staff verbalized not having been trained on their use and interpretation, especially for the CMAI.

"Personally, except for notes on the specialized approach to senior care, we don't have much. We have evaluation grids that have never been explained to us, that we do randomly and expect to have an intelligent answer that comes from that." (ALC Nurse 1)

Training Parameters

The preferences of staff regarding the training modalities varied. Most LTC staff wanted a hybrid training, with four to five online training capsules lasting between 10 and 15 min each. Others preferred training entirely in person or entirely online. The ALC staff preferred entirely online training, composed of four to five training capsules

lasting between 10 and 15 min with activities. Both units thought the training would be more feasible if online and available from home.

ALC staff also mentioned that an algorithm guiding the evaluation of BPSDs would be helpful. The LTC and ALC staff believed that 4 weeks would be sufficient to complete the training.

Indicators and Tools

All staff from both study settings mentioned numerous negative consequences of BPSDs on both their professional practice and their psychological and physical well-being, to varying degrees. Staff from both units raised a concern of fearing for their own security and the security of other residents. They mentioned the unpredictability of resident behaviours, being hurt physically and even work accidents resulting from these behaviours.

"We never know how the person [resident with a NCD] will react...The other day I got a knee to the ovaries." (ALC Orderly 1)

Stress, fear, discouragement, and hopelessness related to these behaviours were also verbalized.

"It's really difficult [managing aggressive behaviours]. We are hopeless, we really don't know what to do right now." (ALC Nurse 2)

Furthermore, when questioning staff on the most pertinent outcomes to measure, staff from both units agreed that the measures of stress and distress associated with BPSD management before and after the training would be adequate measures. They believed that 1 month after the training would be sufficient to see changes in these measures.

LTC staff also mentioned that the training would be a success, according to them, if they had more tools to optimally manage BPSDs, allowing them to be more confident in their interventions and have better control over their approach. The ALC staff mentioned the evaluation of the training's practicality after its reception would be pertinent. These indicators were added to the interview guide for the focus groups after the training in the pilot study's second phase.

Identification of the Content and Modalities to Prioritize according to Experts (Objective 2)

Two focus groups and one individual interview were conducted with eight experts. These interviews lasted between 90 and 120 min each. Experts recommended the use of an online training platform and the addition of cognitive interviews of the training with caregivers from

the target population. Certain experts also recommended the use of Kirkpatrick's and Kirkpatrick [27] four levels of learning in the creation of the training and evaluation of its efficacy [27], and the use of the Continuing Professional Development Reaction Questionnaire to assess the training's impact on health professionals' clinical behavioural intentions [28]. All these recommendations were applied.

Development of the Intradisciplinary Training on BPSD Management (Objective 3)

An initial training outline was created by the research team according to the best practices identified in our systematic review [19]. This plan was then adapted according to the data collected in staff focus groups. Afterwards, the adapted plan was presented to our experts and enriched further. The research team then created five online training capsules lasting from 20 to 25 min each. Each capsule contained participation and comprehension questions, care scenarios, sections to reflect on practice and finished with key messages and memory cards of the main content to remember (Table 2).

The third training capsule was based on a structured acronym "WATCH OVER" guiding BPSD evaluation and interventions (Table 3) and contained five optional sections on the instructions for the use of different assessment tools. The acronym "WATCH OVER" was developed from the best practices identified in our systematic review [19] and bonified with the experts.

Pretesting the Training's Preliminarily Version Using Cognitive Interviews (Objective 4)

Individual cognitive interviews were conducted with one registered nurse, one licensed practical nurse, one orderly and one service aid. They varied from 3 to 5 h in total length (divided into more than one interview). These interviews allowed the identification of sections in the training that were less well understood, terms and concepts that required clarification, and sections that would benefit from the addition of examples, care scenarios and participation questions. Changes were consequently made to the preliminary version of training.

Discussion

This study resulted in the creation of an intradisciplinary BPSD training, based on the best practices identified in the literature, the training needs and modality preferences mentioned by the staff, the collaboration of a panel of experts, and improved following

cognitive interviews. The training developed is composed of five online training capsules lasting from 20 to 25 min each, participation questions, memory cards and an algorithm guiding the systematic evaluation and management of BPSDs.

