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ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/waaa20

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To cite this article: J. Yoon Irons, David Sheffield & Trish Vella-Burrows (03 Apr 2025): Health and Wellbeing Benefits of Group Singing for Older People, Activities, Adaptation & Aging, DOI: 10.1080/01924788.2025.2484918

To link to this article: <https://doi.org/10.1080/01924788.2025.2484918>



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Published online: 03 Apr 2025.



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Health and Wellbeing Benefits of Group Singing for Older People

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ABSTRACT

Numerous reports indicate reduced wellbeing, and more loneliness was experienced by older adults during the COVID-19 pandemic, but we know little about the experiences and wellbeing of group singers. This research aimed to assess the wellbeing and loneliness of older adults in an open-to-all singing group before and during the pandemic in the UK as well as hearing about their experiences. Older adults who participated in group singing completed assessments of wellbeing (EQ-5D-5 L) and loneliness (De Jong loneliness questionnaires) and provided subjective accounts of their singing experiences before and during the pandemic. The findings suggest that there were no differences in any dimension of wellbeing and loneliness scores prior to versus during the pandemic, although singers reported poorer overall health during the pandemic compared with singers before the pandemic. Additionally, singers' subjective accounts demonstrated the benefits of group singing before and during the pandemic were largely similar in terms of feeling positive, experiencing enjoyment and having meaningful social connections. Interestingly, singers described unique experiences of online singing during the pandemic that "nullified the effects of lockdown," highlighting that singing was sustained during the "extraordinary circumstances."

ARTICLE HISTORY

Received 13 October 2023

Accepted 22 March 2025



KEYWORDS

Wellbeing; loneliness;
older adults; group singing;
COVID-19

Introduction

Older people's wellbeing and loneliness

Given the aging population, the quality of life of those living longer, Age UK (2017) produced an Index of Wellbeing in Later Life based on older people's lived experiences. The Index's domains include elements of wellbeing centering on physical and mental health, physical activities, civic, creative, and cultural participation, and social connections and friendships (Age UK 2017). There are age-related specific barriers to engaging in these activities which could promote wellbeing; these include living with disabilities, recurrent and chronic illnesses or being a caregiver for a partner. Each of these are significant

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challenges that compromise activities related to wellbeing in older age and frequently lead to isolation and loneliness (Age UK 2021).

Loneliness and isolation are substantial and growing public health concerns in the UK. Around 1.4 million adults aged over 50 were reported to suffer from loneliness in 2016/7. This figure is predicted to rise to two million by 2025/6 (Age UK, 2018). A longitudinal study involving adults aged 50 and over living in the UK found that both social isolation and loneliness have complex relationship with wellbeing (Shankar et al., 2015). A lack of social connections, feeling lonely or being socially isolated has been reported to impact physical health: There is an increased risk of developing high blood pressure (Hawkley et al., 2010), and of developing coronary heart disease and stroke (Valtorta et al., 2016). Further, studies report that the effects of loneliness on mortality are at least as large as other risk factors, such as obesity and cigarette smoking (Holt-Lunstad et al., 2010). During the COVID-19 pandemic, Age UK and others reported that older people were severely and disproportionately affected (Age UK, 2021; Richardson et al., 2020), and loneliness was negatively associated with well-being (Gubler et al., 2021; Mäkinen et al., 2021). In 2020, 89% of deaths related to COVID-19 in England and Wales occurred in people over 65 years age, many of whom were living in care homes, and they were acutely affected (Inauen & Zhou, 2020), and unable to see their families (Age UK, 2021). Age UK reported this as a “new wave of loneliness” among older people (Age UK, 2021).

Conceptual framework

Five Ways to Wellbeing is an evidence-based framework to promote mental wellbeing (Aked et al., 2008), that is endorsed by the National Health System (NHS) in the UK. This framework includes five ways to support well-being: (1) connect with other people; (2) be physically active; (3) learn new skills; (4) give to others; and (5) pay attention to the present moment (be mindful) (NHS, 2022). Participation in group singing programmes is an activity that involves a combination of cognitive, psychosocial and physical components (Coulton et al., 2015; Särkämö, 2018) that align with the Five Ways to Wellbeing framework. Numerous research shows that group singing provides, engenders, and enhances the five-ways to mental wellbeing. First, it is well accepted that group singing is an enjoyable activity that enhances social connections (Irons & Hancox, 2021). Second, while singing, singers are actively engaging their body, the whole respiratory system, the speaking apparatus, the brain, to produce sounds (Irons et al., 2019). Third, group singing also offers opportunities to continuously learn new skills, new songs, new musical genre, new words, expression, or language. For some, performance opportunities with their group might present a new set of challenges supporting learning new skills. Fourth, group singing allows singers to give their time and skills to

others: for example, some singers might volunteer to help with refreshments or organizing song sheets. Others may help someone by providing a listening ear. In group singing practice, we observe a range of small acts of giving (Irons et al., 2022). Fifth, singing is also a mindful activity in which singers are required to pay attention to the moment, while they sing songs with others. Due to the music being a time-based production, singers are forced to be in the moment, in time with the music and each other to produce the required sounds. Additionally, singing actively engages with one's cognitive function (e.g., remembering lyrics, and other musical expressions), which requires singers' full concentration in the moment (Irons & Hancox, 2021). Accordingly, group singing is well-placed to provide support for older adults.

