


To Turn or Not to Turn: Exploring Nurses' Decision-Making Processes Concerning Regular Turning of Nursing Home Residents

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Abstract

Background: Nursing home (NH) residents are at high-risk for pressure injuries (PrIs), and those living with Alzheimer's Disease and Related Dementias (ADRD) are at even greater risk. Understanding how nursing staff approach repositioning remains critical. **Methods:** As part of an ongoing clinical trial, this mixed-method prospective, exploratory, descriptive study examined repositioning efforts for PrI prevention. An investigator-developed checklist guided researcher observations, and focus groups revealed staff perspective on resident behaviors and corresponding repositioning approaches. Focus group transcripts were analyzed using the constant comparative coding method. **Results:** Repositioning observations were conducted for 88 residents. Resident behaviors and nursing approaches were similar between the ADRD ($n = 62, 70\%$) and non-ADRD ($n = 26, 30\%$) groups. Thirty-six staff participated in one of six focus group sessions. A conceptual model was developed to depict the repositioning process. Staff revealed care is guided by clinical frameworks and guidelines, along with resident preferences and behaviors. **Conclusions:** Protocol-driven, standardized PrI prevention care may limit the capacity to honor repositioning preferences. Insights from the focus groups highlight the importance of being cognizant of competing factors that may interfere with successful repositioning. Approaches by staff may be protocol-driven or an integrated method of care.

Keywords

aging, Alzheimer's/Dementia, long-term care, nursing

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Introduction

Nursing home residents are at high risk for pressure injuries (PrIs), localized damage to the skin and underlying tissue, usually caused by prolonged pressure against the skin which can happen when someone is left in the same position for long periods of time (European Pressure Ulcer Advisory Panel et al., 2019). Nursing home (NH) residents living with Alzheimer's disease or a related dementia (ADRD) are at even greater risk for PrI formation due to the decline in neurophysiologic function, which affects one's ability to sense pressure/pain and move to offload the underlying tissue from said pressure (Harris-Kojetin et al., 2016; Jaul &

Calderon-Margalit, 2015). Approximately 48% of NH residents are diagnosed as having ADRD (Center for Disease

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Control and Prevention, 2020); and of those, up to 66% are at risk for PrI development at some point during their stay (Harris-Kojetin et al., 2016; Jaul & Calderon-Margalit, 2015). While regular repositioning is the cornerstone of PrI prevention (and mandated by government regulation) a number of barriers exist to conducting frequent, scheduled resident repositioning. Participation in repositioning activities is difficult for many residents given their limited mobility, sensation, and common behavioral challenges. In fact, up to 90% of residents with ADRD suffer from behavioral issues (Feast et al., 2016), such as agitation, aggression, and apathy. Managing these behavioral expressions is one of the most difficult challenges nursing staff encounter (Finkel & Burns, 2000), and the inability to successfully meet this challenge often results in increased care burden (Mohamed et al., 2010).

Nursing staff in NHs have finite resources and tight, protocol-driven schedules, making PrI prevention care delivery difficult and time-intensive for residents with ADRD who experience fluctuating behavioral and psychological symptoms (BPSD) (Selbaek et al., 2014; Sun et al., 2018). Given the staff's fixed amount of time to care for each resident, resident preferences regarding care delivery may be overlooked, potentially causing or exacerbating BPSD (Ervin et al., 2014). Past research has demonstrated that BPSD expressions often arise from the incongruence between a person's needs and the environment (Cohen-Mansfield et al., 2012). Medication is often the first choice for stabilizing moods and managing BPSD (Cohen-Mansfield & Jensen, 2008; Olsson et al., 2010); however, non-pharmacological approaches provided by caregivers, that include both the social and physical environment, have proven effective and have the added value of avoiding adverse effects experienced when using pharmacological intervention (Chenoweth et al., 2009; Cohen-Mansfield et al., 2007; Cohen-Mansfield et al., 2012; Ervin et al., 2014). Resident cooperation is vital for successful repositioning; hence, recognizing and integrating a tailored nursing staff approach can improve resident cooperation and engagement within the fixed amount of time available for providing care (Fazio et al., 2018a; Fossey et al., 2006; Poey et al., 2017; Yoon, 2018). Yet, little is understood about successful repositioning care models for those living with ADRD. This study aimed to better understand nursing staff decision-making processes for repositioning approaches aimed at PrI prevention.

Methods

Design

This was a mixed-method prospective, exploratory design conducted in 3 NHs as a supplemental study to an ongoing clinical trial [3R01-NR016001-04S1; ClinicalTrials.gov: NCT02996331, First registration (12/19/2016)] comparing 2-, 3-, and 4-hour repositioning intervals for PrI prevention across nine NHs. Details are published elsewhere (Yap et al., 2018). Observational data were collected on a convenience sample of NH residents during routine, naturally occurring

repositioning events. Focus groups (2 per NH) with nursing staff were convened following completion of parent study data collection.

Setting and Sample

Setting. The study was conducted at 3 for-profit, Medicare-certified, intermediate, and skilled care NHs with >100 beds in the eastern United States participating in the parent study.

Sample. All NH residents were eligible for the additional study and if clinically assessed during routine care as having a Braden Scale for Predicting Pressure Sore Risk[®] (hereafter Braden Scale) score of 10–12 = high, 13–14 = moderate, 15–18 = mild, and 19–23 = low risk for PrI (Bergstrom et al., 1987a; Bergstrom et al., 1987b). Exclusion criteria included existing PrI, severe risk for PrI (Braden score ≤ 9 because they had individualized treatments in place such as specialty beds), adhesive allergy, use of specialty beds, or presence of a “do not turn” order.

Nursing Staff. Focus groups consisted of a convenience sample drawn from all eligible nursing staff (irrespective of job category, gender, race, or ethnicity) working clinically full-time or part-time with residents. Staff were recruited using flyers containing the purpose and logistics of the study, as well as by word of mouth and invitations from researchers. Interested participants contacted the researchers in person or by phone if interested in participating in a scheduled focus group.

Measures and Procedures

Electronic health record (EHR) data were extracted to ascertain each resident's clinically assessed Braden risk score (Bergstrom et al., 1987a), demographics (age, gender, race, and ethnicity), and ADRD status. ADRD was defined as the presence of an International Classification of Disease (ICD) code for Alzheimer's disease or another dementia diagnosis (with the exception of Huntington's disease, major depressive disorder, multiple sclerosis, Parkinson's disease, Batten disease, schizophrenia, and AIDS dementia) (National Institute on Aging). Because it is known that dementia develops over time and is often without diagnosis in early stages, the research team also used the Brief Interview for Mental Status (BIMS) score < 12 as a mechanism for early detection of cognitive impairment in residents without a formal ICD10 ADRD diagnosis (Chodosh et al., 2007; McCarten et al., 2012; Saliba et al., 2012; The Gerontological Society of America Workgroup, 2015).

