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DISSERTATION NURSING

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CROSSOVER TRIAL

Could towel bath reduce aggressiveness in patient with dementia? Results from a crossover trial

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Findings:

This paper provides evidences concerning the use of the towel bath technique instead of traditional bathing to reduce aggression in patients with dementia.

ABSTRACT

BACKGROUND: Bathing is one of the most intimate activities during which persons with dementia are cared for. The literature suggests that 20-40% of patients with cognitive impairment, hospitalized in long-term facilities, may react with aggressive behaviours.

AIM: To evaluate the efficacy of the towel bath technique in reducing agitation, aggression, and discomfort in nursing home residents with dementia.

MATERIALS AND METHODS: An Interventional crossover study was conducted; a convenience sample of patients with dementia, was enrolled. Aggressive behaviors were evaluated using the italian version of the Care Recipient Behavior Assessment (CAREBA-ita).

RESULTS: 71 resident were enrolled. Towel Bath technique showed a reduction in episodes of aggression and in the execution time of the procedure with a statistically significant difference ($p < 0.05$).

CONCLUSIONS: The technique Towel bath provides a viable alternative to traditional bath to reduce aggression in patients with dementia.

KEYWORDS: *dementia, towel bath, aggression, nursing*

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CROSSOVER TRIAL

La "towel bath" può ridurre l'aggressività in pazienti affetti da demenza? Risultati di un trial crossover

Giada Cocciolo[1], Lara Carelli [2], Laura Di Prisco[2], Paolo Ferrara[2], Mauro Parozzi[2], Giancarlo Celeri Bellotti[2], Elena Sala[2], Agostino D'Antuono[2], Stefano Terzoni[2], Roberta Lodini[2]

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Riscontri:

Questo articolo fornisce evidenze nell'utilizzo della tecnica della towel bath al posto del bagno tradizionale per ridurre l'aggressività dei pazienti affetti da demenza.

ABSTRACT

INTRODUZIONE: Il bagno rappresenta una delle più delicate attività assistenziali durante le quali ci si prende cura delle persone con demenza. La letteratura suggerisce che il 20-40% dei pazienti con compromissione cognitiva, ricoverati in strutture a lungo termine, possono reagire con comportamenti aggressivi.

OBIETTIVO: Valutare l'efficacia della tecnica di Towel Bath nella riduzione dell'agitazione, dell'aggressività e del disagio nelle persone affette da demenza ricoverate in residenze assistenziali

MATERIALI E METODI: E' stato condotto uno studio crossover interventistico; è stato arruolato un campione di convenienza rappresentato da pazienti affetti da demenza. I comportamenti aggressivi sono stati valutati utilizzando la versione italiana della Care Recipient Behavior Assessment (CAREBA-ita)

RISULTATI: Sono stati arruolati 71 pazienti. La tecnica della Towel Bath ha mostrato una riduzione degli episodi di aggressività e del tempo di esecuzione della procedura con una differenza statisticamente significativa ($p<0.05$)

CONCLUSIONI: La tecnica della Towel Bath rappresenta una valida alternativa al bagno tradizionale per ridurre l'aggressività nei pazienti affetti da demenza

KEYWORDS: *demenza, towel bath, aggressione, assistenza infermieristica*

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BACKGROUND

The presence of aggressive behaviors in person with dementia is a reality that needs to be addressed and prevented.

It is known in literature that 20% of patients with dementia develop psycho-behavioral symptoms within two years from being diagnosed. This percentage raises to 80% during the course of the disease (1–3). In patients with dementia, agitation and aggression represent a challenge for both caregivers and healthcare personnel, with direct consequences such as (4) poor job satisfaction, distress and high staff turnover (5,6). In the absence of disease, hygienic care including bath or shower, are self care activities important for most people, not only because they allow adequate prevention against infection but also because they provide comfort (7–9). Despite bath being considered by most people a pleasant and relaxing experience, for patients with dementia and their caregivers it can turn into a stressful and traumatic moment, triggering aggression (10,11).

Bath time can become a real struggle between caregivers and patients (10): the literature indicates that 20-40% of patients with cognitive impairment, hospitalized in long-term facilities, can react with aggressive manifestations such as screaming, threats, kicks, punches, and scratches, as well as to remain agitated for many hours after the bath (12–14).

