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## Multi-cultural perspectives on group singing among diverse older adults

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### Abstract

Group choir singing has been shown to have health benefits for older adults. However, because most studies have included predominantly white participants, it is unknown whether findings generalize to older adults from more diverse backgrounds. This multi-site qualitative study assessed perceived benefits of group singing for socioeconomically and racially/ethnically diverse older adults. We interviewed 31 choir participants, 6 music professionals and 6 administrators involved in a large, cluster-randomized trial. We used content analysis to identify themes. Psychosocial engagement was most commonly reported, with six components: emotional well-being, self-esteem, self-confidence, social connection and support, decreased loneliness, and cultural identity and multi-cultural appreciation. A few reported cognitive and physical benefits. They also suggest that group singing among ethnically diverse older adults can have multiple psychosocial benefits and enhance a sense of cultural identity and appreciation of other cultures. These findings can help in selecting structured outcome measures for choir interventions.

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Declaration of Competing Interests

The authors have no conflict of interest to disclose.

IRB and clinical trial registration

The UCSF Institutional Review Board approved this qualitative study (protocol 12-09005) [ClinicalTrials.gov](https://ClinicalTrials.gov) registration: [NCT01869179](https://ClinicalTrials.gov/ct2/show/study/NCT01869179) registered 9 January 2013 for the parent study.

## Introduction

Adults age 65 and over in the United States (US) are increasing in number and becoming more diverse. By 2030, one in five Americans is projected to be age 65 and over, and approximately one-third of these older adults will be from racial/ethnic backgrounds other than non-Latino/Hispanic whites.<sup>1,2</sup> In general, individuals from these groups experience worse health outcomes compared to their white counterparts. For example, a greater proportion of older Black/African American, Latino and other minority individuals experience lower health status and quality of life and less access to health promotion opportunities compared to non-Latino whites.<sup>3,4</sup> Thus, there is a need to identify effective health promotion interventions that can be culturally and linguistically tailored for diverse older adults, which could in turn help reduce racial/ethnic disparities in health.

Among the choices of interventions for older adults to maintain their health and well-being, engagement in the arts (e.g., dancing, group singing) has received increased attention.<sup>5</sup> Arts-based interventions can be practical (e.g., offered in the community with relatively low costs), sustainable, and easily tailored for diverse older adults. Of the arts, music is an important part of most cultures and offers an opportunity for engagement throughout the life course. Among music traditions, group singing is popular in the US.<sup>6</sup> With singing, the musical instrument is within the body, and singing skills typically develop spontaneously in early childhood.<sup>7</sup>

A growing research literature suggests that participating in group singing is associated with measurable health benefits for community-dwelling older adults. Most of these studies are observational, demonstrating associations between group singing and well-being.<sup>8-10</sup> A few recent studies have involved longitudinal research designs, including randomized studies.<sup>11,12</sup> Using structured surveys, multiple studies have found that older adults who regularly sing in a choir often report high levels of well-being (e.g., self-confidence, enjoyment, and positive emotions).<sup>13-15</sup> Group singing also has been associated with a sense of belonging and higher levels of social interaction, social inclusion, and less loneliness<sup>16-18</sup> and other mental health benefits, such as reduced symptoms of depression and anxiety.<sup>11</sup> Physical benefits have included improved breathing and energy level.<sup>19-22</sup> A few studies have reported cognitive benefits (e.g., improved mental alertness, memory).<sup>15,22,23</sup> It is important to note that a majority of the older adults enrolled in these studies have relatively homogeneous back-grounds; they are predominately white, female, and well-educated. These study participants, therefore, do not reflect the US general population. To determine whether singing in a choir provides similar benefits to older adults from other racial/ethnic groups or cultures, it is important to develop and test interventions that are effective in the general population, particularly if population-level implementation is a goal.

