

Review

Clinical Effects of Choral Singing for Older AdultsAmy Clements-Cortés¹¹ University of Toronto, Music and Health Research Collaboratory, Baycrest Centre, Toronto, Canada**Abstract**

This paper presents a literature summary overviewing the clinical effects of choral singing with a focus on older adults. As part one of a two part paper, this review helps to establish the framework for the research study “Singing for Health Connection and Care” presented in part two. Information is offered on the psychophysiological effects of singing; social benefits of singing; emotional benefits of singing; music in long-term care facilities and outcomes for persons with dementia and their caregivers. To date, the studies conducted as examined in this review show promising results for physical, emotional, and mental health, however further research is needed. This analysis of the literature provides the necessary background information to implement future choral singing studies with older adults and their caregivers, and serves to support the need for the study undertaken in part two.

Keywords: *singing, mood, wellness, older adults, caregivers*multilingual abstract | mmd.iammonline.com**Introduction**

As the population of older adults continues to steadily increase [1] there will be an augmented need for care to be provided to these persons by both informal and formal caregivers [2]. Therefore it is important to develop and assess interventions to enhance care and overall quality of life for older adults. Singing, is a widespread activity among the adult population that appears particularly attractive to females [3,4], and is a music-making activity that is open to everyone [5]. Many older adults participated in musical activities throughout their youth and continue through adult life, and using songs from their early life can stimulate reminiscence and engagement in meaningful activity. As such, choral singing provides a platform for inclusive activity.

This paper provides a summary of literature on singing for health with a focus on older adults. It is part one of a two part paper, where Part Two presents a research study investigating the effects of singing for older adults and their caregivers for health and wellness benefits. Four databases

were searched (Medline, Psychinfo, Embase and Cinahl) with the primary search terms including: singing, health, wellness, and aging. Findings were then divided into psychophysiological effects of singing; social benefits of singing; and emotional benefits of singing, based on Hettler’s [6] dimensions model of wellness. These are outlined below alongside two further sections on the use of music in long-term care facilities and the outcomes for persons with dementia and their caregivers.

There have been limited studies on choral singing with older adults and even fewer that focused on caregivers and older adults. Studying singing and health has gained some upward focus since 2000, however studies often involved smaller sample sizes, lack of control groups and were widely variable with respect to design, scope and methods, making it challenging to draw broad conclusions [5]. Interestingly persons who were in a randomized control group study (which is often considered the gold standard in research methodology) on group singing for health promotion described feeling disappointed when they were not selected to be put in the singing group [7]. The control group- then, may subsequently render negative results, feeling let down, even in conditions where there is a wait-listed control group. It is results such as this that often make it challenging and almost unethical to not provide something that will be of benefit to all potential study participants. Many times study design does not permit for crossover due to funding, and in that way many studies involving singing have not employed control groups. Of significance is that “group singing may have potential as a therapeutic intervention in relation to long-term and progressive health conditions, such as chronic obstructive

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pulmonary disease, Parkinson’s disease and dementias” [5, p. 9].

It is beyond the scope of this article to provide a comprehensive systematic review of the literature on singing and health, but rather the present summary serves to highlight findings and gaps that might be addressed in future studies. This review serves as a framework to *Part Two: Singing for Health, Connection and Care* (Pages 13-23) as well as researchers designing choral studies for older adults.

Psychophysiological Effects of Singing

Both professional and amateur singers often remark on the many personal health benefits of music. Singing is believed to aid relaxation and ‘de-stress’ an individual [8,9]. Two biological indicators of stress are immunoglobulin A and cortisol; these can be determined by tracking changing levels in the body [8]. Immunoglobulin A, an antibody that contributes to a strengthened immune system, is generally associated with less frequent illness and overall good health. In addition, cortisol, known as the stress hormone, has been shown to reflect decreased levels of stress response [10]. Using these indicators, research has indicated that singing and listening to music both improve a localized immune response and decreased feelings of stress as measured physiologically through the amount of Immunoglobulin A and cortisol in one’s system, demonstrating an increased level of Immunoglobulin A [8,11,12], as well as a decrease of cortisol levels after participants were exposed to musical interventions [8,11,12]. Further, singing has been found to increase the release of the hormone oxytocin [13], which has a number of health benefits such as increased intimacy or bonding and reduced stress [14,15]. The physiological measures used to assess changes in relaxation and health strongly support the idea that choral singing can induce feelings of relaxation and rest in its participants and improve immune system functioning. In association with several studies reporting that singing decreases cortisol, many singers also report feelings of relaxation after singing [9,16,17], and improvements in physical health [18]. Stress and anxiety can be symptoms felt by residents in long-term care facilities due to physical conditions and changes in everyday life, and therefore singing could be considered as a possible activity to address stress.

