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Teatro Verdi

GRUPPO ITALIANO CENTRI DIURNI ALZHEIMER

La musicoterapia per la demenza: dalle evidenze scientifiche alla realizzazione degli interventi

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DECLINAZIONE TERAPEUTICA DEGLI INTERVENTI CON LA MUSICA IN AMBITO CLINICO

Musicoterapia

- Componente relazionale (presenza costante del musicoterapeuta)
- Basi psicologiche (approcci relazionali) e neuroscientifiche (approcci riabilitativi); tecniche attive e recettive
- Setting terapeutico strutturato
- Obiettivi terapeutici medio-lungo termine (processo)
- Assessment

Ascolto Musicale

- Auto-somministrazione (azione diretta della musica)
- Basi psicologiche e neurofisiologiche
- Setting flessibile
- Obiettivi prevalenti breve termine (maggiore efficacia sui sintomi transitori)
- Assessment

Fare musica

- Attività musicali, training musicale
- Basi psicologiche e neurofisiologiche
- Assenza di un setting specifico
- Assenza di specifici obiettivi terapeutici, finalità benessere, socializzazione…
- Assessment (spesso assente)

La musicoterapia attiva…

(Stern, 1975;1985;2004;2010; Benenzon, 1984; Tronick, 1989; Trevarthen & Aitken, 2001; Wigram, 2004; Hillecke et Al., 2005; Kim et Al., 2009; Raglio & Oasi, 2009; 2016; Koelsch, 2009; 2010)

- Il suono è il primo organizzatore e regolatore della comunicazione e delle emozioni (relazione madre-neonato)
- L'interazione sonoro-musicale facilita il processo di espressione, organizzazione, modulazione e (co-)regolazione della relazione
- L'elemento sonoro-musicale riflette gli elementi dinamici e cinetici dell'esperienza emotiva
- La comunicazione non verbale e sonoro-musicale promuove e facilita i momenti di incontro e la relazione empatica

Alfredo Raglio, PhD

Raglio & Gianelli

Music therapy for individuals with dementia: areas of intervention and research perspectives

2009;6(3): 293-301

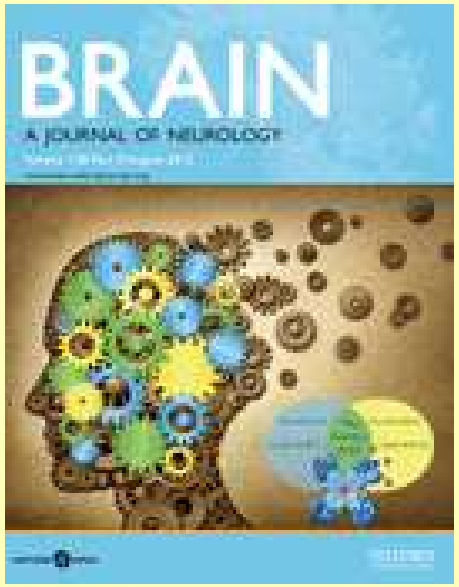
THE THERAPEUTIC PERSPECTIVES OF MUSIC THERAPY IN THE DEMENTIAS.

With reference to the above illustrated concepts, we believe that in dementia – as in other pathologies characterized by the impairment of those communicative functions which are most recent in human ontogenetic evolution - one may hypothesize the possibility of re-activating and broadening those archaic expressive and relational abilities which persist along the whole life-span of each human being, as forms of interpersonal experience, alternative to the verbal one. It is within this context that we envisage the possibility of music therapy building a communicative bridge for people with dementia. Music therapy being a pre-verbal, non-verbal communication technique - subsisting without need either for symbolic representations of reality, abstractive abilities or culture-bound learning processes - we believe that relational and expressive modalities, archaic in origin and nature and therefore more likely to be still present in persons with cognitive impairment, can be activated by means of its potential. Music therapy can promote the preservation of recognition of the external environment, of a sense of identity, of personhood even, in individuals with dementia.

… L’approccio musicoterapeutico attivo nelle demenze…

Alfredo Raglio, PhD

Nonostante il declino cognitivo generale alcune funzioni cognitive legate alla musica (abilità musicali, percezione, memoria…) si mantengono anche nella fasi più avanzate della malattia (Crystal et al., 1989; Cowles et al., 2003; Cuddy et al., 2005; Fornazzari et al., 2006; Vanstone et al., 2009; Groussard et al., 2013; Jacobsen et al., 2015)



Jacobsen et al., Brain 2015; 138:2438-50

- **La M. familiare attiva il cingolato anteriore e la corteccia prefrontale mediale in soggetti sani → Rapporto tra queste aree e memoria**

- **Nell'AD la corteccia prefrontale mediale degenera più lentamente rispetto ad altre aree corticali e le regioni che codificano la memoria musicale mostrano una minina atrofia e diminuzione del metabolismo del glucosio rispetto ai depositi di β-amiloide**

↓

Questo spiega in parte perché le persone con AD riconoscono e rispondono emotivamente ai brani musicali familiari, anche nelle fasi più avanzate della demenza

Alive Inside: How the Magic of Music Proves Therapeutic for Patients with Alzheimer's and Dementia

Could a pair of headphones change the lives of millions of Americans suffering from Alzheimer's and dementia? "Alive Inside: A Story of Music & Memory," a new documentary at the Sundance Film Festival, follows a social worker named Dan Cohen who has launched a campaign to bring iPods and music therapy to nursing homes. One of the central characters he works with is a 90-something Alzheimer's patient named Henry Dryer, who was featured in a video posted online that went viral in 2012, with nearly 10 million views. The clip begins with video of Dryer looking largely unresponsive to the outside world. Then he was given a pair of headphones to listen to Cab Calloway, his favorite artist. The music energizes him, awakens him and helps bring back old memories. We play clips from the film and speak with Cohen about his project, "Music & Memory," which he hopes to expand around the world. We are also joined by Michael Rossato-Bennett, the film's director and producer.

