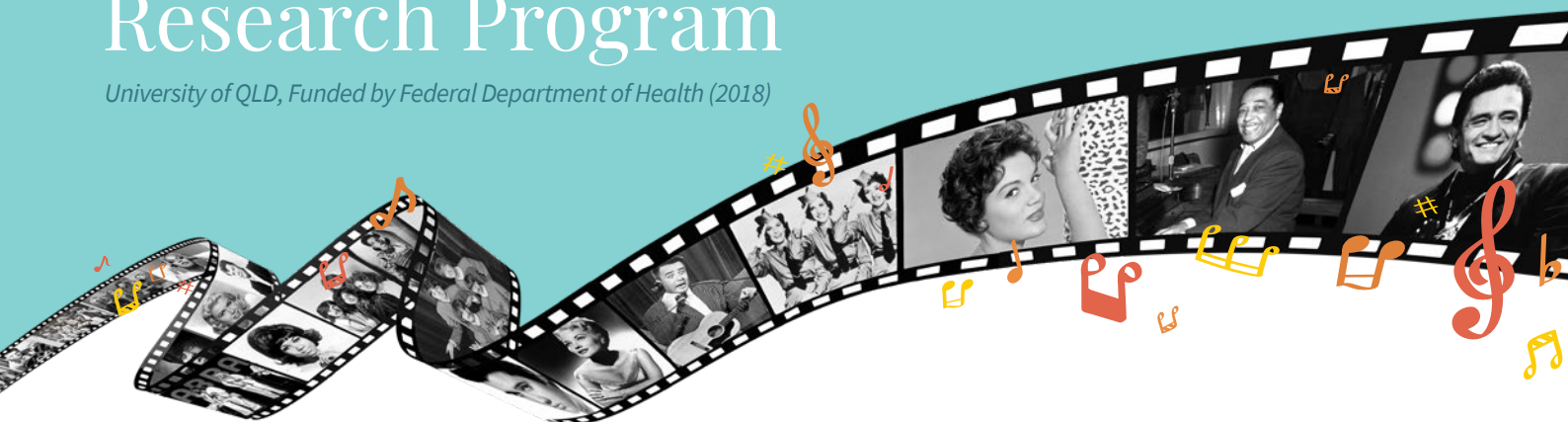


Silver Memories Research Program

University of QLD, Funded by Federal Department of Health (2018)



Abstract

The management of dementia related behaviours is an ongoing challenge for carers. Silver Memories is a 24/7 nostalgia radio program providing Reminiscence Therapy for patients living with dementia in aged care facilities in Australia. In 2016, Dr Catherine Travers, Research Manager School of Health and Rehabilitation Sciences, University of Queensland, with funding from the Federal Department of Health, began a 12 month research program. The research was designed to evaluate the impact of Silver Memories on the wellbeing and quality of life dementia sufferers. A total of 74 residents from 16 aged care facilities across metropolitan and regional centres in New South Wales and Queensland participated in the research program. The measures were Quality of Life (QoL) – nursing home version; the Geriatric Depression Scale – 5 (GDS) and the Cohen Mansfield Agitation Inventory (CMAI) - aggression and agitation. The results demonstrated statistically significant improvements in participants' quality of life, depression, aggression and agitation over a 12-month period following the introduction of the Silver Memories Nostalgia Radio program.

A chronic disease of the 21st century

Dementia is the single greatest cause of disability in people aged 65+ years and the second leading cause of death in Australia [1] Of the 13,126 people who lost their lives to dementia in 2016, 64 percent were women.[2]

The health, social and economic costs associated with supporting people with dementia are significant and forecast to rise sharply as our population ages. In 2018, dementia is estimated to cost Australian taxpayers more than \$15 billion. By 2025, the total cost of dementia is predicted to increase to \$18.7 billion and to \$36.8 billion by 2056. [2]

The personal costs are more difficult to quantify. Memory loss, difficulty performing familiar tasks, confusion about time and place, and changes in mood and behaviour can cause distress for dementia sufferers and their loved ones.

More than 90 percent of people with dementia also experience agitation, aggression, apathy and depression. Carers report these dementia symptoms to be the most challenging to manage.

Silver Memories as Reminiscence Therapy

In 2007, Brisbane-based community radio station 4MBS introduced Silver Memories, a 24 hours a day/7 days nostalgia radio program that focuses on music from the 1940s to the 1970s.

Established to address the important issue of social isolation and depression in Aged Care, Silver Memories provides a non-pharmacological tool for the management of dementia related behaviours.