Psychophysiological effects of singing have not yet been investigated with a specific focus on older age. However, studies in the general population could be instructive. At present it is inconclusive whether singing may improve respiratory function [19]. However singing has proven useful in improving respiratory status in young persons (average age 11.6 years) with Cystic Fibrosis [20] and improving breathing patterns in those suffering from asthma or Chronic Obstructive Pulmonary Disease (COPD) [21,22] with the majority of COPD therapeutic singing participants (average age 70) stating singing helped their breathing during the

sessions as well as overall [23]. Choral singing has been shown to possibly improve respiratory muscle strength in adults with cancer [24]. In addition, singing promotes physical stamina and proper posture, and an increased sense of arousal and energy [17] which may also lead to a relaxing, energizing and invigorating sensation. The act of singing as well as the warm-up exercises that are associated with a choir may help to reduce the symptoms of these illnesses by improving breath control.

Another common and consistent challenging issue for older adults is adequate pain management. Older adults, including those with Alzheimer’s (AD) and dementia, often suffer from chronic or acute pain [26]. Research on music and pain management has found that listening to music can decrease the perception of acute or chronic pain, often by acting as a distraction [27]. Furthermore, active music performance may increase pain threshold due to the release of endorphins into the body, thus making it an effective pain – killer [28]. The dual-effect of choral singing may help residents of long-term care facilities in effective pain management.

There is little research on choral singing specifically with long-term care home residents. One interdisciplinary study looked at the physical and emotional effects of participatory, cultural art programs (i.e. painting, writing, singing, poetry, etc.) on the overall wellbeing of older adults [29]. Some positive physical gains from these programs included fewer doctor visits, less prescription medicine taken, lower number of falls, and increased involvement in other activities. Participants also reported a greater feeling of overall health.

Social Benefits of Singing

Social benefits may be gathered from a number of sources. Broadly speaking, social benefits as part of a wellness model include rewards derived from contributing to one’s environment/community [6]. Keeping in line with the findings of the interdisciplinary study described above it has been found that creative activity provides opportunities for social engagement [29]. To date, social interaction and collective bonding are recurring themes in many studies on the benefits of singing [17,18]. While some of these studies have focused on various adult populations and groups, the results are still important to consider when developing singing interventions for older adults.

In a study of university singers’ choral experiences, 87% of participants reported they had benefited socially [9]. Furthermore, a survey of almost 600 choristers from across England identified 6 major themes and possible functions of music, including: the social function of music, claiming that choral singing offered participants a sense of friendship and support which helped to decrease feelings of loneliness [30].

The perceived social benefits of participation in choral singing with marginalized groups in society have also been

examined [31]. Common themes were: an experience of group belonging, an enjoyment of the camaraderie in a group, a feeling of pride and contribution to a finished product, and a feeling of satisfaction at creating something together. Similarly, others have found that working together towards a mutual goal and having an activity in common can bring choral participants together and facilitate social interaction [32,33]. Older adults experienced increased morale and decreased loneliness when they participated in a professionally conducted cultural program [29].

Similarly, the vulnerability that comes from singing in a group can facilitate an experience of group identity and community [33-36]. Moreover, authors have noted that participants may be exposed to alternative ways of being [36], growth [9] and learning [37]. Further, choral singing for older adults established an environment that facilitated participants having special moments, providing positivity and making friends; these themes also emerged in another study conducted with the same population [33,38].

Emotional Benefits of Singing

Participating in a group singing condition has been shown to improve mood [39], increase positive feelings and reduce negative feelings [13] as well as improve general well-being [18,25,40-44]. Singing can improve mood as self-reported by participants and also increase positive affect as observed by others [9,16,17,33,38,45]. Through improvising it has been found that singing can help to combat problems such as depression, anger, fatigue, and confusion [45]. Group music therapy sessions with mild to moderately impaired clients that included singing and familiar music also led to a decrease in depression and anxiety [46], while therapeutic singing with AD participants resulted in significantly higher verbal participation in sessions as compared to discussion groups with the same participants [47]. Emotional benefits also include: increased happiness [30,33], decreased anxiety [30,33,38], feelings of wellness [33,38] increase in energy [17,33] and a decrease in pain [33].