Currently, the treatment options for psycho-behavioral symptoms include pharmacological and non-pharmacological therapies (15–17). Some studies show that antipsychotics are used between 21% and 46% of cases to manage agitation and aggression (18–20). Atypical antipsychotics are the most commonly used to reduce the frequency and severity of episodes of agitation and aggression (21,22) which, however, in most patients, are poorly controlled by the drug (23), thus leading to consequences (24,25) increased risk of falls and fractures (26), development of cerebrovascular accidents, reduced quality of life and increased mortality (27–30).

For these reasons, the guidelines of the American Psychiatric Association from 2007 onwards have been recommending (31) non-pharmacological interventions as the first choice (32–34). However studies on this subject are few and sometimes discordant, and produce scant evidence (35,36).

Specifically, interventions such as touch therapy (37), aromatherapy (38,39), music therapy (40,41) and sensory stimulation (15,42) have shown promising results in reducing agitation and deterioration in elderly patients with dementia (15,43,44). The Towel bath (45,46) is a technique that starts in the early 1990 's, when two research groups, of North Carolina, were funded by the National Institutes of Health to develop interventions to improve the techniques used during bathing. This technique is a variant of the bed bath, it can be a good choice for people who are frail, non-ambulatory, severely overweight or fearful of lifts, also representing an useful and viable alternative to the complete bath in bedridden patients. In 2004, within a broader educational program, this technique was used on a group of persons with dementia, achieving good results in terms of reduction in aggressive behaviors against caregivers, reduction in care recipient agitation, reduction in care recipient distress and decrease in the time used for the execution of the bath (10). The technique of Towel bath in fact as well as reducing patient discomfort and aggressive behavior helps to promote a therapeutic relationship between patient and caregiver (10,11,47). It is possible to wash these persons adequately in the bed, which is often less stressful. The technique consists in gently covering the body of the person with a large warm towel containing a no-rinse soap solution, and washing and massaging through the towel (47). The technique was performed in all cases by two operators.

Aggression in people with dementia is a complex phenomenon, with several possible causative factors

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that requires a multidimensional and multidisciplinary response; nursing assessment in this field is aimed at researching specific risk factors. The use of valid screening tools assessment helps nurses to identify those at high risk, and to implement interventions aimed at reducing the risk of aggressive behaviour.

The level of aggressiveness of the person with dementia can be assessed through the Care Recipient Behavior Assessment Scale (CAREBA), created in 2004 and used to evaluates signs of behavioral distress in the person receiving Person-centered showering and the towel bath in different nursing homes. In Italy, to date towel bath is not commonly used, and no Italian versions of the CAREBA scale currently exist.

AIM

The aim of the study was to evaluate the effectiveness of the Towel bath technique in reducing aggressiveness when nursing care for residents with bathing.

MATERIALS AND METHODS

A monocentric, non-randomized, two-arms crossover trial, aimed at comparing the method of Towel bath (intervention group) with complete bath (control group) was conducted in a long term care facility dedicated to patients with dementia; aggressiveness shown by patients and time required to complete the procedure were evaluated.

Setting, sample size and sample characteristics

The study was conducted in two units of the "Istituti Milanesi Martinitt e Stelline e Pio Albergo Trivulzio" in Milan, Northern Italy, both dedicated to patients suffering from dementia, from June to October 2018.

We enrolled persons with diagnosis of dementia (Alzheimer's and non-Alzheimer's) with "moderate" or "severe" cognitive impairment, with a Mini Mental State Examination scores (MMSE) ≤ 19, Pain Assessment in Advanced Dementia scores (PAINAD) <4 (that is, absence of pain before the procedure) and history of physically or verbally aggressive behaviours. Patients with a primary diagnosis of delirium, unconscious or comatose patients, patients with a alcohol-related dementia or with psychotic disorders as their primary diagnosis, patients with a MMSE > 19 with a cognitive "mild" impairment and PAINAD patients ≥ 4 were excluded.