Both units verbalized that the most difficult symptoms to manage were aggressive behaviours, especially during hygiene care. Rapaport et al.'s [29] recent qualitative study also reported that the most common behaviours identified by care home staff were physical and verbal aggressive behaviours manifested during hygiene or other intimate care (e.g., assisting the resident to the bathroom) [29].

Furthermore, staff interviewed in our study verbalized that BPSDs had many negative consequences on them, including fear of being harmed, feeling stressed and hopeless regarding BPSD management, as well as sad and unsatisfied with their work when they were unable to optimally manage BPSDs and ease resident suffering. Staff interviewed in the study conducted by Rapaport et al. [29] also mentioned feeling fear, danger, and hopelessness regarding these behaviours. They also mentioned feeling like they were not doing a good job when they were unable to alleviate the manifestation [29]. The results of this study are consistent with our findings. The many negative consequences of these behaviours on staff reinforce the need for adapted training to better equip them.

In addition, staff from both units mentioned insufficient training on how to apply and interpret a variety of assessment tools, and limited access to certain tools and scales adapted to residents with a NCD. A recent study conducted by Penko et al. [30] on the NCD-related behavioural assessment tools in Canadian LTC homes, reported that 87% of LTC home staff mentioned that the training they had received pertaining to the use of behavioural assessment tools were "verbal instructions from a colleague" [30]. Having access to tools and training on their use is essential to allow the optimal monitoring and management of BPSDs, as well as collaborative decision-making [30]. Therefore, we recommend the inclusion of training on the adequate use of these essential tools that facilitate nursing staff in their role of assessment, and in interprofessional collaboration for future research and implementation in clinical practice.

Moreover, although the COVID-19 pandemic strongly encouraged the shift towards virtual training, this modality was desired by most staff from both units as they believed it would be more feasible with their busy work schedules. Williams et al. [31] concluded that virtual training is effective, more flexible, accessible, and essential

Table 2. Learning objectives and outline of the content for the five training capsules

Capsule	Learning objectives	Outline of the content
1) Introduction to BPSDs	<ul style="list-style-type: none"> • Learn about BPSDs • Be able to identify the possible causes of BPSDs (predisposing and precipitating factors) 	<ul style="list-style-type: none"> • NCDs (definition, evolution, and types) • BPSDs (definition and symptoms) • Causes of BPSDs (using the NDB Model) • Consequences of BPSDs
2) Optimal approaches and communication techniques to adopt with residents with a NCD	<p>With a resident presenting a NCD, understand and become familiar with:</p> <ul style="list-style-type: none"> • Principles of therapeutic communication • Techniques of validation and diversion • Application of optimal approaches 	<ul style="list-style-type: none"> • Indications for pharmacological versus non-pharmacological interventions • Principles of therapeutic communication • Technique of validation • Technique of diversion • Optimal approaches and other factors to consider
3) Systematic assessment and intervention approach in the presence of a BPSD	<ul style="list-style-type: none"> • Be able to identify when it's relevant to assess a BPSD in depth and to intervene on it • Learn about the components of the structured protocol and be able to use the protocol in care settings, when relevant • Learn about existing measurement tools, their indications and analysis 	<ul style="list-style-type: none"> • Assessment and intervention approach in the presence of a BPSD, including the appropriate assessment tools, when applicable
4) Resistance to care and aggressive behaviours in residents with a NCD	<p>Be able to identify the causes, elements to assess (for nurses) or to consider (for other caregivers) and preferred interventions in the presence of</p> <ul style="list-style-type: none"> • Resistance to care • Verbal agitation • Physical aggressive behaviours 	<ul style="list-style-type: none"> • Resistance to care: <ul style="list-style-type: none"> – Dressing and undressing – Medication administration • Management of refusals • Verbal agitation • Physical aggressive behaviours
5) Hygiene care with residents with a NCD	<p>With a resident presenting a NCD, learn about</p> <ul style="list-style-type: none"> • Principles to be applied during hygiene care • Indications for each type of bath available 	<ul style="list-style-type: none"> • Resistance to hygiene care • What to do before, during and after the bath • Important elements to consider at all times • Types of baths recommended with this clientele (description and indications)