PSYCHOGERIATRICS
The Official Journal of the Japanese Psychogeriatric Society
doi:10.1111/psyg.12947 PSYCHOGERIATRICS 2023

CASE REPORT

Music and autobiographical memory: A new experimental protocol

Francesca CENTOMO,[1] Isaline Mottet WYTTENBACH,[2] Alice BENCIVENNI[3] and Alfredo RAGLIO[3]
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Table 1 Scheme of the intervention with a life review supported by music

Assessment	Musical anamnesis and personal data collection	Interview sessions based on feedback concerning the music listening experience and memories related to each life stage	Interview session concerning a global review of the person's life history	Building a personal book including narrative and musical components	Assessment
T0	Sessions 1–2	Sessions 3–7	Session 8	Session 9–10	T1

G Ital Med Lav Erg 2022; 44:4, 0-0
ISSN 1592-7830

Alfredo Raglio, Alice Bencivenni, Francesca Centomo

The Music-Based Life Review Protocol (MLRP)

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Table I. ***The Music-Based Life Review Protocol (MLRP)***

SESSIONS	1	Autobiographical and musical anamnesis / Baseline assessment (MMSE, FAB, HADS, MAB, QoL-AD)	
	2 CHILDHOOD	LISTENING	Preferred music / music chosen by therapist related to childhood stage
		INTERVIEW	Childhood: birth, home, family, neighbors, school, games
	3 YOUTH	LISTENING	Preferred music / music chosen by therapist related to youth stage
		INTERVIEW	Youth: hobbies, school, holidays, friends, first love, marriage, first job
	4 ADULTHOOD	LISTENING	Preferred music / music chosen by therapist related to adulthood stage
		INTERVIEW	Adulthood: parenthood, professional experiences, family, relationships
	5 LATE ADULTHOOD	LISTENING	Preferred music / music chosen by therapist related to late adulthood stage
		INTERVIEW	Late adulthood: family, professional experiences, hobbies, relationships
	6 AGING	LISTENING	Preferred music / music chosen by therapist related to senior stage
		INTERVIEW	Aging: retirement, health, hobbies
	7 Summary from all ages	LISTENING	Most salient songs from previous playlists
		INTERVIEW	Reviewing the highlights of all life stages
	8	Last playlist and Audiobook delivering / Final assessment (MMSE, FAB, HADS, MAB, QoL-AD)	

frontiers | Frontiers in Human Neuroscience

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A novel music-based therapeutic approach: the Therapeutic Music Listening

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The therapeutic use of music is frequently based on active interventions that directly involve the patient through a sonorous-music interaction with the music therapist. In contrast, approaches based on musical listening are characterized by a relationship aimed at promoting an introspective work and processing of one's emotional experiences. Increasingly, the scientific literature has shown how even listening to music related to the patient's personal tastes (preferred music listening) and by-passing the direct relationship with the patient, can produce therapeutic effects in different clinical settings. However, in many cases, a clear therapeutic rationale and specific application protocols are still lacking. The paper introduces a novel approach based on music listening: the Therapeutic Music Listening. This approach integrates the subjective component of listening (patient's musical tastes) and structural and parametric characteristics of the music in relation to the therapeutic aims. The article defines theoretical-applicative bases as well as therapeutic and research perspectives of this music listening-based intervention.

KEYWORDS

music listening, Therapeutic Music Listening, music therapy, evidence-based approaches, clinical and psychological symptoms

The Journal of the European Society for the Cognitive Sciences of Music

A music-based protocol for memory stimulation in elderly people

Alice Bencivenni, Camilla Figini & Alfredo Raglio, 2023, under review

Structure of each session	Participants	Materials	Duration
Welcome exercise	All group/Individuals	Voice, hands	5 Minutes
Memory encoding	All group/Individuals	Tables PC, speaker, voice	7 Minutes
Attentional exercises	All group	Wood sticks, tambourines	10 Minutes
Long-term Memory retrieval	All group/Individuals	Tablets PC, speaker, voice	5 Minutes
Short-term Memory exercise	One-to-one	Musical instruments	10 Minutes
Working Memory Exercise	One-to-one	Musical instruments	10 Minutes
Feedbacks and greetings	All group	-	3 Minutes

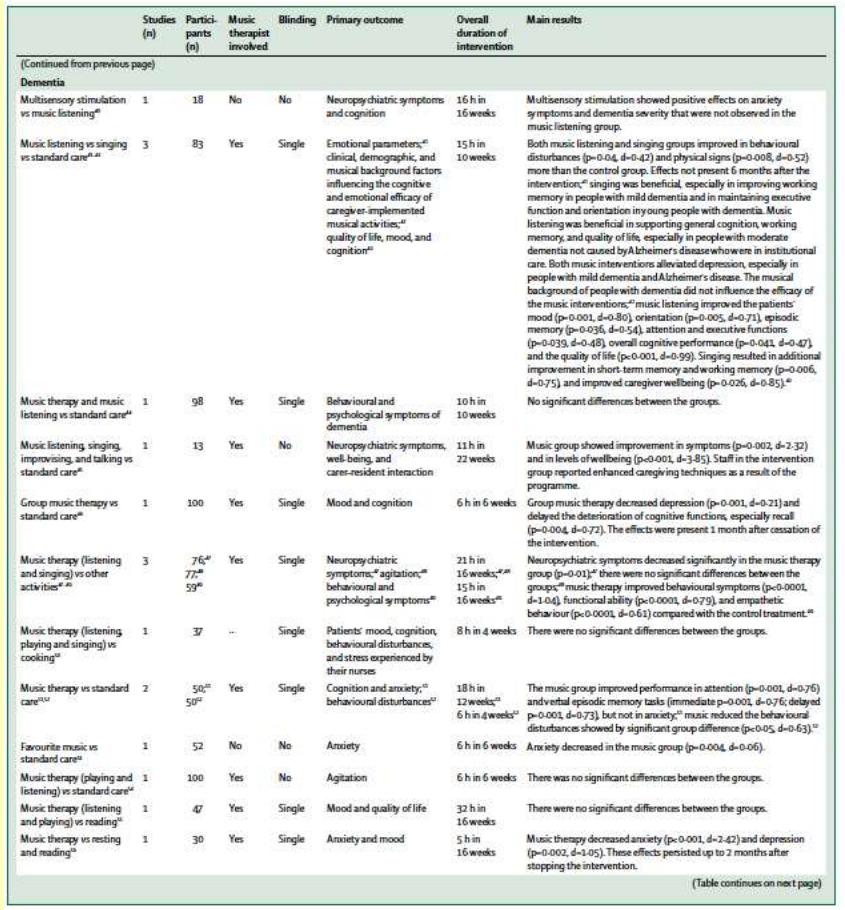
12 sessions - 50 minutes each – 2 sessions/week

