

“Mãos de Conforto” (Hands of Comfort): A novel non-pharmacological intervention to ease agitation in elderly persons with dementia

Case Report

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Abstract

Behavioral symptoms associated with dementia, such as agitation, are frequent and associated with well-known negative consequences for patients, their carers, and their environment. Pharmacological treatments for agitation using sedatives and antipsychotics are known to have several undesirable side effects and modest efficacy. Non-pharmacological alternatives are recommended as first-line options for agitation in persons with dementia with few side effects, but there is limited evidence of efficacy. We developed a novel and simple non-pharmacological alternative for agitation in dementia residents based on a Brazilian intervention using warm water surgical gloves used in patients with COVID-19 in intensive care units during the pandemic. We coined it “Mãos de Conforto” – Hands of Comfort. We report a series of 7 cases in 3 residents with dementia who wore Hands of Comfort.

Introduction

According to the World Alzheimer Report 2021, dementia is the seventh leading cause of mortality globally, estimating that over 55 million people live with dementia worldwide, with forecasts reaching 78 million by 2030 (Gauthier et al. 2021).

Behavioral symptoms associated with dementia, such as agitation, can be present in up to 90% of persons. Agitation can be defined as “inappropriate verbal, vocal, or motor activity that is not explained by needs or confusion per se” (Cohen-Mansfield and Billing 1986). There are several well-known negative consequences of agitation for patients with dementia and their carers, such as decreased quality of life due to creating unpleasant, impeding activities and relationships, causing helplessness and anger in family and paid caregivers (Draper et al. 2000; Finkel 2000).

Agitation in dementia can adversely influence the environment (Draper et al. 2000), which can be particularly relevant in long-term elderly facilities where many dementia residents are institutionalized. Agitation in patients with dementia can be treated with pharmacological and non-pharmacological interventions (de Oliveira et al. 2015). Pharmacological treatments for agitation using sedatives and antipsychotics are known to have several undesirable side effects and modest efficacy (Kar 2009; O’Connor et al. 2014; Schneider et al. 2006). Non-pharmacological alternatives are promising interventions with few side effects (Cerga-Pashoja et al. 2010; Chen et al. 2014; Gill et al. 2007; Yang et al. 2015). They are recommended as first-line options for agitation in persons with dementia, but the evidence is currently unclear (AGS Choosing Wisely Workgroup 2014; de Oliveira et al. 2015; Gauthier et al. 2021; Royal College of Nursing, Dementia 2006).

Agitation in dementia is currently a challenging clinical dilemma as professionals are encouraged to avoid drug use, on the one hand, and to find and implement effective and sometimes costly non-pharmacological alternatives, on the other hand.

Our long-term care institution cares for a large percentage of dementia residents who frequently present agitation. With the aim of avoiding physical restraints and pharmacological interventions, we sought to use a novel and simple non-pharmacological alternative for agitation based on a Brazilian intervention using warm water surgical gloves called “Luvas de Amor” used in patients with COVID-19 in intensive care units during the pandemic (Cunha et al. 2021; Melo 2021).

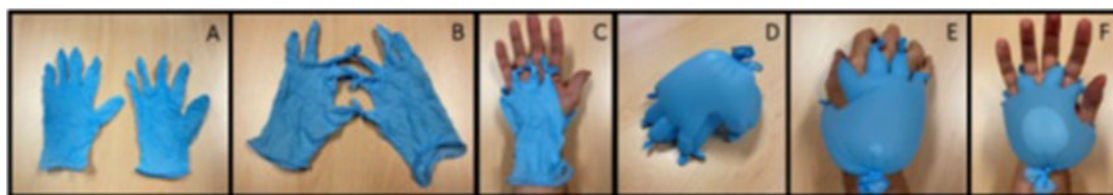


Fig. 1. Hands of Comfort assembly process: (A) nitrile latex-free gloves; (B) knotting the fingertips together; (C) all fingertips knotted together; (D) gloves filled with warm water; (E) one glove in the dorsum of hand; and (F) one glove in the palm of the hand.

After knowing about this simple and innovative intervention and because there was no evidence – to the best of our knowledge – of its use other than with intubated patients in intensive care unit (ICU), we hypothesized if using such warm gloves – coined as “Mãos de Conforto” – Hands of Comfort (HC) – could help ease agitation in dementia residents.