Sample size was calculated considering a probability of type I error of 5%, and a probability of type II error of 20% (power=80%). Considering an expected effect size between 30% and 40% a sample size of 71 patients was needed to compare the two groups.

Crossover trial

The study design is outlined in Fig 1. The 71 persons were invited to receive the usual-care - traditional bathing, with water, soap, and full-body cleansing with sponges - with prior permission of the patient's guardians or next of kin.

The following bath, after an average of 4 days, was given to the same persons with the towel bath technique, described in the Background section. During the remaining days of the week, all patients received daily hygiene but not a full bath. This schedule was compliant with the usual care provided in the hospital, in which full bath was only given every four days even before the beginning of this study.

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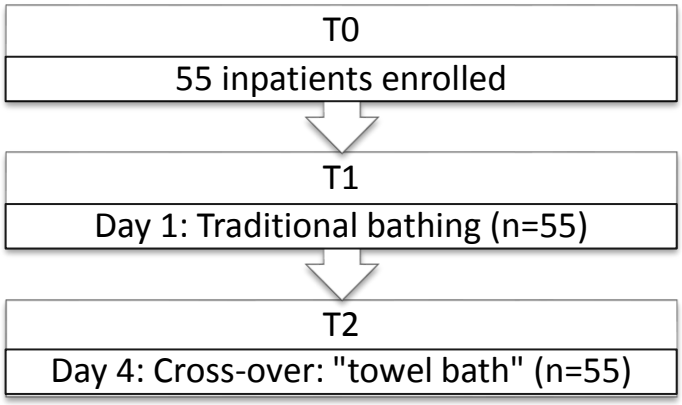

Figure 1: Flow chart outlining study design

In order to avoid a bias represented by the possible presence of pain, which could influence aggressive behaviours, the PAINAD scale was administered prior to all baths. Patients with positive PAINAD scores were treated for pain according to the physician's presriptions, and not enroled for the study until pain came under control again.

Assessment of aggressiveness was performed through repeated administration of the italian version of the CAREBA scale to all patients, 15 minutes before the bath, during the bath and 15 minutes after the end of the procedure.

Data collection was performed by one nurse only; assessment and baths was always performed during the morning shift by two experienced nursed with advanced education and *training* about towel bath technique.

Validation Of The Careba Scale

The scale, reported in table 1 (appendices section), has 9 items, each corrisponding to a patient's behaviour, which can be present or not. According to the original author patients are considered at risk of violence even with a single "attempt" of aggressive behaviour against the caregiver. The scale was back-translated from English into Italian by two nurses independently and then back to English (by an English teacher). The final version was approved by the original author. Face and content validity of the italian version oft he CAREBA scale were investigated by calculating the content validity index, with the help of six nurses experiences 5 or more years in this area. Cronbach's alpha was used to assess internal consistency.

Statistical analysis

Continuous variables have been described with mean and standard deviation if normally distributed, with median and interquartile range otherwise. Wilcoxon matched-pair test was used to compare the CAREBA-ita scores in the two groups (traditional and towel bath) after failure of data normalization, attempted with Blom's transformation and checked with Shapiro-Wilk normality test ($p<0.05$). The threshold of significance of the tests was set at 5%. All calculations were checked by a statistician and perfermed wih SAS® 9 (SAS Inc., Cary NY).

Post-hoc power analysis on our sample revealed an actual power of all statistical tests between 80% and 82%, which can be considered satisfactory.

Ethical issues

The hospital does not have an ethical committee, and is not affiliated with any external committee. Ethical issues are discussed by representatives of the hospital management, includind nurses, doctors, and managers, according to the ethical principles of the Declaration of Helsinki. We complied with the ethical rules of the hospital, and obtained all required authorizations to conduct the study.

RESULTS

Validation of the Italian version of CAREBA scale (CAREBA-ita)

Face validity was satisfactory: the scale had a content validity index (S-CVI) of .94. Internal consistency was good (Cronbach's alpha = .79). Average time for

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completing the CAREBA scale was less than 1 minute.