Observations were conducted using an investigator-developed checklist to guide researcher interpretations of routine repositioning events. The checklist was not validated but the same 3 team members collected observational data at all 3 NHs and random inter-rater reliability checks for both resident and nursing behaviors were performed. The checklist

was based on current behavioral and psychological symptoms of dementia (BPSD) literature (Cummings, 1997; Gerlach & Kales, 2018; van der Linde et al., 2016), to assess residents' behaviors and nursing responses. Research team members observed resident/staff during repositioning events throughout the day and evening shifts during the last week of implementation and recorded the observations. Repeated repositioning events performed on the same resident were considered independent, unique events. There was no consistent pairing of staff to residents, and participation in helping reposition residents was random (i.e., often a solicited team effort).

Focus groups provide a broader range of insights than may have been obtained with individual interviews (Krueger & Casey, 2000). All sessions lasted between 45 and 60 min and were held on a single day at each NH. An investigator-developed, semi-structured interview guide was used. Specifically, the interview guide aimed to elicit staff perceptions of 1) the impact residents' BPSD had on repositioning events; 2) strategies employed to manage challenging resident behaviors; and 3) tailoring required during repositioning events. Two study team members experienced in focus group methods moderated each session, with emphasis placed on facilitating interactions between consented staff participants. The lead moderator provided an overview of the study's purpose, background, and procedures, such as investigator roles and session recordings; all group members were encouraged to participate in the discussion, and differing views were explored with follow-up probes. All sessions were audio-recorded and transcribed verbatim and imported into NVivo 12.0 (QSR International Team, 2018). Four team members with backgrounds in ICU, gerontological nursing, and organizational science participated in the data analysis and transcript accuracy.

Analysis

Descriptive statistics were used to analyze EHR (resident demographic characteristics and ADRD status) and observational checklist data. Potential differences in resident characteristics within the ADRD vs. non-ADRD groups were analyzed using a Mann-Whitney U test for nonparametric continuous variables, and a Pearson chi-square or Fisher's exact test, as appropriate, for categorical variables. Differences in behaviors observed between residents with or without ADRD, and differences in nursing approaches toward residents with or without ADRD, were assessed using a Pearson chi-square or Fisher's exact test as appropriate.

Verbatim focus group transcripts were analyzed using the constant comparative coding method, an inductive qualitative process aimed at establishing clear links between the research objectives and the raw data (Smith, 2000). Open, axial, and selective coding levels were used to examine the discrete elements, reveal categories, and attribute meaning related to information obtained about repositioning events during observational data collection (Figure 1, Qualitative Analysis

Process). The working group's initial step was to use open coding to compare individually coded units of data. Discrete pieces of transcript data were assigned descriptive labels from which categories developed as part of an iterative process. The interconnections of the initial categories were examined during the axial coding stage. Transcripts were reread to validate and clarify initial coding decisions and resolve differences identified in coder discussions and across transcripts. Some categories required revision as the coding team worked to establish coding consistency. Categories were subsequently refined into four themes through the selective coding process. A summative check was conducted for reliability for all transcripts; inter-coder reliability at above 85% was established (Smith, 2000).

Results

NH resident ($n = 88$) demographic characteristics are presented in Table 1. The mean age of the sample was 77 years ($SD = 14$), and residents were evenly split between Black race ($n = 42$, 48%) and white race ($n = 42$, 48%); race was unknown for four (5%) residents. Sixty-two residents (70%) had ADRD.

Observational Checklist Findings

Observational checklist results are shown in Tables 2 and 3. Resident behaviors and staff approaches were similar between the ADRD ($n = 62$, 70%) and non-ADRD ($n = 26$, 30%) groups; in both groups, agitation was the most common behavior, and aggressive behavior was seldom observed ($n = 1$) (Table 2). Staff approaches are shown in Table 3. The most common staff approach in both groups was informing the resident of the event, followed by offering encouragement. All observed repositioning events were completed (the resident moved to a new body position).

Focus Group Findings

A total of 36 female nursing staff participated in one of the six focus group sessions. Using the constant comparative coding method, saturation was reached when no new repositioning care themes emerged beyond these four: cognizant, resources, protocol-driven, and an integrated method. Table 4 displays and defines these four themes, along with exemplar quotes from nursing staff. Overall, staff revealed their care is guided by institutional protocols stemming from clinical frameworks and practice guidelines (American Nurses Association, 2021; European Pressure Ulcer Advisory Panel et al., 2019; Fazio et al., 2018a; National Institute for Occupational Safety, 2013; Occupational Safety and Health Administration, 2014; U.S. Department of Labor & Occupational Safety and Health Administration, 2009). Also, staff described the importance of balancing the tension between institutional safety protocols guiding efficient, task-driven care within the context of resident preferences and behaviors (current or anticipated). The staff

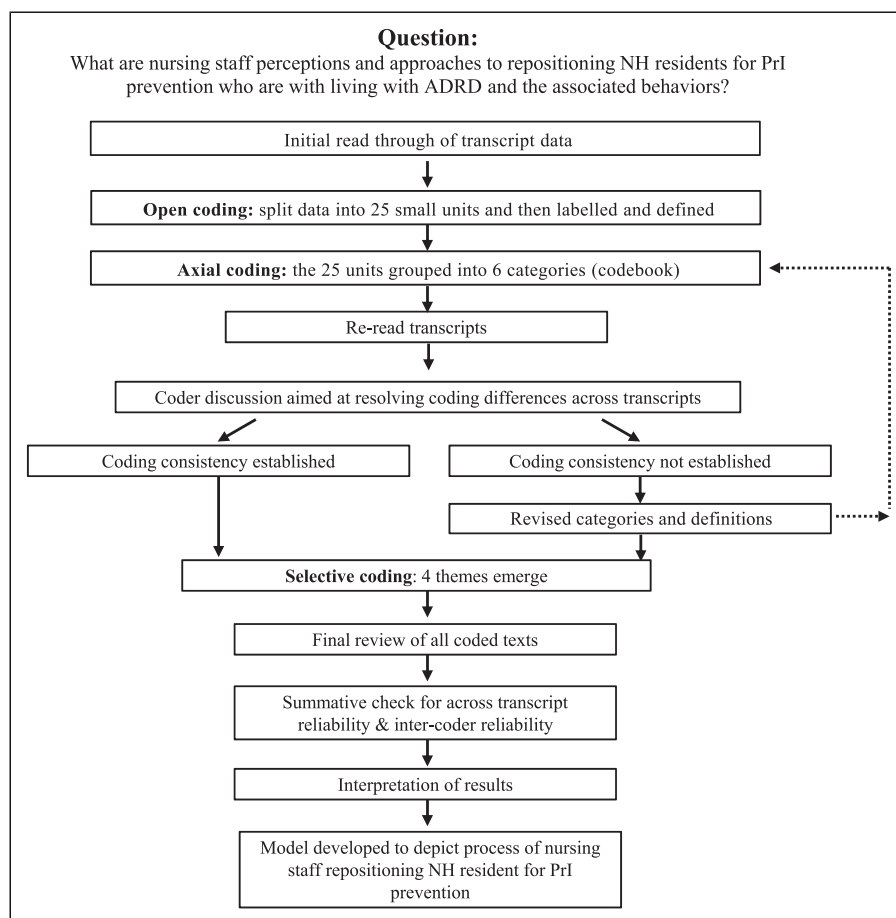


Figure 1. Qualitative analysis process.

explained how integrating a tailored approach (more customized) honoring resident preferences improves resident cooperation and engagement within the fixed amount of time available, while simultaneously meeting institutional goals. A conceptual model (Figure 2, Nursing Staff Repositioning Process for Pressure Injury Prevention) was developed to depict the four themes that emerged [cognizant (X_1), resources (X_2), protocol-driven (X_3), and integrated method (X_4)] from the focus group analysis. When repositioning was due, the staff's approach centered on applying institutional repositioning protocols within the context of resident preferences and behaviors. Also expressed was the importance of resource availability (e.g., repositioning equipment and sufficient staff) required for safe-patient handling and mobility during the event. Being cognizant of resident preferences, behaviors, and available resources guided the staff toward either protocol-driven or an integrative method to care. The repositioning process ended with one of two outcomes: body orientation changed or unchanged.