Group singing for older adults

In 2015, the UK's National Institute of Health and Care Excellence guidance on independence and mental wellbeing for older people recommended, "singing programmes, in particular, those involving a professionally led community choir" (NICE, 2015, p. 7). Importantly, open-to-all community singing groups have become increasingly popular in the UK. Typically, the open-to-all singing groups require no entry auditions, no ability to read music, and no previous singing experience. They are led by professional singing group leaders and focus on enjoyment and wellbeing rather than performances of a high technical standard. A growing body of evidence links community group singing to physical and psychosocial wellbeing in older people (Creech et al., 2014; Davidson et al., 2014; Hillman, 2002; Skingley & Vella-Burrows, 2010; Skingley et al., 2016). Further, group singing was found to provide a cost-effective intervention strategy for mental health-related quality of life in a UK-based study (Coulton et al., 2015).

Benefits of open-to-all community group singing on wellbeing

A growing body of evidence links community group singing to physical and psychosocial wellbeing (Clift & Hancox, 2010; Kreutz et al., 2004), and moreover to wellbeing in older age (Coulton et al., 2015; Skingley & Vella-Burrows, 2010; Skingley et al., 2016). An emphasis on "active ageing" for wellbeing as people approach and reach older age is driven by rapidly rising health and social care costs associated with aging populations across the UK and Europe (European Commission, 2021).

Studies have shown that pre-lockdown, community group singing for older people helps to mitigate negative feelings. They also show that wellbeing factors associated with group singing align with specific domains of established wellbeing frameworks. For example, three randomized controlled studies involving: i) mixed ethnicity community choir singers with a mean age of

71.3 years ($n = 390$) (Johnson et al., 2020); ii) white British community group singers aged 60+ ($n = 258$) (Coulton et al., 2015; Skingley et al., 2016; and iii) mixed ethnicity chorale singers from Washington DC aged 64 years and over ($n = 166$) (Cohen et al., 2006) show links to the “thinking skills,” “friendships” and “creative and cultural participation” domains on the Index of Wellbeing in Later Life (Age UK, 2017). Findings also map onto the Five Ways to Wellbeing in terms of “connecting with others,” “being active,” “noticing things,” “learning” and “giving” (peer support) (Aked et al., 2008). They also found improvements in “happiness,” “anxiety” (reduction), “worthwhileness” and “life satisfaction” as assessed by the ONS subjective wellbeing measure (ONS, 2022). Thus, group singing may support wellbeing by promoting the

COVID restrictions and remote group singing

On 23rd March 2020, the UK government imposed the first lockdown as the key public health measure of combating the fast-spreading coronavirus. As a result of such drastic measures, all in-person community activities were prohibited including open-to-all community singing groups. Around this time, the reports on “Balcony singing” from Italy across the Europe were reported (Thorpe, 2020), which demonstrated that people wanted to connect to each other through songs and music making even though all direct social contacts were curtailed. Community singing groups then established online singing programmes to connect with each other and continue their singing activities. Daffern et al. (2021) observed that some online technologies enabled community groups to sing remotely in the UK.

Over 50% of people in the UK reported increased stress, anxiety and isolation associated with the lockdown in April 2020 (ONS, 2022). Given the negative effects of COVID on people’s wellbeing, the current investigation sought to understand how the wellbeing effects of online singing activities during the lockdown differ from in-person singing prior to the COVID-19 pandemic in older adults. We hypothesize that wellbeing would be lower, and loneliness would be higher during the pandemic online sessions compared to pre-pandemic in-person session. Additionally, we explore how older adults described the wellbeing benefits of group singing.

Methods

Study design

This study followed two OTA community singing groups between June 2019 and June 2020. At two time points, i.e., before the pandemic (Pre-P) and during the pandemic (Peri-P), we administered a loneliness questionnaire (6-item scale, De Jong-Gierveld & Tilburg, 2006) and wellbeing questionnaire

(EQ-5D-5 L) (Cavrini et al., 2012). Additionally, we asked open-ended questions about singers' subjective experiences (e.g., *what have you found beneficial? what was less helpful?*). Participants filled out a paper-based survey before the pandemic (Pre-P) and online-based survey during the pandemic (Peri-P) via the Qualtrics platform. This study was approved by the University of Derby College of Health, Psychology and Social Care Research Ethics Committee. Participants provided informed consents prior to participating in the study.

Participants

We recruited participants from two existing OTA community singing groups. The inclusion criteria were:

- Being part of OTA community singing groups and willing to take part in the study;
- Having no dementia, or any other cognitive impairments;
- Being over 50 years old and able to read and write in basic English.