Musicoterapia e demenze: la letteratura scientifica

Alfredo Raglio, PhD

Sihvonen et al., 2017, Lancet Neurology

a. Miglioramento BPSD (in particolare depressione e ansia)
b. Miglioramento funzioni cognitive (in particolare memoria, funzioni esecutive, attenzione)
c. Miglioramento comunicazione/relazione
d. Miglioramento qualità di vita, benessere
e. Approcci con la musica: MT attiva, Ascolto musicale, canto



	Studies (n)	Partici-pants (n)	Music therapist involved	Blinding	Primary outcome	Overall duration of intervention	Main results
(Continued from previous page)							
Dementia							
Multisensory stimulation *vs* music listening[40]	1	18	No	No	Neuropsychiatric symptoms and cognition	16 h in 16 weeks	Multisensory stimulation showed positive effects on anxiety symptoms and dementia severity that were not observed in the music listening group.
Music listening *vs* singing *vs* standard care[41,42]	3	83	Yes	Single	Emotional parameters;[41] clinical, demographic, and musical background factors influencing the cognitive and emotional efficacy of caregiver-implemented musical activities;[42] quality of life, mood, and cognition[43]	15 h in 10 weeks	Both music listening and singing groups improved in behavioural disturbances (p=0·04, d=0·42) and physical signs (p=0·008, d=0·52) more than the control group. Effects not present 6 months after the intervention;[42] singing was beneficial, especially in improving working memory in people with mild dementia and in maintaining executive function and orientation in young people with dementia. Music listening was beneficial in supporting general cognition, working memory, and quality of life, especially in people with moderate dementia not caused by Alzheimer's disease who were in institutional care. Both music interventions alleviated depression, especially in people with mild dementia and Alzheimer's disease. The musical background of people with dementia did not influence the efficacy of the music interventions;[42] music listening improved the patients' mood (p=0·001, d=0·80), orientation (p=0·005, d=0·71), episodic memory (p=0·036, d=0·54), attention and executive functions (p=0·039, d=0·48), overall cognitive performance (p=0·041, d=0·47), and the quality of life (p<0·001, d=0·99). Singing resulted in additional improvement in short-term memory and working memory (p=0·006, d=0·75), and improved caregiver wellbeing (p=0·026, d=0·85).[43]
Music therapy and music listening *vs* standard care[44]	1	98	Yes	Single	Behavioural and psychological symptoms of dementia	10 h in 10 weeks	No significant differences between the groups.
Music listening, singing, improvising, and talking *vs* standard care[45]	1	13	Yes	No	Neuropsychiatric symptoms, well-being, and carer-resident interaction	11 h in 22 weeks	Music group showed improvement in symptoms (p=0·002, d=2·32) and in levels of wellbeing (p<0·001, d=3·85). Staff in the intervention group reported enhanced caregiving techniques as a result of the programme.
Group music therapy *vs* standard care[46]	1	100	Yes	Single	Mood and cognition	6 h in 6 weeks	Group music therapy decreased depression (p=0·001, d=0·21) and delayed the deterioration of cognitive functions, especially recall (p=0·004, d=0·72). The effects were present 1 month after cessation of the intervention.
Music therapy (listening and singing) *vs* other activities[47–49]	3	76;[47] 77;[48] 59[49]	Yes	Single	Neuropsychiatric symptoms;[47] agitation;[48] behavioural and psychological symptoms[49]	21 h in 16 weeks;[47,49] 15 h in 16 weeks[48]	Neuropsychiatric symptoms decreased significantly in the music therapy group (p=0·01);[47] there were no significant differences between the groups;[48] music therapy improved behavioural symptoms (p<0·0001, d=1·04), functional ability (p<0·0001, d=0·79), and empathetic behaviour (p<0·0001, d=0·61) compared with the control treatment.[49]
Music therapy (listening, playing and singing) *vs* cooking[50]	1	37	..	Single	Patients' mood, cognition, behavioural disturbances, and stress experienced by their nurses	8 h in 4 weeks	There were no significant differences between the groups.
Music therapy *vs* standard care[10,51]	2	50;[10] 50[51]	Yes	Single	Cognition and anxiety;[10] behavioural disturbances[51]	18 h in 12 weeks;[10] 6 h in 4 weeks[51]	The music group improved performance in attention (p=0·001, d=0·76) and verbal episodic memory tasks (immediate p=0·001, d=0·76; delayed p=0·001, d=0·73), but not in anxiety;[10] music reduced the behavioural disturbances showed by significant group difference (p<0·05, d=0·63).[51]
Favourite music *vs* standard care[52]	1	52	No	No	Anxiety	6 h in 6 weeks	Anxiety decreased in the music group (p=0·004, d=0·06).
Music therapy (playing and listening) *vs* standard care[53]	1	100	Yes	No	Agitation	6 h in 6 weeks	There was no significant differences between the groups.
Music therapy (listening and playing) *vs* reading[54]	1	47	Yes	Single	Mood and quality of life	32 h in 16 weeks	There were no significant differences between the groups.
Music therapy *vs* resting and reading[55]	1	30	Yes	Single	Anxiety and mood	5 h in 16 weeks	Music therapy decreased anxiety (p<0·001, d=2·42) and depression (p=0·002, d=1·05). These effects persisted up to 2 months after stopping the intervention.
							(Table continues on next page)