Discussion

The current study contributes to understanding how staff navigate the tension between institutional repositioning protocols aimed at

safety and PrI prevention, and individual resident preferences and behaviors, which may not always align with conventional procedures. Residents living in NHs are all at risk for developing a PrI, and those living with ADRD are at an increased risk. However, little is known about how staff approach evidence-based PrI prevention repositioning protocols.

Resident behaviors

The literature about NH residents living with ADRD describes the difficulties in understanding their environment and the behavioral manifestations of this confusion (Conn & Thorpe, 2007; Cummings, 1997; Cummings et al., 1994; Lai, 2014; Loreck et al., 1994; Melander et al., 2018; Mungas et al., 1989; Ray et al., 1992; Rosen et al., 1994; Tible et al., 2017; Wood et al., 2000). We expected to observe disruptive behaviors during and interfering with, repositioning events. In actuality, few challenging behaviors occurred, and from these data, we speculate the staff's approach (before, during, and after repositioning) may have prevented or reduced the intensity of common BPSD. For example, staff commented on the importance of reducing behavior antecedents like confusion and

Table 1. Characteristics of the Sample.

Variable	All residents (n = 88)	Residents with ADRD (n=62)	Residents without ADRD (n = 26)	p value
Age, M (SD)	77 (14)	80 (14)	70 (11)	p < 0.001
Gender, female, n (%)	49 (56%)	36 (58%)	13 (50%)	p = 0.59
Race, n (%)	Black: 42 (48%) white: 42 (48%) Unknown: 4 (5%)	Black: 33 (53%) white: 26 (42%) Unknown: 3 (5%)	Black: 9 (34%) white: 16 (62%) Unknown: 1 (4%)	p = 0.30
Ethnicity, n (%)	Non-Hispanic: 84 (95%) Hispanic: 1 (1%) Unknown: 3 (3%)	Non-Hispanic: 58 (94%) Hispanic: 1 (1%) Unknown: 3 (5%)	Non-Hispanic: 25 (96%) Hispanic: 0 (0%) Unknown: 1 (4%)	*

M=mean; SD= standard deviation;

*unable to calculate due to small numbers of Hispanic residents.

Table 2. Resident Repositioning Behaviors.

Resident behavior	All residents (n = 88)	Residents with ADRD (n = 62)	Residents without ADRD (n = 26)	p value
Aberrant motor, n (%)	5 (6%)	4 (6%)	1 (4%)	p = 1.0
Aberrant vocal, n (%)	9 (10%)	9 (15%)	0 (0%)	p = 0.06
Aggression, n (%)	1 (1%)	0 (0%)	1 (4%)	*
Agitation, n (%)	18 (20%)	14 (23%)	4 (15%)	p = 0.24
Anxiety, n (%)	12 (14%)	9 (15%)	3 (12%)	p = 1.0
Apathy, n (%)	12 (14%)	11 (18%)	1 (4%)	p = 0.10
Disinhibition, n (%)	1 (1%)	1 (2%)	0 (0%)	*
Irritability, n (%)	14 (16%)	11 (18%)	3 (12%)	p = 0.54

*Insufficient number of events for analysis.

overstimulation, which aligns with the current literature strongly supporting a non-pharmacologic approach using simplified communication and environmental modifications (Caspar et al., 2018; de Oliveira et al., 2015). At the same time, staff engagement with residents during repositioning events, including addressing personal care or other unmet needs, likely provided stimulation to counterbalance boredom and withdrawal.

Of the challenging behaviors observed, similarities were noted for both the ADRD and non-ADRD residents (Table 2). Staff approaches to repositioning either group did not differ (Table 3). The most pronounced resident behavior was agitation, occurring in 23% of those living with ADRD and 15% without ADRD ($p = 0.24$). While agitation is a commonly described behavior for those living with ADRD, it is clear that this is not limited to residents with ADRD and is, in fact, a common human behavior. Furthermore, this similarity suggests that agitation manifests universally as an expression of fear, fatigue, or frustration with unmet needs (real or perceived), which might be more challenging to understand in those residents living with ADRD. Even when challenging resident behaviors were not observed, staff explained the need to reposition in simple positive language and adjusted the environment to provide privacy and reduce unnecessary stimuli. Staff consistently provided encouragement (and/or reassurance) in a calm, soothing manner.

Cognizant

Insights from the focus groups highlight the importance of being cognizant of competing factors in one's approach to repositioning and reveal staff's critical reasoning to balance the tension between time-sensitive, institutional protocols, and resident preferences. Staff expressed that they were often successful with repositioning if they were cognizant of competing factors: best evidence (institution-driven, evidence-based protocols), knowing the resident's preferences based on past interactions, shift report, other forms of team communication/tracking, and applying their cumulative clinical expertise with this population. Consistent with prior literature, focus group participants shared that while there may be institutional repositioning protocols in place, guidance was lacking on how to implement said protocols when residents living with dementia are not cooperative. While staff clearly understood that residents often lacked insight into their own impairment and daily care needs, they were also cognizant of the tension placed on a trust-based, "nurse-patient (resident)" relationship if conflict arises and staff overrode their resident's repositioning preferences (Molina-Mula & Gallo-Estrada, 2020). Although shared decision-making is an intuitively appealing approach to delivering care, individuals often do not accurately judge their future feelings (preferences), which means that staff approaches for successful repositioning are not simple. Further exploration with our focus groups revealed that staff wanted to honor resident refusal to reposition in situations they empathized

Table 3. Nurse Repositioning Approaches.

