

PRESS RELEASE

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A SONG A DAY KEEPS DEMENTIA AT BAY

Group singalong sessions are as good as health education programmes in helping to prevent cognitive decline in elderly people.

Singapore, 16 February 2021 — Elderly people at risk of developing dementia may benefit from choral singing as an alternative to attending health education programmes. While both aim to retard/prevent age-related cognitive decline, new research by the Yong Loo Lin School of Medicine, National University of Singapore (NUS) suggests that choral singing intervention (CSI) is equally effective in delaying cognitive decline as a structured health education programme (HEP) targeting known risk factors of dementia such as hypertension, obesity, smoking, depression, physical inactivity, diabetes, and social isolation.

COGNITIVE DECLINE AMONG THE ELDERLY

Cognitive function declines with increasing age. This universal phenomenon affects the majority of Singaporean elders. Impaired cognitive function presents a major obstacle to healthy, functional, productive and successful aging. With a rapidly-aging population, effective interventions are critical to maintaining good cognitive function and preventing age-related cognitive decline.

THE INTERVENTION PROGRAMMES – CHORAL SINGING VERSUS HEALTH EDUCATION PROGRAMME

In a randomised controlled trial (RCT), Dr Feng Lei, a research assistant professor from the Department of Psychological Medicine at NUS Medicine worked with 93 participants who had an average age of 70. One group of these senior citizens were assigned to the choral singing intervention led by professional musicians, while a second group attended the health education programme conducted by family physicians, specialist clinicians and community nurses. This established programme comprised short talks as well as activities that emphasised memory work and the acquisition of certain skills.

For a period of two years from 2015 to 2017, the choral group sang weekly at the Yong Siew Toh Conservatory of Music, NUS. Each session was an hour long and participants were exposed to the musical, social, and physical aspects of choral singing. The focus during the sessions was to educate participants to understand the concept of sound, the mechanics of the singing voice, and to differentiate good from bad singing.

Later in the programme, participants learned to sing in different parts. The parts were taught aurally and slowly, helping each singer to understand how they represent different lines in the musical harmony at any point in a musical piece with two or more parts. Several performances were also included as part of the intervention programme, the purpose of which was to promote motivation and a sense of purpose, pride and accomplishment. The participants also performed at the Victoria Concert Hall for the 2019 Voices of Singapore Festival.

Over the same period of time, the Health Education Programme was also held weekly, at the Training and Research Academy in Jurong Point (TaRA@JP). The hour-long sessions consisted of short talks on a health-related topic – diabetes, physical activities, healthy eating, depression. Participants also took part in activities that required memory work and the acquisition of certain skills, though none involved singing.

Comparing both intervention programmes, Dr Feng Lei and his team found common elements such as social interactions, a sense of belonging and the building of friendships over time.

CHORAL SINGING AS A PROMISING CANDIDATE TO REDUCE COGNITIVE DECLINE

Choral singing is a novel and promising candidate that has not yet been assessed by a well-designed clinical trial. Based on existing trials and studies, people engaging in lifelong music-making have been found to have better cognitive outcomes later in life. Both amateur and professional singers and musicians have brain features younger than their chronological age, suggesting that music-making has an age-decelerating effect. Singing may therefore be an engaging and effective way to prevent age-related cognitive decline.

To measure the results of the study, the primary outcome was the change in cognitive function during the intervention period. Additionally, secondary biological outcome variables were also measured, including brain magnetic resonance imaging (MRI) metrics, blood markers of immunosenescence and peripheral markers of oxidative damage.

The study, which was published in the bio-medical journal, *Aging*, suggests the possibility of choral singing being superior to health education in promoting cognitive health in older people. A definitive conclusion cannot however be drawn, given inadequate statistical power and inconsistent findings using different analytical approaches.

“Our study is the first randomised trial in the world that systematically assessed the effects of singing on cognitive decline in aging and the potential effects on brain imaging, immune system and oxidative damage markers. Our findings from the very first RCT on this topic suggest that choral singing is a potentially useful intervention for the promotion of cognitive health in aging. Choral singing is a safe and enjoyable activity, and is likely to be embraced by the community. Policy makers may consider promoting choral singing for healthy and active aging of seniors in the community, when health authorities determine that the Covid-19 pandemic situation has been resolved. Choral singing is especially relevant for countries where existing resources are available”, said Dr Feng Lei.

“There is no cure for dementia and ageing without dementia and disability is possible by adopting lifestyle behaviours which you enjoy and make you happy such as choral singing. Other alternatives include horticulture, strong social network, exercise with cognitive stimulation, brain healthy diet, having a purpose in life and making sure all your chronic diseases are under control,” added Associate Professor Reshma Merchant, from the NUS Medicine Department of Medicine and Head & Senior Consultant of the Division of Geriatric Medicine, National University Hospital.

For media enquiries, please contact:

Sally TOH
Senior Assistant Director, Communications
Yong Loo Lin School of Medicine
National University of Singapore
Tel: +65 8100 4781
Email: sally.toh@nus.edu.sg

About National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. We have 17 faculties across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established our NUS Overseas Colleges programme in more than 15 cities around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, 31 university-level research institutes, research centres of excellence and corporate labs focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity.

For more information on NUS, please visit www.nus.edu.sg.

About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is Asia's leading medical school and ranks among the best in the world (Times Higher Education World University Rankings 2019 by subject and the Quacquarelli Symonds (QS) World University Rankings by Subject 2019).

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