Cochrane Database Syst Rev. 2018;7(7):CD003477

Authors' conclusions: Providing people with dementia who are in institutional care with at least five sessions of a music-based therapeutic intervention probably reduces **depressive symptoms** and improves overall **behavioural problems** at the end of treatment. It may also improve **emotional well-being** and **quality of life** and reduce **anxiety**, but may have little or no effect on agitation or aggression or on cognition. We are uncertain about effects on social behaviour and about long-term effects. Future studies should examine the duration of effects in relation to the overall duration of treatment and the number of sessions.

Aging Ment Health, 2017.

The effect of music therapy on cognitive functions in patients with dementia: a systematic review and meta-analysis.

Fusar-Poli L, Bieleninik Ł, Brondino N, Chen XJ, Gold C.

OBJECTIVES: The aim of the present study was to meta-analyze the effect of music therapy (MT) on cognitive functions in patients with dementia.
METHOD: A systematic literature search was performed in Medline, PsycINFO, Embase, CINAHL and RILM up to 8 September 2016. We included all randomized controlled trials that compared MT with standard care, or other non-musical types of intervention, evaluating cognitive outcomes in patients with dementia. Outcomes included global cognition, complex attention, executive function, learning and memory, language, and perceptual-motor skills.
RESULTS: From 1089 potentially relevant records, 110 studies were assessed for eligibility, and 7 met the inclusion criteria, of which 6 contained appropriate data for meta-analysis (330 participants, mean age range 78.8-86.3). Overall, random-effects meta-analyses suggested **no significant effects of MT on all outcomes**. **Subgroup analysis found evidence of a beneficial effect of active MT on global cognition (SMD = 0.29, 95% CI 0.02 to 0.57, p = 0.04).**
CONCLUSION: Despite the limited evidence of the present review, it is important to continue supporting MT as a complementary treatment for older adults with dementia. RCTs with larger sample sizes are needed to better elucidate the impact of MT on cognitive functions.

REVIEW Open Access

The effect of music therapy on cognitive functions in patients with Alzheimer's disease: a systematic review of randomized controlled trials

Malak Bleibel[1], Ali El Cheikh[2], Najwane Said Sadier[1,3] and Linda Abou-Abbas[1,4*]

Abstract

Background The use of music interventions as a non-pharmacological therapy to improve cognitive and behavioral symptoms in Alzheimer's disease (AD) patients has gained popularity in recent years, but the evidence for their effectiveness remains inconsistent.

Objectives To summarize the evidence of the effect of music therapy (alone or in combination with pharmacological therapies) on cognitive functions in AD patients compared to those without the intervention.

Methods A systematic literature search was performed in PubMed, Cochrane library, and HINARI for papers published from 1 January 2012 to 25 June 2022. All randomized controlled trials that compared music therapy with standard care or other non-musical intervention and evaluation of cognitive functions are included. Cognitive outcomes included: global cognition, memory, language, speed of information processing, verbal fluency, and attention. Quality assessment and narrative synthesis of the studies were performed.

Results A total of 8 studies out of 144 met the inclusion criteria (689 participants, mean age range 60.47–87.1). Of the total studies, 4 were conducted in Europe (2 in France, 2 in Spain), 3 in Asia (2 in China, 1 in Japan), and 1 in the USA. Quality assessment of the retrieved studies revealed that 6 out of 8 studies were of high quality. The results showed that compared to different control groups, there is an improvement in cognitive functions after music therapy application. A greater effect was shown when patients are involved in the music making when using active music intervention (AMI).

Conclusion The results of this review highlight the potential benefits of music therapy as a complementary treatment option for individuals with AD and the importance of continued investigation in this field. More research is needed to fully understand the effects of music therapy, to determine the optimal intervention strategy, and to assess the long-term effects of music therapy on cognitive functions.

Keywords Alzheimer's disease, AD, Cognitive functions, Music therapy, Music intervention

Efficacy of Music Therapy in the Treatment of Behavioral and Psychiatric Symptoms of Dementia

Alfredo Raglio, MT,† Giuseppe Bellelli, MD,‡ Daniela Traficante, PsyD, PhD,§ Marta Gianotti, MT,* Maria Chiara Ubezio, MD,* Daniele Villani, MD,* and Marco Trabucchi, MD‖¶*

Background: Music therapy (MT) has been proposed as valid approach for behavioral and psychologic symptoms (BPSD) of dementia. However, studies demonstrating the effectiveness of this approach are lacking.

Objective: To assess MT effectiveness in reducing BPSD in subjects with dementia.

Method: Fifty-nine persons with dementia were enrolled in this study. All of them underwent a multidimensional assessment including Mini Mental State Examination, Barthel Index and Neuropsychiatry Inventory at enrolment and after 8, 16, and 20 weeks. Subjects were randomly assigned to experimental (n = 30) or control (n = 29) group. The MT sessions were evaluated with standardized criteria. The experimental group received 30 MT sessions (16 wk of treatment), whereas the control group received educational support or entertainment activities.