Nurse behavior	All residents (n = 88)	Caring for residents with ADRD (n = 62)	Caring for residents without ADRD (n = 26)	p value
Adjusts environment, n (%)	45 (51%)	34 (56%)	11 (42%)	p = 0.56
Changes directions, n (%)	11 (13%)	10 (16%)	1 (4%)	p = 0.21
Changes terminology, n (%)	4 (5%)	2 (3%)	2 (8%)	p = 0.72
Distracts, n (%)	6 (7%)	4 (6%)	2 (8%)	p = 1.0
Offers encouragement, n (%)	61 (69%)	43 (69%)	18 (69%)	p = 0.20
Informs of event, n (%)	71 (81%)	51 (82%)	20 (77%)	p = 0.90
Medication, n (%)	0 (0%)	0 (0%)	0 (0%)	*
Mirrors, n (%)	1 (1%)	1 (2%)	0 (0%)	*
Offers care, n (%)	9 (10%)	7 (11%)	2 (8%)	p = 0.77
Organizes equipment, n (%)	21 (24%)	16 (26%)	5 (19%)	p = 0.48
Organizes team, n (%)	18 (20%)	14 (23%)	4 (16%)	p = 0.13
Prompts based on routine, n (%)	9 (10%)	6 (10%)	3 (12%)	p = 0.62
Prompts care or comfort, n (%)	10 (11%)	6 (10%)	4 (15%)	p = 0.77
Reassurance, n (%)	12 (14%)	11 (18%)	1 (4%)	p = 0.16
Responds to refusal, n (%)	0 (0%)	0 (0%)	0 (0%)	*

*Insufficient number of events for analysis.

with, such as the desire to remain in a comfortable position, sleep uninterrupted, and/or simply not being touched or bothered. In fact, many of the focus group participants believed that many of the ADRD behaviors they encounter result from the sleep disruption caused by longstanding, institutional repositioning protocols (i.e., two-hour intervals, twenty-four-hours-a-day, and seven-days-a-week), which is consistent with concerns noted in the literature (Sharp et al., 2019).

Indeed the needs and treatment of residents living with dementia evolve over time (Gaugler et al., 2014), and our focus group participants also highlighted that residents living with more advanced dementia may not be able to (consistently) express their care-related preferences even during the same day. Accordingly, as resident physical and behavioral assessment fluctuated throughout the day, staff were cognizant that to be successful with repositioning, it may be necessary to seek out additional resources (equipment, supplies, and staff) and information about individual residents prior to each repositioning event.

Resources

Focus group participants spoke about the importance and consistency of resources (i.e., equipment, supplies, and staff) necessary to perform quality repositioning care delivery on all shifts. To safely reposition, nurses shared how gathering other team members, particularly those whom the resident liked/favored, helped encourage cooperation and/or participation in the repositioning event. In contrast, some resources were viewed as potential barriers to repositioning. For example, focus group participants observed that equipment resources used for repositioning (i.e., lifts/lift slings) can cause resident discomfort/pain and can potentially trigger ADRD behaviors during use (i.e., anxiety and agitation) from fear of falling while being hoisted and

physically suspended to reposition or transfer to another surface (i.e., bed to chair). The progressive nature of dementia and fear of falling are strongly linked (Soysal et al., 2021); being cognizant of the potential spectrum of reactions from residents during repositioning events reinforces the importance for staff to seek key team members and/or use comforting, verbal assurances while employing repositioning equipment.

Protocol-Driven

Focus group participants described repositioning as a task embedded within institution-specific protocols to be performed in a timely, efficient manner; hence, a protocol-driven approach prioritizes repositioning; thus, staff from these focus groups often found themselves in the unenviable position of overriding resident preferences (protocol-driven care) to avoid being perceived as a poor-performing employee and unable to complete repositioning in a timely, efficient manner as expected. Hence, a protocol-driven approach to ensure that a resident receives repositioning care to prevent PrI (U.S. Centers for Medicare & Medicaid Services, 2017b) makes the goal of person-centered care/shared decision-making (U.S. Centers for Medicare & Medicaid Services, 2017a) a challenge for nursing staff who have to negotiate and effectively navigate the nurse-resident partnership throughout each day (Molina-Mula & Gallo-Estrada, 2020; Sevdalis & Harvey, 2006). While person-centered care is a federal regulatory requirement that defines a resident's rights to participate in care planning, as well as the right to select or refuse specific treatment options, enforcement of PrI prevention protocols is likely to be prioritized to avoid citation. A federal NH surveyor, for example, does not need to prove that a PrI developed; rather, a NH can be cited if it has been determined that the provider failed to implement

Table 4. Themes: Definitions, Supporting Quotes, and Exemplar Strategies.

Four themes identified for successful repositioning for PrI prevention	Supporting quotes from NH focus groups	Exemplar strategies
<p>Cognizant</p> <p>Cognizant definition: Having knowledge, awareness, or perception, especially through personal experience; being mindful.</p>	<p><i>"I find that it's a case to case situation, depending on the resident and how much you know 'em. You know that Mr. So & So will not lay on his right side and he's combative if you put him on his left side. So if you know that you're automatically gonna tend to that person in that way. And their care plan helps out a lot too for some of the ones that have in their care plan that, "Don't do this, don't do that." Or, "They don't like this, they don't like that. So you know how to (take care of them)."</i></p> <p><i>"Sometimes you don't want to be touched, if you have dementia or not. If you don't want to be touched, you don't want to be touched. And the way to get somebody away from you, that's trying to touch you, is to swat at 'em. (The resident will say) "Get away, get away or (they) cuss us out. We get some words - we get some words!" (Other focus group members laugh and nod their head in agreement.)</i></p> <p><i>"The combative ones (residents) are the hardest to deal with because if they are in an aggravated state, they're trying to not let you touch them in any way, shape, or form. And it's their right to refuse. If they say, "Don't touch me. Get away from me!" and their hands go up, we have to stop care, legally."</i></p> <p><i>"We have a lot of pain management patients. Once they get that pain medicine and they're in their comfortable position and then we go to move them – they're gonna think it's gonna hurt again or they will be hurting again. So that's why they're refusing to be turned, especially after they get their medication and the medication starts having its effectiveness. They don't want to be bothered."</i></p> <p><i>"Some residents are aggressive 24/7, and others are nice and sweet but when they sundown, it's just like a light switch. They become combative and often threaten or throw things at you or their roommate."</i></p> <p><i>"I know certain – certain ones (residents) swing, when they get scared, they swing. So, if I am down low (by the foot of the bed), I'm not – I don't have to worry about it (getting hit) cause I am literally at their feet."</i></p>	<p>Know residents preferences based on current/past behaviors or team communication (verbal/written), but be creative and flexible in repositioning approach as resident behaviors are dynamic</p> <p>Adjust communication (anticipatory or real-time) to accommodate resident preferences</p> <p>To facilitate repositioning, consider pre-medicating with analgesics as needed</p> <p>Know when to advocate for, negotiate with, or honor residents repositioning preferences</p> <p>Strategically position self out of harm's way if demonstrated or anticipated BPSD before or during a repositioning event.</p>
<p>Resources</p> <p>Resources definition: Proper equipment (i.e., lifts) and additional staff.</p>	<p><i>"Teamwork is the most important thing. You know sometimes when you have only yourself, you know you may have heavier residents, so definitely you need to work together."</i></p> <p><i>"We have the equipment but we never have the staff. If it's written down as an order (to reposition) and it's difficult to do, we're not allowed to say, "Oh, we're understaffed." But we are understaffed. And, we often don't have any clean linen to wash the residents or change their beds. Without supplies, you can't do the work that's expected."</i></p> <p><i>"Many residents are scared of the Hoyer lift because it's painful for some or they think they are going to fall. And a lot of times, the residents complain about the noise that it makes when they are being lifted up, the chains clanking and stuff. I think it (the sound) scares them and they are afraid it will topple over. I prompt them by saying "We'll be careful. We'll be gentle. And don't worry cause you know we've lifted people bigger than you." You know so –and that gives them comfort."</i></p> <p><i>"Most of the residents can walk but we don't have the time or people to walk someone down the hall and get 'em off their butt or like relieve their agitation. They have to sit there until the next shift comes and puts 'em to bed, is like torture. They are stuck (in their chairs) and told to "Sit down, sit down, sit down"</i></p>	<p>To safely reposition, teamwork is necessary</p> <p>Ensure optimal staffing, equipment, and supplies for all shifts</p> <p>Be aware that repositioning equipment itself can cause pain/discomfort or trigger resident behaviors (i.e., anxiety from fear of falling or injury)</p> <p>Gather other team members whom the resident likes/favors to help encourage cooperation and/or participation in the repositioning event</p>