We recently completed a cluster-randomized trial that examined the effects of a community choir intervention on the health and well-being of a large sample of diverse adults age 60 and over; 65% of the trial participants were non-white, representing older adults from Black/African American, Latino/Hispanic, and Asian backgrounds.<sup>12</sup> This study was conducted through a three-way collaboration between a university school of nursing, a local area agency on aging, and a community music organization. Twelve senior centers were

randomized to receive the choir intervention either immediately ( $n = 208$ , intervention) or after a six-month delay ( $n = 182$ , controls). Professionals from the community-based music center delivered weekly, 90-minute choir sessions, and participants completed 44 sessions (over a year).

The Community of Voices (COV, Comunidad de Voces in Spanish) choir intervention was designed using a conceptual framework that focused on three engagement components: psychosocial, cognitive and physical.<sup>24</sup> These components were considered to be mechanisms through which group singing might promote health and well-being among older adults. Specific activities were included in each choir session to address each of these engagement components, thus standardizing the intervention across sites. For example, psychosocial engagement during choir sessions included exercises to promote group cohesion and discussion about the meaning of the songs; engaging in these could lead to improved social connections. Cognitive engagement included strategies to learn new songs, focus on the director, and synchronize with other singers, possible mechanisms for improving memory. Physical engagement included breathing exercises, both sitting and standing, and moving to different parts of the room, hypothesized to result in improved physical functioning. These are documented in detail in a program manual (<https://cov.ucsf.edu>).

The trial outcome measures included structured surveys and performance measures, selected to reflect the hypothesized effects of these psychosocial, cognitive, and physical engagement components on health and well-being.<sup>24</sup> The main randomized intention-to-treat comparison was at six months; retention in the study was 92%. Compared to controls, older adults who sang in the COV choir for six months had significant reductions in loneliness and increases in interest in life but not in cognitive or physical function.<sup>12</sup>

Similar to other behavioral intervention trials,<sup>25</sup> we added a qualitative study to the main randomized trial to augment our structured, quantitative evaluation and gain a richer understanding of the perceived benefits of participating in the COV intervention. We therefore interviewed participants in the choir intervention as well as the interventionists and administrators. Querying perspectives from multiple stakeholder groups adds additional depth to the findings and helps facilitate intervention refinement.<sup>26</sup>

## Material and methods

### Study design

This multi-site, multi-stakeholder qualitative study used focus groups and interviews to identify perceived benefits of a cluster-randomized trial of a choir intervention for diverse older adults following completion of the intervention.<sup>12</sup> This qualitative portion of the study was funded separately through an administrative supplement. The UCSF Institutional Review Board approved this study and separate written consent was obtained for all participants.

## Participants

Participants were recruited from the first five of the 12 sites (three immediate-start sites and two delayed-start sites) following completion of the COV trial intervention. Stakeholders included trial participants (referred to as “choir participants”), the choir directors and accompanists leading the choirs (referred to as “music professionals”), and music center and senior administrators (referred to as “administrators”). Choir participants were English or Spanish language speakers, including monolingual Spanish speakers.

## Measures

We collected descriptive demographic characteristics for the focus group participants (including: age, sex, race/ethnicity, language (Spanish yes/no), and country of origin) and for the music professionals and administrators (sex and race/ethnicity). The interview guides for the focus groups and interviews were based on the conceptual framework of mechanisms by which a choir intervention may lead to health benefits.<sup>24</sup> Initial open-ended questions and follow-up probes were developed to investigate general and specific benefits relating to the psychosocial, cognitive and physical engagement components that were incorporated into the choir intervention sessions.<sup>24</sup> We additionally asked choir participants to identify features of the intervention that they liked or disliked and to describe how participating in the choir affected their lives. For Spanish language focus groups, questions were translated into Spanish by a bilingual/bicultural research assistant and checked for accuracy by a second bilingual/bicultural research assistant not involved in the trial. We additionally asked music professionals (choir directors and accompanists) and administrators to share their observations of the effects of the intervention on the choir participants.