The singing groups were based in South-East England and met pre-pandemic weekly for an hour of group singing which was followed by refreshments. The singing groups were open to senior citizens in the community without an audition and including all abilities; singers were not required to be able to read music. They sang songs from memory or learnt new songs by ear. Song repertoire included popular songs from 60s or 70s and well-known traditional folk songs. The facilitators, with over 10-year experiences of leading singing groups, accompanied the group singing with guitar. Each session started with physical warm-ups, then followed by vocal warm-ups and song singing. Singers willing to participate in the study provided signed consent forms prior to data collection; singers who chose not to participate in the study continued to sing in the groups. During the pandemic lockdown, singers from these groups were invited to join weekly, hour-long online Zoom singings sessions, which included the same musical content and time for social interactions, for example, using the breakout room function.

Data collection

At two time points, i.e., before the pandemic (Pre-P) and during the pandemic (Peri-P), we administered the 6-item De Jong-Gierveld & Tilburg, (2006), a reliable and validated ($\alpha = 0.70$ to 0.75) social wellbeing measure containing questions about emotional loneliness (feeling of missing an intimate relationship) and social loneliness (missing a wider social network). Respondent can choose either, “yes,” “more or less” or “no” to the six statements. On the

negatively worded questions (#1,2 & 3), the neutral (“more or less”) and positive answers (“yes”) are scored as “1,” while “no” is scored as “0.” On the positively worded questions (#4,5 & 6), the neutral and negative answers are scored as “1,” while “yes” is scored as “0.” After summing scores, the possible range of scores is between 0 and 6, 0 being the least lonely and 6 being the most lonely (De Jong-Gierveld & Tilburg, 2006).

Participants also completed the EuroQol (EQ-5D-5 L), which is a widely used health status questionnaire with good reliability and validity. EQ-5D-5 L consists of five domains: namely, mobility, self-care, usual activities, pain/discomfort, and depression/anxiety. For each domain, there are five statements that respondent can choose from. Additionally, respondents will give a number out of 100 for their overall health status: 0 being the worst one can imagine and 100 being the best health one can imagine (Cavrini et al., 2012).

Data analysis

The quantitative data from the Loneliness scale and EQ-5D-5 L were analyzed using SPSS (version 27). Following assumption testing, we conducted *t*-tests to compare the scores from Pre-P with those Peri-P, using an alpha value of 0.05 and reported effect sizes using Cohen’s (1988) criteria to aid interpretation with *d* of 0.2 as small, 0.5 as medium and 0.8 as large. Additionally, we examined relationships between loneliness and EQ-5D-5 L Pre-P and Peri-P using Spearman’s correlations.

The qualitative data were derived from the open-ended questions included in the questionnaires: for example, in the pre-pandemic questionnaire, we asked “Could you tell us about your experience in singing with your group?.” For the during pandemic questionnaires, we asked “What was helpful about singing via Zoom?; What was less helpful or what did you miss most when singing via Zoom?; Is there anything else you would like to let us know about your experience in singing with your group?”

All participants’ responses were included in the qualitative analysis. Using the inductive thematic analysis method (Braun & Clarke, 2006), the authors took the following six steps: (i) familiarising with the data (e.g., reading the participants’ responses again and again), (ii) developing initial codes (e.g., breaking the data down into smaller, more meaningful pieces), (iii) searching for themes/generating initial themes (e.g., looking for similarities, connections, and patterns), (iv) reviewing themes (e.g., considering how the themes relate to each other and the data set as a whole), (v) defining themes (e.g., explaining each theme and checking whether each theme captures its essence), and (vi) writing up the themes (e.g., providing detailed description of each theme with illustrative quotes) (Braun & Clarke, 2006). The first and third authors undertook the initial three stages of the analysis, then, with the second

author, they completed the later stages of analysis of reviewing and defining themes.

The authors recognize that they have actively co-constructed meaning with the participants' data and generated the themes and sub-themes (Braun & Clarke, 2022; Finlay, 2021). Such a constructivist epistemological position is acknowledged. The authors with Asian (JYI) and Caucasian (DS & TVB) backgrounds have been working on the topic of group singing. While DS has published predominantly using quantitative methodologies, JYI and TVB are experienced qualitative researchers with several publications. In order to move beyond their subjectivity and cultural context, and avoid misrepresentation, the authors employed reflexivity, which guided the research process (Pillow, 2003), as well as considering the big eight criteria for qualitative research (i.e., worthy topic, rich rigor, sincerity, credibility, resonance, significant contribution, ethics, meaningful coherence (Yadav, 2022).

Results

Our original intention was to follow the same participants during the one-year study period. However, due to the outbreak of COVID-19, the in-person group singing was moved to an online setting, which resulted in majority of the members not attending due to number of reasons (e.g., difficulties with the technology, not having access to digital devices). However, this new modality and different circumstances (e.g., being at home most of the time) also attracted new members. We compared these two cohorts on their wellbeing and health status using between-group comparisons, as only 18 participants completed both the pre- and peri-pandemic surveys despite 62 participants providing data from before the pandemic (Pre-P) and 61 participants providing data during the pandemic (Peri-P). Fewer participants completed the loneliness measure; 57 and 59 participants completed the loneliness measures before and during the pandemic, respectively. Table 1 presents the characteristics of both groups; participants did not differ on those reported characteristics. On average, participants were over 70 years old, and the majority reported living with a health condition, such as anxiety, hypertension and cancer. The length of time that participants had been engaging with group singing varied ranging from a couple of weeks to 21 years. Over 90% of participants were White British. In both groups, over 70% were female. There were no differences between groups on any of these characteristics.

