



Non-Pharmacological Therapies in People with Alzheimer Dementia: Comparing Hand Massage and Conversational Approach in the Italian Context

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Abstract

Objectives: Non-pharmacological therapies have shown to have significant benefits in reducing behavioral psychological symptoms in people with dementia. This is a pilot study to compare the efficacy of two non-pharmacological treatments in people with mild to moderate Alzheimer's Dementia (AD) with behavioral psychological symptoms: hand massage and conversational approach.

Method: Older adults with mild-to moderate dementia (N = 22) were randomly assigned to two treatments: hand massage and conversational approach. Both of groups attended two sessions twice a day for 4 weeks. The outcome measures were related to behavioral psychological symptoms in dementia (measured with Neuropsychiatric Inventory-NPI-and Agitated Behavior Scale-ABS).

Results: Both treatments reduced on NPI and ABS measures. In particular both groups showed a significant reduction in the level of following NPI items: agitation, irritability and motor activity. Caregiver distress also reduced. Hand massage group, compared with conversational approach showed a more significant reduction on motor activity. Related to ABS, hand massage group compared with conversational group showed a significant reduction on level of impatient, rocking, wandering, rapid speech, restlessness with an increase of collaboration.

Conclusion: This is a pilot study and other researches have to be conducted, but the results confirm the efficacy of two non-pharmacological treatments, a promising intervention to sustain clinical practice with people with dementia.

Keywords

Dementia, Non-pharmacological therapy, Behavioral psychological symptoms

Introduction

Hand massage and conversational approach are included in non-pharmacological and psychosocial interventions used in dementia care with the aim of counteracting cognitive decline and reducing frequent problems of depression, anxiety, aggression and related psychological and behavioral manifestations, improving quality of life, or improving general health [1,2].

Different theoretical models have been proposed to explain the possible positive effects of massage and touch for people with dementia, from neurological model [3] to psychological one which looks to the massage as a way to stay in touch and retain a sense of meaningful, reassuring

communication even when words begin to fail [4]. The sensory stimulation also involved non verbalized patterns

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of memories and meanings [5]. Hand massage could also help to limit cognitive decline in people with dementia but at first it reduce behavior psychological symptoms.

Conversational approach is a relational style based on specific conversational techniques known as “twelve steps”. The most important rules are: don’t ask questions, don’t correct, don’t interrupt, listen to, answer the questions, recognize emotions, use no verbal language, and accept the answers of the person. It was demonstrated that using conversational approach improves language production and promotes the participation of the person with dementia to the dialogue [6-8].

This is a pilot study and our aim is to compare, for the first time in Italy at our knowledge, two non pharmacological treatments of behavioral psychological symptoms in people with dementia: hand massage treatment [9] and conversational approach [6,10]. In line with previous studies we expected significant reduction of symptoms measured by Neuropsychiatric Inventory [11,12]. We also want to contribute to clinical practice giving more scientific basis.

Method

Participants

An Italian residential home collaborated in this study. Eligibility was based on the following criteria: (1) diagnosis of Alzheimer Dementia (AD), following DSM 5 criteria, in the mild to moderate range [a minimum score of 14 on the Mini Mental State Examination (MMSE) [13]]; (2) psychological behavioral symptoms from mild to moderate range. All the patients were on medication but, at the baseline, all of them had a similar activation level. During the treatment there were no pharmacological changes.

Among 35 people 22 eligible participants were collected.

They were balanced for age, education and level of cognitive functioning; then they were randomly allocated into two treatment groups: one named as “hand massage” (11 people, 3 males and 8 females) and the other one named as “conversational” (11 people, 3 males and 8 females). The two groups did not differ in terms of age, education and global cognitive functioning (Table 1).

Table 1: Descriptive characteristics of participants at baseline.

	Hand massage group		Conversational group		p
	M	DS	M	DS	
Age	78.54	1.91	77.45	2.38	0.25
Education	4.82	0.4	4.78	0.38	0.98
MMSE	23.15	0.89	23.09	0.94	0.963

Note: MMSE = Mini Mental State Examination.

Materials

Cognitive measures: The Mini Mental State Examination [13] is a brief, internationally used test of cognitive function. It is composed by 30 items assessing orientation, memory, language, attention and praxis. The score ranges from 0 to 30 and derived from the sum of each item score. Low scores indicate worse cognitive functioning.