Based on Reminiscence Therapy principles, Silver Memories is guided by evidence based research, including two previous research programs specifically focused on the Silver Memories program [3] [4]. There is a large and growing body of international Silver Memories in Dementia Management research showing the positive effect of music on the brain, and the role of music reminiscence therapy for the management of dementia.

In 2016, the Federal Government's Department of Health commissioned this 12- month research program to evaluate the impact of Silver Memories on people living with dementia in aged care facilities.

Research Program

The research was undertaken by Dr Catherine Travers, Rehabilitation Sciences, from the University of Queensland. Dr Travers is a Research Fellow with the Centre for Research in Geriatric Medicine at the University of Queensland. Dr Travers is a Clinical Psychologist and her research interests include dementia and interventions to improve older people's quality of life including those living with dementia.

Population

A total of 74 residents from 16 aged care facilities across metropolitan and regional centres in New South Wales and Queensland participated in the research program. A range of facility demographics and corporate entities were selected. The service was provided to the aged care facilities free of charge to ensure all facilities maintained the same initial value perception.

Each facility had 5 residents who participated in the evaluation, except for one facility that had three participants. The majority of participants were female (n = 49; 66.2%) and participants' ages ranged from 52-100 years with the average age being 82.8 years (Standard Deviation = 8.5). All had dementia that required a higher level of care necessitating them living in the aged care residence. Unfortunately, five participants died over the course of the evaluation.

Design and duration

The research was designed to evaluate the impact of Silver Memories on the wellbeing and quality of life dementia sufferers, as well as symptoms of aggression and agitation observed by a staff member who knew the residents well.

Three validated questionnaires were developed to assess depression, quality of life and behaviour using the following assessment instruments:

- Geriatric Depression Scale – 5 (GDS)
- Quality of Life (nursing home version) (QoL)
- Cohen Mansfield Agitation Inventory (CMAI) - aggression and agitation.

The survey answers required either a yes/no response or a sliding scale to remove subjectivity and allow for easy comparison of participants over the time period.

The survey data was collected at baseline (before program commencement), and at regular three monthly intervals for the following twelve months in 12 facilities:

- T1: Term 1 - 3 months
- T2: Term 2 - 6 months
- T3: Term 3 - 9months
- T4: Term 4 - 12 months

Within four facilities (18 participants), the data was collected across 6, rather than 12 months, with data being collected at baseline, and at 6, 12, 18 and 24 weeks following baseline. For consistency, only the baseline, 12 week (3 month) and 6 month data were included in the analysis.

Paired t-tests were performed to assess whether there were changes over time for each of the outcome measures. The data was analysed using SPSS for Windows version 24 (IBM©, 2016).

Results

As illustrated in Table 1 below, there were significant improvements in participants' quality of life, depression, aggression and agitation over a 12-month period following the introduction of the Silver Memories Nostalgia Radio program.

Table 1. Results of baseline and follow-up assessments: Silver Memories

Assessment Time / Instrument	Baseline	3 months (T1)	6 months (T2)	9 months (T3)	12 months (T4)
Geriatric Depression Scale (GDS)#					
Average (Mean)	2.16	2.58	1.73	0.66	0.35
Standard Deviation (SD)	1.63	1.17	0.98	1.29	0.71
Range of scores	0 - 5	1 - 5	1 - 4	0 - 5	0 - 3
Number of participants (N)	70	66	48	47	47
Quality of Life (QoL)##					
Mean	34.35	36.57	38.57	40.72	42.02
SD	8.46	7.73	8.60	7.34	6.88
Range	21 - 58	25 - 56	18 - 59	25 - 59	26 - 59
N	68	65	65	47	47
Cohen Mansfield Agitation Inventory (CMAI)‡ - Aggressive Behaviour					
Mean	5.94	5.32	4.97	4.81	4.44
SD	2.43	1.84	1.64	1.44	1.04
Range	4 - 14	4 - 12	4 - 12	4 - 10	4 - 8
N	71	68	65	47	47
CMAI - Physically nonaggressive behaviour (e.g. general restlessness)					
Mean	8.86	7.57	6.55	6.50	5.98
SD	4.02	3.52	2.08	2.37	1.53
Range	5 - 22	5 - 18	5 - 13	5 - 14	5 - 10
N	69	65	64	6	46
CMAI - Verbally agitated behaviour (e.g. yelling)					
Mean	8.58	7.43	6.78	6.74	6.02
SD	3.91	3.32	2.50	2.34	1.53
Range	5 - 18	5 - 18	5 - 16	5 - 14	5 - 11
N	71	68	65	47	47

#Geriatric Depression Scale – higher scores indicate more symptoms of depression;

##Quality of Life – higher scores indicate better QoL;

‡CMAI – higher scores indicative greater levels of agitation or aggression

Geriatric Depression Scale (GDS)

The 5-item Geriatric Depression Scale specifically investigates how the individual feels about their life and existence while living with dementia. The yes/no questions were asked by carers at the facilities, thereby ensuring the participants were comfortable with the interviewer. This five question survey records how the individuals feel within themselves as well as their thoughts about their immediate environment.