## Focus group and individual interview procedures

All focus groups and interviews were digitally recorded, professionally transcribed and checked for accuracy. Choir participant focus groups were held at the senior centers. Two experienced facilitators, who shared the predominant cultural background of persons from each site, conducted the groups. Transcripts in Spanish were subsequently translated into English and checked for accuracy by bilingual/bicultural members of the research team. Interviews with administrators were conducted in English by an experienced qualitative interviewer. They were held at their respective senior centers. Interviews with the music professionals were conducted in English by an experienced music anthropologist. They were held at the music center, a senior center, or a local music studio.

## Data analysis

Transcripts of focus groups and interviews were entered into Atlas.ti software for data analysis. Transcripts were then analyzed with inductive/deductive qualitative content analysis,<sup>27</sup> a commonly used method of qualitative data analysis.<sup>28–30</sup> Three independent coders analyzed the transcripts. In the first purely inductive phase, open codes were created to describe the perceived benefits of the intervention; we created codes only after the analysis began, and a codebook was created in Atlas.ti. In this initial phase, all of the coders were blinded to the conceptual framework. Transcripts were analyzed line by line,<sup>31–33</sup> to identify benefits of participating in the COV intervention. For example, the code “looking

forward” was created every time an eagerness to attend the choir was identified in the transcripts, as in the description of choir rehearsal as “definitely something to look forward to.” Each coder independently reviewed a portion transcripts and reconciled differences by discussion until consensus was reached.<sup>34</sup> Themes (i.e., perceived benefits that recurred across stakeholders and participant groups) were then identified through making connections among codes, writing memos, and having iterative discussions with coders and team members. Once no new codes or themes emerged, the study was determined to have reached its endpoint of thematic saturation.<sup>34</sup>

In the second phase that started after the inductive analysis ended, the coders were introduced to the original conceptual framework.<sup>24</sup> The codes categorizing each benefit were critically re-examined to assess the extent to which the benefits overlapped with the framework. For example, the participant statement “I got started with the choir and something was reborn in me,” was initially coded in an inductive category of “feeling uplift.” In the deductive phase, this code was incorporated into a larger theme of “emotional well-being.” This phase was intended to assess the post-hoc fit of our original conceptual framework to the actual experiences of the participants and to identify opportunities for further refinement of community choirs as an intervention for diverse older adults. In cases where elements of the conceptual framework had not emerged as themes during the inductive phase, the primary data were re-examined for evidence of those components but they were not added to the table unless they reached the level of theme. Conversely, we highlighted themes that were not fully addressed by the conceptual framework.

### Data validation

For rigor, reproducibility, and transparency, we used three approaches to validate the data. First, during data collection, we searched for disconfirming evidence.<sup>35</sup> This standard technique in qualitative research allows researchers to test the strength of observed patterns. Second, we triangulated data from three stakeholder groups, paying particular attention to discrepancies in the data.<sup>34,36</sup> Third, collaborative coding was used during data analysis. Three independent coders coded the data, and none of the coders were involved in data collection and did not have prior knowledge of the conceptual framework.

## Results

### Participants

Out of 45 choir participants invited, 31 consented and attended a focus group. Three focus groups were conducted in English, and two in Spanish; the Spanish language focus groups included groups of 6 and 11 participants, while the English-language focus groups included groups of 6 and 7; for one focus group, only one participant showed up. All focus groups were 8–90 min in length. All five senior center administrators and the music center administrator completed interviews. All music professionals for the five sites completed an interview, including three conductors and three accompanists. One conductor and accompanist requested to be interviewed together. Interviews lasted 60–90 min. Table 1 summarizes participant characteristics for all stakeholder groups.

## Themes

Participants in the focus groups identified a number of benefits that they attributed to participating in the choir intervention. Administrators and music professionals identified similar benefits by observing choir participants. Table 2 provides sample questions for reference. The sections below summarize the results (see Table 3).