Behavior: Behavior was assessed using the Neuropsychiatric Inventory (NPI) [11] and the Agitated Behavior Scale (ABS) [14].

The NPI assess 10 behavioral disturbances occurring in dementia patients like hallucination, delirium, agitation, depression, anxiety, euphoria, sleep and diet disorder, disinhibition, irritability, apathy. The total score (frequency X gravity) range from 0 to 12 with high score indicating more frequent and more severe behavioral disturbances. For each item is requested to the caregiver to explain his personal distress. The total distress score range from 0 to 60.

The ABS is a 14-item scale developed to monitor agitation during the acute phase of recovery from acquired brain injury. It was also used to measure agitation in people with long-term care facility residents experiencing dementia. The scale assesses behavioral disturbances like distraction, impulsiveness, no collaboration, aggression, irritability, rocking, wandering, inhibition, rapid speech, repetitive behaviors, and mood changes. Total score derived from the sum of each item score and range from 14 to 56. High score indicates severe behavioral symptoms.

Procedure

People involved into treatment group named as “hand massage” participated to sessions of massage following Goldschmidt and Von Meines’s protocol [9] once a week, twice a day (mid-morning and mid-afternoon) for a month while people involved into treatment group named as “conversational” participated to sessions of conversation following guidelines of conversational approach founded by Lai [10] and Vigorelli [6,8] once a week, twice a day for a month. Each sessions, both “hand massage” and “conversational” lasted 20 minutes. All the sessions were conducted by the same trainer who received a special training both in hand massage treatment and in conversational approach. He was properly supervised.

Before starting all the participants declared his informed consent to participate to the research.

The ABS was scheduled an hour before and an hour after both treatments, while NPI was administered at the beginning and at the end of the treatment (after a month).



Figure 1: Preparing hand massage session.

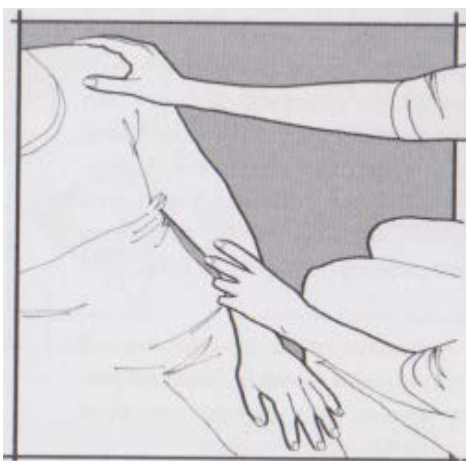


Figure 2: Starting hand massage session.

Intervention

Hand massage

In literature there is a great flexibility and there isn't a standardized protocol but the common goal is to take care and communicate with people with dementia through the contact when verbal communication is no longer possible [9]. Despite this flexibility and the absence of a strict protocol of intervention the results of the researches are promising. In particular hand massage treatment in people with dementia reduces the stress [15], level of anxiety and blood pressure [16], verbal aggression [17] and physical pain [18]. In this research we used the intervention proposed by Goldschmidt and Von Meines [9].

Below the description of a hand massage session:

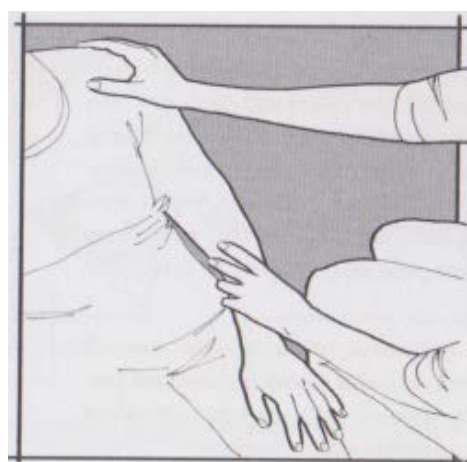


Figure 3: Starting hand massage.



Figure 4: Run small, light and circular movements on the knuckles.

Wash the hands, remove jewelry, use a hand cream if you want and the person who receive the massage likes it. Greet the person, explain what will do. Sit down in front of him and start hand massage on the right or on the left hand. The arm should be resting on the lap or on the bed. Note if there are areas to be avoided excoriated. Stay silent and smile to create a peaceful environment.