Quantitative analysis of EQ-5D-5 L and loneliness scale

Findings of analysis indicated that the domains of EQ-5D-5 L and loneliness scores were similar in both cohorts (all $p > .10$) (see Table 2 and Figure 1). Moreover, the patterning of the extent of problems across domains was similar

Table 1. Characteristics of Survey Respondents.

	Gender	Age – mean (SD/range)	Marital status	Ethnicity	Singing history - mean (SD, range)	Health condition
Pre-Pandemic Before the pandemic (n = 62)	Male = 15 (24%) Female = 47 (76%)	74.1 (6.1/63–90) years old	Married = 26 (42%) Not married = 6 (10%) Divorced = 9 (15%) Widowed = 21 (34%)	Caucasian = 55 (91%) Black = 0 (0%) Asian = 2 (4%) Mixed = 1 (2%) Other = 2 (4%)	4.01 years (3.55 years; 2 weeks – 21 years)	Yes = 60 (97%) No = 2 (3%)
Peri-Pandemic During the 1 st UK lockdown (n = 61)	Male = 15 (25%) Female = 46 (75%)	72.5 (6.2/60–88) years old	Married = 30 (50%) Not married = 7 (12%) Divorced = 14 (23%) Widowed = 9 (15%)	Caucasian = 55 (93%) Black = 2 (3%) Asian = 2 (3%) Mixed = 0 (0%) Other = 0 (0%)	3.78 years (3.07 years; 4 weeks – 10 years)	Yes = 59 (97%) No = 2 (3%)

Table 2. Results of EQ-5D-5 L and Loneliness Scale (Means ± SD).

	EQ-5D-5 L: Mobility	EQ-5D-5 L: Selfcare	EQ-5D-5 L: Usual Activities	EQ-5D-5 L: Pain/ discomfort	EQ-5D-5 L: Anxiety/ Depression	EQ-5D-5 L: Overall health	Loneliness**
Pre-Pandemic Before the pandemic (n = 62)	1.47 ± 0.76	1.13 ± 0.42	1.44 ± 0.72	1.77 ± 0.78	1.58 ± 0.67	82.37 ± 13.02*	2.38 ± 1.93
Peri-Pandemic During the 1 st UK lockdown (n = 61)	1.54 ± 0.87	1.16 ± 0.49	1.51 ± 0.72	1.93 ± 0.85	1.66 ± 0.73	76.07 ± 17.05*	2.44 ± 1.72
Cohen's d	0.09	0.08	0.10	0.20	0.11	0.42	0.03

**p* < .05 differences between pre- and peri-groups.
**There were only 57 and 59 participants who completed the loneliness measures before and during the pandemic, respectively.

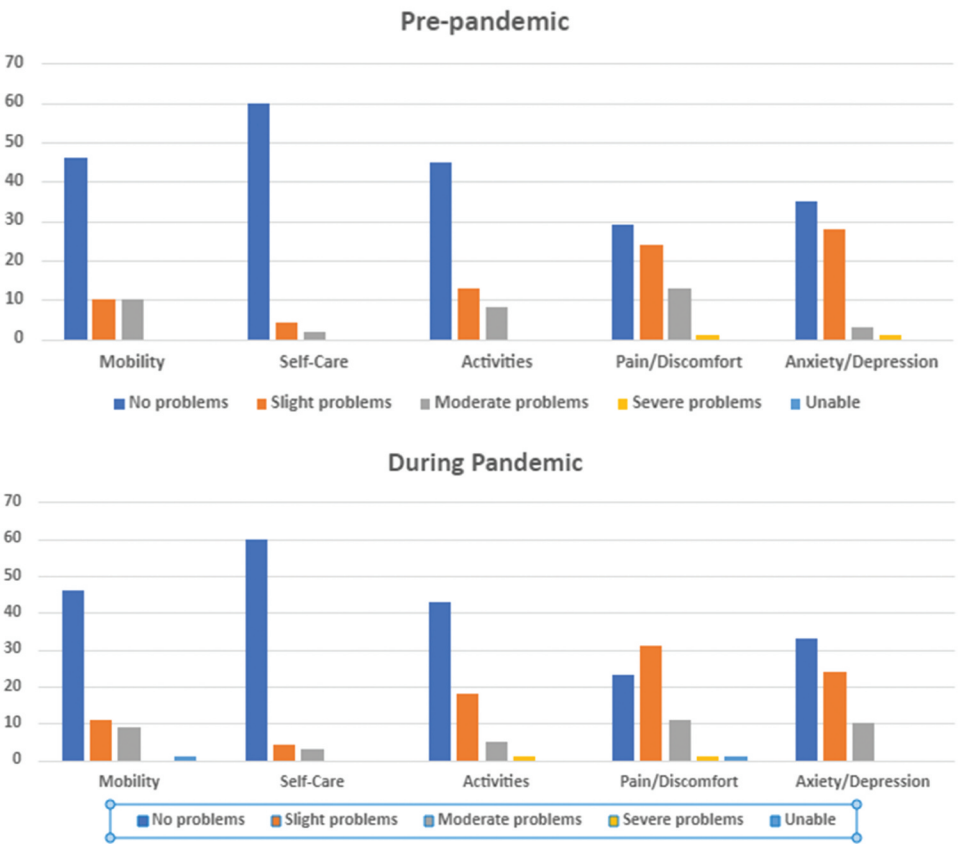


Figure 1. Numbers of participants in each EQ-5D-5L category before and during the COVID-19 pandemic.