We report, therefore, a clinical case series of 7 cases of 3 dementia residents who wore HC and were assessed for clinical efficacy.

Methods

This is a retrospective analysis of all residents who had an episode of agitation and received HC during November and December 2022. We retrieved the following data: (1) demographic and clinical characteristics; (2) documented behaviors before and after HC; (3) vital signs before and after HC; (4) need for sedative or hypnotic as needed (PRN) medication during HC; (5) gloves’ characteristics during usage, and (6) residents’ statements during HC usage. The Institutional Review Board approved this study (of. no 74/2022).

Hands of Comfort intervention

HC are a novel, easy, and inexpensive intervention for agitation in persons with dementia, free from laborious and time-consuming staff training. HC were replicated following a very simple Brazilian intervention called “Técnica da ‘mãozinha,’” “Luvas de Amor,” and “Mãozinhas de Deus” (Technique of the Little Hand, Gloves of Love, and Little Hands of God), initially developed by nurse Melo (2021) and later by Cunha et al. (2021). The warm water surgical gloves were reported to increase ICU ventilated patients’ hands’ temperature, improve clinical signs’ evaluation, and provide a sense of human presence and calmness during the isolated and stressful time in the ICU. Several photos of this technique were shared on social media during the pandemic. Their use in Brazil was widespread and seen as clinically helpful, enhancing the sense of compassion and meaning of burned-out health-care professionals (Cunha et al. 2021; Melo 2021).

We sought to implement this non-pharmacological intervention in our long-term care institution as a standard procedure in daily clinical care. We coined the intervention “Mãos de Conforto” – Hands of Comfort.

Following the original Brazilian gloves technique, our HC are assembled using 2 nitrile latex-free gloves with each fingertip knotted together, filled with warm water (36–37°C), and worn in one of the person’s hands (Figures 1 and 2).

Assessments

We used the Patient Comfort Assessment Form developed by Bruera et al. (2003) to assess several behaviors associated



Fig. 2. The hand of a person with dementia wearing Hands of Comfort.

with agitation in our dementia residents and excluded possible precipitating and reversible factors such as pain, nausea, need to urinate or defecate, difficulty breathing, and delirium, prior to HC. Our adapted protocol included the following behaviors: saying isolated words, shouting, touching or rubbing an area, purposeless movements, and restlessness, all measured on a scale of 0–4 (0 = not seen, 1 = present when the resident was moving, 2 = occasional, 3 = frequent, and 4 = continuous). A score of 3 or 4 was considered clinically relevant (Bruera et al. 2003). A health professional assessed the protocol before and 30 minutes after introducing HC to an agitated person. Vital signs such as pulse rate and blood pressure were also assessed before and after HC, whenever possible. During the HC use, words or phrases pronounced by the residents were registered, and the HC usage duration, the gloves’ characteristics (rupture and temperature), and the need for PRN medication for agitation were registered. It was guaranteed that no sedative or hypnotic drugs were administered before the use of HC.

Results

Residents’ characteristics

Seven cases (3 persons with dementia) were reviewed. All residents were female; the average age was 97 years old (range: 95–98). All residents had advanced-stage Alzheimer’s dementia and were completely dependent on all activities of daily living and bedbound. Table 1 summarizes the case series and residents’ characteristics.

Discussion

Non-pharmacological alternatives are promising interventions to manage agitation in persons with dementia. Although the evidence supporting their effectiveness is still lacking, they are recommended as potential alternatives to sedative and hypnotic drugs (AGS Choosing Wisely Workgroup 2014; de Oliveira et al. 2015; Gauthier et al. 2021; Royal College of Nursing, Dementia 2006).

