Using music interventions in the care of people with dementia

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Abstract

The therapeutic properties of music have been recognised since antiquity. There is now a growing evidence-base to support claims to its benefit for individuals with certain health conditions, including dementia. It has been reported that music interventions can lead to improvements in cognition, behaviour and psychosocial well-being in people with the condition, as well as offering support for carers. There are a variety of types of music interventions that can be used, and it is suggested that nurses consider harnessing music's potential as part of the care they provide. This article explores the evidence-based use of music in dementia care and outlines its potential benefits.

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The therapeutic qualities of music have been noted since antiquity, with Plato noting its beneficial effects on humans (Ruud 2000) Over the past 20-30 years, there has been an increase in the use of music for therapeutic purposes (Cooke et al 2010), coinciding with the start of a growing research base in the area (Bowell and Bamford 2018). 'Music therapy' as a term is restricted to an established psychological clinical intervention, delivered by registered music therapists (British Association for Music Therapy 2017). However, there is also evidence to support the everyday use of music – such as music listening or

singing in a community group – for a variety of patient groups, including people with dementia. This article focuses on this everyday use of music, exploring its potential benefits for people with dementia and their carers, considerations for practice and research, and the nurse's role in implementing music interventions.

Benefits of music for people with dementia

The World Health Organization (WHO) (2018) defines dementia as 'a syndrome of cognitive impairment that affects memory, cognitive abilities and behaviour, and significantly interferes with a person's ability to perform daily activities'. Alzheimer's disease is the most common type of dementia (Alzheimer's Society 2017), with other types including vascular dementia, dementia with Lewy bodies, frontotemporal dementia and mixed dementia.

There are an estimated 50 million people with dementia worldwide (WHO 2019). In 2019, there were almost 885,000 older people in the UK living with the condition at a total cost of £34 billion, with 40% of this being provided by unpaid carers (Wittenberg et al 2019). In the absence of a cure for dementia, a range of interventions are required to optimise the care and well-being of people with dementia and their carers. The use of music may provide one such beneficial intervention.

In accordance with the WHO's (2018) definition, much of the research on music for dementia is focused on the cognitive and behavioural effects of music interventions, often measured by standardised scales such as the Mini-Mental State Examination (MMSE) (Creavin et al 2016) or the Cohen-Mansfield Agitation Inventory Observation tool (CMAI-O) (Griffiths et al 2020). Alongside this, in recognition that promoting 'personhood' has been an important concept in dementia care since the publication of Kitwood's (1997) seminal work, evidence is also emerging for the contribution of music to psychosocial outcomes. These various outcomes are shown in Table 1.

Cognitive benefits

Evidence for the effect of music on cognition largely relates to Alzheimer's disease. This is because the regions of the brain to encode music – as shown in magnetic resonance imaging (MRI) scans – correspond to areas where there is minimal cortical atrophy in Alzheimer's disease (Jacobsen et al 2015, King et al 2019). Findings from research suggest that when words are sung they are better remembered than when they are spoken for people with Alzheimer's disease (Simmons-Stern et al 2010, Palisson et al 2015). This has implications for practice, because it may be possible to teach novel information to people with this form of dementia in this way, including practical information needed for daily living (Simmons-Stern et al 2010).

The evidence of cognitive benefits for non-Alzheimer's dementias is less clear. A Cochrane review by van der Steen et al (2018) concluded that there was little evidence that music improved cognition in 22 randomised controlled trials. However, Cochrane reviews have tight guidelines on what constitutes quality evidence, and individual studies have found cognitve **benefits** in people with various types of dementia, including vascular and mixed dementia, as well as Alzheimer's disease (Särkämö et al 2014). Therefore, in non-randomised controlled trials and actual practice, these benefits may be more widely apparent than van der Steen's (2018) Cochrane review suggests.

Behavioural benefits

Behavioural symptoms, such as anxiety and aggression, are common in people with dementia, often because the individual feels overwhelmed by the demands of their environment (Roberton and Daffern 2020). This can be challenging for carers to manage. Sherratt et al's (2004a) literature review found that most research studies reported that music could decrease behaviour that challenges in people with dementia, though a few studies found no effect. The authors of the review suggested that this may be because the choice of music was not personalised for the individual.

Since 2004, several further studies have taken place which suggest more specifically where and when music might be beneficial in behaviour management. Götell et al (2009) and Engström et al (2011) explored the use of music during morning care activities in a residential setting. Götell et al (2009) identified that caregiver singing led to improved

communication and reduced aggressiveness on the part of the individual with dementia, compared with no music and background music. Engström et al (2011) found that humming or singing familiar songs improved verbal and non-verbal communication and suggested replacing spoken with sung requests on the part of carers. Cunningham et al (2019) used a personal mobile musical app (Memory Tracks) in care home environments to assess its use in facilitating daily care tasks such as toileting, dressing and medicines administration, identifying positive changes in behaviour and ability. These studies all indicate the potential usefulness of music in one-to-one care situations where it is delivered individually, and usually personalised. Therefore, such interventions could be incorporated into daily care situations by nurses.