Sample characteristics

71 eligible patients were enrolled, median age 86 years, IQR [83-89] (skewed distribution, Kolmogorov-Smirnov test $p < 0.05$), 61 were women, 10 men, among them 56 patients (79.0%) taking antipsychotics, 22 patients (31.0%) had Alzheimer's disease, 27 (38.0%) mixed dementia, 22 (31.0%) vascular dementia. The Mini Mental State Examination had a median value Me = 5 [2-8] with a range between 1 and 19, thus largely compatible with the diagnosis of dementia. Before bathing, no patients needed pharmacological treatment for pain, according to the PAINAD score (always <4).

Traditional bath vs Towel bath

The CAREBA scores were calculated in both groups before (15 minutes), during and after (15 minutes) bathing with the traditional technique and Towel bath, as shown in Table 2. All patients received 6 evaluation, 3 in the control group and 3 in the intervention group. Before and after bathing, no patient were at risk (CAREBA score=0); one patient was evaluated at risk of aggressive behaviours during bathing with traditional technique.

Towel bath led to statistically significant reduction in the number of patients that showed aggressive behaviours (p=0.037) during the bath. The CAREBA scores ranged between [0-3] in the control group and [0-1] in the Towel bath.

Table 3 shows the comparison of every single item in the two groups.

Group	Before(n, Me[IQR])	During (n, Me[IQR])	After (n, Me[IQR])
Traditional bath	0,0[0-0]	43, 1[0-3]	1,0[0-0]
Towel bath	0, 0[0-0]	22, 0[0-1]	0, 0[0-0]

n= patients with CAREBA >0; Me=median score CAREBA; IQR=InterQuartile Range

Table 2: Comparison CAREBA-ita scores in the two arms

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	Item	Traditional bath (n, Me[IQR])	Towel bath (n, Me[IQR])	p-value
CAREBA-ita	**Hitting, pushing, scratching**	24,0[0-2]	11,0[0-0]	0.02
	Kicking	10,0[0-0]	3,0[0-0]	0.001
	Biting	2,0[0-0]	0,0[0-0]	0.01
	Grabbing caregiver	11,0[0-1]	3,0[0-0]	0.001
	Throwing things	6,0[0-0]	0,0[0-0]	<.001
	Spitting	1,0[0-0]	0,0[0-0]	>0.05
	Calling for Help /Protesting/Objecting	9,0[0-1]	2,0[0-0]	0.03
	Hostile/Aggressive language	3,0[0-0]	1,0[0-0]	0.03
	Screaming/yelling	9,0[0-1]	2,0[0-0]	0.01

Table 3: comparison of different Item both physical and verbal aggression while bathing in the two groups

38 patients (54.0%) had a Mini Mental State Examination below 5 points. Having a MMSE above or below MMSE=5 was not related to any significant differences in the scores CAREBA during bathing (always $p > 0.05$). As regarding the variables "Diagnosis", "Gender" and "Age" the scores during the procedure showed no significant differences in the different domains of the CAREBA (always $p > 0.05$).

As regards the time required to complete the procedure there was a statistically significant difference in favour of Towel bath, requiring a median of 7 minutes IQR [6; 8] against 9 minutes IQR [8; 10] traditional bath ($p=0.01$).

CONCLUSIONS

The perception of a safe environment is a fundamental characteristic of individual and social well-being (48). It is an important component of job satisfaction and job performance. An aggressive event can adversely affect the healthcare worker's problem-solving skills and and expose them to the risk of experiencing other issues as moral distress (49).

Bathing persons with Alzheimer's disease is physically and emotionally demanding for the healthcare workers. Hitting, kicking, biting, swearing, and shouting at staff by dementia patients while bathing is an everyday occurrence in long-term care facilities. This study shows that changing the nursing approach can significantly reduce aggression and agitation without having a negative effect on bathing completeness or hygiene outcomes. The reduction in behavioral symptoms produced by the technique Towel bath was large except for spitting, but the lack

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of this occurrence suggests the need for further investigation. It also seems interesting to investigate the perceived any caregiver regards the effecetivenss of this technique.

About the execution time of the procedure, there was a statistically significant difference in favour of Towel bath technique against traditional bath. These results are in line with what it was declared in international studies that have implemented Towel bath (10,11).