BPSD, behavioural and psychological symptoms of dementia; NCD, neurocognitive disorder; NDB, Need-Driven Dementia-Compromised Behaviour Model.

to reach LTC staff, considering their heavy workloads and staff shortages that limit their attendance in classroom training. Many recent studies have the same conclusion [32–34]. Therefore, this modality will be used to administer the training created and the feasibility and acceptability of this modality will be assessed in this study's second phase.

Our recommendations for future training in the clinical and research context are the inclusion of content on the management of aggressive behaviours, non-pharmacological approaches, and the tools available for the assessment of BPSDs and possible confounding pathologies. Pertaining to the modalities, we recom-

mend online training, in the form of short interactive capsules, administered through a platform available from home.

Strengths and Limitations

This study has many strengths. We used multiple complementary and rigorous methods in the creation of the training (i.e., focus groups with staff and domain experts, cognitive interviewing). Therefore, we are confident that the training developed is robust and addresses the needs of the actual caregivers in our study settings. We also ensured a transparent approach to favour reproducibility. Therefore, we believe that the training

Table 3. Acronym guiding the evaluation and intervention in presence of BPSDs

WATCH OVER		Components to consider and evaluate
W	Watch for the presence of BPSDs and assess the necessity to intervene on the behaviour	<ul style="list-style-type: none">• Are the communication methods and basic approaches adequate for the situation?• Is it possible to modify the caregiver's perception of the behaviour (<i>recadrage</i>)?
A	Assess the BPSD	<ul style="list-style-type: none">• Description of the symptom (what is occurring precisely?)• Frequency of its manifestation• Context of its appearance• Consequences of the behaviour
T	Think of, identify, and analyse the possible causes of the BPSD	<ol style="list-style-type: none">1. Response to fundamental needs2. Presence of pain or discomfort3. Response to interactional and environmental needs4. Presence of abnormalities on the physical exam5. Presence of a delirium6. Presence of a depression
C	Connect the BPSDs to the	<ul style="list-style-type: none">• Hypothesis #1, #2, #3, etc.
H	Hypotheses	
O	Outline, order and	<ul style="list-style-type: none">• Primary hypothesis• What interventions have been successful and unsuccessful in the past?• Possible interventions by hypothesis• Retained interventions by hypothesis• Identification of means to apply these interventions in daily care (and who will apply them)• Consultation of other professionals and non-professionals, as well as the resident's relatives
V	Valorize interventions based on the identified hypotheses	
E	Evaluate and	<ul style="list-style-type: none">• Monitor the behaviour and follow-up on it with pertinent assessment scales• Required frequency of follow-ups and evaluations
R	Re-evaluate the efficacy of the intervention(s)	
BPSD, behavioural and psychological symptoms of dementia.		

developed compensates for many limits that we noted in our systematic review [19].

We also believe that the chosen methodology is transferable to other settings, although certain local adaptations may be necessary [35]. In addition, we believe that our heterogenous sampling for the staff focus groups allowed a more comprehensive understanding of the reality, context, and collaborative needs of staff on each unit.

However, this study did have some limitations. Firstly, the staff having participated in the focus groups were more experienced and implicated on the unit, limiting our capacity to evaluate the training needs and the impact of BPSDs on less experienced staff. Assessment of more novice staff's needs is recommended in future studies. D.C. and E.T. are both registered nurses in LTC units; therefore, there is a possibility that their experience with BPSD management may have influenced their animation

and analysis of the focus groups. However, the study was conducted in two units where D.C. and ET. did not work. In addition, many qualitative best practices were used to increase qualitative rigour and reduce the risk of bias (e.g., co-coding in a precise, consistent and exhaustive manner to increase neutrality and credibility, use of field notes to note contextual and non-verbal aspects, with the goal of increasing credibility, as well as reflexive notes to consider the subjectivity of the researchers [e.g., point of view, feelings] to increase fidelity).