with only two individuals at each time point indicating severe or extreme problems in at least one domain. However, overall health (EQ-5D-5 L) scores were different: singers reported poorer overall health score during the pandemic compared with singers before the pandemic, with a small to medium

effect ($t = 2.31, p = .02, d = 0.42$). Singers during the pandemic reported similar loneliness to those before the pandemic; the difference was not significant and the effect size was very small ($t = -.17; p = .87, d = -0.03$). Pre-pandemic, loneliness was not related to overall health on the EQ-5D-5 L (Spearman's $\rho = -0.23, p = .07$) but was related to anxiety/depression domain scores ($\rho = -0.31, p = .01$). By contrast, peri-pandemic loneliness was significantly related to overall health on the EQ-5D-5 L ($\rho = -0.42, p < 0.001$) and was more strongly related to anxiety/depression domain scores ($\rho = -0.52, p < 0.001$).

Qualitative analysis

Qualitative analysis of singers' subjective experience of group singing revealed similar themes in singers before the pandemic and singers during the pandemic. A range of positive impacts on wellbeing were highlighted at both time points. Table 3(a) illustrates themes from both time periods.

In the pre-pandemic data, the main theme was centered around enhanced "Sense of wellbeing;" there were four sub-themes: (i) enjoyment & positive feelings, (ii) social connections & friendship, (iii) perceived health benefits, and (iv) enhanced confidence.

For the first sub-theme, "enjoyment & positive feelings," singers reported that group singing evoked a range of positive emotions: for example, tingly feeling when harmonizing, hugely enjoyable, buzzing. Within the sub-theme of enjoyment and positive feelings, feeling uplifted, having fun time, as well as experiencing pleasure through group singing were strongly reported. The second sub-theme, "Social Connections & Friendship," highlighted that group singing provided a great platform for socializing. Evidently, group singing provided social platform at the rehearsals (during singing), as well as enriched their social life outside of singing (e.g., "go out and have coffee"). The third sub-theme, "Perceived health benefits," is associated with both physical and mental health improvements. Respondents described improved breathing, reduced stress. This sub-theme highlighted that group singing offered respiratory exercises and singers ascertained enhanced mental wellbeing. Finally, the fourth sub-

Table 3a. Themes and Sub-Themes of Group Singing Experience Before and During the Pandemic.

Pre-Pandemic	Peri-Pandemic
Sense of wellbeing	(I) Sense of wellbeing
(1) Enjoyment & Positive feelings	(1) Positive feelings & Enjoyment
(2) Social connections & Friendship	(2) Maintaining social connections
(3) Perceived health benefits	(3) Perceived health benefits
(4) Building confidence	(II) Extraordinary circumstances
	(1) "Nullifying the effects of lockdown"
	(2) Experiencing normality
	(3) "Not quite the same as before"
	(4) Difficulties with technology

theme “Building confidence” demonstrated that group singing enhanced singers’ confidence and self-esteem. The participants from community singing groups were engaged in singing through a non-judgmental approach, with the emphasis of making sounds together and having a good time. This differs from the practice of a traditional choir, which usually emphasizes producing perfect harmony and/or performances. Singers’ experience of boosting their confidence through group singing seems to be interlinked with having enjoyable singing and companionship experiences.

In the peri-pandemic data, there were two main themes: (i) sense of well-being and (ii) extraordinary circumstances (Table 3(a,b)). The sense of well-being theme and its sub-themes are comparable to those of pre-pandemic, while the extraordinary circumstance’s theme is unique to this time period and group of singers.

Within the sense of wellbeing main theme, there were three sub-themes: (i) enjoyment & positive feelings, (ii) maintaining social connections, and (iii) perceived health benefits. The first sub-theme, “enjoyment & positive feelings,” highlights that online singing provided enjoyable experiences. Respondents expressed online singing was uplifting, inspiring, and great fun. This was similar to those of pre-pandemic data. The second sub-theme, “Maintaining social connections,” demonstrates that taking part in the online sessions allowed singers to meet fellow singers and exchange news with each other over Zoom, which was important for the singers. The third sub-theme is associated with perceived health benefits. Reports of physical and mental health benefits were recorded. Additionally, the online singers reported that learning new songs was stimulating and singing helped breathe better. These reported health benefits during the pandemic did not seem to be different from the pre-pandemic data in the current study.

Further, the “Extraordinary circumstances” theme yielded three sub-themes, concerning with the lockdown: (i) Experiencing normality; (ii) “Nullifying the effects of lockdown”; (iii) Difficulties with technology.