Start hand massage (Figure 1 and Figure 2). Support the hand with the palm facing downwards (Figure 3). Run small circular movements on the knuckles (Figure 4), on the back of the hand arriving along the fingers (Figure 5). At the hand gently accompany the hand on the leg or on the lap (Figure 6). Communicate to the person the end.

Conversational approach

Conversational approach [6,8,10] is based on the ability of people with dementia to communicate in spite of aphasia. This approach distinguishes two language functions:



Figure 5: Run small, light and circular movements along the fingers.



Figure 6: Gently accompany the hand on the leg or on the lap.

Table 2: Descriptive statistics results on Neuropsychiatric Inventory (NPI).

Measure	Hand massage group (n = 11)				Conversational group (n = 11)			
	Pre-test		Post-test		Pre-test		Post-test	
	M	SD	M	SD	M	SD	M	SD
Neuropsychiatric inventory: agitation	10.18	1.78	9.09	1.7	9.72	1.85	8.91	1.14
Neuropsychiatric inventory: irritability	9.91	1.7	8.9	1.14	9.99	1.7	9	1.09
Neuropsychiatric inventory: motoractivity	7.18	1.4	3.63	0.81	7.82	1.25	7.45	1.21
Neuropsychiatric inventory: diet	3.54	1.44	2.36	0.81	3.27	1.55	3	1.26

Table 3: Descriptive statistics of significant results on distress scale.

Measures	Hand massage group (n = 11)				Conversational group (n = 11)			
	Pre-test		Post-test		Pre-test		Post-test	
	M	SD	M	SD	M	SD	M	SD
Distress agitation	4	0.77	3.64	0.82	4.18	0.75	4	0.77
Distress irritability	4.27	0.79	3.73	0.79	4.09	0.7	3.91	0.54
Distress activity	3.82	0.98	3.27	0.9	4.27	0.9	4	0.77

communicative and conversational. The first allows you to understand and be understood while the second lets you exchange words with no meaning or whatever their purpose. Conversational function is preserved even in advanced stages of dementia so the person with dementia has the possibility to participate in a dialogue with or without meaning keeping the rules of conversation. People with dementia are able to converse but are not able to communicate. The conversations following conversational approach seem illogical but return meaning to the person with dementia. An example derived from the study: “help me, help me there are some thieves in my home (this is not true)” said the patient, “ok Giovanni, It is terrible... I know... I’m coming with you to the police. To be safe we’re going to change the lock” answered the researcher using a calm tone of voice without prejudice, recognizing as real what is not real. There are some tricks to use in a conversation with people with dementia: maintain eye contact, absence of prejudice, the way it is transmitted the information is more important than the content, use simple and short sentences, don’t interrupt the

person, don’t use indirect questions, don’t change the subject without notifying the person, don’t correct grammar or content errors [8].

To assess the gains from treatments, a series of 2X2 mixed-design ANOVAs were run (Group: Hand massage and conversational) X (Session: pre-test and post-test) on the measures of interests (the results are summarized in Table 2, Table 3 and Table 4).

Results

The results obtained in both of observer-rated scales are reported below.

Neuropsychiatric inventory

Agitation: There was a significant main effect of Session $F(1, 20) = 7.6$ $p = 0.012$ indicated that, on the post-test, both of treatments groups reduced their level of agitation.

Distress agitation: There was a significant effect of Session $F(1, 20) = 7.83$ $p = 0.010$ indicated that, on the post-

Table 4: Descriptive statistics of significant results on agitated behavior scale (ABS).

Measures	Hand massage group (n = 11)				Conversational group (n = 11)			
	Pre-test		Post-test		Pre-test		Post-test	
	M	SD	M	SD	M	SD	M	SD
Impatience	2.55	0.52	1.27	0.47	2.36	0.5	2.09	0.54
Collaboration	2.45	0.52	1	0	2.27	0.47	1.91	0.7
Wandering	2.36	0.67	1.27	0.47	2.18	0.75	1.82	0.75
Rapid speech	2.55	0.52	1.36	0.5	2.45	0.52	2.09	0.54
Restlessness	2.55	0.52	1.18	0.4	2.55	0.52	1.91	0.54
Rocking	1.73	0.91	1.27	0.47	1.55	0.69	1.55	0.69

test, caregiver of both groups participants reduced their level of distress in correspondence of agitation reducing.