### Psychosocial benefits

Six dimensions of perceived psychosocial benefits were identified: emotional well-being, self-esteem, self-confidence, social connection and support, decreased loneliness, and a sense of cultural identity and multi-cultural appreciation.

**Emotional well-being**—The predominant benefit of participating in the choir was a generalized sense of “feeling good”. Multiple choir participants described the act of singing as the mechanism through which they achieved a sense of well-being. For example, one choir participant explained that “[When] we are singing and rehearsing, I forget if I have any illness, the worries, the sorrows.” As another choir participant explained, “if I didn’t have the opportunity to do this, I wouldn’t have the opportunity to get certain feelings of accomplishment and happiness.” Another described the sensation as follows: “I live in the moment of the music, and I feel like I’m in the air, on the clouds.” In order to explain the visible effects of the choir on participants, one choir participant first described their sad expressions and pouted lips, by saying “we all had duck faces,” and then explaining that “now everyone is laughing and laughing.” Participant well-being was also observed by music professionals and administrators, exemplified by the administrator who said that choir participation “gladdens their heart, you know, makes them feel better. ... It makes them feel like they’re doing something that’s good.”

**Self-esteem**—Participants described feeling greater acknowledgement for their abilities when singing in the choir. Through the choir “I have a bit of my own personal glory,” one participant said. Another one reflected: “You know, I think different. I feel like I’m worthy of something. Something I can do.” Aside from singing, self-esteem was also increased by successfully trying something new. For example, a participant noted, “I could try to see what I could do. And I did.” Some participants described how something “dormant” was awakened in them through the choir: “I feel like it was like a bottle where they took the cork off,” one noted.

**Self-confidence**—Participants reported feeling more confident in themselves. Several expressed how much they “looked forward” to participating in the choir and described how this motivated proactive strategies to reach the senior centers for rehearsals. One participant walked to the center despite having low vision; another participant overcame discomfort navigating public transportation; and a third travelled for more than one hour each way following a housing relocation. Explanations also included descriptions of a newfound voice. “I would always respect the opinions of other people that could have stronger voices than I did, you know” said one participant, “so I would always hide, I would shrink down there. But when it was time to sing, I was like, I stood out and I loved it.” She added, “I even feel motivated to defend my rights...I feel more energy to talk.”

Increased self-confidence also was observed and encouraged by music professionals and administrators. A music professional said, “It gave them a voice outside of singing.” An administrator noted, “They are finding a voice for themselves, which is great.” Music professionals nurtured this voice by discussing how to better use vocal cords, and also by involving participants in the management of the choir. Participants were consulted about the lyrics, the repertoire, the choir stoles, and the names of each choir. Interestingly, the sense of self-confidence was often discussed using the voice as a metaphor for assertiveness and empowerment. One administrator noted, “As they watch the other seniors come together, watch their confidence build up and...it makes them say, ‘Oh, I can do that. If she can do it, I can do it.’” Another administrator added: “We definitely see the visible signs of seniors becoming much more confident...they are so proud.”

**Social connection and support**—Singing in the choir expanded participants’ social networks, as they engaged in shared creative activity with people from other countries, cultures and racial/ethnic backgrounds. “You get to meet all these interesting people,” a participant said in a quote representative of most participants. Because participants were recruited from the geographic service areas of senior centers, participants made new connections with neighbors, discovering that “I didn’t know there were that many people my age right within blocks of me!” One participant explained, “We see each other now as family, because we sing, we eat, and we exercise together here.” This new camaraderie made participants feel part of something bigger. The sentiment, “We are all doing this project together” was heard across focus groups. Because of this sense of belonging, participants in focus groups explained that they could now solve problems as a group. For example, some participants explained how the choice of songs was often a collective decision. The emergence of social networks was described by one music professional who explained that choir participants “took ownership” of new relationships, exchanging telephone numbers and supporting one another outside of rehearsals. The practice of meeting outside of the choir was mentioned by study participants and music professionals alike. New forms of support developed through extended interactions with one another, including sending cards to those who were ill and, in one case, visiting a participant in the hospital. Thus, participants felt more connected to their city and their neighborhood by getting to know their neighbors better, by singing songs from different countries, and by singing at neighborhood events.