(continued)

Table 4. (continued)

Four themes identified for successful repositioning for PrI prevention	Supporting quotes from NH focus groups	Exemplar strategies
Protocol-Driven Care	<i>“What a lot of people don’t understand that – (for residents living with dementia), you have to take your time with them. If you rush them, they get more confused and agitated. You make them more agitated if you argue with them. It’s best to walk away and then re-approach. But a lot of people will rush to get the job done because they don’t want to get written up because they are not finished (with the task).”</i>	Protocol-driven care requires frequent interruption in the resident’s routine; be mindful of time of day and activity that resident is engaged in Be flexible and avoid rushing as it might trigger or exacerbate BPSD behaviors
Protocol-driven care definition: A practice designed to achieve a care-focused goal, often with an emphasis on efficiency.	<i>“Sometimes I will just slip in (to their room), you know, some of them don’t want you to disturb their sleeping (to turn them).” They (residents) are like, “Well I’m comfortable here. Why did you come in to wake me up to turn me?” “First thing in the morning is bad for refusals (for repositioning). When you come in first thing in the morning, they not always ready to wake up.”</i>	
Integrated Method	<i>“One of our residents that I have is more chipper when she first wakes up. Most dementia and Alzheimer’s residents, I notice when they first wake up, before like the day sets in and so much is going on and they get aggravated- that’s the best time to talk to her. So I’m like, “Good morning beautiful. Can I move you?” Like you have to tell her everything from step by step before you do it. Because if you just go and do it, she flips out. So you really have to tell her, “I’m about to move you. I’m about to turn you. I’m about to lift you up. I’m about to change you” Whatever the task is, she has to know what’s going on first.”</i>	Residents living with ADRD may not be able to (consistently) express their wishes; consider institutional goals and resident preferences simultaneously Information delivery should be soothing and supportive; ongoing cueing and encouragement is often needed Use music and other creative approaches can encourage individuals, roommates, and small groups of residents
Integrated method definition: A BPSD-tailored approach to repositioning care that integrates both behavior assessment and resident preferences; nurses seek ways to complete repositioning by balancing the tension between institution-specific protocols and resident behaviors (current or anticipated), and their repositioning preferences.	<i>“Music is soothing and especially for an agitated resident, it might soothe them, hearing nice, calm music. We’ve tried that before. Or music that they grew up with. Sometimes I play music or sing songs and would tell my resident to move like, “Try to shimmy yourself up.” Sometimes, I’ll be like (singing the tune) “Shimmy, Shimmy Ko Ko Bop.” Like you know just like older stuff and then try to get her neighbor to do the same to get out whatever mood they are in cause sometimes they are a handful.” “(When we go to reposition a resident), we ask, “Hey we’re gonna turn you - is it okay if we do this with you? Can we do this?” Cause a lot of times like - a lot of people are still able to make their decisions. And if they are resistant and stuff, you just walk away, cause legally that’s what you have to do, and come back later.” “You know you have to just be - be gentle, be respectful. “Cause that’s how you want to be treated, so you - you need to treat them the same way.” No matter what the - you know, no matter what the condition or the age or anything. So, that’s important.”</i>	Ask permission to reposition, repeat words slowly and clearly in a step-by-step fashion, and use words that are comforting with desirable end points (e.g., Can I help make you more comfortable?). Negotiation may not (initially) work, walk away to de-escalate tension and reapproach resident for another attempt

interventions to prevent the development of PrI for a resident identified at risk (U.S. Centers for Medicare & Medicaid Services, 2017b). Hence, when the tension between respect for NH resident preferences and the perceived duty to care cannot be initially resolved (and refusal to reposition is not considered a viable option), staff from our focus groups shared how they sought out creative, tailored strategies (e.g., playing music) to achieve care goals considered essential per repositioning protocol. For our focus group participants, use of

music was often an effective strategy to persuade residents to reposition for PrI prevention, and is consistent with the literature (Molina-Mula & Gallo-Estrada, 2020; Yap et al., 2016). In addition, findings from this study are consistent with prior literature describing the tension created for nursing staff when a hospitalized patient refuses a prescribed procedure and the expectation is then for the nurse to persuade (and in some instances, coerce) the patient with additional information (Aveyard, 2004). Importantly, while our focus group