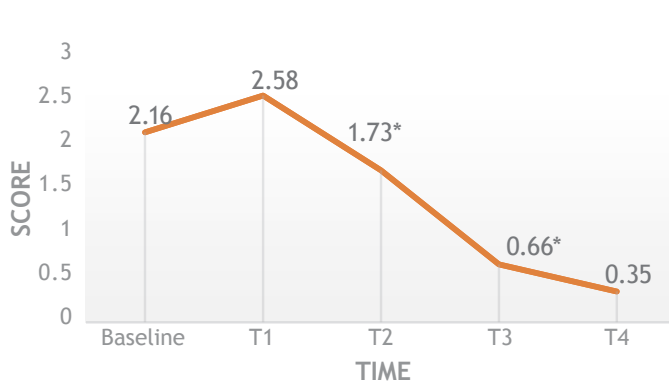
The items are:

1. Are you basically satisfied with your life?
2. Do you often get bored?
3. Do you often feel helpless?
4. Do you prefer to stay at home rather than going out and doing new things?
5. Do you feel pretty worthless the way you are now?

Participants' scores on the GDS improved significantly from T1 to T2 ($p < 0.05$), and from T2 to T3 ($p < 0.001$). Overall, the improvement from baseline to T4 was also significant ($p < 0.001$) with the effect size being large (0.98). Figure 1 shows GDS scores over time.

Figure 1. Geriatric Depression Scores over 12 months

Geriatric Depression Scale Scores: Baseline to T4



Significant improvement in score from previous timepoint

Quality of Life – Nursing Home Version

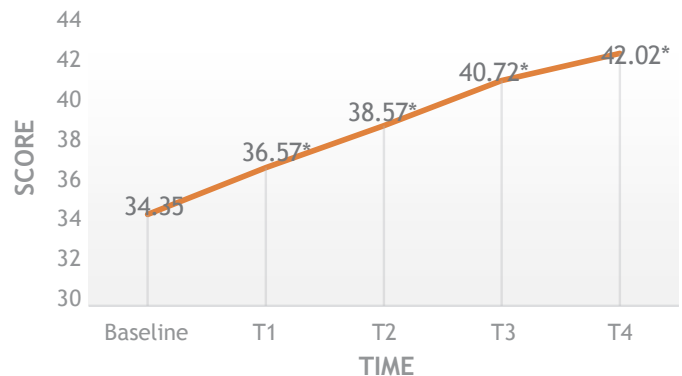
This Quality of Life questionnaire tracks the residents' responses about a wide group of subjective elements of their lives. This rating system limited responses to poor, fair, good, and excellent.

Examples of the areas that were rated included physical health, energy and mood, as well as relationship-based areas such as family, friends and staff. Other areas included residents' ability to control their own lives including keeping busy, taking care of themselves and making their own choices.

The results of this test demonstrated a lineal increase in the perceptions of themselves as well as their external relationships. Participants' quality of life improved steadily and consistently over the 12 months. Scores improved significantly from baseline to T1 ($p < 0.05$), from T1 to T2 ($p < 0.05$), from T2 to T3 ($p < 0.001$) and from T3 to T4 ($p < 0.05$). Overall, the change from baseline to T4 was significant ($p < 0.001$) with the effect size being large (0.82). Figure 2 shows the scores over time.

Figure 2. Quality of Life scores over 12 months

Quality of Life Scores: Baseline to T4



Significant improvement in score from previous timepoint

Mansfield Agitation Inventory (CMAI)

This is a short form of a more standard form that, unlike the other two surveys, was filled out based on the observations of aged care staff. The 14 question survey involved a more direct recording of negative behaviours ranging from the inappropriate through to the annoying as well as hiding things and complaining.

The five levels of scale for this survey related to number of times that negative behaviours occurred— from never through to a few times per hour or continuously for half an hour.