Similarly, Hicks-Moore (2005) focused on the practical integration of music into care practices, but in a group setting. She reported a reduction in agitated behaviours when playing relaxing classical music at mealtimes in a nursing home for people with dementia. This finding suggests that, since people with dementia are often overstimulated, the introduction of such music might be a beneficial adaptation to the environment. These conclusions are supported by the work of Sung et al (2012), which involved a group music intervention that resulted in lower anxiety among people with dementia, although not agitation.

Psychosocial benefits and well-being

One of the main aims of the dementia care that nurses provide is to enable individuals to live well with the condition through the promotion of compassionate, person-centred care (Royal College of Nursing 2019). This goes beyond aiming to managing behavioural symptoms and involves the active promotion of psychosocial well-being and social connectedness, where the person is valued as an individual. McDermott et al (2014) developed a psychosocial model of music in dementia care based on these principles. Their research involved focus group interviews with care home residents, day hospital clients and family carers, and found that music provision based on individual preferences was highly valued, emotionally meaningful and contributed to a shared musical and cultural identity.

Other research supports these findings. Camic et al's (2013) 'singing together' group for people with dementia and their carers showed slow deterioration **in cognition** on Addenbrookes Cognitive Examination (ACE-R) and Mini Mental Status Exam (MMSE). However, the quality of life measure, Dementia Quality of Life scale (Dem-QoL-4), remained stable. They reported that singers gained a sense of fulfilment and enjoyment, and demonstrated active engagement, while attendance levels remained high. Similarly, a report from the Commission on Dementia and Music (Bowell and Bamford 2018) concluded that music-based provision for people with dementia promotes social connection, restores a sense of self and brings joy.

Benefits for carers

Most people with dementia are cared for at home by one of the estimated 700,000 friends or family members acting as primary carers (Alzheimer's Society 2018). The relationship between carer and the person they care for often changes when one in a pair develops dementia, which can be challenging for them (La Fontaine et al 2016), therefore it is important for nurses to be aware of ways to support carers in their role.

Alzheimer's Society have been running 'Singing for the Brain' programmes for people with dementia and their carers for several years. Osman et al (2016) undertook a qualitative evaluation of these programmes, finding that carers reported that attendance improved relationships with those they cared for and provided an opportunity to enjoy a shared experience. In their research, Unadkat et al (2017) adopted a relationship-centred model of care to understand how group singing in dementia for couples may benefit both. They found that the activity led to what they termed 'relationship resilience' and provided an opportunity for couples to share 'in-the-moment' creative experiences together. Similarly, Camic et al (2013) found that 'singing together' sessions had several benefits for carers, principally in meeting others in a similar situation to themselves.

As well as providing benefits for informal carers, music participation with people with dementia may also benefit professional carers, though there appears to be less research in this area. Götell et al (2009) and Engström et al (2011)

involved nurses as singing caregivers in their work and suggested that this intervention provided nurses with a tool to connect with their patients, resulting in a mutuality of communication. The work of Vella-Burrows (2009) with staff in care homes also resulted in increased engagement with patients, at the same time increasing the musical skills of the carers.

Types of music interventions

There are a variety of ways in which music activities may be delivered to people with dementia. Table 2 illustrates the different combinations of features, together with examples of different projects. These range across hospital, care home or community settings, group or one-to-one sessions, participatory or receptive (listening) delivery, live or recorded music, and whether the programme is personalised or general.

Many musical interventions take place in care homes which have a relatively stable resident population and are, arguably, easier to arrange than those in other settings, given the possibility of personalising music programmes based on greater familiarity with individuals and their tastes. Those taking place in the community – such as Singing for the Brain, Carers Create and Turtle Song (Table 2) – often encourage carers or companions to be present to assist those they care for. Perhaps the most challenging environment for music interventions to take place is the acute hospital ward, where adaptations have to be made. Daykin et al (2018) found that in a hectic ward environment, clinical routines and activities were often prioritised over musical interventions.

Group-based and one-to-one sessions are equally prevalent. A group intervention will reach more people in a given time frame and therefore be more cost-effective than one-to-one sessions. Groups can also promote social cohesion as shown in the research by Camic et al (2013) and Bowell and Bamford (2018). Group size can vary, with Sherratt et al (2004b) using groups of no more than eight people, while the Singing for the Brain groups evaluated by Bannan and Montgomery-Smith (2008) were in the region of 20 participants. There appears to be little evidence for the optimum size of group.