Results: NPI total score significantly decreased in the experimental group at 8th, 16th, and 20th weeks (interaction time × group: $F_{3,\ 165} = 5.06$, $P = 0.002$). Specific BPSD (ie, delusions, agitation, anxiety, apathy, irritability, aberrant motor activity, and night-time disturbances) significantly improved. The empathetic relationship and the patients' active participation in the MT approach, also improved in the experimental group.

Conclusions: The study shows that MT is effective to reduce BPSD in patients with moderate-severe dementia.

Key Words: dementia, behavioral disorders, music therapy

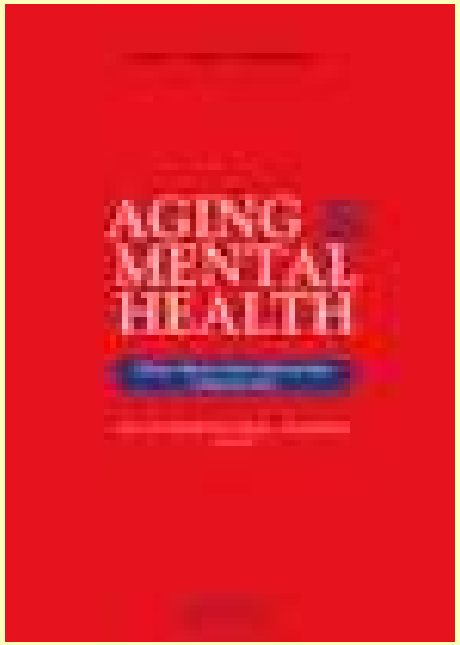
(*Alzheimer Dis Assoc Disord* 2008;22:158–162)

phases.[1] BPSD are usually treated with a pharmacologic approach, including the use of neuroleptics, sedatives, and antidepressants.[1] However, pharmacologic approaches are not easy to manage and are often burdened by several side effects and complications.[2,3] In a recent study on 421 patients with Alzheimer disease, 24% of patients treated with olanzapine, 16% with quetiapine, and 18% with risperidone, discontinued their assigned treatment at 36 weeks due to intolerability.[4] A recent review by the Cochrane Database claims that the atypical antipsychotics, although useful in reducing BPSD, are associated with serious adverse cerebrovascular events and extrapyramidal symptoms.[5] Because of these difficulties, recent guidelines from national and international associations recommend that the pharmacologic approach should not be the first-line treatment.[3,6]

Nonpharmacologic approaches are longtime known to be useful in the treatment of BPSD. In a multicenter study on 55 patients with moderate to severe dementia,[7] it has been shown that agitation and irritability significantly decreased with environmental adaptations and individually designed care planning. In this study, BPSD decreased at 6 months without using neuroleptics and/or physical restraints.[7]

Music therapy (MT) is a promising nonpharmacologic approach for BPSD. It is based on the systematic use of musical instruments to improve communication between music therapist and patients. MT is now used with increasing frequency, especially for the treatment of some BPSD, namely agitation and aggressiveness.[8–15] Despite these premises, studies demonstrating MT effec-

Raglio et al., 2008
Alzheimer Dis Assoc Disord



Efficacy of music therapy treatment based on cycles of sessions: a randomized controlled trial.

Raglio A, Bellelli G, Traficante D, Gianotti M, Ubezio MC, Gentile S, Villani D, Trabucchi M

Aging and Mental Health, 2010, 14, 900-904

Maturitas 72 (2012) 305–310

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Review

Music, music therapy and dementia: A review of literature and the recommendations of the Italian Psychogeriatric Association

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ABSTRACT

This study reviews the most recent (from 2000 to 2011) Clinical Controlled Trials (CCT) and Randomized Controlled Trials (RCT) concerning the use of music and music-therapy (MT) in the context of dementia and related issues.

Studies which explored the efficacy of music and MT on behavioral and psychological symptoms of dementia (BPSD) are prevalent, while those aiming at assessing a potential effect of these approaches on cognitive and physiological aspects are scant. Although with some limitations, the results of these studies are consistent with the efficacy of MT approach on BPSD. In this context, the ability of the music therapist to directly interact with the patients appears to be crucial for the success of the intervention.

This review was endorsed by the Italian Psychogeriatric Association (AIP) and represents its view about the criteria to select appropriate music and MT approaches in the field of dementia. Accordingly, we have developed a list of recommendations to facilitate the current use of these techniques in the context of non-pharmacological treatments for patients with dementia.

Raglio A, Bellandi D, Baiardi P, Gianotti M, Ubezio MC, Granieri E.

Music therapy in frontal temporal dementia: a case report

J Am Geriatr Soc. 2012;60(8):1578-9.

Raglio A, Bellandi D, Baiardi P, Gianotti M, Ubezio MC, Granieri E.

Listening to Music and Active Music Therapy in Behavioral Disturbances in Dementia: a Crossover Study.

J Am Geriatr Soc. 2013;61(4):645-7

Raglio A, Bellandi D, Baiardi P, Gianotti M, Ubezio MC, Zanacchi E, Granieri E, Imbriani M, Stramba-Badiale M.

Active Music Therapy and Individualized Listening to Music: A Multicentric Randomized Controlled Trial in The Field of Dementia

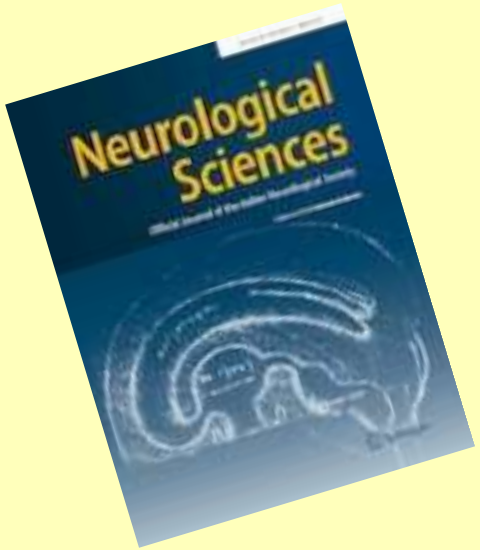
J Am Geriatr Soc. 2015; 63(8):1534-9

Risultati degli studi…

- Miglioramento BPSD

- Miglioramento comunicazione/relazione

Raglio A, Bellandi D, Manzoni L, Grossi E.
Communication improvement reduces BPSD:
a music therapy study based on artificial neural networks.
Neurol Sci. 2021;42(5):2103-2106.