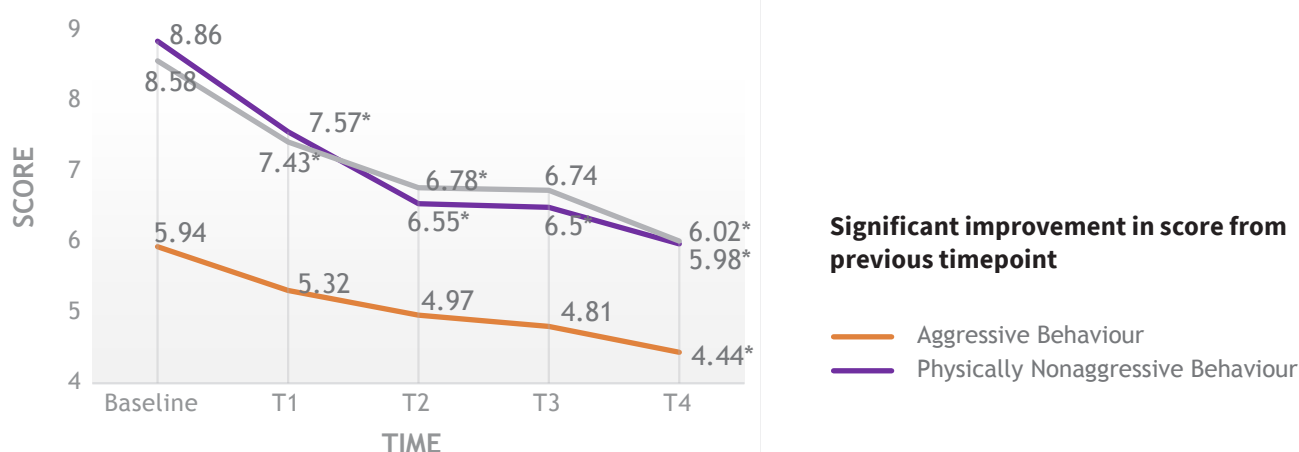
Participants' scores on the measure of physically aggressive behaviour (e.g. hitting) showed a significant improvement from T3 to T4 ($p < 0.05$) and from baseline to T4 ($p < 0.001$) with the effect size being medium (0.69).

Scores on the measure of physically nonaggressive behaviour (e.g. pacing, wandering) improved significantly from baseline to T4 ($p < 0.001$) with the effect size being large (0.80). The improvement was steady and continuous with scores illustrating significant improvement across all timepoints: from baseline to T1 ($p < 0.05$), from T1 to T2 ($p < 0.05$), from T2 to T3 ($p < 0.05$) and from T3 to T4 ($p < 0.05$).

Participants' scores on the measure of verbal agitation improved significantly from baseline to T1 ($p < 0.05$), from T1 to T2 ($p < 0.05$), and from T3 to T4 ($p < 0.05$) T4 ($p < 0.001$). Overall, the improvement was baseline to T4 was significant with the effect size being medium (0.72).

Figure 3. Aggression and agitation scores over 12 months

CMAI Scores: Baseline to T4



Conclusion

The results indicate Silver Memories is an effective intervention for improving the quality of life and reducing negative symptoms in people living with dementia in residential aged care facilities. Over the 12 month period, there were statistically significant improvements on all three measures – Quality of Life, Depression and agitation.

References

- [1] Australian Bureau of Statistics (2017) Causes of Death, Australia, 2016 (cat. no. 3303.0)
- [2] The National Centre for Social and Economic Modelling NATSEM (2016) Economic Cost of Dementia in Australia 2016-2056
- [3] Travers, Catherine and Bartlett, Helen (2010) 'An Exploratory Study of Carers' and Care Staff's Perspectives of Silver Memories – A Unique Radio Program for Older People', Activities
- [4] Down Memory Lane, Dr Libby Flynn, University of Queensland, 2017(unpublished)

Extract from Churchill Fellowship Report 2012

By **Gary Thorpe OAM** Manager Music Broadcasting Society of Queensland

Silver Memories – addressing social isolation, depression, effects of dementia

What is Dementia?

The term 'dementia' describes the symptoms of a large group of diseases including Alzheimer's (the most commonly diagnosed form of dementia), vascular dementia (the second most commonly diagnosed form of dementia), Parkinson's disease, Creutzfeldt-Jakob disease, Fronto Temporal dementia and Lewy Body Dementia.

There are a variety of behavioural problems that frequently accompany the cognitive deterioration in dementia – irritability, withdrawal, depression, anxiety, fear, paranoia, aggression, delusions, hallucinations, wandering, pacing, agitation and sleeping problems. These conditions require additional supervision and in some instances, sedative-hypnotic drugs and restraints for the safety and manageability of the dementia sufferer (Cohen et al. 1993). Christine Kennard writing for About.com says that some drugs have been shown to actually increase disinterested behaviour and motor agitation.