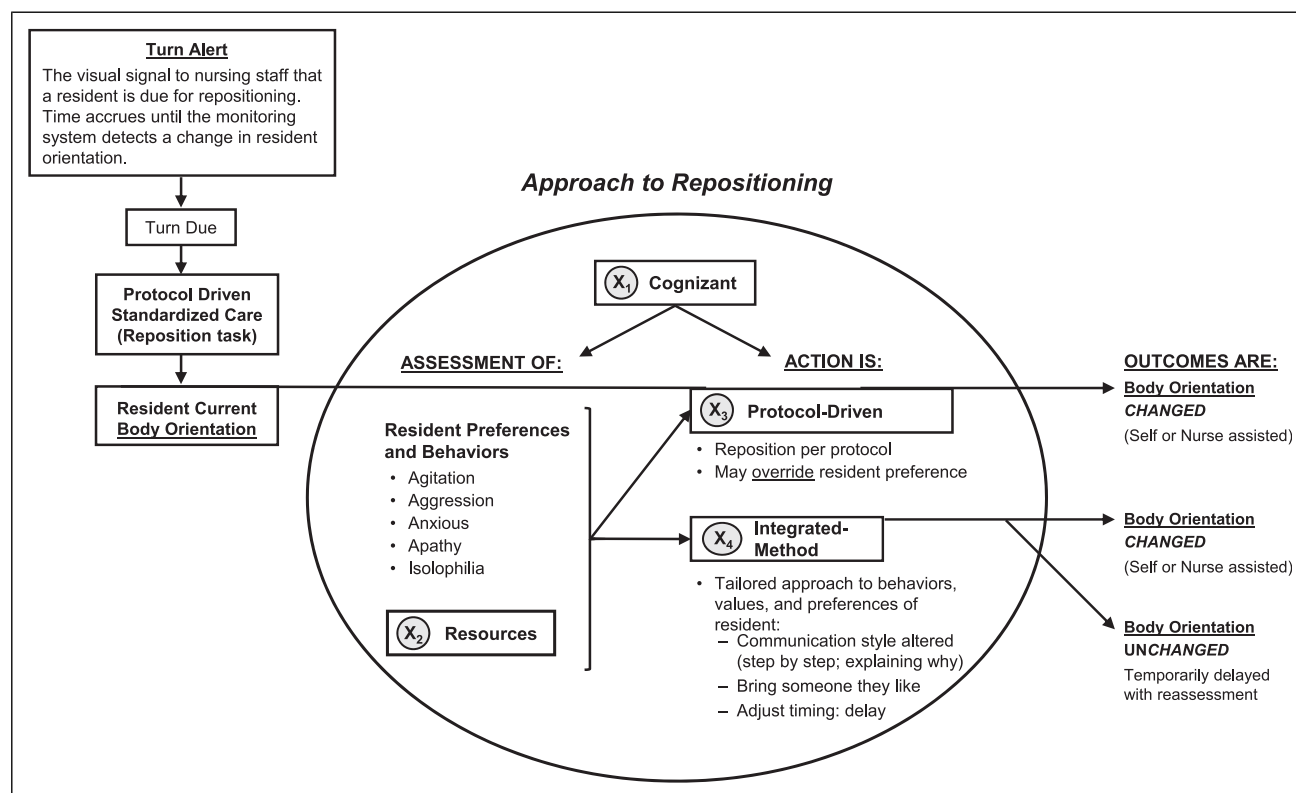


Figure 2. Nursing staff repositioning process for pressure injury prevention.

participants also viewed consent as preferred (even for everyday clinical nursing care), it was not always viewed as essential, and some staff chose to override resident repositioning preferences.

Integrated-Method

Many of the staff delivered an integrated method of care, a repositioning approach seeking balance. While the goal is to achieve regular repositioning for PrI prevention, resident preferences are acknowledged; identified preferences can then be uniquely and creatively addressed by staff. Standard interventions for BPSD involve close contact between individuals living with dementia and their caregivers (Bessey & Walaszek, 2019). Hence, allowing for some flexibility during tight, time-driven protocols during complex activities of daily living promotes a more trusting, therapeutic relationship and may increase the likelihood for greater cooperation in future care-related exchanges.

In considering institutional goals and resident preferences, the staff shared their creative, often dynamic, approach to repositioning as individual resident responses could vary between repositioning events or within an event itself. Staff from this study sought permission to reposition and repeated words slowly and clearly in a step-by-step, comforting fashion. Finally, focus group participants observed that the push for

institutional, protocol-driven adherence and efficiency was often counterproductive; consistent with the literature, overriding resident repositioning preferences or rushing them to complete tasks can trigger or exacerbate existing BPSD (Kar, 2009).

Importantly, the staff's use of an integrative method to repositioning may also help explain why common BPSD described in the literature were observed with relatively low frequency during the observation period. For example, the staff shared how they anticipated challenging behaviors based on previous experience(s), and how they have learned to strategically position themselves out of harm's way if challenging behaviors like agitation or aggression were demonstrated, allowing them to remain safe and proceed with alternative repositioning approaches. Strategies included honoring time delays, walking away after a repositioning refusal (to avoid or de-escalate challenging behaviors), and gathering of other team members (resources) whom the resident liked/favored to help encourage cooperation and/or participation in the repositioning event (rather than an "extra set of hands" for the physical labor component of repositioning). Knowing the consequences of inconsistent repositioning, staff from these focus groups also provided examples of negotiation strategies they had used in the past with varying levels of success, while simultaneously acknowledging that residents have a right to refuse care. While short time delays for repositioning did occur using an

integrated method of care, none of the residents refused repositioning for PrI prevention during the observation period.

Limitations

A limitation of this study was that the focus groups were from only three NHs within the same corporation that volunteered to participate in the parent study. Therefore, they may be systematically different from facilities in other geographic regions or corporations, limiting generalizability. Furthermore, we used a convenience sample of staff available and willing to participate on the day of the scheduled focus groups. Efforts to recruit a diverse group of staff were likely effective, as evidenced by a discussion consisting of negatively toned comments about insufficient resources.

Conclusion

We are the first, to our knowledge, to explore nursing care approaches to repositioning for PrI prevention for NH residents living with or without ADRD. This is important because existing repositioning protocols assume that each repositioning event occurs on time and without incident; how to manage real-life challenges with regard to resident preferences or behaviors is not addressed within task-driven protocols. Hence, identifying an effective, integrated method for PrI repositioning will assist staff in balancing the tension created by these challenges. Knowledge of a practical, effective approach may also inform new staff orientation, continuing education/competency training, and guidance for other protocol-driven tasks.

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References

- American Nurses Association (2021). *Nursing: Scope and standards of practice* (4th ed.). American Nurses Association.
- Aveyard, H. (2004). The patient who refuses nursing care. *Journal of Medical Ethics, 30*(4), 346-350. <https://doi.org/10.1136/jme.2002.000893>
- Bergstrom, N., Braden, B. J., Laguzza, A., & Holman, V. (1987a). The Braden Scale for predicting pressure sore risk. *Nursing Research, 36*(4), 205-210.
- Bergstrom, N., Demuth, P. J., & Braden, B. J. (1987b). A clinical trial of the Braden Scale for predicting pressure sore risk. *Nursing Clinics of North America, 22*(2), 417-428.
- Bessey, L. J., & Walaszek, A. (2019). Management of behavioral and psychological symptoms of dementia. *Current Psychiatry Reports, 21*(8), 66. <https://doi.org/10.1007/s11920-019-1049-5>
- Caspar, S., Davis, E. D., Douziech, A., & Scott, D. R. (2018). Nonpharmacological management of behavioral and psychological symptoms of dementia: What works, in what circumstances, and why?. *Innovation in Aging, 2*(1), igy001. <https://doi.org/10.1093/geroni/igy001>
- Center for Disease Control and Prevention (2020). *Alzheimer's disease*. <https://www.cdc.gov/nchs/fastats/alzheimers.htm>.
- Chenoweth, L., King, M. T., Jeon, Y. H., Brodaty, H., Stein-Parbury, J., Norman, R., Haas, M., & Luscombe, G. (2009). Caring for aged dementia care resident study (CADRES) of person-centred care, dementia-care mapping, and usual care in dementia: a cluster-randomised trial. *Lancet Neurology, 8*(4), 317-325. [https://doi.org/10.1016/s1474-4422\(09\)70045-6](https://doi.org/10.1016/s1474-4422(09)70045-6)
- Chodosh, J., Sultzer, D. L., Lee, M. L., Hahn, T. J., Reuben, D. B., Yano, E. M., Mittman, B. S., & Rubenstein, L. Z. (2007). Memory impairment among primary care veterans. *Ageing & Mental Health, 11*(4), 444-450. <https://doi.org/10.1080/13607860601086272>
- Cohen-Mansfield, J., & Jensen, B. (2008). Nursing home physicians knowledge of and attitudes toward nonpharmacological interventions for treatment of behavioral disturbances associated with dementia. *Journal of the American Medical Directors Association, 9*(7), 491-498. <https://doi.org/10.1016/j.jamda.2008.04.009>
- Cohen-Mansfield, J., Libin, A., & Marx, M. S. (2007). Non-pharmacological treatment of agitation: A controlled trial of systematic individualized intervention. *Journals of Gerontology. Series A: Biological Sciences and Medical Sciences, 62*(8), 908-916. <https://doi.org/10.1093/gerona/62.8.908>
- Cohen-Mansfield, J., Thein, K., Marx, M. S., & Dakheel-Ali, M. (2012). What are the barriers to performing non-pharmacological interventions for behavioral symptoms in the nursing home?. *Journal of the American Medical Directors Association, 13*(4), 400-405. <https://doi.org/10.1016/j.jamda.2011.07.006>
- Conn, D., & Thorpe, L. (2007). Assessment of behavioural and psychological symptoms associated with dementia. *Canadian Journal of Neurological Sciences, 34*(1), S67-S71. <https://doi.org/10.1017/s0317167100005606>
- Cummings, J. L., Mega, M., Gray, K., Rosenberg-Thompson, S., Carusi, D. A., & Gornbein, J. (1994). The neuropsychiatric inventory: Comprehensive assessment of psychopathology in dementia. *Neurology, 44*(12), 2308-2314. <https://doi.org/10.1212/wnl.44.12.2308>