Secondly, only four caregivers participated in the cognitive interviews. Our results may have been richer if we had interviewed more staff. We nonetheless believe that a small amount of cognitive testing is still of added value compared to none [25]. Finally, the training created was slightly longer than initially planned by the research team and desired by the staff (i.e., 25 min instead of 15 min each). Several training needs were verbalized; therefore, we

prioritized detailed training addressing most of these needs with time for examples, participation questions and care scenarios. We believed this would increase the training's pertinence, interactivity, and acceptability.

Conclusion

This pilot study's first phase resulted in the creation of an intradisciplinary training on BPSD management that was created based on the needs of the staff caregivers and the expertise of provincial experts and improved following cognitive interviews. The next step will be the administration of this training to the two study settings and the evaluation of its feasibility and acceptability in this pilot study's second phase.

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Statement of Ethics

This study's protocol was reviewed by the Comité d'éthique de la recherche du CIUSSS de l'Estrie – CHUS and approved on February 7, 2022, approval No. 2022-4502. Written informed consent was obtained from all participants (staff and experts).

References

- 1 Bergh S, Engedal K, Røen I, Selbæk G. The course of neuropsychiatric symptoms in patients with dementia in Norwegian nursing homes. *Int Psychogeriatr*. 2011;23(8):1231–9. <https://doi.org/10.1017/S1041610211001177>
- 2 Bränsvik V, Granvik E, Minthon L, Nordström P, Nägga K. Mortality in patients with behavioural and psychological symptoms of dementia: a registry-based study. *Aging Ment Health*. 2021;25(6):1101–9. <https://doi.org/10.1080/13607863.2020.1727848>
- 3 Fauth EB, Gibbons A. Which behavioral and psychological symptoms of dementia are the most problematic? Variability by prevalence, intensity, distress ratings, and associations with caregiver depressive symptoms. *Int J Geriatr Psychiatry*. 2014;29(3):263–71. <https://doi.org/10.1002/gps.4002>
- 4 Steinberg M, Shao H, Zandi P, Lyketsos CG, Welsh-Bohmer KA, Norton MC, et al. Point and 5-year period prevalence of neuropsychiatric symptoms in dementia: the Cache County Study. *Int J Geriatr Psychiatry*. 2008; 23(2):170–7. <https://doi.org/10.1002/gps.1858>
- 5 Bédard A, Landreville P, Voyer P, Verreault R, Vézina J. Reducing verbal agitation in people with dementia: evaluation of an intervention based on the satisfaction of basic needs. *Aging Ment Health*. 2011;15(7):855–65. <https://doi.org/10.1080/13607863.2011.569480>
- 6 Fernández M, Gobartt AL, Balañá M; COOPERA Study Group. Behavioural symptoms in patients with Alzheimer's disease and their association with cognitive impairment. *BMC Neurol*. 2010;10:87–9. <https://doi.org/10.1186/1471-2377-10-87>
- 7 Algase DL, Beck C, Kolanowski A, Whall A, Berent S, Richards K, et al. Need-driven dementia-compromised behavior: an alternative view of disruptive behavior. *Am J Alzheim Dis*. 1996;11(6):10–9. <https://doi.org/10.1177/153331759601100603>
- 8 Norton MJ, Allen RS, Snow AL, Hardin JM, Burgio LD. Predictors of need-driven behaviors in nursing home residents with dementia and associated certified nursing assistant burden. *Aging Ment Health*. 2010;14(3):303–9. <https://doi.org/10.1080/13607860903167879>
- 9 Costello H, Walsh S, Cooper C, Livingston G. A systematic review and meta-analysis of the prevalence and associations of stress and burnout among staff in long-term care facilities for people with dementia. *Int Psychogeriatr*. 2019;31(8):1203–16. <https://doi.org/10.1017/S1041610218001606>
- 10 McPherson S, Hiskey S, Alderson Z. Distress in working on dementia wards: a threat to compassionate care – a grounded theory study. *Int J Nurs Stud*. 2016;53:95–104. <https://doi.org/10.1016/j.ijnurstu.2015.08.013>
- 11 Zwijsen SA, Kabboord A, Eefsting JA, Hertogh CPM, Pot AM, Gerritsen DL, et al. Nurses in distress? An explorative study into the relation between distress and individual neuropsychiatric symptoms of people with dementia in nursing homes. *Int J Geriatr Psychiatry*. 2014;29(4):384–91. <https://doi.org/10.1002/gps.4014>