The advantage of one-to-one sessions is that the repertoire can be individualised and this is the focus of programmes such as Playlist for Life, Music Mirrors and Musical Walkabout. Creating lists of meaningful music requires communication with those who know the individual with dementia well, in addition to information from the individual themselves. Sherratt et al (2004b) used a musical preferences questionnaire in their research, while Lancioni et al (2015) used songs recommended by patients' families or staff as a starting point.

Most group-based music interventions, and many of the individual interventions, encourage participation on the part of the person with dementia, while others use more receptive approaches, primarily music listening. Research findings have demonstrated benefits in both modes of delivery. Götell et al (2009) found that caregivers singing with patients resulted in positive emotions more noticeably than background music alone, whereas a review by Victor et al (2016) concluded that individualised music listening was more effective than active participation in reducing anxiety and improving well-being. Sherratt et al (2004b) and Särkämo et al (2014) reported benefits of both these modes of delivery; active singing enhanced short-term memory and increased engagement, whereas music listening had a more positive effect on quality of life, reducing both the time of daytime sleeping and time engaged in meaningless activity. This research demonstrates that the aim and circumstances of any musical intervention needs to be established to achieve the optimum benefit.

Linked to the mode of delivery (participatory or receptive) is the need to consider whether to use live or recorded music. Most of the examples of participatory delivery involve live musicians, because this is often felt to be more beneficial than the use of recorded music (Cooke et al, 2010. For example live, as opposed to recorded music has been shown to be more effective in reducing apathy in people with dementia (Holmes et al 2006). Live music may be delivered by single musicians (for example Musical Walkabout: https://www.musicalwalkabout.com/) or by whole orchestras as part of their community outreach (for example Manchester Camerata: https://www.cameratacommunity.co.uk/dementia/ or the London Symphony Orchestra:https://lso.co.uk/lso-discovery/community/hospital-visits.html).

However, an issue to be considered if live – often professional – musicians are engaged in a project is the cost, because they may charge for their services. Some projects, such as Singing for the Brain, are partially supported by charities such as Alzheimer's Society, while others, such as Lost Chord and Turtle Song, are registered as charities themselves and are reliant

on direct donations, and/or depend on external support from grant-awarding bodies. Some projects, such as Musical Moments, charge care homes for delivering sessions.

The use of recorded music is usually less costly than live music. Playlist for Life and Music Mirrors are individualised records of a person's favourite music memories which can be as simple as a document listing them . which carers can use to select music to play via a digital device or CD, or to link to music on You Tube. A more interactive version can make use of mp3 players, CDs and headphones (Playlist) or information and recordings stored on a secure web page (Music Mirrors). More sophisticated examples of technology use are also available, such as the Memory Tracks mobile app (Cunningham et al 2019).

Considerations for practice

One of the main issues to consider when introducing music into dementia care is deciding who will deliver the programme or intervention. Engaging professional musicians usually involves a cost, but there are examples of projects which involve training care staff to embed a musical culture in the care setting. Bowell and Bamford (2018), Särkämö et al (2014) and Vella-Burrows (2009) provide examples of research where care staff, activity coordinators or family members receive training before being encouraged to introduce musical sessions for and with people with dementia. For example, Vella-Burrows (2009) devised a four-week programme of music theory and practice, jointly led by a nurse-musician and a theatre company. Music as Therapy International (n.d.) is a UK organisation that introduces useful techniques to care staff, suited to local needs, for example, how to calm a situation through music and movement, or how to use tempo and sound levels to good effect. However, achieving staff engagement can be challenging, and issues around culture exist; Daykin et al (2018) noted in their study how any impacts of music-making are mediated by organisational factors, citing the example of how clinical staff often interrupted a music session to perform a routine task. Vella-Burrows (2012, 2020) commented that staff confidence and role expectations therefore need to be addressed.

Another issue to consider is musical genre. Research projects, such as those undertaken by Sherratt et al (2004b) and Särkämö et al (2014), often incorporate individual preferences where possible and recommend familiar or popular songs from an individual's childhood as having biographical importance and to promote memory recall. However, Simmons-Stern et al (2010) used unfamiliar, but simple, songs when testing the ability of music to enhance memory in people with Alzheimer's disease. Although memory for sung words was enhanced in the sample when compared with spoken words, the authors do not report the severity of the dementia diagnosis, so this may not apply at all stages of the disease. Research which includes individual preferences appears to contribute to improved quality of life and well-being for people with dementia and their carers (Sherratt et al 2004b, McDermott et al 2014, Lancioni et al 2015).