- Cummings, J. L. (1997). The Neuropsychiatric Inventory: Assessing psychopathology in dementia patients. *Neurology*, 48(5 Suppl 6), S10-S16. https://doi.org/10.1212/wnl.48.5_suppl_6.10s
- de Oliveira, A. M., Radanovic, M., de Mello, P. C., Buchain, P. C., Vizzotto, A. D., Celestino, D. L., Stella, F., Piersol, C. V., & Forlenza, O. V. (2015). Nonpharmacological interventions to reduce behavioral and psychological symptoms of dementia: A systematic review. *BioMed Research International*, 2015, 218980. <https://doi.org/10.1155/2015/218980>.
- Ervin, K., Cross, M., & Koschel, A. (2014). Barriers to managing behavioural and psychological symptoms of dementia: Staff perceptions. *Collegian*, 21(3), 201-207. <https://doi.org/10.1016/j.colegn.2013.04.002>
- European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel, & Pan Pacific Injury Alliance (2019). *Prevention and treatment of pressure ulcers/injuries: clinical practice guideline. The international guideline*. In E. Haesler (Ed).
- Fazio, S., Pace, D., Flinner, J., & Kallmyer, B. (2018a). The fundamentals of person-centered care for individuals with dementia. *Gerontologist*, 58(1), S10-S19. <https://doi.org/10.1093/geront/gnx122>
- Fazio, S., Pace, D., Maslow, K., Zimmerman, S., & Kallmyer, B. (2018b). Alzheimer's association dementia care practice recommendations. *Gerontologist*, 58(1), S1-S9. <https://doi.org/10.1093/geront/gnx182>
- Feast, A., Orrell, M., Charlesworth, G., Melunsky, N., Poland, F., & Moniz-Cook, E. (2016). Behavioural and psychological symptoms in dementia and the challenges for family carers: Systematic review. *British Journal of Psychiatry*, 208(5), 429-434. <https://doi.org/10.1192/bjp.bp.114.153684>
- Finkel, S. I., & Burns, A. (2000). Behavioral and psychological symptoms of dementia: A clinical and research update. *International Psychogeriatric Association*, 12(1), 9-12.
- Fossey, J., Ballard, C., Juszczak, E., James, I., Alder, N., Jacoby, R., & Howard, R. (2006). Effect of enhanced psychosocial care on antipsychotic use in nursing home residents with severe dementia: cluster randomised trial. *BMJ*, 332(7544), 756-761. <https://doi.org/10.1136/bmj.38782.575868.7C>
- Gaugler, J. E., Yu, F., Davila, H. W., & Shippee, T. (2014). Alzheimer's disease and nursing homes. *Health Affairs*, 33(4), 650-657. <https://doi.org/10.1377/hlthaff.2013.1268>
- Gerlach, L. B., & Kales, H. C. (2018). Managing behavioral and psychological symptoms of dementia. *Psychiatric Clinics of North America*, 41(1), 127-139. <https://doi.org/10.1016/j.psc.2017.10.010>
- Harris-Kojetin, L., Sengupta, M., Park-Lee, E., Valverde, R., Caffrey, C., Rome, V., & Lendon, J. (2016). Long-term care providers and services users in the United States: Data from the national study of long-term care providers, 2013-2014. *Vital and Health Statistics. Series 3: Analytical and epidemiological studies*, 41, 1-105.
- Jaul, E., & Calderon-Margalit, R. (2015). Systemic factors and mortality in elderly patients with pressure ulcers. *International Wound Journal*, 12(3), 254-259. <https://doi.org/10.1111/iwj.12086>
- Kar, N. (2009). Behavioral and psychological symptoms of dementia and their management. *Indian Journal of Psychiatry*, 51(1), S77-S86.
- Krueger, R. A., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (3rd ed.). Sage Publications.
- Lai, C. K. (2014). The merits and problems of neuropsychiatric inventory as an assessment tool in people with dementia and other neurological disorders. *Clinical Interventions in Aging*, 9, 1051-1061. <https://doi.org/10.2147/cia.S63504>
- Loreck, D. J., Bylsma, F. W., & Folstein, M. F. (1994). The dementia signs and symptoms scale: A new scale for comprehensive assessment of psychopathology in Alzheimer's disease. *American Journal of Geriatric Psychiatry*, 2(1), 60-74. <https://doi.org/10.1097/00019442-199400210-00009>
- McCarten, J. R., Anderson, P., Kuskowski, M. A., McPherson, S. E., Borson, S., & Dysken, M. W. (2012). Finding dementia in primary care: The results of a clinical demonstration project. *Journal of the American Geriatrics Society*, 60(2), 210-217. <https://doi.org/10.1111/j.1532-5415.2011.03841.x>
- Melander, C., Sävenstedt, S., Olsson, M., & Wälivaara, B. M. (2018). Assessing BPSD with the support of the NPI-NH: A discourse analysis of clinical reasoning. *International Psychogeriatrics*, 30(4), 581-589. <https://doi.org/10.1017/s1041610217002009>
- Mohamed, S., Rosenheck, R., Lyketsos, C. G., & Schneider, L. S. (2010). Caregiver burden in Alzheimer disease: Cross-sectional and longitudinal patient correlates. *American Journal of Geriatric Psychiatry*, 18(10), 917-927. <https://doi.org/10.1097/JGP.0b013e3181d5745d>
- Molina-Mula, J., & Gallo-Estrada, J. (2020). Impact of nurse-patient relationship on quality of care and patient autonomy in decision-making. *International Journal of Environmental Research and Public Health*, 17(3). <https://doi.org/10.3390/ijerph17030835>
- Mungas, D., Weiler, P., Franzi, C., & Henry, R. (1989). Assessment of disruptive behavior associated with dementia: The disruptive behavior rating scales. *Journal of Geriatric Psychiatry and Neurology*, 2(4), 196-202. <https://doi.org/10.1177/089198878900200405>
- National Institute for Occupational Safety (2013). *Safe patient handling and mobility (SPHM)*. <https://www.cdc.gov/niosh/topics/safepatient/default.html>
- National Institute on Aging. *Alzheimer's disease administrative supplements*. <https://www.nia.nih.gov/research/grants-funding/alzheimers-disease-administrative-supplements>
- Occupational Safety and Health Administration (2014). *Safe patient handling: Preventing musculoskeletal disorders in nursing homes*. <https://www.osha.gov/sites/default/files/publications/OSHA3708.pdf>
- Olsson, J., Bergman, A., Carlsten, A., Oké, T., Bernsten, C., Schmidt, I. K., & Fastbom, J. (2010). Quality of drug prescribing in elderly people in nursing homes and special care units for dementia: A cross-sectional computerized pharmacy