Irritability: There was a significant main effect of Session F (1, 20) = 9.34 $p = 0.013$ indicated that both of treatment groups, on the post-test, reduced their level of irritability.

Distress irritability: There was a significant effect of Session F (1, 20) = 9.34 $p < 0.001$ indicated that, on the post-test, caregiver of both groups participants reduced their level of distress in correspondence of irritability reducing.

Motor activity: There was a significant main effect of Session F (1, 20) = 57.42 $p < 0.001$ indicated that both of treatment group, on the post-test, reduced their level of irritability. The significant interaction Group X Session F (1, 20) = 38.04 $p < 0.001$ indicated that only the “hand massage” group reduced, on the post-test, his level of motor activity.

Distress motor activity: There was a significant effect of Session F (1, 20) = 10.66 $p < 0.001$ indicated that, on the post-test, caregiver of both groups participants reduced their level of distress in correspondence of motor activity reducing.

Diet: There was a significant main effect of Session F (1, 20) = 11.74 $p = 0.003$ indicated that both of treatment group, on the post-test, reduced their level of irritability. The significant interaction Group X Session F (1, 20) = 4.59 $p = 0.045$.

The descriptive statistics are summarized in Table 2 and Table 3.

Agitated behavior scale

There was a significant interaction Group X Session indicated that the “hand massage” group, more than “conversational” group, reduced on the post-test level of: impatience F (1, 20) = 25.2 $p < 0.001$; rocking F (1, 20) = 8.33 $p = 0.012$; wandering F (1, 20) = 25.2 $p = 0.001$; rapid speech F (1, 20) = 17.61 $p = 0.001$; restlessness F (1, 20) = 8.20 $p = 0.010$ while showed an increase in the level of collaboration F (1, 20) = 24.83 $p < 0.001$.

The descriptive statistics are summarized in Table 4.

Discussion

The results of the pilot study confirmed the efficacy of both no pharmacological treatments considered: hand massage and conversational approach and also showed, for the first time at our knowledge, their efficacy on a small group of Italian people with Alzheimer’s Dementia.

In particular there are no differences between two treatments on NPI measure. Both treatments reduced, after a month, the level of agitation, irritability and motor activity confirming previous results. Very interesting is, on NPI, the reduction of behavioral symptoms related to the diet with positive effects on quality of life, we presume. The reduction of behavioral psychological symptoms such as irritability, agitation and motor activity in people with dementia determined a significant reduction of caregiver distress measured by specific items of NPI because of decreasing of behavioral symptoms facilitate care. In particular Kramer and Smith [19], Lai and Vigorelli [6,10] found similar results respectively about hand massage and conversational approach. Like Field (2000) we found that only hand massage treatment determined, on the post-test, significant reducing of motor activity. The results obtained on ABS measure showed, only for hand massage group, a significant reduction after a month on symptoms like impatient, rocking, wandering, rapid speech, restlessness with an increase of collaboration. These results confirmed previous researches. Synder, Egan and Burns [20] or more recently Harris and Richards [17] showed, in people with dementia, significant reduction of anxiety, restlessness, irritability, wandering and motor activity such as our results. Same results, in line with our findings, were found in retirement home by Kurtner and colleagues [21]. The limits of our study are: no treatment group as control group, rather low sample size, no follow-up and no blind administration although we haven’t had any expectations about the efficacy of treatments. Furthermore we considered the particular context of the research: a residential home so that, how suggested by the chief, an other people could mean another variable of confusion. We consider that this is an exploratory study so other future researches will be necessary to replicate our findings giving

attention to methodological aspects. It would be useful a double blind study with a sample larger than ours including control group and follow-up. Despite the limits and considering the difficulty to work with people with dementia, we were been very rigorous in methodological aspects. Furthermore it will be interesting to compare single treatment with combined intervention (hand massage and conversational approach), there aren't, at our knowledge, study which move in this direction. Nevertheless our findings contribute, at first, to the research on no pharmacological therapies in people with dementia and then contribute to clinical practice giving scientific basis to non-pharmacological treatments usually used to take care of people with dementia.

Conflict of Interest

None declared.

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