The CAREBA scale (10) was translated into Italian by the method of back translation. We proceeded to the internal consistency evaluation by calculating Cronbach Alpha which turned out to be 0.79: this value is satisfactory, indicating that among the items of the scale there is a good correlation and therefore, a strong logical connection. The scale is easy to use, requires less than a minute to be completed and thus represents a valid and reliable instrument in assessing the aggressiveness even in personss with dementia in long term facilities.

This study supports the growing belief that a change in attitudes and practice can and should take place with regard to bathing and other personal care activities. Improving personal care experiences would have a significant positive effect on both patients and healthcare professionals.

In conclusion our results support the idea that the technique Towel bath can be a valid alternative at traditional bathroom types, for use in patients with dementia to reduce aggressive manifestations and the execution time of the procedure.

The towel bath technique can be incorporated into educational training programs for any healtcare professional or caregiver who will be working with persons with dementia. It is a procedure that can be adapted to the care of the most challenging resident and will help staff begin to display person-centred care for the resident who is afraid of care proceduresor is not compliant as a result.

These results require replication in further settings and on a wider sample; continued enhancement of health professionals through education, supportive administrative practices and regulation is recommended to maintain the level of improvement achieved in this study. Efforts in this direction are currently ongoing.

Declarations of interest: The study was performed by part of the editorial board of Dissertation Nursing: the appropriate editorial conflict of interest policies (Publication Ethics - Art. 7.2) and the *conflict of interest procedure* described in the Author Guidelines were adopted.

REFERENCES

1. Savva GM, Zaccai J, Matthews FE, Davidson JE, McKeith I, Brayne C, et al. Prevalence, correlates and course of behavioural and psychological symptoms of dementia in the population. Br J Psychiatry. 2009 Mar 1;194(3):212–9.

2. Geda YE, Schneider LS, Gitlin LN, Miller DS, Smith GS, Bell J, et al. Neuropsychiatric symptoms in Alzheimer's disease: Past progress and anticipation of the future. Alzheimers Dement. 2013 Sep;9(5):602–8.

3. Ismail Z, Smith EE, Geda Y, Sultzer D, Brodaty H, Smith G, et al. Neuropsychiatric symptoms as early manifestations of emergent dementia: Provisional diagnostic criteria for mild behavioral impairment. Alzheimers Dement. 2016 Feb;12(2):195–202.

4. Desai AK, Schwartz L, Grossberg GT. Behavioral Disturbance in Dementia. Curr Psychiatry Rep. 2012 Aug;14(4):298–309.

5. Skovdahl K, Kihlgren AL, Kihlgren M. Dementia and aggressiveness: stimulated recall interviews with caregivers after video-recorded interactions. J Clin Nurs. 2004 May;13(4):515–25.

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6. Cheng S-T. Dementia Caregiver Burden: a Research Update and Critical Analysis. Curr Psychiatry Rep [Internet]. 2017 Sep [cited 2017 Oct 29];19(9). Available from: http://link.springer.com/10.1007/s11920-017-0818-2

7. Cohen-Mansfield J, Parpura-Gill A. Bathing: A framework for intervention focusing on psychosocial, architectural and human factors considerations. Arch Gerontol Geriatr. 2007 Sep;45(2):121–35.

8. Cheever KH, Smeltzer SC, Brenda G. Infermieristica medico-chirurgica. 1 1. Milano: CEA; 2010.

9. Bulechek GM, editor. Nursing interventions classification (NIC). 6. ed. St. Louis, Mo: Mosby/Elsevier; 2013. 608 p.

10. Sloane PD, Hoeffer B, Mitchell CM, McKenzie DA, Barrick AL, Rader J, et al. Effect of person-centered showering and the towel bath on bathing-associated aggression, agitation, and discomfort in nursing home residents with dementia: a randomized, controlled trial. J Am Geriatr Soc. 2004 Nov;52(11):1795–804.

11. Gozalo P, Prakash S, Qato DM, Sloane PD, Mor V. Effect of the Bathing Without a Battle Training Intervention on Bathing-Associated Physical and Verbal Outcomes in Nursing Home Residents with Dementia: A Randomized Crossover Diffusion Study. J Am Geriatr Soc. 2014 May;62(5):797–804.