The first sub-theme, “Experiencing normality,” highlights that online group singing was perceived as a lifeline for the older adults, providing a sense of regularity and normality. Having the regular weekly sessions offered continuity and structure, while the situation with COVID-19 seemed unpredictable and uncontrollable. The second sub-theme is related to singers’ coping with the enforced isolation, “Nullifying its effects.” Online sessions were a lifeline, “nullifying the effects of lockdown” and helped “cope with lockdown in a more positive way.” Online singing helped the participants cope with the isolating situation. For some singers, online singing was a helpful distraction from the pandemic, and for others it provided positivity. Nonetheless, online singing presented challenges too, as this emerged as the third sub-theme, “Difficulties with technology.” This sub-theme highlights that the transition from in-person singing to online singing was not straightforward for participants.

Table 3b. Themes, Sub-Themes and Representative Quotes.

Time	Themes	Sub-themes	Representative quotes
Pre-Pandemic	Sense of wellbeing	Enjoyment & Positive feelings	I get a tingly feeling when harmonizing.
			We all turn up quietly expectant and come out buzzing, chatting and probably singing. We love it!
			A wonderful experience, uplifting.
	Social connections & Friendship		A relaxing and satisfying experience.
			A good lively singing session often/usually makes me feel much lighter and happy after the event.
			It's a good "meeting place" with friends and meeting other singers.
	Perceived health benefits		I've made new acquaintances and afterward we usually go off for coffee and chat. It gives a good sense of belonging and feeling valued.
			[Singing group] has enriched my social life as I now have many more acquaintances.
			It also helps my breathing. I have bronchiectasis so this is good
	Building confidence		Singing takes away the negative thoughts that people like myself who have gone through cancer, always harbor.
			Singing reduces any depression or negativity which may be present on that day.
			A bit like having gone to the gym and felt better after a good workout, that it feels mentally beneficial in a positive way.
		It's helping to give me confidence.	
		Singing with the group is a wonderful way to build confidence and to enhance creativity.	
			It [singing] certainly gives me confidence.

(Continued)

Table 3b. (Continued).

Time	Themes	Sub-themes	Representative quotes
Peri-Pandemic During the 1 st UK lockdown	Extraordinary circumstances	"Nullifying the effects of lockdown"	[Zoom singing has] nullifying the effects of lockdown. this is so much better than nothing. obviously not as fun as being live so to speak but nevertheless highlight of the week during Lockdown for an hour or so the singing has helped to banish all other thoughts about the global and my personal situation. I feel more positive and happier after it! I think all these benefits [of singing] have helped me cope with lockdown in a more positive way. [Singing is] an amazing way to keep positive and well balanced. Without [singing] life would be much worse.
			It is good to have the continuity and routine of singing. At the beginning of quarantine, I felt quite cut off and naturally concerned about the situation we were all in. Just seeing other people was a link that felt "normal" and made me happier. [Singing] retains structure in the week. I.e., a regular activity at the same time every Monday. Sense of continuity during lockdown.
		Experiencing normality	It has given me a good reason to get up early on Monday mornings. It's not quite the same not being able to hear the lovely sound that we make when we sing together. Not as good as the real thing but great to see everyone.
			[I miss] responding together with sound and hearing each other sing or spontaneous comments or laughs. This "isolated singing" lost much of the communal uplift and chemistry that real sessions give us all. [I miss] live interactions and the buzz.
		"Not quite the same as before"	[I] miss the reinforcement one gets with normal group singing [Zoom singing has] inability to sing in chorus due to technical features, we have to mute the sound. [I have] difficulty of hearing and chatting when mics are turned on because of cross-interference. I find all video meetings frustrating and hard on the eyes. I was unable to enjoy with Zoom owing to the fact that my laptop is too elderly to have or facilitate a microphone or camera.
			[I] can't do Zoom. [I] look forward to meeting in person. I miss members of the group who haven't been able to join the Zoom sessions, perhaps because they're older and don't use online technology.
		Difficulties with technology	[Singing] gives me a feeling of joy and is exhilarating. Just been able to sing. Fills me with joy. It [Zoom] reunited me with the singing group; seeing their familiar faces was very positive. It has been a great source of delight to be connected to MM, albeit by Zoom. It is really excellent and long may it continue.
			It [singing session] is probably the best day of my week. Being in some form of contact with people I am used to singing with. Still being able to check in and see people even if it's just online it's better than nothing. [Zoom enabled us] to see everyone and feel connected again. Seeing others and knowing they are OK Seeing people, hearing their voices, still that feeling of belonging to a group.
		Sense of wellbeing	[Singing] has big part in keeping us both physically and mentally well on our life journeys. Learning new songs was stimulating. It made me use my lungs to sing which made me aware of the health aspects of singing. I thought the coming together of the community to sing and chat was invaluable for mental wellbeing.

Additionally, not being able to sing simultaneously together during online sessions was also the source of frustration.