The size of the problem of dementia

Dementia is a major issue in Australia and internationally. In Australia, it is expected that the incidence of dementia will double over the next twenty years. Glen Rees from Alzheimer's Australia writing in the Sydney Morning Herald on the 7th January 2012 wrote that dementia is the iceberg that will cripple Australia's health care system. He stated that there are 280,000 Australians with dementia and 1600 new cases are diagnosed each week. By the year 2050 more than 1 million Australians will be living with various forms of the disease. It already costs 6 billion dollars annually and will grow to be the third largest area of hospital and residential care by the year 2030.

Australia has one of the longest life expectancies in the world. So the problem of dementia will continue to grow in Australia. There are currently about 1.5 million people affected by dementia either as sufferers or carers. It is an enormous public health problem. Programs that assist in the management of dementia will help to ease the burden not just on the public health system, but on the carers of people afflicted with the disease.

Can music help manage these problems?

There is a growing body of evidence that says it can. As reported in Pacific Standard Magazine on the 9th July 2012, the Italian Psycho-geriatric Association recently reviewed 32 papers on music therapy and dementia published over the last decade and found a pattern of significant reductions in such symptoms as depression, delusion and hallucination. So, music therapists have been working with dementia sufferers for many years achieving significant results. I met with some of the leading researchers in music therapy worldwide to explore how I could apply their research findings to the Silver Memories radio service – the 24 hour a day nostalgia radio station started by radio station 4MBS Classic FM in Brisbane in 2007. Silver Memories was set up to address social isolation in aged care facilities. This special service broadcasts music from the 1920's to the 1950's, old time serials, musicals, popular old time ballads and sends birthday greetings to its elderly listeners. Silver Memories was designed to address the social isolation that many elderly people experience both in their own home or in an assisted facility. Research has shown that social isolation leads to depression which can lead to dementia and other issues.

Silver Memories has been operating in Brisbane for over seven years. It is an Australian innovation that is now available Australia wide via satellite.

Silver Memories: Implementation and Evaluation

Brief Report

Silver Memories

Silver Memories is a unique 24 hour a day radio service that has been developed by 4MBS Classic FM, a Brisbane community radio station and has been designed to address the needs of socially and emotionally isolated older Australians including those living in Residential Care facilities. Silver Memories broadcasts music, serials and other programs relevant to the period when they grew up – the 1920s to the 1950s. A key goal of Silver Memories is to improve the quality of life and well-being of older people who are socially or emotionally isolated by providing a sense of companionship to listeners through its friendly style. Silver Memories is operated by experienced 4MBS broadcasters who are assisted by a large number of volunteers and can be received via the internet (www.4mbsclassicfm.com.au) or alternately, by a small custom built radio receiver tuned to the Silver Memories frequency. The radios were designed with the older listener in mind and are operated by a simple on/off switch. Silver Memories first aired as a pilot program in April 2008.

The Evaluation

The impact of Silver Memories upon listeners' quality of life and well-being was formally evaluated by researchers from The University of Queensland. The evaluation also aimed to ascertain the views of older listeners regarding the content and format of the program with a view to improving its quality and appeal. Both community dwelling socially isolated older people as well as residents of Residential Aged Care (RAC) facilities were invited to participate in a three month evaluation of Silver Memories. Flyers advertising Silver Memories were widely distributed through community groups (e.g. Home and Community Care Services) and social organisations, and advertisements were placed in local community newsletters inviting people to participate. Individual RAC facilities, respite services and community organisations were also approached directly to invite participation from their residents/members.

In total, 114 participants completed the evaluation including 68 community dwelling participants and 46 RAC residents from 14 separate facilities (31 lived in low-care RAC facilities and 15 in high-care RAC facilities), as well as 15 staff members and 9 carers of participants. All participants were asked to listen to Silver Memories for at least one hour

a day for three months and were provided with a radio receiver, free of charge, throughout the three month trial. Participants were also asked to keep a daily listening diary and completed questionnaires regarding their quality of life and well-being before and following the three month trial as well as providing information regarding their health and social circumstances and their opinion of the program. To obtain feedback regarding the quality and appeal of the program's content and format, participants were also asked the following questions at the follow-up interview:

- How enjoyable did you find Silver Memories?
(responses ranged from 1 - not at all enjoyable to 5 - extremely enjoyable)
- How would you rate the friendliness of Silver Memories?
(responses ranged from 1 - not at all friendly to 5 - extremely friendly)
- How would you rate the quality of Silver Memories overall?
(responses ranged from 1 - extremely poor to 5 - excellent)
- Is Silver Memories something you look forward to?
(responses ranged from 1 - not at all to 5 - greatly)

Finally, participants were also invited to provide comments regarding the program quality and content including program preferences and suggestions for improvement at the conclusion of the three month trial.

