

A Review of Group Singing and Social Cohesion: Recommendations for Assessing Social Cohesion in Utah's Youth

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Background

Social cohesion is a fundamental social determinant of health that signifies the strength and quality of relationships among individuals or groups within a given community or society.¹⁻³ It is also an important component of social health as outlined by the 7 Domains of Health, which reflects an individual's "connection to family, intimate partner, friends, co-workers, and larger structures such as community, church, and workplace."⁴ Numerous studies underscore the significance of social cohesion in promoting better mental and physical health, reducing risky behaviors, preventing disease, ensuring access to healthcare, fostering resiliency, promoting health equity, and improving the overall quality of life.⁵ Additionally, people are more likely to engage in community life, contribute to collective well-being, and experience positive health outcomes when they perceive strong social cohesion within their community.^{3,5}

Social cohesion plays a pivotal role in shaping the overall well-being and health outcomes of individuals and communities, particularly for young people. Mental health is intricately linked to physical health, and maintaining a healthy mental state can mitigate behavioral risks such as substance use, unintended pregnancy, sexually transmitted diseases, and violence, while also reducing rates of self-harm, truancy, and feelings of isolation.^{6,7} Positive habits developed during adolescence tend to persist into adulthood, reinforcing the importance of fostering strong social cohesion during youth to cultivate lifelong positive health outcomes.

Various approaches can be employed to enhance social cohesion and foster a sense of connectedness, trust,

and mutual support within a community.⁸ These include community engagement and participation, promoting inclusivity, building social networks, supporting social initiatives, investing in public spaces, and celebrating cultural diversity.⁸ Art and music therapy show promise in improving mental health conditions and social wellbeing.^{9,10} In particular, participating in a music group cultivates characteristics that strengthen social cohesion.¹¹ Group members share common purposes and goals, create social bonds during rehearsals and performances, rely on effective communication to synchronize their efforts, engage in community outreach activities, and contribute to a sense of continuity and tradition. Research indicates that participating in a music group can expedite the development of strong social cohesion compared to other forms of social interaction.^{12,13} This holds particular significance for young people, who are in the process of developing their social identities and shaping their worldviews.

Data Snapshot

Given the recognized potential of music groups in fostering social cohesion, a review was undertaken to explore the relationship between group singing and social cohesion. A search of the scientific literature was conducted across multiple electronic databases, including PubMed, PsychINFO, Scopus, and CINAHL, from January to February 2024. Search terms included combinations of social bonding, group singing, social cohesion, choir, chorale, social network, community, and social capital. Articles meeting the following criteria were included in the results: publication date from 2014 to present, written in English, focus on group

singing and/or choir participation, measurement of ‘social cohesion’ and/or ‘social bonding’ as a primary or secondary outcome, inclusion of original research studies with scientifically robust study designs, and exclusion of participants with significant mental or physical health conditions. The search yielded a total of 86 articles, from which seven met the predefined inclusion criteria (Table 1).

All seven studies included in the review demonstrated a positive correlation between group singing and strengthened social cohesion (Table 1). While all studies demonstrated a positive association between group singing and social cohesion, it is important to note the variations in methodologies, populations, and measures used across studies, which may influence the interpretation of the findings.

Bowling et al measured salivary oxytocin levels (a hormone associated with social bonding and trust) in the Vienna Youth Choir before and after singing as a group and singing alone, as well as before and after speak-

ing as a group and speaking alone.¹⁴ Both activities resulted in a decrease in salivary oxytocin; however, singing as a group was associated with a significantly smaller decrease in oxytocin compared to speaking as a group, indicating that group singing may contribute to stronger feelings of social connectedness than group speaking.¹⁴ Keeler et al examined plasma oxytocin and adrenocorticotrophic hormone (a hormone released in response to stress) levels in jazz singers, reporting reduced stress hormones and increased feelings of connectedness during group singing, although the small sample size (n=4) may limit generalizability.¹⁵ In a study of singers from the London Popchoir, Weinstein et al. used self-reported measures of social bonding and pain threshold measurements to conclude that group singing increases feelings of inclusion, connectivity, positivity, and social closeness and may be associated with an increase in endorphin release.¹⁶

Pearce et al (J. Community Appl. Soc. Psychol.) followed four community-based singing classes and three non-singing (creative writing and craft) classes over

Table 1. Summary of 7 studies that investigate the impact of group singing on social cohesion.