The main predictive factor is the Barthel Index, followed by NPI and some of its sub-items (mainly, Disinhibition, Depression, Hallucinations, Irritability, Aberrant Motor Activity, and Agitation). Moreover, the semantic map underlines how the improvement in communication/relationship is directly linked to "responder" variable. "Responder" variable is also connected to "age," "Mini Mental State Examination," and sex ("female").

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Table 1 Main characteristics of interventions in the global music approach in dementia (GMA-D)

Type of intervention	Professionals/caregivers	Content	Setting/context	Stage of disease	Duration and frequency of interventions	Aims
Active music therapy – psychological approach (AMT-PA) (individual or small group sessions, two to three PWD)	Trained music therapist	Musical improvisation and/or structured music	Therapeutic setting/ music therapy room	Mild to severe dementia (CDR 1–4)	Twice a week for at least 15 sessions, 30 min/session	Reduction of BPSD and related complications, emotional and behavioral regulation, increase of communication/relationship
Active music therapy – rehabilitative approach (AMT-RA) (individual or small group sessions, two to three PWD)	Trained music therapist	Music exercises	Therapeutic setting/ music therapy room	Mild to moderate dementia (CDR 1–2)	Two–three times a week for at least 15 sessions, 30 min/session (cycles of sessions)	Improvement of cognitive functions (specifically memory, attention, language, executive functions) and motor and sensory functions
Active music therapy with family caregivers (AMT-FC) (couple PWD–family caregiver and music therapist)	Trained music therapist	Musical improvisation and/or structured music	Therapeutic setting/ music therapy room	Moderate to severe dementia (CDR 2–4)	Twice a week for at least 12 sessions, 30 min/session (cycles of sessions)	Reduction of stress and anxiety condition in family caregivers; reduction of BPSD in PWD; improvement of communication and quality of life in PWD and family caregivers
Music-based interventions (MBI) (middle group sessions, six to eight PWD)	Musician or worker with musical expertise	Structured musical initiatives: rhythmic use of instruments, singing, movement associated to music, and listening to music (classical music, soothing music, evocative music)	Spacious room	Mild to moderate dementia (CDR 1–2)	Weekly/biweekly, cycles of sessions (eight to ten), 45–60 min/session	Well-being, improvement of mood and motivation, promotion of socialization, global motor and cognitive stimulation
Caregiver singing (CS) (individual sessions)	Caregivers formal or informal	Caregiver singing (familiar songs or improvised melodies to or together with PWD)	Personal care (ie, toilet, bathing, dressing, assisted deambulation)	Moderate to severe dementia (CDR 2–4)	Daily	Improvement of communication and relationship; reduction of BPSD during daily activities; improvement of mood; promotion of positive emotional context
Individualized listening to music (ILM) (individual sessions)	Music therapist (music selection), caregivers (music administration)	Listening to preferred music	Comfortable room	Mild to severe dementia (CDR 1–4)	Daily, 30 min/session, 4 weeks or more	BPSD reduction; cognitive stimulation
Background music (BM) (group sessions)	Music therapist (music selection), caregivers (music administration)	Listening to music (different kind of music, mainly without text)	Living spaces	Mild to severe dementia (CDR 1–4)	Daily	Activation or relaxation, increase of well-being; improvement of person's adaptation to the environment

Abbreviations: PWD, persons with dementia; CDR, clinical dementia rating; BPSD, behavioral and psychological symptoms of dementia.

AMT-PA	**Trained music therapist**	**Musical improvisation and/or structured music**	**Mild to severe dementia (CDR 2-4)**	**Reduction of BPSD and related complications, emotional and behavioral regulation, increase of communication/ relationship**
AMT-RA	**Trained music therapist**	**Music exercises**	**Mild to moderate dementia (CDR 1-2)**	**Improvement of cognitive functions (specifically memory, attention, language, executive functions, etc), motor and sensory functions**
AMT-FC	**Trained music therapist**	**Musical improvisation and/or structured music**	**Moderate to severe dementia (CDR 2-4)**	**Reduction of stress and anxiety condition in family caregivers; Reduction of BPSD in PWD; Improvement of communication and Quality of Life in PWD and Family Caregivers**
ILM	**Music therapist (music selection) Caregivers (music administration)**	**Listening to preferred music**	**Mild to severe dementia (CDR 1-4)**	**BPSD reduction; Cognitive stimulation**

MBI	**Musician or worker with musical expertise**	**Structured musical initiatives: rhythmic use of instruments, singing, movement associated to music, and listening to music (classical music, soothing music, evocative music)**	**Mild to moderate dementia (CDR 1-2)**	**Well-being, improvement of mood and motivation, promotion of socialization, global motor and cognitive stimulation**
CS	**Caregivers formal or informal**	**Caregiver singing (familiar songs or improvised melodies to or together PWD)**	**Moderate to severe dementia (CDR 2-4)**	**Improvement of communication and relationship; reduction of BPSD during daily activities; improvement of mood; promotion of positive emotional context**
BM	**Music therapist (music selection) Caregivers (music administration)**	**Listening to music (different kind of music, mainly without text)**	**Mild to severe dementia (CDR 1-4)**	**Activation or relaxation, increase of well-being; improvement of person adaptation to the environment**