Discussion

This study aimed to offer insights into the benefits of community group singing for health and wellbeing status of UK older adults before and during the pandemic. As we hypothesized, older adults' overall health status was significantly worse during the pandemic compared with pre-pandemic. However, there were no differences in loneliness or the patterns of the well-being scores (i.e., mobility, self-care, usual activity, pain/discomfort and anxiety/depression); very few participants from both pre and during the pandemic cohorts indicated severe or extreme problems in any domain. Moreover, based on the qualitative findings the benefits of group singing before and during the pandemic were largely similar. At both times, older singers experienced enhanced sense of wellbeing, such as positive feelings, enjoyment, perceived health benefits, and having meaningful social connections through the group singing activity. On the other hand, our findings highlight unique experiences of online group singing during the first UK lockdown, an "extraordinary circumstance." In relation to online singing, both challenges and benefits were reported: older singers experienced difficulties with new technology required for the online sessions and they were not satisfied with the limitations of online sessions (e.g., one cannot hear the whole group singing). Despite those difficulties and limitations, older singers also experienced a great deal of benefits. For some singers, online group singing had "nullified the effects of lockdown:" through online sessions, they were able to maintain their social contacts, feel part of a group as well as experience other positive emotions, such as enjoyment, pleasure, and being uplifted.

In the current study, overall health status scores of EQ-5D-5 L were lower during the pandemic than before the pandemic. Although it was not possible to obtain data from the same participants at both time points, this difference was significant with a small to medium effect, suggesting that older adults who engaged with singing reported poorer overall health during the pandemic. This accords with previous studies' findings. Philip et al. (2020) conducted a group singing involving older adults living with Chronic Obstructive Pulmonary Disease, which also had to be shifted from in-person to online sessions due to the outbreak of COVID-19. In this randomized controlled study, the singing group participants, whose age (mean age 72.1, SD = 9.65) was similar to our study participants, reported that online singing was still uplifting and beneficial for mental health. This was supported by statistically significant improvements in the PHQ-9 depression score (treatment effect -4.78 points, $p = .049$). Additionally, the study reported similar digital barriers: some participants did not have

internet connection, nor computer/device and there was some degree of initial anxiety of joining online (Philip et al., 2020).

In relation to loneliness measures, there were no statistically significant differences between pre- and peri-pandemic scores and size of the difference was very small. Mean scores at both times were in the “mildly lonely” range and were higher than some Western European cohorts of older people (De Jong Gierveld and Van Tilburg, 2010). Another peri-pandemic group singing study evaluated the effects of 6-month community singing using the randomized controlled trial method involving almost 400 older adults. Their findings demonstrate that community group singing significantly reduced loneliness ($d = 0.34$) and increased interest in life ($d = 0.39$) in older adults (Johnson et al., 2020), suggesting that singing may alleviate loneliness. During the pandemic our participants experienced unprecedented changes in their lives. Direct social contact was not possible and group singing activities also had to move to an online platform, which was unfamiliar with them; yet there were no differences in loneliness scores. Our qualitative data demonstrated that online group singing provided a psychological “buffer,” supporting older adults to connect with others and offering regular routine and beneficial exercises. Our findings also underline both in-person and online group singing enabled older adults to experience the five ways to wellbeing: our qualitative data highlights especially three aspects (i.e., being connected with others, being physically active, and being in the moment) were common before and during the pandemic.

Considering having a strong sense of purpose and meaning in life is correlated with longer survival (Steptoe et al., 2015) and lonely individuals are at higher risk of the onset of disability and cognitive decline, including dementia (Campaign to End Loneliness, 2021), more widely available group singing programmes and appropriate health and social care policies are therefore needed to support older adults. Indeed, more group singing programmes would one be one way to help address the growing and globally recognized need to focus on social and psychological wellbeing as a public policy priority (HM Treasury, 2018; Lilly et al., 2020).

The current study also highlights that both in-person and online group singing programmes provided a range of wellbeing benefits for older adults. In our study, sense of wellbeing (enjoyment, pleasure) and happiness was the main thread of older singers’ experience before and during the pandemic. Further, establishing and maintaining friendships and social connections were prevalent. Especially, during the pandemic, for many, group singing was their lifeline, as it was the only way to engage with others. It was also clear that online singing provided meaningful activities that were translated into physical benefits, such as experiencing improved breathing ability. Group singing also boosted a sense of achievement in managing their health and arranging their daily structures. Participants reported group singing provided a routine

and normality which was critical especially during the pandemic. Our findings are in accordance with previous studies including Lamont et al. (2018) longitudinal community choir study of older adults. They report wellbeing benefits, and these were related to factors aligned to Five Ways to Wellbeing including: positive emotions, enjoyment of singing together, engagement with group singing, connections to other singers within and beyond the choir, as well as gaining a sense of meaning alongside the accomplishment of learning and performing (Lamont et al., 2018). Findings from earlier studies with older adults provided the foundational evidence that the positive psychological and social wellbeing benefits of group singing (Davidson et al., 2014; Skingley & Vella-Burrows, 2010; Skingley et al., 2016). The current study's data collected during the stressful period of the COVID-19 pandemic also attest this.