**Decreased loneliness**—A few participants indicated that music alleviated feelings of loneliness, which they associated with social isolation. For example, one participant observed that the choir addressed an unrecognized need: “I met so many nice and interesting people and I really began to realize how isolated I had become.” In contrast, other participants joined the study already aware of their loneliness and isolation: “I have a very hard time where I live, so the choir was like an escape for me, to get out of that.” Several participants explained that the choir gave them a reason to stop “staring at four walls” or “being caged up” inside tiny apartments. “That activity gets you out of your confinement,” a participant noted. All stakeholder groups identified decreases in participant loneliness as a benefit of group singing.



**Cultural identity and multi-cultural appreciation**—The choir participants articulated a sense of cultural identity engendered by singing familiar songs. Singing provided several immigrant choir participants with a sense of being home again. As one described, “I get transported to my homeland,” while another described how singing a particular song took him back to a moment where he was a child roaming in the fields in Mexico. Another noted how much pleasure she derived from singing “La Bamba” because of her Latin American roots. Another participant explained that the music “brings it all back. And that’s a delightful surprise.”

In addition, singing songs from the countries of origin of other immigrant participants created connections with their peers’ countries, and generated a sense of appreciation for other cultures. “I love to hear songs from other nationalities,” a participant noted. Another one recalled how quickly requests for music in other languages were accommodated. One participant reflected, “It’s a different kind of thing when I am one of many. And you know, it’s interesting finding out what different people have experienced.” Some participants explained that they had to become more patient and tolerant because of their involvement in the choir. Another enjoyed being exposed to new perspectives as well as idioms. In her words, “The choir has brought in a whole different senior population, which has made us grow, and it’s been really positive. I think that sometimes we become isolated in our monolingual communities.” Participants discussed benefits specific to singing in foreign languages: the benefits of practicing their language skills, learning a new language, and being exposed to new cultures. Music professionals supported participants’ connections with their roots, as well as participants’ exposure to other cultures through their choice of lyrics and specific songs.

### **Cognitive benefits**

In contrast to the variety of psychosocial benefits that were noted, only two aspects of cognitive benefits reached the level of thematic saturation: learning new skills and improved memory. Choir participants often described the experience of singing in the choir as “challenging” in a positive way.

**Learning new skills**—The new skills identified by participants included learning new lyrics, memorizing songs, singing in foreign languages, and synchronizing body movements with others. As one participant said, “I really have to apply my brain to it.” The music professionals explained the effort required for a successful choir performance, and observed that it stimulated the participants. Describing the enthusiasm with which participants tried to learn new songs, a music professional said, “One thing I like about that group is they really do their best.” Another music professional observed participants testing one another’s ability to sing specific lyrics in “their own little study session.”

**Improved memory**—Some participants reported improvements in their memory, particularly as it related to learning and remembering song lyrics. Narratives from participants and administrators underscored the participants’ delight when they realized that they remembered specific lines or entire songs. One administrator recalled, “When they first joined the choir, they were uncertain whether they would be able to remember the songs ...

when they heard the applause, they felt ‘Oh yes, I can remember these words.’” A participant explained, “For trying to remember the fourth line you have to go back to what the first line is... So that’s how I learned to improve my memory.”

### Physical benefits

Similarly, only two aspects of physical benefits were also identified: increased stamina and vitality and improved respiratory function and voice. Although other physical benefits emerged during open coding, they appeared only once or twice, and did not emerge across stakeholder groups or among multiple choir participants.