Table 1. Clinical outcomes of Hands of Comfort intervention

Rsd	Age	Gender	Diagnosis and clinical condition	Behavior prior to Hands of Comfort ^a	Behavior after Hands of Comfort	Vital signs prior to Hands of Comfort	Vital signs after Hands of Comfort ^b	Onset and duration of effect	Need for PRN during usage	Gloves' characteristics during usage	Residents' quotes during usage
1	98	F	<ul style="list-style-type: none"> - Advanced-stage dementia - Dependency in ADL - Bedbound - Total blindness 	<ul style="list-style-type: none"> - Shouting: 3 - Saying isolated words: 3 - Repeating words: 4 - Touching/rubbing an area: 2 - Purposeless movement: 3 - Restlessness: 3 	<ul style="list-style-type: none"> - Shouting: 0 - Saying isolated words: 1 - Repeating words: 1 - Touching/rubbing an area: 0 - Purposeless movement: 0 - Restlessness: 1 - Mostly with eyes shut - Repeated "shaking hands" movement 	<ul style="list-style-type: none"> - Pulse rate: 83 bpm - Blood pressure: 143/84 mmHg 	<ul style="list-style-type: none"> - Pulse rate: 63 bpm - Blood pressure: 122/70 mmHg 	<ul style="list-style-type: none"> - Immediate - 8 hours 	<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Intact/no leakage - Similar temperature (under bed sheets) 	<ul style="list-style-type: none"> 1. "Your hand is so good" 2. "It is warm"
	98	F	<ul style="list-style-type: none"> - Advanced-stage dementia - Dependency in ADL - Bedbound - Total blindness 	<ul style="list-style-type: none"> - Shouting: 4 - Saying isolated words: 3 - Repeating words: 4 - Touching/rubbing an area: 3 - Purposeless movement: 3 - Restlessness: 3 	<ul style="list-style-type: none"> - Shouting: 0 - Saying isolated words: 1 - Repeating words: 2 - Touching/rubbing an area: 3^c - Purposeless movement: 0 - Restlessness: 0 - Mostly with eyes shut - Repeated "shaking hands" movement 	<ul style="list-style-type: none"> - Pulse rate: 71 bpm - Blood pressure: 121/75 mmHg 	<ul style="list-style-type: none"> - Pulse rate: 70 bpm - Blood pressure: 119/71 mmHg 	<ul style="list-style-type: none"> - Immediate - 6 hours 	<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Intact/no leakage - Similar temperature (under bed sheets) 	<ul style="list-style-type: none"> "Your hand"

(Continued)

Table 1. (Continued.)

Rsd	Age	Gender	Diagnosis and clinical condition	Behavior prior to Hands of Comfort ^a	Behavior after Hands of Comfort	Vital signs prior to Hands of Comfort	Vital signs after Hands of Comfort ^b	Onset and duration of effect	Need for PRN during usage	Gloves' characteristics during usage	Residents' quotes during usage
1	98	F	<ul style="list-style-type: none"> - Advanced-stage dementia - Dependency in ADL - Bedbound - Total blindness 	<ul style="list-style-type: none"> - Shouting: 4 - Saying isolated words: 3 - Repeating words: 4 - Touching/rubbing an area: 3 - Purposeless movement: 3 - Restlessness: 3 	<ul style="list-style-type: none"> - Shouting: 0 - Saying isolated words: 2 - Repeating words: 3 - Touching/rubbing an area: 0 - Purposeless movement: 0 - Restlessness: 0 - Mostly with eyes shut - Repeated "shaking hands" movement 	<ul style="list-style-type: none"> - Pulse rate: 69 bpm - Blood pressure: 139/81 mmHg 	<ul style="list-style-type: none"> - Pulse rate: 75 bpm - Blood pressure: 107/68 mmHg 	<ul style="list-style-type: none"> - Immediate - 6 hours 	<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Intact/no leakage - Similar temperature (under bed sheets) 	-
	98	F	<ul style="list-style-type: none"> - Advanced-stage dementia - Dependency in ADL - Bedbound - Total blindness 	<ul style="list-style-type: none"> - Shouting: 3 - Saying isolated words: 4 - Repeating words: 4 - Touching/rubbing an area: 4 - Purposeless movement: 3 - Restlessness: 3 	<ul style="list-style-type: none"> - Shouting: 0 - Saying isolated words: 2 - Repeating words: 3 - Touching/rubbing an area: 0 - Purposeless movement: 0 - Restlessness: 1 - Mostly with eyes shut - Repeated "shaking hands" movement 	<ul style="list-style-type: none"> - Pulse rate: 82 bpm - Blood pressure: 127/73 mmHg 	<ul style="list-style-type: none"> - Pulse rate: 64 bpm - Blood pressure: 112/61 mmHg 	<ul style="list-style-type: none"> - Immediate - 6 hours 	<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Intact/no leakage - Similar temperature (under bed sheets) 	-

(Continued)

Table 1. (Continued.)