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

Acquisition of data: D.C. and E.T. Conception and design of the study; analysis and interpretation of data; drafting, critically revising for intellectual content, and approving the final version of this article; and agreeing to be accountable for all aspects of the study: D.C., E.T. and C.M.R.

Data Availability Statement

All data generated or analysed during this study are included in this article and its online supplementary material. Further enquiries can be directed to the corresponding author.

- 12 Jones E, Aigbogun MS, Pike J, Berry M, Houle CR, Husbands J. Agitation in dementia: real-world impact and burden on patients and the healthcare system. *J Alzheimers Dis.* 2021; 83(1):89–101. <https://doi.org/10.3233/JAD-210105>
- 13 Legere LE, McNeill S, Schindel Martin L, Acorn M, An D. Nonpharmacological approaches for behavioural and psychological symptoms of dementia in older adults: a systematic review of reviews. *J Clin Nurs.* 2018;27(7–8):e1360–76. <https://doi.org/10.1111/jocn.14007>
- 14 Livingston G, Kelly L, Lewis-Holmes E, Baio G, Morris S, Patel N, et al. A systematic review of the clinical effectiveness and cost-effectiveness of sensory, psychological and behavioural interventions for managing agitation in older adults with dementia. *Health Technol Assess.* 2014;18(39):1. <https://doi.org/10.3310/hta18390>
- 15 Meyer C, O'Keefe F. Non-pharmacological interventions for people with dementia: a review of reviews. *Dementia.* 2020;19(6):1927–54. <https://doi.org/10.1177/1471301218813234>
- 16 Watt JA, Goodarzi Z, Veroniki AA, Nincic V, Khan PA, Ghassemi M, et al. Comparative efficacy of interventions for aggressive and agitated behaviors in dementia: a systematic review and network meta-analysis. *Ann Intern Med.* 2019;171(9):633–42. <https://doi.org/10.7326/M19-0993>
- 17 Ab raha I, Rimland JM, Trotta FM, Dell'Aquila G, Cruz-Jentoft A, Petrovic M, et al. Systematic review of systematic reviews of non-pharmacological interventions to treat behavioural disturbances in older patients with dementia. The SENATOR-OnTop series. *BMJ Open.* 2017;7(3):e012759–28. <https://doi.org/10.1136/bmjopen-2016-012759>
- 18 Chang E, Daly J, Johnson A, Harrison K, Easterbrook S, Bidewell J, et al. Challenges for professional care of advanced dementia. *Int J Nurs Pract.* 2009;15(1):41–7. <https://doi.org/10.1111/j.1440-172X.2008.01723.x>
- 19 Carrier D, Toulouse É, Rochefort CM. Staff training interventions to prevent or reduce behavioural and psychological symptoms of dementia in nursing home residents: a mixed methods systematic review. *Dement Geriatr Cogn Disord.* 2023;52(3):117–46. <https://doi.org/10.1159/000530503>
- 20 McGilton KS, Boscart V, Fox M, Sidani S, Rochon E, Sorin-Peters R. A systematic review of the effectiveness of communication interventions for health care providers caring for patients in residential care settings. *Worldviews Evid Based Nurs.* 2009;6(3): 149–59. <https://doi.org/10.1111/j.1741-6787.2009.00155.x>
- 21 Nguyen H, Terry D, Phan H, Vickers J, McInerney F. Communication training and its effects on carer and care-receiver outcomes in dementia settings: a systematic review. *J Clin Nurs.* 2019;28(7–8):1050–69. <https://doi.org/10.1111/jocn.14697>