**Stamina and Vitality**—While participants acknowledged the challenges of aging, they also articulated that, because of the choir, they felt “more sure,” “with more strength.” One participant explained, “I think it rejuvenates you. ... It gives you more encouragement, more will to live life, more enthusiasm.” Another participant explained, “I feel, in myself and in the group, an energy and an exhilaration.” These effects were validated through independent observations from the music professionals, one of whom explained, “I’m looking at their faces and their posture. And I think they have a better spring in their step.”

**Respiratory function and voice**—Choir participants observed that the warm-up exercises made them more conscious of their breathing. “Now I can take deep breaths,” a participant noted. Another observed that “Now even when I am praying, I go like this: [takes a deep breath].” Several participants noted feeling more relaxed after the preparatory breathing exercises. A few participants with asthma reported clinical improvements. For example, one explained, “The breathing exercises that we do are better than the blowing tube that I’m supposed to use with my asthma.” One participant even stopped smoking, after realizing “How am I going to sing and smoke? I won’t be able to sing later. I better stop smoking and I have to stop,” and observing, “It was really difficult, but I did it in the end.” In terms of voice, participants spoke more generally, saying “I learned to get my voice together,” and “I think she [music professional] managed it in terms of teaching us tricks to improve our voices.” As discussed above, voice was framed also as a metaphor for empowerment.

### Discordant and alternative findings

Although the majority of responses were positive, a few negative comments about participating in the choir intervention arose during the focus groups and interviews. One participant reported feeling marginalized by his placement during performances, another participant disliked the inclusion of religious music, and a third considered the music to be too difficult. Five choir participants, two music professionals, and one administrator mentioned occasional interpersonal conflicts between choir participants that caused varying levels of disruption to rehearsals and required additional attention, which the music professionals reported to be typical of community choirs.

## Discussion

Overall, the key stakeholders involved in the COV choir trial identified multiple perceived benefits that encompassed psychosocial, cognitive, and physical engagement components. Psychosocial benefits were most consistently reported, and the predominant benefit of participating in group singing was an overall sense of well-being, often expressed as “feeling good.” Other psychosocial benefits included improved self-esteem and self-confidence, increased social connection and support, and decreased loneliness. Several stakeholders also reported physical and cognitive benefits, including improved stamina and vitality, improved memory and the benefits of learning new skills. All of these findings from our study of older adults from diverse racial/ethnic backgrounds were consistent with prior studies that involved predominately white, female older adults. However, the multi-cultural composition of the choirs resulted in an important new theme: group singing involving diverse older adults encouraged a sense of cultural identity and multi-cultural appreciation.

Of the perceived benefits, participants overwhelmingly identified emotional well-being, as the predominant perceived benefit of singing in a choir. Descriptors like feeling euphoric and reborn exemplified the depth of the impact of group singing on their well-being. Well-being is increasingly understood to be positively associated with longevity and multiple health outcomes among older adults,<sup>37</sup> including maintenance of functional status.<sup>38</sup> Positive reports of subjective well-being in our racial/ethnically diverse sample is consistent with the findings of other studies of older adult conducted in Europe, the UK and Australia<sup>13,20,21,23,39</sup> and in the one study of older African American choir participants from lower socioeconomic backgrounds in the US.<sup>40</sup>

The qualitative data particularly enrich and inform the quantitative findings of the cluster-randomized the COV choir trial that documented statistically significant reductions in loneliness and increases in interest in life. The choir participants articulated connections between both increased social support and decreased loneliness with decreases in social isolation. Even though social isolation and loneliness are distinct concepts,<sup>41</sup> choir participants drew connections between difficulties in their social situations, which compounded both social isolation and loneliness. They reported that choir participation decreased loneliness through increased social support and having something worth leaving their home to attend. This set of connections is reflective of the social isolation and desire for greater social integration found in other studies of older adults in lower income urban areas,<sup>42</sup> suggesting that the choirs have the potential to help vulnerable, isolated older adults. The benefits of increased social support and decreased loneliness were also congruent with the findings from prior studies.<sup>21,39</sup> As hypothesized in our conceptual framework of engagement mechanisms,<sup>24</sup> and supported in the literature,<sup>40</sup> providing a regular activity with somewhere to go and the opportunity to make new friends<sup>24</sup> was found by participants to be beneficial and deeply meaningful.