Rsd	Age	Gender	Diagnosis and clinical condition	Behavior prior to Hands of Comfort ^a	Behavior after Hands of Comfort	Vital signs prior to Hands of Comfort	Vital signs after Hands of Comfort ^b	Onset and duration of effect	Need for PRN during usage	Gloves' characteristics during usage	Residents' quotes during usage
2	95	F	- Advanced-stage dementia - Dependency in ADL - Bedbound	- Shouting: 4 - Saying isolated words: 3 - Repeating words: 4 - Touching/rubbing an area: 4 - Purposeless movement: 4 - Restlessness: 3	- Shouting: 3 - Saying isolated words: 0 - Repeating words: 3 - Touching/rubbing an area: 0 - Purposeless movement: 2 - Restlessness: 0 - Mostly with eyes shut	- Pulse rate: 79 bpm - Blood pressure: 141/75 mmHg	- Pulse rate: 68 bpm - Blood pressure: 128/71 mmHg	- Effect after 15–20 minutes - 4 hours	Yes	- Intact/no leakage - Decreased temperature (under bed sheets)	-
3	97	F	- Advanced-stage dementia - Dependency in ADL - Bedbound	- Shouting: 4 - Saying isolated words: 4 - Repeating words: 2 - Touching/rubbing an area: 3 - Purposeless movement: 3 - Restlessness: 3	- Shouting: 2 - Saying isolated words: 2 - Repeating words: 0 - Touching/rubbing an area: 3 ^c - Purposeless movement: 0 - Restlessness: 1 - Repeated “shaking hands” movement	- Pulse rate: 97 bpm - Blood pressure: 146/76 mmHg	- Pulse rate: 76 bpm - Blood pressure: 136/73 mmHg	- Effect after 15 minutes - 4 hours	None	- Intact/no leakage - Similar temperature (under bed sheets)	1. Initial quote: “What is this?” 2. Quote during usage: “It’s so warm”
	97	F	- Advanced-stage dementia - Dependency in ADL - Bedbound	- Shouting: 3 - Saying isolated words: 4 - Repeating words: 3 - Touching/rubbing an area: 3 - Purposeless movement: 3 - Restlessness: 3	- Shouting: 2 - Saying isolated words: 2 - Repeating words: 0 - Touching/Rubbing an area: 3 ^c - Purposeless movement: 0 - Restlessness: 1 - Repeated “shaking hands” movement	- Pulse rate: 78 bpm - Blood pressure: 139/74 mmHg	- Pulse rate: 105 bpm - Blood pressure: 148/61 mmHg	- Immediate - 4 hours	Yes	- Intact/no leakage - Decreased temperature (under bed sheets)	-

ADL, activities of daily living; bpm, beats per minute; F, female; mmHg, millimeters of mercury; PRN, as needed; Rsd, resident.
^a0 = not seen, 1 = when moving, 2 = occasionally, 3 = frequently, 4 = continuously. After excluding possible reasons for the observed behavior, such as pain, need to urinate or defecate, nausea, and difficulty breathing.
^b30 minutes after wearing Hands of Comfort.
^cRubbing/touching/caressing the warm glove with the opposite free hand.

These interventions might reduce drug side effects (including paradoxical agitation) and interactions and prevent undignified and potentially harmful physical restraints. This might have positive effects for patients, caregivers, clinicians, and the environment in an institution.

To the best of our knowledge, this is the first paper discussing the use of HC as a novel, easy, and inexpensive intervention for agitation in persons with dementia, adapted from anecdotal Brazilian experiences in ICU intubated COVID patients (Cunha et al. 2021; Melo 2021).

