Preserving The Cognitive Abilities In Alzheimer Disease: An Innovative Intervention.

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Summary

Alzheimer's Disease (AD) has a long duration and a progressive course, so the development of methods aimed to preserve the residual abilities and improve life quality of both the patient and the caregiver are relevant topic . Such methods are mainly based on sensorial and emotional stimulations and environmental interventions as the Music Therapy and the creation of Alzheimer's Garden. An innovative program , developed at the MoMa Museum, consists in guided tours with trained operators aimed to involve the patients in the observation, description and interpretation of some paintings, from which a dialogue is encouraged. The program had positive effects and in 2008 we enacted a similar activity, the first in Italy, as far as we know, that is repeated since that data, year by year, and following the request of patients and caregivers. AD participants whose behavioural and neuropsychological profile is evaluated before and after the program, are involved in individual and lately collective meetings based on the observation and dialogue on some visual art masterworks . We found an improvement of their mood and behaviour profile , which was confirmed by the care givers and led, ultimately, to a significant decreasing of the caregivers' stress . Instead , matched control subjects, who underwent a PC based cognitive stimulation program, showed the inverse pattern. Visual art observation stimulates the aesthetical appreciation and the emotions related, leaves the patients free to express opinions and choices, encourage then a dialogue and social interactions.

Key Words: Alzheimer disease; cognitive abilities; innovative interventions; visual art;

Introduction

Cognitive activation, behavioural intervention, environmental compliance, sensorial and emotional stimulations are different methods aimed to preserve the residual abilities and improve the life quality of patients affected by Alzheimer's Disease (AD). This is a very important purpose as the disease has a long duration and a progressive course . The Music Therapy and Alzheimer Garden are both based on emotional and sensorial stimulation and seem effective in decreasing the dangerous and troublesome behaviour so often found in these subjects.[1] Music Therapy has the longest history: in 2001 the American Neurology Academy underlined its efficacy in improving the functional abilities and decreasing the behavioural disturbances, an effect attributed to the melatonin's increasing. In addition, classic music seems to improve the cognitive performances: patients assessed with verbal fluency tests while listening Vivaldi's "Four Seasons", had a better performance as if their attentional processes were stimulated.[2] Alzheimer Gardens were born to favour the sensorial stimulation and allow a relative autonomy.

AD patients, in fact, often loose their capacity to remember paths as their mental representation of space is severely impaired, but these gardens, created with precise structural rules, perceivable in their completeness, and roundly organized, may helps the patients to explore the environment.[3] The most innovative program for stimulating the residual abilities and improving life quality is based on visual art. In 2006 the New York's Modern Art Museum (MoMA) launched the "Meet Me at MoMA" program, consisting in meetings with patients living in residences and with patients living home with their family. The program was realized on demand of the care givers and with them, and included Museum guided tours with trained operators trying to dialogue with the patients from the observation of paintings, and involving them in a description and interpretation of them. The results showed an improvement of mood and interactions with the patients. In care givers' opinion the efficacy of the program depends both on the operator's capacity to involve the patients, and on the opportunity they have to share with their ill loved ones a pleasant and stimulating experience that breaks the social isolation to which the patients and their families are unavoidably exposed . The participation of wifes/husbands in a pleasant activity furthermore temporarily recreate the normal relationship, which is impaired by the disease. The program had a great success, and it's now introduced in other American cities.[13]
In 2008 we enacted a similar project, the first in Italy, as far as we know. The theoretical basis of the program was:

- The proved efficacy of visual art to induce an emotional involvement.[4,5]
- The preservation of the emotional functions in AD patients.[6,7,8]
- The evidence that visual art appreciation is relatively independent from cognitive decline.[9]

So, we used visual art to stimulate, involve and determine interest in the patients. Our hypothesis was that visual art could act in part as a reminiscence therapy, and could also improve the social abilities, encouraging the patients' natural disposition to remember the past. [10]

Methods

In the first program, (a pilot study), involving 10 patients with mild-moderate AD, was based on the observation and description of paintings (classic, modern and contemporary). Paintings were reproduced in a big size, and through them, patients' dialogue was encouraged during various individual meetings. Patients were guided to describe paintings, express what paintings evoked them, and choose their favourite picture; by their preferences, paintings to show during the subsequent meetings were selected.[11]Patients' extreme sensitivity brought the operators to pay much attention not to irritate them, avoiding to correct linguistic errors or to complete phrases and words (as this is perceived as an intrusive intervention), unless that was explicitly required. The program also included a collective meeting at DAI Room (Room for Disabled People) of Naples' Royal Palace. Here patients saw all the pictures again, and were involved in a collective dialogue. All patients took part with enthusiasm and interacted as if they had found their own self-confidence again . The questionnaire administered to the care givers indicated that the program had brought a significant mood improvement. On the strength of these data and on care givers' request, the program was continued introducing *more meetings (10 totally) and a group activity (a collage realization).* All patients were assessed with a behavioural and neuropsychological evaluation at the beginning and at the end of the program.