GMA-D steps

- Clinical evaluations
- Therapeutic aims
- Music therapy assessment
- Treatment definition and initiation (at least 3 music interventions from GMA-D)
- Assessment of each music intervention and of clinical changes

The Global Music Approach to Dementia (GMA-D): evidences from a case report

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Table 1 Main clinical results of the study

	T0 (baseline)	T1 (end of treatment)	T2 (follow-up, 1 month after the end of treatment)
MMSE	NA	NA	NA
NPI (global scores)	32	18	25
Agitation	6	2	6
Disinhibition	6	4	4
Irritability	12	8	6
Appetite and eating	8	4	9
CBQoL (global scores)	− 3	6	− 3
Mood-related signs	− 3	0	0
Ideational disturbances	− 2	− 1	− 3
Behavioral disturbances	− 1	1	− 1
Physical signs	− 1	2	− 3
Cyclic functions	1	4	4

MMSE mini mental state examination, *NPI* neuropsychiatric inventory, *CBQoL* Cornell Brown quality of life

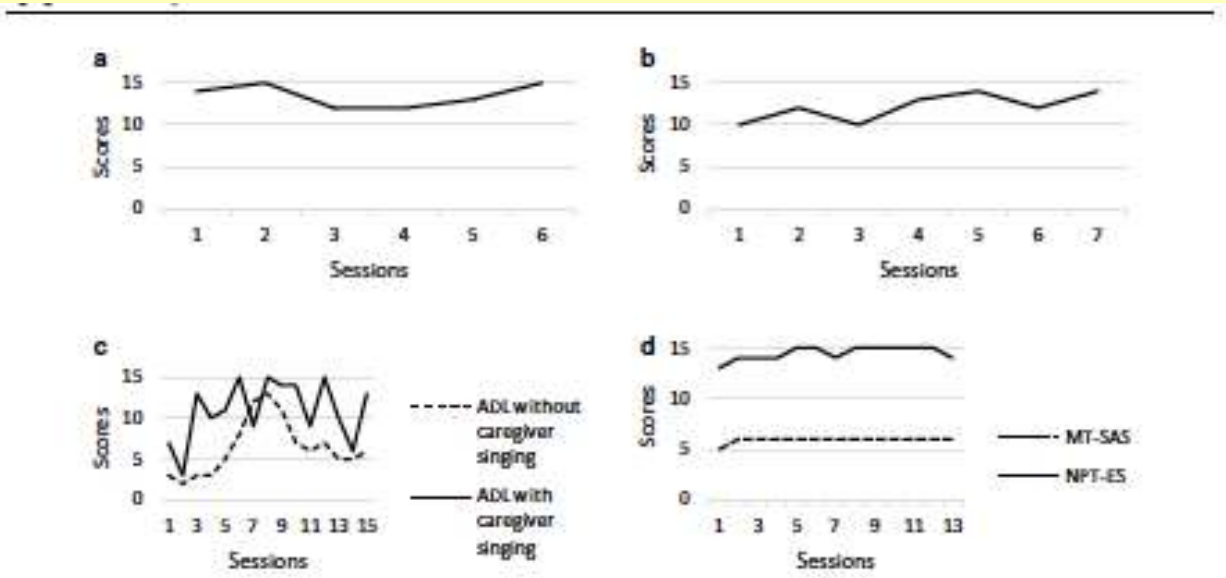

Fig. 1 **a**–**d** Assessment of music interventions: Non-Pharmacological Therapies-Experience Scale (NPT-ES) and Music Therapy-Session Assessment scale (MT-SAS) scores. **a** Scores of Non Pharmacological Therapies-Experience Scale (NPT-ES, Range 0–15) in Group Motor Activity with Music. **b** Scores of Non Pharmacological Therapies-Experience Scale (NPT-ES, Range 0–15) in Group Music-Based Interventions. **c** Scores of Non Pharmacological Therapies-Experience Scale (NPT-ES, Range 0–15) in Activities Daily Living (ADL) with and without caregiver singing (three-weekly evaluations). **d** Scores of Music Therapy-Session Assessment Scale (MT-SAS, Range 0–6) and of Non Pharmacological Therapies-Experience Scale (NPT-ES, Range 0–15) in Music Therapy treatment