One new finding was attributable to the fact that the COV choir trial recruited socioeconomically and racially/ethnically diverse older adults, which differs from prior studies conducted with predominantly white, female participants. Given the relatively intimate setting of group singing, choir participants had unique opportunities for multi-

cultural social engagement. We heard commentary from participants on cultural identity and multi-cultural appreciation as key benefits of group singing. Because these diverse groups of older adults were brought together in the context of group singing with shared activities, including weekly rehearsals and scheduled performances, participants had the opportunity to meaningfully engage with members from racial/ethnic backgrounds that differed from their own. Not surprisingly, participants described these experiences, and they did so with a sense of appreciation and cultural humility. Choir participants repeatedly expressed their appreciation for opportunities to share foreign as well as familiar music, to share their cultural identities with others. Programs like COV can be readily adapted and scaled up in part because the music can be tailored to the cultural backgrounds of participants.

An additional benefit may also be attributable to our focus on socioeconomically and racially/ethnically diverse older adults, that of finding one's voice, which was reported in terms of assertiveness or personhood. This aspect of self-confidence was reported to spill over to their lives outside of choir rehearsals. As in the randomized trial of choir singing by Skingley and colleagues,<sup>21</sup> participants in our study described an awareness of voice. However, choir participants in our study also described learning to speak out or to advocate for themselves, using "the voice" as metaphor for internal changes in attitude and behavior. Although participants in the Davidson (2014) study found improved confidence with group singing after only 8 weeks, they did not describe such confidence outside of choir rehearsals. It appears that participants may "find their voice" in the group singing far sooner than they "find their voice" outside of group singings, raising questions of how long it takes for group singing to be associated with psychosocial effects that transcend rehearsals and concerts.

Our qualitative study identified multiple perceived benefits not captured by the structured survey measures in our cluster-randomized trial. Although these qualitative results do not reflect differences between randomized groups, they highlight the importance of using mixed methods to evaluate arts-based interventions, such as choir singing. Although many of the benefits noted by our respondents fall within "labeled concepts" found in other studies (e.g., self-confidence, social connection), the richness and depth provided by their comments contribute to a deeper understanding of benefits of group singing, particularly among diverse older adults. Structured self-report measures are limited in their ability to detect nuances in experiences, which are important to understand for future refinement of choir interventions. For example, measures of emotional well-being and enjoyment do not capture the statements about how singing made the choir participants feel euphoric, or being on the clouds. Measures of self-confidence seldom capture the concept of finding one's voice as a metaphor for empowerment. Thus, inclusion of mixed-methods designs in arts-based studies can potentially identify benefits not documented by structured measures and focus the development of new measures that better capture the impact of the arts on health and well-being.

### Limitations

The study is limited by sampling only the first 5 of 12 sites for the qualitative focus groups and interviews. The small size of the sample and the limited geographical scope (one city in the United States) also limited the generalizability of the findings, although participants

represented ten different countries of origin. Observations of rehearsals and recordings might have provided additional data to challenge and reinforce the primary findings. Conducting interviews during multiple time points might have provided additional insights into the timing of benefits from group singing.

## Conclusions

Our qualitative multi-stakeholder study of a large cluster-randomized study of a choir intervention designed for diverse older adults revealed multiple benefits associated with group singing. Our findings among diverse older adults are consistent with prior studies involving predominately white older adults, suggesting that the benefits of group singing interventions are likely similar among different racial/ethnic groups. It also revealed relationships between social isolation, loneliness and social support. In this diverse population, a sense of strong cultural identity and multi-cultural appreciation was attributed to participation in the choir intervention. The findings can be used to help refine choir interventions for older adults and develop new outcome measures that are more sensitive to the effects of group singing on health and well-being.