Although this is a small case series, there are some noteworthy observations. In all cases, agitation was controlled and maintained for extended periods (mean time = 5 hours). Except for 2 cases, which took about 15–20 minutes to ease agitation, all others showed an immediate onset. It is noteworthy that most residents tended to show improvement in their vital signs after wearing HC. No PRN sedative or hypnotic drugs were used during HC usage except for 2 cases. This finding may be due to a decrease in the gloves' temperature that was observed in both cases, thus reducing the sensation of comfort and connectedness. Our findings are important because less drug use reduces the risk of harmful effects as well as the workload of burned-out health-care professionals in large long-term care institutions (Cooper et al. 2018; Costello et al. 2019; Fjelltun et al. 2009; Harrad and Sulla 2018; Kar 2009; O'Connor et al. 2014; Schneider et al. 2006; Woodhead et al. 2016), where many residents can agitate simultaneously, needing attention and vigilance. Nurses referred to this fact as a positive aspect that eased their professional stress during night shifts. It also gave them "a sense of meaning and tranquility because they were helping residents in such a caring and different way," as one nurse said. The assembly of HC is easy and low cost and free from laborious and time-consuming staff training and updates.

Our preliminary findings align with the need to develop evidence-based interventions to change home-care culture in managing agitation in older adults with dementia (Livingston et al. 2014). Moreover, there are no expected side effects as nitrile, latex-free gloves are used, and the water temperature is warm, thus avoiding the risk of skin burning. The HC temperature might decrease slightly during usage, but they never get completely cold as they are maintained under the bed sheets and blankets and in contact with the resident's warm hand.

When considering costs, this is an inexpensive intervention. Suppose, on average, a box of latex-free gloves contains 100 units. In that case, the same box might serve 50 persons, which can be helpful for low and middle-income countries, smaller community programs, or institutions dealing with financial restrictions. Because of its simplicity, HC can be easily applied by non-professional caregivers in the home setting.

These persons had advanced stages of dementia, impairing their verbal communication, thus increasing the risk of reducing the elderly's sense of personhood and possibly increasing the health-care team's disconnection during care. After wearing HC, residents tended to close their eyes, enter a state of calmness, and verbalize words within a frame of personhood, relation, and presence. A repeated "shaking hands" movement was observed in 2 persons, identified as a possible gesture of physical human connection.

We recognize several limitations of the study. We performed a retrospective analysis on clinical charts reflecting professionals' registries. For that reason, missing data might have interfered with our analysis. We report a case series of a relatively small sample size of female advanced-age dementia residents. Future research using

larger samples with age and gender diversity and other diagnoses (such as delirium) are warranted. Our findings reflect the preliminary effect of HC used by dementia residents at night; thus, no conclusions can be drawn from HC effects during daylight periods, where other stimulating external factors might contribute to agitation. We also recognize that because HC was not compared with other interventions or control, our results must be read cautiously and as a starting point for future investigations.

Despite all limitations, our findings are aligned with the evidence showing that sensory activities (including touch) reduce agitation in care-home dementia residents (Livingston et al. 2014; Watt et al. 2019). The use of HC might also reduce one of the factors known to precipitate agitation related to the physical and social environment characteristics, such as the absence of social interaction and sensory stimulation (Pelletier and Landreville 2007). Offering dementia residents the feeling of having a permanent warm "hand" to shake might also transmit a sense of social interaction and human connectedness. Another issue to consider is that future research should look at a technique or thermal material (different from latex) that might help maintain temperature more constant or even think to safely reheat HC before the PRN medication. This might reduce the risk of starting new agitation episodes and recurring to PRN sedative or hypnotic medications, as observed with 2 cases in our series.

HC is a promising easy, safe, and inexpensive non-pharmacological intervention to reduce agitation in institutionalized and home-care older people with agitation. Future research using controlled and systematic methodologies are now warranted, assisting health professionals in integrating HC into the clinical practice of long-care institutions and home-based programs, helping to reduce the elderly's distress and suffering, as well as their caregivers while also enhancing professionals' proximity and satisfaction when caring for dependent and vulnerable people.

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Author contributions. M.J., E.B., C.S., J.C., and M.C. were responsible for the initial draft's conception, design, and writing. C.S. and J.C. were responsible for the residents' assessments. M.V. and B.S.R.P. gave overall input during the study and its writing. All co-authors made the revision of the final report and had full access to all the data.

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Conflicts of interest. None declared.

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