12. Rasin J, Barrick AL. Bathing Patients with Dementia: Concentrating on the patient's needs rather than merely the task. 2014 Mar;AJN, American Journal of Nursing March 2004-Volume 104-Issue 3-pp 30-32.

13. Hoeffer B, Talerico KA, Rasin J, Mitchell CM, Stewart BJ, McKenzie D, et al. Assisting cognitively impaired nursing home residents with bathing: effects of two bathing interventions on caregiving. The Gerontologist. 2006 Aug;46(4):524–32.

14. Boustani M, Zimmerman S, Williams CS, Gruber-Baldini AL, Watson L, Reed PS, et al. Characteristics associated with behavioral symptoms related to dementia in long-term care residents. The Gerontologist. 2005 Oct;45 Spec No 1(1):56–61.

15. Brodaty H, Arasaratnam C. Meta-analysis of nonpharmacological interventions for neuropsychiatric symptoms of dementia. Am J Psychiatry. 2012 Sep;169(9):946–53.

16. Cabrera E, Sutcliffe C, Verbeek H, Saks K, Soto-Martin M, Meyer G, et al. Non-pharmacological interventions as a best practice strategy in people with dementia living in nursing homes. A systematic review. Eur Geriatr Med. 2015 Apr;6(2):134–50.

17. Cammisuli DM, Danti S, Bosinelli F, Cipriani G. Non-pharmacological interventions for people with Alzheimer's Disease: A critical review of the scientific literature from the last ten years. Eur Geriatr Med. 2016 Feb;7(1):57–64.

18. Mann E, Köpke S, Haastert B, Pitkälä K, Meyer G. Psychotropic medication use among nursing home residents in Austria: a cross-sectional study. BMC Geriatr [Internet]. 2009 Dec [cited 2017 Oct 29];9(1). Available from: http://bmcgeriatr.biomedcentral.com/articles/10.1186/1471-2318-9-18

19. Schneider LS, Tariot PN, Dagerman KS, Davis SM, Hsiao JK, Ismail MS, et al. Effectiveness of Atypical Antipsychotic Drugs in Patients with Alzheimer's Disease. N Engl J Med. 2006 Oct 12;355(15):1525–38.

20. Richter T, Mann E, Meyer G, Haastert B, Köpke S. Prevalence of psychotropic medication use among German and Austrian nursing home residents:

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a comparison of 3 cohorts. J Am Med Dir Assoc. 2012 Feb;13(2):187.e7-187.e13.

21. Alexopoulos GS, Streim J, Carpenter D, Docherty JP, Expert Consensus Panel for Using Antipsychotic Drugs in Older Patients. Using antipsychotic agents in older patients. J Clin Psychiatry. 2004;65 Suppl 2:5-99; discussion 100-102; quiz 103-104.

22. Daiello LA. Atypical antipsychotics for the treatment of dementia-related behaviors: an update. Med Health R I. 2007 Jun;90(6):191–4.

23. Howard R, McShane R, Lindesay J, Ritchie C, Baldwin A, Barber R, et al. Donepezil and Memantine for Moderate-to-Severe Alzheimer's Disease. N Engl J Med. 2012 Mar 8;366(10):893–903.

24. Brauer R, Smeeth L, Anaya-Izquierdo K, Timmis A, Denaxas SC, Farrington CP, et al. Antipsychotic drugs and risks of myocardial infarction: a self-controlled case series study. Eur Heart J. 2015 Apr 21;36(16):984–92.

25. Hartikainen S, Lönnroos E, Louhivuori K. Medication as a risk factor for falls: critical systematic review. J Gerontol A Biol Sci Med Sci. 2007 Oct;62(10):1172–81.

26. Bierman EJM, Comijs HC, Gundy CM, Sonnenberg C, Jonker C, Beekman ATF. The effect of chronic benzodiazepine use on cognitive functioning in older persons: good, bad or indifferent? Int J Geriatr Psychiatry. 2007 Dec;22(12):1194–200.

27. Ballard C, Creese B, Corbett A, Aarsland D. Atypical antipsychotics for the treatment of behavioral and psychological symptoms in dementia, with a particular focus on longer term outcomes and mortality. Expert Opin Drug Saf. 2011 Jan;10(1):35–43.