Moreover, our participants experience of difficulties and limitations with digital technology also corresponds with the findings of online singing studies (e.g. Daffern et al., 2021). Age UK, the UK's leading charity supporting older adults, also highlighted that there is poor digital literacy in older adults and, therefore, many older adults experience digital exclusion (Age UK, 2021). The Campaign to End Loneliness (2021) also states that digital exclusion could exacerbate social exclusion and resulting increased loneliness in older adults. Unsurprisingly, a recent study demonstrated that sports sessions delivered via online platforms during the pandemic were less effective than in-person sessions due to a lack of social connectedness (Soares et al., 2022). To mitigate the potential barriers of digital technology, a recent study recommends co-designing online programmes with older people (Johansson-Pajala et al., 2022). They also suggested that appropriate support should be provided to enable older people to engage with online-based programmes, which has an advantage for some with limited mobility and reduced access to public transport (Age et al., 2022).

Technological advances have meant greater support for people living alone and with complex health needs, but the importance to wellbeing of in-person interactions was raised by the peri-pandemic group. This study showed that where no alternative is possible, online singing activities were appreciated and beneficial, but two factors should not be withstood: i) whilst the pandemic lockdown propelled technology use among people aged 65+, there remain cohorts of older people who have poor digital literacy (OFCOM, 2021; ii) the long-term sustainability of online singing activities and the perceived benefits beyond the pandemic restrictions have not been explored. In-person singing groups may have greater and longer appeal among members because of the direct, face-to-face social component. Further, online singing programmes can be advantageous for people who cannot travel due to mobility and/or financial issues (Dowson et al., 2021). Mitigating difficulties with internet connectivity and latency issues are key to widen the accessibility to older adults. Moreover,

costs of device and internet connection are recognized as common barriers, especially for people aged over 65 (Dowson et al., 2021). Given the current study's novel finding, online singing was a lifeline for some, "Nullifying the lockdown effects," developing suitable and inexpensive technology is needed to promote wellbeing and reduce loneliness in older adults.

Given the aging population and the outlook that increasing number of older people will live longer with disabilities and/or long-term health conditions (United Nations, 2019), group singing can be an effective intervention to mitigate those negative impacts of aging and promote psychological wellbeing in older people, similar to the findings of a recent community dance study which reported a range of physical, psychological and social benefits (Paglione et al., 2024). Further studies are needed to evaluate the effectiveness and cost-effectiveness of group singing programmes for older adults, as well as using appropriate wellbeing scales (e.g., Layard & Oparina, 2021). Robust research can inform practice and public health policy accordingly. Further, specialized training and support for group singing providers are needed as well as appropriate technology to ensure easy access and better experiences of online singing for older adults.

In practice, facilitating online singing requires extra supports. Older singers may not have a device to join in, or they may lack in confidence using a device, understanding the digital etiquettes e.g., muting themselves. Facilitators may link with local charities to support singers who may not have access to an appropriate device. Facilitators may also require providing extra support for how to join in online singing sessions, separate from singing sessions, where singers can learn about all necessary online etiquettes. Such extra help can make singers feel more confident using the device and online platform and reduce any unnecessary disturbance during singing time. Online platforms, such as Zoom, have a breakout-room function, which can also be used for socializing (Irons et al., 2022).

There are a number of limitations that future studies could address. First, although we intended to follow same group of singers over a period of time, this was not possible due to the outbreak of COVID-19: some regular singers discontinued singing with the group – that may have been due to poor health, or, as the qualitative analysis suggests, they may have found the technology difficult. On the other hand, some new participants joined the group singing because there were few activities available for them. We also received feedback regarding doing online surveys, as this was a barrier for some participants. Second, this study was unable to include a control condition. Future studies should compare group singing with other group activities, such as group dancing or coffee mornings, which will allow to establish whether group singing offers more than social benefits, such as belonging, friendship and peer-support. Third, our participants were mainly White Caucasian from South-East area of England, which limits the generalizability of our findings.

Further, although EQ-5D-5 L is a well-validated, widely used tool for assessing health of older adults (Marten et al., 2022), it may not be sufficiently sensitive to detect changes except in large studies.

Conclusion

The current mixed methods study provides key insights into the health and wellbeing benefits of group singing for older people in the UK before and during the pandemic. At both times, older singers experienced similar wellbeing benefits based on the qualitative accounts and had similar loneliness scores. However, singers reported poorer overall health during the pandemic compared with singers before the pandemic. In particular, this study brought older adults' experience of online singing during the pandemic into light. For some, online singing nullified the effect of lockdown during the extraordinary circumstance. Both in-person and online group singing facilitate the Five Ways of Wellbeing, as well as providing meaning and achievement to older adults. Given these benefits to older adults' health and wellbeing, developing appropriate and inexpensive technology might be needed to make online singing more enjoyable and accessible. Future studies should use appropriate wellbeing measures to inform the practice and health and social care policy and ongoing support for practitioners is required to ensure older singers can gain positive experiences from group singing programmes, particularly at times of international tension when people may feel more isolated.

Acknowledgments

We thank our participants and Canterbury Cantata Trust for their participation. Without their support, this study would have not been possible. The preliminary findings were presented at the inaugural Wellbeing Research & Policy Conference in July 2022 at Oxford University. The full paper was presented at Chung-Ang University International Conference in October 2022.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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