- register analysis. *Clinical Drug Investigation*, 30(5), 289-300. <https://doi.org/10.2165/11534320-000000000-00000>
- Poey, J. L., Hermer, L., Cornelison, L., Kaup, M. L., Drake, P., Stone, R. I., & Doll, G. (2017). Does person-centered care improve residents satisfaction with nursing home quality?. *Journal of the American Medical Directors Association*, 18(11), 974-979. <https://doi.org/10.1016/j.jamda.2017.06.007>
- QSR International Team (2018). NVivo qualitative data analysis software. *Version 12*. QSR International Pty Ltd.
- Ray, W. A., Taylor, J. A., Lichtenstein, M. J., & Meador, K. G. (1992). The nursing home behavior problem scale. *Journal of Gerontology*, 47(1), M9-M16. <https://doi.org/10.1093/geronj/47.1.m9>
- Rosen, J., Burgio, L., Kollar, M., Cain, M., Allison, M., Fogleman, M., Michael, M., & Zubenko, G. S. (1994). The Pittsburgh agitation scale: A user-friendly instrument for rating agitation in dementia patients. *American Journal of Geriatric Psychiatry*, 2(1), 52-59. <https://doi.org/10.1097/00019442-199400210-00008>
- Saliba, D., Buchanan, J., Edelen, M. O., Streim, J., Ouslander, J., Berlowitz, D., & Chodosh, J. (2012). MDS 3.0: Brief interview for mental status. *Journal of the American Medical Directors Association*, 13(7), 611-617. <https://doi.org/10.1016/j.jamda.2012.06.004>
- Selback, G., Engedal, K., Benth, J., & Bergh, S. (2014). The course of neuropsychiatric symptoms in nursing-home patients with dementia over a 53-month follow-up period. *International Psychogeriatrics*, 26(1), 81-91. <https://doi.org/10.1017/s1041610213001609>
- Sevdalis, N., & Harvey, N. (2006). Predicting preferences: A neglected aspect of shared decision-making. *Health Expectations*, 9(3), 245-251. <https://doi.org/10.1111/j.1369-7625.2006.00391.x>
- Sharp, C. A., Schulz Moore, J. S., & McLaws, M. L. (2019). Two-hourly repositioning for prevention of pressure ulcers in the elderly: Patient safety or elder abuse? *Journal of Bioethical Inquiry*, 16(1), 17-34. <https://doi.org/10.1007/s11673-018-9892-3>
- Smith, C. P. (2000). Content analysis and narrative analysis. In H. T. Reis, & C. M. Judd (Eds), *Handbook of research methods in social and personality psychology*. Cambridge University Press.
- Soysal, P., Tan, S. G., & Smith, L. (2021). A comparison of the prevalence of Fear of Falling between older patients with Lewy body dementia, Alzheimer's disease, and without dementia. *Experimental Gerontology*, 146, 111248. <https://doi.org/10.1016/j.exger.2021.111248>
- Sun, M., Mainland, B. J., Ornstein, T. J., Sin, G. L., & Hermann, N. (2018). Correlates of nursing care burden among institutionalized patients with dementia. *International Psychogeriatrics*, 30(10), 1549-1555. <https://doi.org/10.1017/s104161021800025x>
- The Gerontological Society of America Workgroup (2015). The Gerontological society of American workgroup on cognitive impairment detection and earlier diagnosis: Report and recommendations. <https://www.geron.org/images/gsa/kaer/gsa-kaer-toolkit.pdf>
- Tible, O. P., Riese, F., Savaskan, E., & von Gunten, A. (2017). Best practice in the management of behavioural and psychological symptoms of dementia. *Therapeutic Advances in Neurological Disorders*, 10(8), 297-309. <https://doi.org/10.1177/1756285617712979>
- U.S. Centers for Medicare & Medicaid Services. (2017a). *State operations manual appendix PP - guidance to surveyors for long term care facilities (rev.173 11-22-17), F553 right to participate in planning care*. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf
- U.S. Centers for Medicare & Medicaid Services. (2017b). *State operations manual appendix PP - guidance to surveyors for long term care facilities (rev.173 11-22-17), F686 Treatment/ Services to Prevent/Heal Pressure Ulcers*. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf
- U.S. Department of Labor, & Occupational Safety and Health Administration. (2009). *Guidelines for nursing homes*. Ergonomics for the Prevention of Musculoskeletal Disorders (OSHA 3182-3R 2009). https://www.osha.gov/sites/default/files/publications/final_nh_guidelines.pdf
- van der Linde, R. M., Denning, T., Stephan, B. C., Prina, A. M., Evans, E., & Brayne, C. (2016). Longitudinal course of behavioural and psychological symptoms of dementia: systematic review. *British Journal of Psychiatry*, 209(5), 366-377. <https://doi.org/10.1192/bjp.bp.114.148403>
- Wood, S., Cummings, J. L., Hsu, M. A., Barclay, T., Wheatley, M. V., Yarema, K. T., & Schnelle, J. F. (2000). The use of the neuropsychiatric inventory in nursing home residents. Characterization and measurement. *American Journal of Geriatric Psychiatry*, 8(1), 75-83. <https://doi.org/10.1097/00019442-200002000-00010>
- Yap, T. L., Kennerly, S. M., Bergstrom, N., Hudak, S. L., & Horn, S. D. (2016). An evidence-based cue-selection guide and logic model to improve pressure ulcer prevention in long-term care. *Journal of Nursing Care Quality*, 31(1), 75-83. <https://doi.org/10.1097/ncq.0000000000000128>
- Yap, T. L., Kennerly, S. M., Horn, S. D., Bergstrom, N., Datta, S., & Colon-Emeric, C. (2018). TEAM-UP for quality: A cluster randomized controlled trial protocol focused on preventing pressure ulcers through repositioning frequency and precipitating factors. *BMC Geriatrics*, 18(1), 54. <https://doi.org/10.1186/s12877-018-0744-0>
- Yoon, J. Y. (2018). Relationships among person-centered care, nursing home adjustment, and life satisfaction: A cross-sectional survey study. *International Psychogeriatrics*, 30(10), 1519-1530. <https://doi.org/10.1017/s1041610218000194>