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**Table 1**

Sample characteristics by stakeholder group.

Participants (n)	Choir Participants (31)	Administrators (6)	Music Professionals (6)
Age (mean, SD)	71.43 (8.01)	NA	NA
Sex (female/male, n)	23/8	6/0	4/2
Race/Ethnicity (n)			
Non-Latino White	4	2	2
Non-Latino Black	4	2	1
Asian/Pacific Islander	5	0	2
Latino	18	2	1
Education (n)			
High school or less	15	NA	NA
Some college	10		
Master's degree or more	5		
Married or partnered	9	NA	NA
Interviewed in Spanish, n	17	0	0
Foreign born	23	NA	NA

Note: SD = standard deviation, NA = not available, Foreign-born participants reported country of origin as follows: Canada ( $n = 1$ ), China ( $n = 2$ ), Cuba ( $n = 1$ ), El Salvador ( $n = 4$ ), Guatemala ( $n = 4$ ), Hong Kong ( $n = 2$ ), Mexico ( $n = 7$ ), Peru ( $n = 1$ ) and Philippines ( $n = 1$ ).



**Table 2**

Sample interview and focus group questions.

- 
1. Overall, what did you think of the choir program? (choir participant focus group)
  2. Please share your overall impressions about how things went with the choir. (administrator interview)
  3. If you had to describe to a friend what singing in a choir does for you, what would you say? (choir participant focus group)
  4. Why do you think the choir members keep coming to the choir practices? (music professional interview)
  5. Did you notice any changes in among choir members because of being in the choir? (administrator interview)
  6. Why do you think some choir members dropped out? (administrator interview)
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**Table 3**

Perceived benefits of choir singing for diverse older adults.

Engagement Component	Perceived Benefits	Examples/definitions
Psychosocial engagement	Emotional well-being	<ul style="list-style-type: none"> <li>• Enjoyment, happiness, pleasure</li> <li>• Euphoria, uplifted</li> <li>• Enhanced mood, feel good</li> <li>• Sense of self worth</li> <li>• Sense of pride</li> <li>• Feel valued</li> </ul>
	Self-esteem	<ul style="list-style-type: none"> <li>• Voice as metaphor for assertiveness and empowerment</li> </ul>
	Self-confidence	<ul style="list-style-type: none"> <li>• Sense of achievement and accomplishment</li> </ul>
	Social connection and support	<ul style="list-style-type: none"> <li>• Camaraderie</li> <li>• New relationships</li> <li>• Sense of belonging</li> <li>• Connection to neighborhood</li> </ul>
	Decreased loneliness	<ul style="list-style-type: none"> <li>• Decreased subjective loneliness</li> <li>• Reduced isolation</li> </ul>
	Cultural identity and multi-cultural appreciation	<ul style="list-style-type: none"> <li>• Appreciate other cultures</li> <li>• Strengthen connection to own culture</li> <li>• Become more tolerant</li> <li>• Nostalgia</li> </ul>
Cognitive engagement	Learn new skills	<ul style="list-style-type: none"> <li>• Learn music, lyrics</li> <li>• Learn choreography</li> </ul>
	Memory	<ul style="list-style-type: none"> <li>• Remember music, lyrics</li> <li>• Remember movements</li> </ul>
Physical engagement	Stamina and vitality	<ul style="list-style-type: none"> <li>• Feel strong</li> <li>• Energy, rejuvenation</li> <li>• Spring in their step</li> </ul>
	Respiratory function and voice	<ul style="list-style-type: none"> <li>• Breathing awareness</li> <li>• Deep breathing</li> <li>• Vocal improvements</li> </ul>