Others have also undertaken studies to examine the effects of choral singing on emotional health finding singers experienced improved self-esteem and feelings of rejuvenation, all of which led to an overall improvement in emotional balance [31,48]. Further, song lyrics gave the singers an opportunity to explore their emotions in a safe environment. Correspondingly, it has been found that choral singing can lead to increased feelings of identity within a group [36]. Participants who struggle socially can find total acceptance in a choir with a friendly and positive facilitator. Choral singing has also been associated with improved quality of life and emotional wellbeing [49].

Music in Long-Term Care Facilities

Music may be a useful tool in decreasing negative responsive behaviors in elderly residents of long-term care facilities diagnosed with AD or dementia. The use of music including singing during care routines, medical procedures and mealtimes for adults with dementia is well documented in the literature and has been primarily implemented to reduce aggression during these activities [50-58]. Using recorded music during mealtimes or morning care routines, or at other times of the day, has been shown to decrease agitated behaviors such as wandering, yelling, or other disruptive vocalizations [48-51,54,55,57,59,60-62].

When caregivers sing to their patients or sing together while providing care, it can result in enhanced communication, better self-expression for the resident, improved cooperation, elimination of patient resistance, increased expression of positive emotion, and increased alertness [58,63,64,65] as well as the dementia patient having an increased understanding of what was happening [64], improved speech, and decreased agitation [58,63,64,66]. Singing by professional caregivers during daily transfer situations of persons with dementia facilitated the process and transfers successfully and also provided benefits to the caregivers [67]. Specifically caregivers “enjoyed singing and experienced calmness, happiness and a spirited disposition and felt an enhanced togetherness with the residents” [67, p. 240]. They stated the residents were more alert, expressed less pain, and did not convey a fear of falling which were common issues during transfers without music. Other studies have also reported that caregivers felt an improvement in their moods and positive emotions when singing during care [52,56,58]. These singing interventions generally involve using the patient’s preferred music and encouraging them to sing along as much as possible.

A review of the effects of group singing on wellbeing and health included nine studies on group singing with people affected by dementia [37]. Based on these studies, three broad conclusions were identified: group singing for people with dementia facilitates social behavior, increases participation, and reduces anxiety and agitation.

Outcomes for Persons with Dementia and Their Caregivers

Caregivers of people living with AD and dementia often struggle with how to interact with their loved one living with cognitive impairment, and sometimes caregivers search for a new way of connecting. Participating in activities together can give caregivers a fun opportunity to share something new with their loved one. At the same time, it gives their loved one/s increased opportunities for social interaction, communication, and a sense of belonging.

To date, there are 2 studies that look specifically at the effects of choral singing groups with people diagnosed with

dementia and their caregivers [68,69]. Each of these investigations revealed inconclusive results with their quantitative data but rich results qualitatively. Camic et al [69] looked at benefits for the person with dementia as rated by both self-report and as reported by the caregiver, as well as benefits for the caregivers. Common themes included enjoyment, a sense of fulfillment, a sense of security, and a sense of purpose. Caregivers also reported a strong sense of social inclusion, as they welcomed the opportunity to interact with other caregivers who could relate to their current situation. Some were also encouraged by seeing their loved one participate in an activity the way they used to. The person with dementia and their caregiver enjoyed the chance to learn something new and try something they had never thought possible. Lastly, participation in the choir often led to increased engagement in music-related activities outside of the group. A further pilot study on group singing for persons with AD and their caregivers found that after 3 singing sessions there appeared to be increased alertness in a number of persons with AD and caregivers felt the sessions were valuable, while perceiving longer term benefits [70]. Results of this study also suggest that group singing for persons with AD and their caregivers offers a novel method of communication between them and clear advances for their relationships.

Conclusion

The knowledge of singing for health is not a new concept and is certainly an activity that is part of many long-term facilities' weekly schedules, yet it is an area that has not been extensively studied with older adults. To date, the studies conducted as examined in this highlight of the literature show promising results for physical, emotional, and mental health outcomes. Further there is a growing body of research by various healthcare disciplines outlining the benefit of singing in care provision. Due to the lack of studies focusing on residents in long-term care, and family or professional caregiver involvement, future studies looking at the benefits of singing in a choir that includes both older adults and informal or formal caregivers are needed. Additional studies are also needed to assess choral experiences and benefits for persons with varying levels of cognitive impairment and their caregivers, as this summary demonstrates there are significant gains for older adults diagnosed with a cognitive impairment. Moreover, larger studies, randomized control trial and investigations including control groups may help to generalize research findings more broadly. An increased understanding of health benefits for older adults and their caregivers could lead to enhanced quality of life long-term care provision with respect to best music practices. It is highly recommended that a variety of singing studies be implemented with these populations.

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