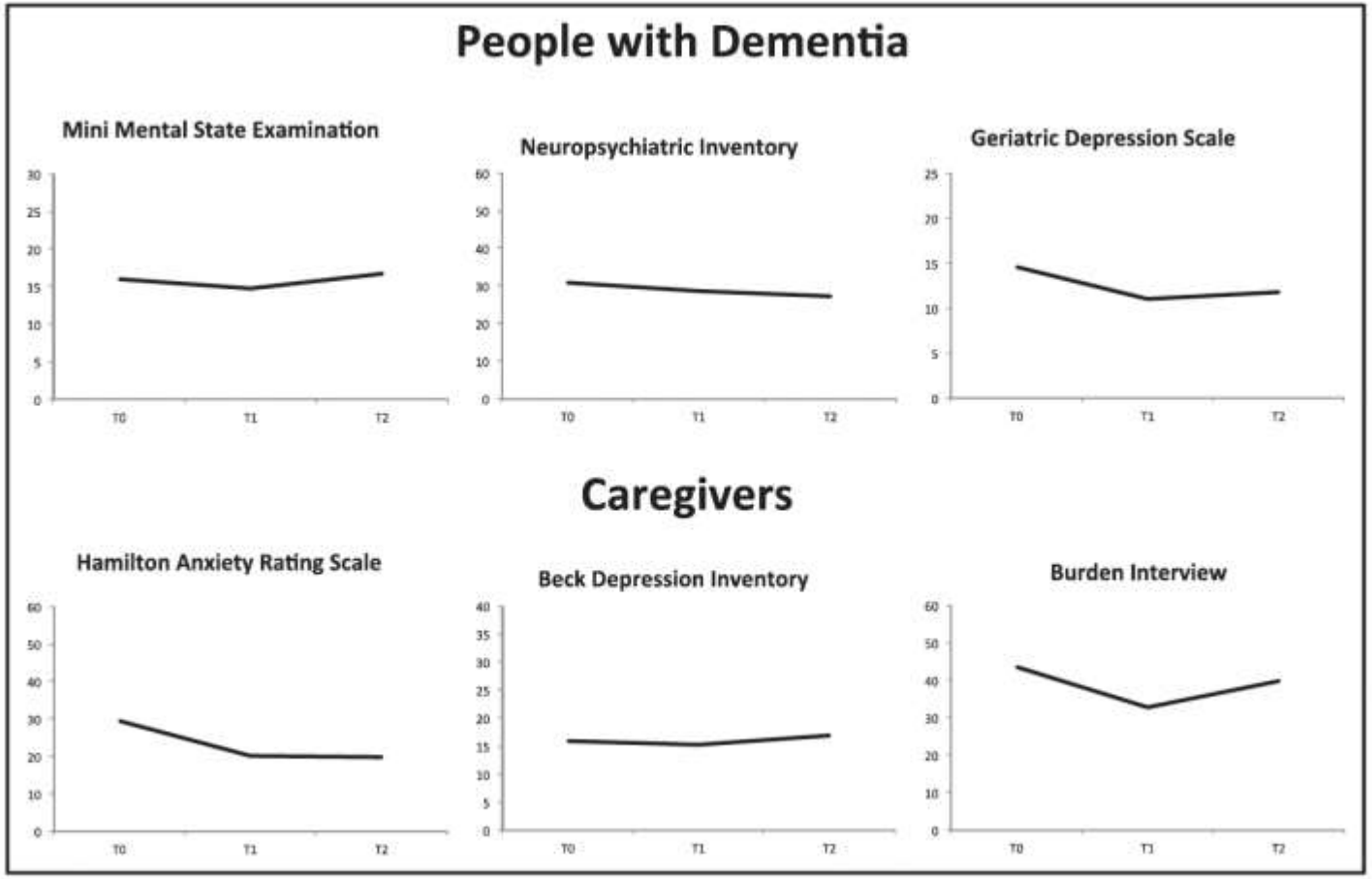

Figure 1 Trends of the outcomes of the study in people with dementia and their family caregivers (means).

Raglio et al. Active music therapy for persons with dementia and their family caregivers
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Background Music in elderly nursing home: a feasibility explorative study

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ABSTRACT. **Introduction.** *This study explores how a background music-listening program within residential facilities for the elderly can influence the general environment and be effective on psychological and behavioral aspects. The feasibility of this type of intervention was explored.*
Methods and Materials. *Twenty-nine residents involved in the experiment were observed for 4 weeks in absence of a music intervention and for the same period during the experimental condition. The intervention consisted in music listening programs, designed by trained music therapists for specific objectives according to the different times of the day. Experimental and control condition effects were compared through the administration of clinical scales and observational grids.*
Results. *The results of clinical scales showed that music listening programs reduced behavioral symptoms in 7 out of 8 people with the most severe neuropsychiatric symptoms. The observational scheme completion showed a clear improvement in all outcomes considered, with the exceptions of agitation (in the morning) and irritability (in the afternoon).*
Discussion. *The study brings several points to attention, including the need to establish a set of criteria in music listening programs selection and administration (e.g. identification of music characteristics related to objectives and outcomes, assessment strategies, involvement of a team of professionals). Implementing evidence-based clinical practice is crucial and the highlighted results encourage the introduction of music-listening approaches as part of therapeutic interventions in elderly nursing homes.*

Key words: *music listening, music therapy, background music, evidence-based intervention, well-being, cognitive disorders, behavioral and psychological symptoms.*

Introduction

Music activities can be considered as powerful interventions used in the geriatric field to promote communicative, relational processes and emotional expression (1). The effectiveness of music-based interventions on behavioral and psychological symptoms of dementia have been highlighted by several previous studies (2-5). Therefore, especially in pathological aging, the use of music is very widespread in psycho-social interventions. A first broad distinction occurs between actual music therapy interventions (active or receptive techniques that require the presence of a trained music therapist, a setting, a theoretical background and a specific assessment) and other music-based activities such as general music activities (singing, music listening, etc.) guided by other professionals (staff, formal and informal caregivers, etc.) and supervised by a music therapist (6-8). Among general music activities, listening to preferred music is one of the most employed interventions with elderly to improve well-being and to reduce eventual maladaptive behaviors. The results of a review of the most recent RCTs testing (9) about music listening intervention showed potential benefits on behavioral disturbances. Clear guidelines are required to fully exploit the potential of individualized music listening (10-15), including the definition of specific criteria to select and administer listening programs; moreover, the involvement of trained music therapists

Conclusioni

Perché la musicoterapia per la persona con demenza?

- Migliora i sintomi psico-comportamentali
- Migliora la qualità di vita
- Migliora la comunicazione/relazione
- Facilita l'espressione emotiva migliorandone l'organizzazione/regolazione
- Promuove il recupero e/o mantenimento del senso di identità
- Facilita l' adattamento della persona all'ambiente sociale
- Stimola alcune funzioni cognitive (in particolare working memory, funzioni esecutive, orientamemto e attenzione)
- …

Raccomandazioni

- Presenza di un professionista qualificato (musicoterapeuta)
- Continuità delle esperienze
- Significativa esposizione allo stimolo sonoro-musicale (interventi differenziati che coinvolgono l'équipe)
- Evidenze e appropriatezza dell'intervento (specificità)
- Definizione del processo terapeutico (dall'invio alla conclusione del trattamento)
- Valutazione del trattamento

Grazie per l’attenzione!

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