Results

As expected, the cognitive damages remained unchanged, but the behaviour profile was improved. Instead, and this was only partially expected, the patients showed positive emotions and interest, all features confirmed by the the care givers. When the creation of "their own" painting was

encouraged (a collage built with pictures cut out from the paintings they had seen), the patients freely took the different "pieces" divided in categories (human figures, animals, etc.) and settled into boxes, interacted with the others and dialogued. They demonstrate to be able and to enjoy themselves in choosing the different elements, to respect the others' choices, and to associate some new elements step by step. The recreational aspect, which came out by this way, surprised all the care givers. Even during the collective meeting the patients were able to interact easily. At the same time the care givers' stress decreased significantly (Figure 1-3).

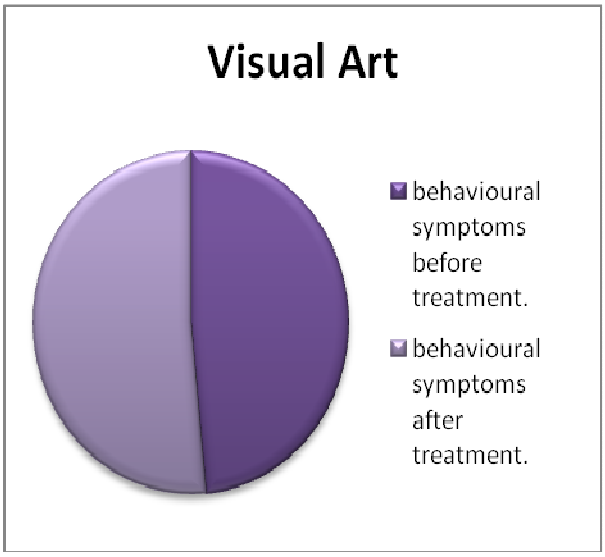

Fig1. The graphic shows the mild decrease of behavioural after symptoms after" visual art" treatment.

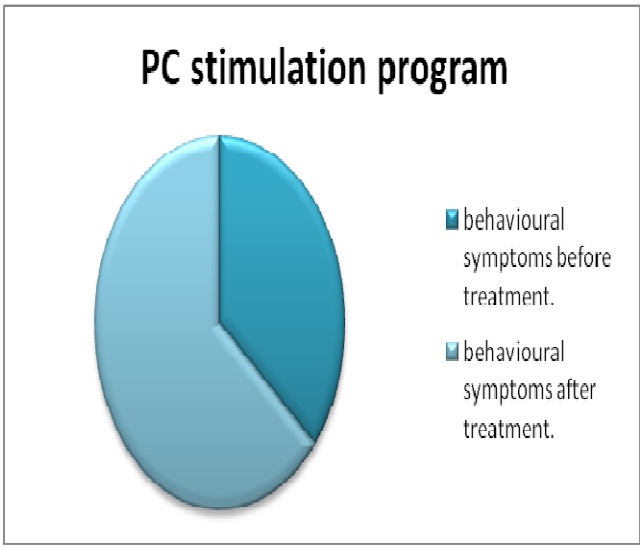

Fig.2: The graphic shows the increase of behavioural symptoms the PC stimulation program

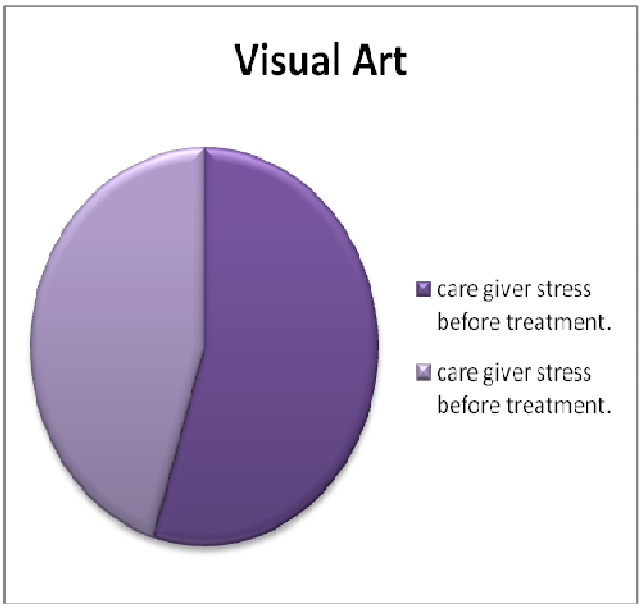

Fig3. The graphic shows the decrease of care givers after stress after "visual art" program.