28. Kales HC, Kim HM, Zivin K, Valenstein M, Seyfried LS, Chiang C, et al. Risk of mortality among individual antipsychotics in patients with dementia. Am J Psychiatry. 2012 Jan;169(1):71–9.

29. Nielsen R-E, Lolk A, M Rodrigo-Domingo null, Valentin J-B, Andersen K. Antipsychotic treatment effects on cardiovascular, cancer, infection, and intentional self-harm as cause of death in patients with Alzheimer's dementia. Eur Psychiatry J Assoc Eur Psychiatr. 2017 May;42:14–23.

30. Maher AR, Maglione M, Bagley S, Suttorp M, Hu J-H, Ewing B, et al. Efficacy and Comparative Effectiveness of Atypical Antipsychotic Medications for Off-Label Uses in Adults: A Systematic Review and Meta-analysis. JAMA. 2011 Sep 28;306(12):1359.

31. APA Work Group on Alzheimer's Disease and other Dementias, Rabins PV, Blacker D, Rovner BW, Rummans T, Schneider LS, et al. American Psychiatric Association practice guideline for the treatment of patients with Alzheimer's disease and other dementias. Second edition. Am J Psychiatry. 2007 Dec;164(12 Suppl):5–56.

32. Mitka M. CMS seeks to reduce antipsychotic use in nursing home residents with dementia. JAMA. 2012 Jul 11;308(2):119, 121.

33. Jutkowitz E, Brasure M, Fuchs E, Shippee T, Kane RA, Fink HA, et al. Care-Delivery Interventions to Manage Agitation and Aggression in Dementia Nursing Home and Assisted Living Residents: A Systematic Review and Meta-analysis. J Am Geriatr Soc. 2016 Mar;64(3):477–88.

34. Brasure M, Jutkowitz E, Fuchs E, Nelson VA, Kane RA, Shippee T, et al. Nonpharmacologic Interventions for Agitation and Aggression in Dementia [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2016 [cited 2017 Mar 6]. (AHRQ Comparative Effectiveness

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Reviews). Available from: http://www.ncbi.nlm.nih.gov/books/NBK356163/

35. Livingston G, Kelly L, Lewis-Holmes E, Baio G, Morris S, Patel N, et al. Non-pharmacological interventions for agitation in dementia: systematic review of randomised controlled trials. Br J Psychiatry. 2014 Dec 1;205(6):436–42.

36. Millan-Calenti JC, Lorenzo-López L, Alonso-Búa B, de Labra Pinedo C, González-Abraldes I, Maseda A. Optimal nonpharmacological management of agitation in Alzheimer’s disease: challenges and solutions. Clin Interv Aging. 2016 Feb;175.

37. Viggo Hansen N, Jørgensen T, Ørtenblad L. Massage and touch for dementia. Cochrane Database Syst Rev. 2006 Oct 18;(4):CD004989.

38. Holmes C, Hopkins V, Hensford C, MacLaughlin V, Wilkinson D, Rosenvinge H. Lavender oil as a treatment for agitated behaviour in severe dementia: a placebo controlled study. Int J Geriatr Psychiatry. 2002 Apr;17(4):305–8.

39. Fu C-Y, Moyle W, Cooke M. A randomised controlled trial of the use of aromatherapy and hand massage to reduce disruptive behaviour in people with dementia. BMC Complement Altern Med [Internet]. 2013 Dec [cited 2017 Oct 29];13(1). Available from: http://bmccomplementalternmed.biomedcentral.com/articles/10.1186/1472-6882-13-165

40. Hsu MH, Flowerdew R, Parker M, Fachner J, Odell-Miller H. Individual music therapy for managing neuropsychiatric symptoms for people with dementia and their carers: a cluster randomised controlled feasibility study. BMC Geriatr. 2015 Jul 18;15:84.

41. Fakhoury N, Wilhelm N, Sobota KF, Kroustos KR. Impact of Music Therapy on Dementia Behaviors: A Literature Review. Consult Pharm J Am Soc Consult Pharm. 2017 Oct 1;32(10):623–8.