Carers and staff of RACs were also interviewed to obtain their perspectives regarding the impact of Silver Memories upon the behaviour and well-being of participants as well as their opinions regarding the quality and suitability of the programming content. They were asked the following questions (questions were tailored to the respondent) at the follow-up interview:

- How would you rate the quality of Silver Memories overall? *(responses ranged from 1 - extremely poor to 5 - excellent)*
- Do residents/your relative look forward to Silver Memories? *(responses ranged from 1 - not at all to 5 - greatly)*
- How would you rate the friendliness of Silver Memories? *(responses ranged from 1 - not at all friendly to 5 - extremely friendly)*
- To what extent do you think Silver Memories positively influenced the morale and well-being of the residents at your facility/ your relative *(responses ranged from 1 - not at all to 5 - enormously)*
- To what extent did Silver Memories have a positive influence on the behaviour of residents/your relative (e.g. assist with relaxation, reduce agitation) *(responses ranged from 1 - not at all to 5 - enormously)*
- To what extent has Silver Memories been a useful addition to the programs already offered at this RAC facility/ activities your relative engages in *(responses ranged from 1 - not at all helpful to 5 - extremely helpful)*

Findings – Participants

The average age of participants was 79.9 years and more females (81) than males (33) participated. Participants had an average of 2.6 chronic health conditions, approximately one-third were visually impaired and 14 (12.6%) were bed or wheelchair bound.

In spite of some difficulties with the reception (signal dropping out, static, interference) in the initial months of Silver Memories going to air (subsequently resolved), the results of the evaluation were very positive. The results showed that listening to Silver Memories resulted in a significant improvement in participants' quality of life after controlling for changes in health status and social circumstances throughout the same period. A trend towards an improvement in depression scores was also observed. There was no change on a measure of loneliness, however, this may have been due to the question lacking sensitivity. Qualitative data shows that the vast majority of participants benefited in some way from the program. Staff of RAC facilities reported that Silver Memories had a calming effect on some patients with dementia. Typical comments in relation to Silver Memories include:

'I never feel lonely with Silver Memories'

'I looked forward to it each day'

'Before Silver Memories I was depressed, lonely and bored to tears.'

'Everyone has commented on how it has made such a difference in my life, I have improved with it.'

'The loneliness has gone, the boredom has gone, all I enjoy is lovely music.'

"It is good that it is going at all times as you wake up at all hours."

'I think it is lovely'

'I love the music'

'I have enjoyed every minute of it'

Results of this evaluation also indicate that Silver Memories had a high degree of acceptability with listeners, with a majority of participants rating Silver Memories as 'very' (47.4%) or 'extremely' (25.4%) enjoyable, very' (57.8%) or 'extremely' (16.5%) friendly, of 'above average' (39.4%) or excellent' (28.4%) quality and was something they looked forward to 'very' (30.3%) much or 'greatly' (27.5%) (see Table 1). This was in spite of some participants indicating they disliked the heavy classical or chamber music and would prefer greater variety. It seems that Silver Memories fills a gap by playing music that is not available elsewhere and an overwhelming majority of participants (92.6%) indicated they plan to continue listening to Silver Memories and would also recommend it to others (96.3%).

Table 1: Participant responses to Silver Memory evaluation questions

Response / Question	Not At All (%)	A Little/ Mildly (%)	Moderately (%)	Very (%)	Extremely/ Greatly (%)
How enjoyable did you find <i>Silver Memories</i> ?	1 (0.9)	2 (1.8)	23 (21.2)	54 (49.5)	29 (26.6)
Is <i>Silver Memories</i> something you look forward to?	8 (7.3)	8 (7.3)	30 (27.5)	33 (30.3)	30 (27.5)
How would you rate the friendliness of <i>Silver Memories</i> ?	0	1 (0.9)	27 (24.8)	63 (57.8)	18 (16.5)
	Extremely Poor	Poor	Average	Above Average	Excellent
How would you rate the quality of <i>Silver Memories</i> overall?	0	1 (0.9)	34 (31.2)	43 (39.4)	31 (28.4)