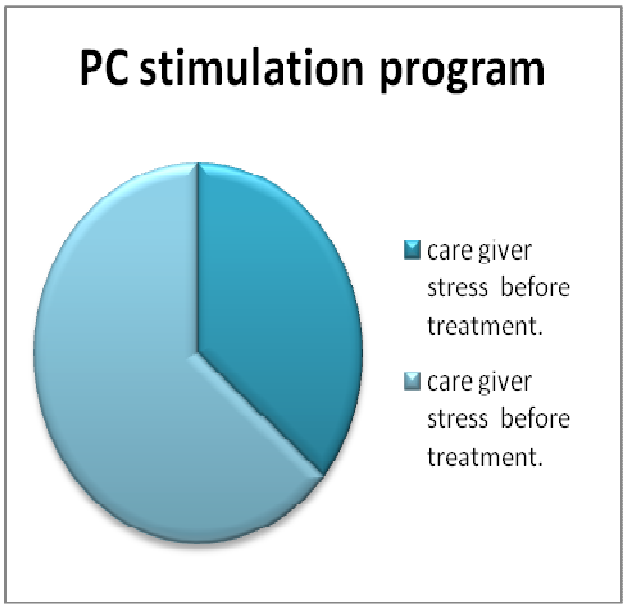

Fig4. The graphic shows the increase of care givers stress after the PC stimulation program.

The results were compared with those obtained by a group of patients of the same disease stage submitted to a PC cognitive stimulation. Even if the success obtained by them was strengthened and the errors minimized , and even if tasks were very easy (easy arithmetical calculations, easy visuospatial tasks) in this group there was a relatively high abandoning rate as 2 out of the 10 patients left the program (maybe the tasks, even if very easy, caused the appearance of difficulties the patients were aware of). The PC stimulation program was then ineffective to either reduce the patients' malaise and increase their self-confidence.

Discussion and conclusions

The results confirmed that the paintings aroused patients' interest, independently from their previous "history" with art. The experience was then very similar to the one reported by the MoMA's program : the habit of observing such stimuli is not much influential on the responses, but it's the one's own personal history to be most influential.

The Project based on visual art incised significantly. The patients felt at ease, infact, when they were called to observe, describe in subjective terms, judge , and choose. The painting description, and evaluation, as it does not need to remember dates or difficult information ,seemed to encourage them to speak, induce activation, and favour the self-esteem independently from the patient age, education and cultural background.[12]

The program , as it attempts to create the conditions to let the patient to talk freely , in a context that doesn't judge him or let him feel wrong and privileging his point of view, seems to give the patients back his dignity and improve the psychological wellness.

Might we draw some general conclusions? We think so.

The use of visual art as a "bridge" was effective , as expected. Visually encoded memories remain more vivid and easy to stimulate, both in "normal" and in cognitively impaired subjects and they are more preserved than verbal memories. Consequently, the visual stimulation is very efficient to lead to visual memories , that may be verbalized if the patient is encouraged and welcomed.

Social capacities' stimulation, and particularly communication, is another important target for these patients, who usually progressively close themselves in a stubborn loneliness; we observed that these features increased as long as the program was developed. Our observation was that if the operators of the program have the capacity to employ an adapted dialogue, to induce involvement, to overcome the eventual perceptual difficulties of these patients, who often explore the space in details and not as a whole, and to overcome their limits in communications , then memories, feelings and emotions naturally emerging from the paintings observation may be verbalized and communicate to all the group, which improves the social competences. Finally , through such an initiative, it's possible to face one of the most difficult challenges of AD: keeping the patients together with their partners and other relatives in pleasant moments , even if the disease course inevitably separates them.

We agree with Margaret Sewell (of Mount Sinai School of Medicine) : "The result [of the program] is directed to life quality, not to improve memory test's performance…I think it's much more reasonable and important on the long lasting to focus on this aspect. This is the most significant objective, the most pragmatic and realistic, actually, for these patients ".

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