- 22 Konno R, Stern C, Gibb H. The best evidence for assisted bathing of older people with dementia: a comprehensive systematic review. *JBI Database Syst Rev Implement Rep.* 2013;11(1):123–212. <https://doi.org/10.11124/jbisrir-2013-607>
- 23 Manietta C, Labonté V, Möhler R. Structured care protocols to reduce behavior that challenges in people with dementia: a systematic review. *J Am Med Dir Assoc.* 2022;23(7): 1137–44.e2. <https://doi.org/10.1016/j.jamda.2021.10.012>
- 24 Reis RC, Dalpai D, Camozzato A. Staff training to reduce behavioral and psychiatric symptoms of dementia in nursing home residents: a systematic review of intervention reproducibility. *Dement Neuropsychol.* 2013; 7(3):292–7. <https://doi.org/10.1590/S1980-57642013DN70300010>
- 25 Campanelli P. Testing survey questions. *International handbook of survey methodology* [Internet]. New York, NY: Taylor & Francis Group/Lawrence Erlbaum Associates; 2008. p. 176–200.
- 26 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77–101. <https://doi.org/10.1191/1478088706qp0630a>
- 27 Kirkpatrick JD, Kirkpatrick WK. Kirkpatrick's four levels of training evaluation. Alexandria, VA: ATD Press; 2016.
- 28 Légaré F, Borduas F, Freitas A, Jacques A, Godin G, Luconi F, et al. Development of a simple 12-item theory-based instrument to assess the impact of continuing professional development on clinical behavioral intentions. *PLoS One.* 2014;9(3):e91013–10. <https://doi.org/10.1371/journal.pone.0091013>
- 29 Rapaport P, Livingston G, Hamilton O, Turner R, Stringer A, Robertson S, et al. How do care home staff understand, manage and respond to agitation in people with dementia? A qualitative study. *BMJ Open.* 2018;8(6): e022260–9. <https://doi.org/10.1136/bmjopen-2018-022260>
- 30 Penko M, Quirt H, Schindel Martin L, Iaboni A. Behaviour assessment tools in long-term care homes in Canada: a survey. *Aging Ment Health.* 2021;25(10):1857–68. <https://doi.org/10.1080/13607863.2020.1793904>
- 31 Williams KN, Coleman CK, Perkhounkova Y, Beachy T, Hein M, Shaw CA, et al. Moving online: a pilot clinical trial of the changing talk online communication education for nursing home staff. *Gerontologist.* 2021; 61(8):1338–45. <https://doi.org/10.1093/geront/gnaa210>
- 32 Halabisky B, Humbert J, Stodel EJ, MacDonald CJ, Chambers LW, Doucette S, et al. eLearning, knowledge brokering, and nursing: strengthening collaborative practice in long-term care. *Comput Inform Nurs.* 2010; 28(5):264–73. <https://doi.org/10.1097/NCN.0b013e3181ec28b9>
- 33 Pusa S, Dorell Å, Erlingsson C, Antonsson H, Brännström M, Sundin K. Nurses' perceptions about a web-based learning intervention concerning supportive family conversations in home health care. *J Clin Nurs.* 2019;28(7–8): 1314–26. <https://doi.org/10.1111/jocn.14745>
- 34 Soper T. Knowledge into learning: comparing lecture, e-learning and self-study take-home packet instructional methodologies with nurses. *Nurs Open.* 2017;4(2):76–83. <https://doi.org/10.1002/nop.2.73>
- 35 Desrosiers J, Pouliot-Morneau D, Larivière N, LE FOCUS GROUP: Application pour une étude des normativités liées au concept de citoyenneté, au sein d'un groupe de patients partenaires en santé mentale. In: Larivière N, Corbière M, editors. *Méthodes qualitatives, quantitatives et mixtes*, 2e édition: Dans la recherche en sciences humaines, sociales et de la santé [Internet]. Presses de l'Université du Québec; 2020. p. 141–72. <https://doi.org/10.2307/j.ctv1c29qz7.11>