42. Preuss U, Wong J, Koller G. Treatment of behavioral and psychological symptoms of dementia: a systematic review. Psychiatr Pol. 2016;50(4):679–715.

43. Cohen-Mansfield J, Mintzer JE. Time for change: the role of nonpharmacological interventions in treating behavior problems in nursing home residents with dementia. Alzheimer Dis Assoc Disord. 2005 Mar;19(1):37–40.

44. Gitlin LN, Winter L, Dennis MP, Hodgson N, Hauck WW. Targeting and managing behavioral symptoms in individuals with dementia: a randomized trial of a nonpharmacological intervention. J Am Geriatr Soc. 2010 Aug;58(8):1465–74.

45. The University of North Carolina at Chapel Hill, Cecil G. Sheps Center for Health Services Research. Bathing Without a Battle Creating a Better Bathing Experience for Persons with Alzheimer's Disease and Related Dementias [Internet]. Available from: http://bathingwithoutabattle.unc.edu/bathing-techniques

46. Martin LS, Morden P, McDowell C. Using the towel bath to give tender care in dementia: a case example. Perspect Gerontol Nurs Assoc Can. 1999;23(1):8–11.

47. Flori L. Don't throw in the towel: Tips for bathing a patient who has dementia. Nursing (Lond). 2007 Jul;37(7):22–3.

48. Castello M, Ferrara P, Destrebecq A, Terzoni S. The perception of clinical risk among students of different health professions: a multicentre study. Br J Nurs. 2019; 28(3),193-197. doi: 10.12968/bjon.2019.28.3.193. PMID: 30746967.

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DISSERTATION NURSING

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49. Lazzari T, Terzoni S, Destrebecq A, Meani L, Bonetti L, Ferrara P. Moral distress in correctional nurses: A national survey. Nurs Ethics. 2020 Feb;27(1):40-52. doi: 10.1177/0969733019834976. Epub 2019 Apr 9.

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APPENDICES:

Table 1 - CARErecipient Behavior Assessment (CAREBA) – first part

This coding system is used to rate clear signs of behavioral distress. If two behaviors occur simultaneously, rate BOTH. Attempts do not make contact with the caregiver. If a behavior **cannot** be clearly seen, do **NOT** rate it.	
1. **PHYSICAL SYMPTOMS**	
BEHAVIOR	**DESCRIPTION**
Hitting, pushing, scratching, etc	- physically abuses caregiver with hand or handheld object or with other body parts (head, whole body), includes pushing, shoving, scratching, pinching (contact must occur)
Hitting, pushing, scratching, etc. ATTEMPT	- swings out arm and hand with force towards caregiver (check for signs of a wind-up)
Kicking	- strikes forcefully with foot or leg (contact occurs)
Kick attempt	- swings out leg and foot with force towards caregiver
Biting	- bites, chomps, gnaws (on caregiver **only**)
Biting attempt	- moves face and open mouth towards caregiver to bite
Grabbing caregiver	- grabs onto a caregiver. Do not rate if resident is holding on to the caregiver for safety reasons. If it is unclear, do not rate.
Throwing things	- forcefully throws object, knocks object off surface
Spitting	- spits other than for dental hygiene purposes.

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Table 1 - CARErecipient Behavior Assessment (CAREBA) – Second part

2. VERBAL SYMPTOMS	
BEHAVIOR	**DESCRIPTION**
Calling for Help /Protesting/Objecting	-says "You are hurting me", "Ouch", **"**Help", etc.; these may include expressions of pain, discomfort or dissatisfaction or calls for help
Hostile/Aggressive language	- verbally threatens to physically harm the caregiver, eg, "I'm going to kill you." or threatens the caregiver in a nonphysical way, eg., "I'm going to tell my son about you." Must be words. -uses curse words(profane or obscene language)
Screaming/yelling	- **Clearly above conversational level**: howls, shouts out, includes **LOUD** verbal outbursts, e.g., - loud exclamations such as "Oh!" or "Help!" would be rated as Screaming/yelling and Protest/Objecting. Rate "help" said in a pleading manner as Protesting/Objecting.

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