Findings – Carers and Care Staff

All carers and care staff who completed the evaluation had listened to Silver Memories, at least once-twice a week, throughout the three month trial and the results indicate that Silver Memories also had a high degree of acceptability with these groups. The majority of carers and care staff rated Silver Memories as ‘very’ (66.7%) or ‘extremely’ friendly (22%, 20% respectively), and of ‘above average’ (22.2, 46.7% respectively) or ‘excellent’ quality (44.4%, 26.7% respectively). Most thought the program positively influenced participants’ well-being and morale ‘very’ much (33.3%, 26.7% respectively) or ‘greatly’ (44.4%, 60% respectively) and that it positively influenced their behaviour ‘very much’ (33.3%, 40% respectively) or ‘greatly’ (33.3%, 40% respectively) while over one-third of care staff thought participants looked forward to listening to Silver Memories ‘very much’ while a similar percent of carers (37.5%) thought that participants looked forward to listening ‘greatly’ (see Table 1). It seems that Silver Memories fills a gap by playing music that is not available elsewhere and 100% of carers and care staff indicated they would recommend Silver Memories to others.

Future Directions

The results of this evaluation suggest that Silver Memories is a potentially powerful intervention that may improve the quality of life of some of the most vulnerable members of our society. Clear advantages of the program include its low cost and flexibility.

Table 2: Care staff and Carer responses to Silver Memory evaluation questions

Response / Question	Not At All (%)	A Little/ Mildly (%)	Moderately (%)	Very (%)	Extremely/ Greatly (%)
How would you rate the quality of <i>Silver Memories</i> ? Care staff Carer	0 0	0 0	2 (13.3) 1 (11.1)	10 (66.7) 6 (66.7)	3 (20.0) 2 (22.2)
To what extent did <i>Silver Memories</i> positively influence the morale and well-being of residents? Care staff Carer	0 1 (11.1)	0 1 (11.1)	2 (13.3) 0	4 (26.7) 3 (33.3)	9 (60.0) 4 (44.4)
To what extent did <i>Silver Memories</i> have a positive influence on the behaviour of residents? Care Staff Carer	1 (6.7) 2 (22.2)	0 0	2 (13.3) 1 (11.1)	6 (40.0) 3 (33.3)	6 (40.0) 3 (33.3)
Do residents look forward to listening to <i>Silver Memories</i> ? Care Staff Carer	2 (14.3) 1 (12.5)	1 (7.1) 1 (12.5)	4 (28.6) 3 (37.5)	5 (35.7) 0	2 (14.3) 3 (37.5)
To what extent do you think <i>Silver Memories</i> is a useful addition to the programs offered? Care Staff Carer	0 1 (11.1)	0 1 (11.1)	3 (20.0) 1 (11.1)	5 (33.3) 4 (44.4)	7 (46.7) 2 (22.2)
	Extremely Poor	Poor	Average	Above Average	Excellent
How would you rate the quality of <i>Silver Memories</i> overall? Care Staff Carer	0 0	1 (6.7) 0	3 (20.0) 3 (33.3)	7 (46.7) 2 (22.2)	4 (26.7) 4 (44.4)

Dr Catherine Travers

Australasian Centre on Ageing
The University of Queensland
St Lucia QLD 4072
25th September 2009

Department of Health Research Project 2018

Supported and funded by the Department of Health.



Residents from a range of aged care facilities have shown a significant improvement in quality of life, depression, aggressive and verbally agitated behaviour after listening to Silver Memories for 12 months as part of their regular activities.

Population

- 16 residential aged care facilities (Qld and NSW)
- 74 participants (49 females)
- 52-100 years old, with an average age of 82.8 years (SD = 8.54) at baseline.

Design and Duration

The residents listened to Silver Memories Radio consistently over the study period. Participants were divided into two groups, with one group assessed over 12 months and the other group assessed over 6 months. Data was collected at baseline and via follow up at 3 months (T1), 6 months (T2), and 12 months (T4).

Researcher

Dr Catherine Travers Research Fellow
Dementia Collaborative Research Centre
Queensland University of Technology