Considerations for research and evaluation

While it is important for care staff to evaluate any new practices, there may be several challenges in doing so, in particular for formal research. People with dementia may be unable to engage with traditional methods of data collection such as completing questionnaires or providing verbal feedback, so establishing patient outcomes and suitable methods may need to be indirect. Observation – for example documenting reactions such as smiling, laughing, clapping or singing – can provide useful information, as can feedback from relatives and friends.

In formal research, there are challenges in conducting research with people with dementia. Gaining ethical approval for projects involving vulnerable individuals who may lack capacity is an issue, and institutional and national guidelines should be followed. Choice of methods also needs to be considered, which can range from randomised controlled trials (Harrison et al 2010, Särkämö et al 2014) to qualitative content analysis of observation sessions (Götell et al 2009). The appropriateness of clinical trials and standardised measures for dementia care research has been questioned (Gibson et al 2004, McCarney et al 2007, Camic et al 2014). McCarney et al (2007) found that research outcome related more to the nature of follow-up than

to which arm of the trial the subject was in, while Camic et al (2014) cautioned that use of standardised measures with small sample sizes can be problematic in detecting change, particularly in people with dementia and if measures lack specificity.

Cooke et al (2010) identified the need to develop a protocol for any intervention, noting the lack of detail often provided in existing studies, together with differences in intervention lengths, which can vary from four weeks (Hicks-Moore 2005) to ten weeks or more (Särkämö et al 2014). Victor et al (2016) found there was a lack of consistency in methods used and populations sampled, which may limit the generalisability of research findings.

Conclusion

Music has considerable potential to contribute to the care of people with dementia. Evidence suggests that it can have cognitive, behavioural and psychosocial benefits, as well as an ability to improve the experience of carers. There are a variety of music intervention types available and when planning its implementation, the aim, context, the individual preferences of people with dementia and how to evaluate its effectiveness should be considered. Because of their knowledge of individuals and carers, nurses and other healthcare professionals are ~~in~~ well placed to oversee, and be involved in, such practice initiatives.

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Table 1. Benefits of music for people with dementia

Benefit	Type of music intervention described	Outcomes	References
Cognitive	Communication through singing in Alzheimer's	Memory enhancement	Simmons-Stern et al 2010 Palisson et al 2015
	Singing and music listening in different settings	Improved short-term memory	Särkämö et al 2014
Behavioural	Review of various music interventions	Decrease in challenging behaviour	Sherratt et al 2004a
	Caregiver singing during morning care	Improved communication Reduced aggressiveness	Götell et al 2009
	Caregiver singing during morning care	Improved verbal and non-verbal expression	Engström et al 2011
	Personal mobile app during daily care	Improved reactions during caring activities	Cunningham et al 2019
	Relaxing classical music during mealtimes	Reduction in agitated behaviours	Hicks-Moore 2005
	Group music intervention including percussion use	Reduction in anxiety	Sung et al 2012
Psychosocial	Music provision based on individual preferences Emotionally meaningful	Highly valued Shared musical identity	McDermott et al 2014
	'Singing together' group for people with dementia and carers	Sense of fulfilment and enjoyment Stable quality of life High attendance levels	Camic et al 2013
	Review of various interventions	Promotes social connection Restores sense of self Brings joy	Bowell and Bamford 2018
Benefits for carers and those they care for	'Singing for the Brain' for people with dementia & carers	Improved relationships Shared experiences	Osman et al 2016
	Group singing for couple dyads	Relationship resilience Shared experiences	Unadkat et al 2017
	'Singing together' group for people with dementia and carers	Appreciation of meeting others in similar situation	Camic et al 2013
	Nurses as singing caregivers during work	Mutual communication	Götell et al 2009 Engström et al 2011
	Care home staff training in music provision	Increased engagement Increased musical skills of staff	Vella-Burrows 2009

Table 2. Examples of types of music interventions for people with dementia								
	Group based	**One-to-one**	**Live music**	**Recorded music**	**Participatory (singing or playing instruments)**	**Receptive (listening to music)**	**Community based**	**Institution based (including care homes)**
Singing for the Brain https://www.alzheimers.org.uk/	✓		✓		✓		✓	
Carers Create http:// www.music4wellbeing.org.uk/	✓		✓		✓		✓	
Playlist for Life https:// www.playlistforlife.org.uk/		✓		✓		✓	✓	✓
Silver Song Music Box https:// www.singforyourlife.org.uk/	✓			✓	✓		✓	✓
Music Mirrors https:// www.musicmirrors.co.uk/		✓		✓		✓	✓	
Lost Chord https://lost-chord.co.uk/	✓		✓		✓			✓
Musical Moments https://www.musical-moments.co.uk/	✓		✓		✓			✓
Turtle Song https:// www.turtlekeyarts.org.uk/ turtle-song	✓		✓		✓		✓	
Musical Walkabout https:// www.musicalwalkabout.com/		✓	✓		✓			✓