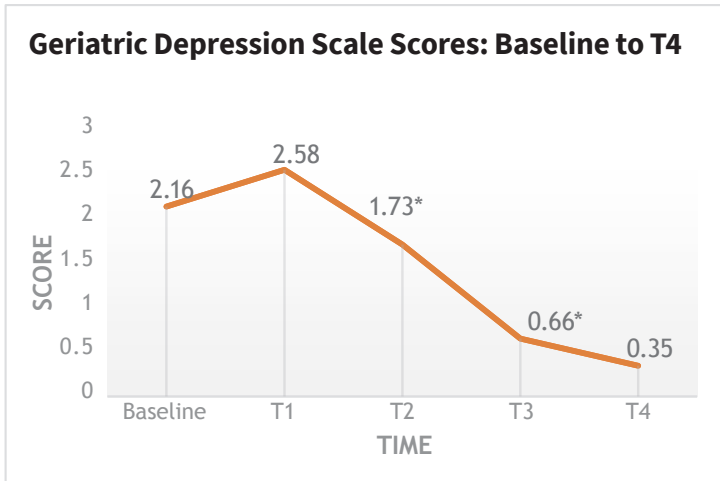
Results

Quality of Life <i>Study Coordinator's comment:</i> "An effect greater than 0.8 is large."	Significant improvement in QoL from baseline to T4 (effect size = 0.823)
Geriatric Depression Scale <i>Study Coordinator's comment:</i> "This is a large effect size."	Significant improvement from baseline to T4 (effect size = 1.53)
Cohen Mansfield Agitation Inventory (CMAI) Aggressive Behaviour	Significant improvement from baseline to T4 (medium effect size)
CMAI Physically Non Aggressive Behaviour	Significant improvement from baseline to T4
CMAI Verbally Agitated Behaviour	Significant improvement from baseline to T4

If you would like to find out about installing Silver Memories in an Aged Care Facility, contact Dene Rowling on 0429 787 201 or dene.rowling@silvermemories.com.au
For more information, visit our website silvermemories.com.au/research.html

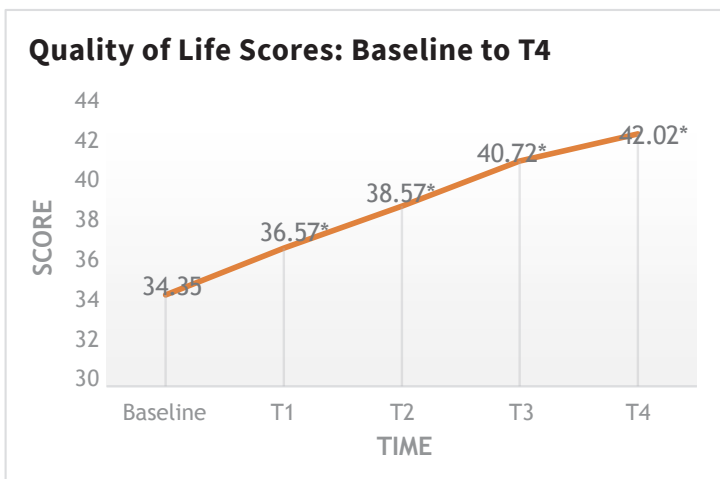
Silver Memories Research Project Results

Fig 1 Geriatric Depression Scores over 12 Months



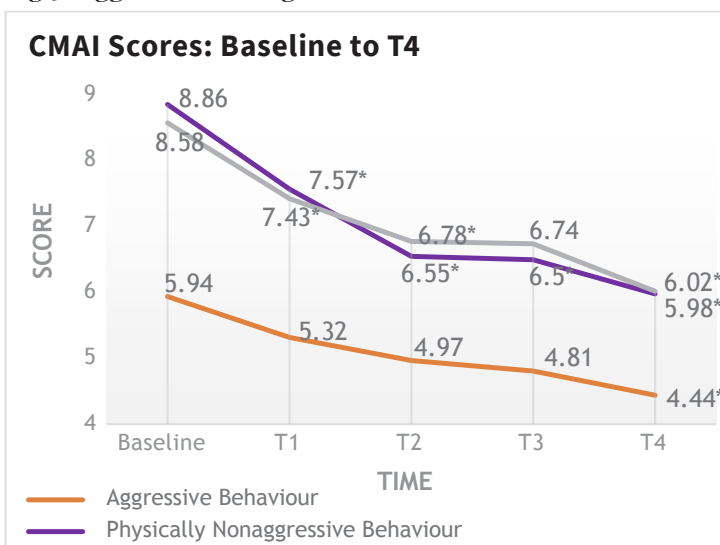
Indicates a significant improvement in resident's sense of wellbeing.

Fig 2 Quality of Life Scores over 12 Months



Shows a clear and linear improvement in perceptions about relationships with others

Fig 3 Aggression & Agitation Scores over 12 Months



Reduced indications of aggressive behaviour were reported.

If you would like to find out about installing Silver Memories in an Aged Care Facility, contact Dene Rowling on 0429 787 201 or dene.rowling@silvermemories.com.au
 For more information, visit our website silvermemories.com.au/research.html