Reference	Title	Journal	Year	Study Type	Population	Method of Evaluation	Main Results
Bowling et al.	Endogenous oxytocin, cortisol, and testosterone in response to group singing	Hormones and Behavior	2022	Experimental	71 singers from the Vienna Youth Choir	Salivary concentrations of oxytocin, cortisol, and testosterone were measured before and after the experimental protocol.	Group singing, compared to speaking, was associated with smaller decreases in salivary oxytocin levels, leading to significantly elevated concentrations after singing together. Singing together stimulated more positive shifts in self-perceived affect and enhanced feelings of social connection compared to speaking together.
Camlin et al.	Group singing as a resource for the development of a healthy public: a study of adult group singing	Humanities and Social Sciences Communications	2020	Mixed methods	78 adults participating in an outdoor singing project	Focus group interviews that include participant observations and reflections.	The findings highlighted the stability of the social bonding effect in the face of environmental and situational influences, underlining group singing's potential as a resource for rehearsing and performing healthy relationships and contributing to mental health recovery.
Helitzer et al.	Lifting spirits and building community: the social, emotional and practical benefits of all-female group singing	Health Promotion International	2022	Mixed methods	7 adult women members of a community choir	A focus group and self-reported questionnaires.	Significant quantitative increase in the overall perceived level of health among participants, indicating that group singing may enhance emotional and social health and well-being.
Keeler et al.	The neurochemistry and social flow of singing: bonding and oxytocin	Frontiers in Human Neuroscience	2015	Experimental	4 jazz singers (convenient sample)	Concentrations of plasma oxytocin and adrenocorticotrophic hormone (ACTH) before and after each singing activity.	Group singing, both in pre-composed and improvised conditions, reduced stress and arousal levels, as indicated by decreased concentrations of adrenocorticotrophic hormone (ACTH). Additionally, participants experienced social flow in both singing conditions.
Pearce et al. (J. Community Appl. Soc. Psychol.)	Is Group Singing Special? Health, Well-Being and Social Bonds in Community-Based Adult Education Classes	Journal of Community & Applied Social Psychology	2016	Observational	135 adults from community classes; 4 singing classes (n=84) and 3 creative writing or crafts classes (n=51)	Self-reported questionnaires on mental and physical health, well-being, and social bonding collected at months 1, 3, and 7.	Physical and mental health and satisfaction with life improved in both groups. Higher collective bonding at a later point in time for the singing classes.
Pearce et al. (Psychol. Music)	Tuning in to others: Exploring relational and collective bonding in singing and non-singing groups over time	Psychology of Music	2017	Experimental	88 participants assigned to teams of four and asked to sing together with another team	Self-reported measures of closeness to teammates before and after engaging in the singing activity.	Participants felt significantly closer to teams from different Cliques after singing with them, regardless of whether they cooperated or competed.
Weinstein et al.	Music and social bonding: “self-other” merging and neurohormonal mechanisms	Evolution and Human Behavior	2016	Observational	213 singers from the Popchoir in London, sorted into small groups and a large group	Self-reported measures of social bonding, and pain threshold measurements were taken as a proxy for endorphin release. These measurements were collected both before and after 90 minutes of singing rehearsals.	Group singing, both in small and large choir contexts, increased feelings of inclusion, connectivity, positive affect, and social closeness. Additionally, measures of endorphin release, assessed through pain thresholds, increased across singing rehearsals

the span of seven months; although physical and mental health and satisfaction of life did not differ between the singing and non-singing groups, group singing may be associated with quicker feelings of social bonding.¹² In another study (Pearce et al, Psychol. Music), participants were randomly assigned to teams of four and asked to sing together.¹⁷ Self-reported measures of closeness to teammates before and after the singing activity were collected, and participants reported increased feelings of closeness to less-familiar group-mates after singing together.¹⁷ Camlin et al conducted focus group interviews of adults participating in an outdoor singing project, and their findings confirm the social bonding effects strengthened by group singing.¹⁸ Lastly, Helitzer et al utilized focus group interviews and a questionnaire to assess the social connectedness of an all-female choir, revealing a significant qualitative increase in the overall perceived level of health among participants and indicating that group singing may enhance emotional and social health and well-being.¹⁹

Recommendations

Limited research has been conducted quantifying the extent of social cohesion that results from group singing. The studies highlighted in this paper either measure an increase in social cohesion qualitatively or consider it as a secondary outcome alongside related factors, rather than as the primary measure. Furthermore, there is a notable gap in the literature concerning studies that are focused on middle- or high-

school-aged participants. Given the ongoing decline in funding for public school arts programs nationwide, coupled with Utah's overall low expenditure on education,²⁰⁻²³ it becomes imperative to study the impact of school choral and music programs on social cohesion and other factors contributing to youth mental well-being.

To address these gaps, it is proposed that the Workplace Social Capital (WSC) scale be adapted to quantify the association between group singing and social cohesion.^{24,25} Initially introduced by Kouvonen et al. in 2006²⁵ and subsequently refined by Eguchi, Tsutsumi, Inoue, and Odagiri in 2017,²⁴ the WSC scale evaluates social capital (defined as “those features of social relationships that facilitate collective action for mutual benefit”²⁵) and its relation to physical and mental health outcomes. Because the WSC scale is intended to measure social capital among working adults, much of its verbiage does not directly apply to adolescents in a school setting. However, by modifying the scale to be more student-centric, the adapted scale, termed the Social Cohesion Youth Group (SCYG) scale, can effectively gauge the impact of group singing on the social cohesion of adolescents in Utah. Table 2 introduces the proposed SCYG scale alongside the WSC from which it was adapted. The SCYG scale comprises eight questions, each assessed on a Likert scale ranging from 1=strongly disagree to 5=strongly agree. Higher scores denote stronger perceptions of social cohesion.

Table 2. Items from the Social Cohesion and Youth Group (SCYG) scale to assess social cohesion in a middle or high school classroom. Included are the original items from the Worker Social Capital (WSC) scales.

SCYG Scale	WSC Scale ^{24,25}	Rating Scale	
		<i>Less social cohesion</i>	<i>More social cohesion</i>
My class has a "we are together" attitude.	We have a "we are together" attitude. ^{1,2}	Strongly disagree (1)	Strongly agree (5)
My classmates and I share a group identity.	We have a "we are together" attitude. ^{1,2}	Strongly disagree (1)	Strongly agree (5)
I feel understood and accepted by my classmates.	People feel understood and accepted by each other. ^{1,2}	Strongly disagree (1)	Strongly agree (5)
There is an atmosphere of helping each other in my class.	In our workplace, there is an atmosphere of helping each other. ¹	Strongly disagree (1)	Strongly agree (5)
My classmates and I work together to learn and apply new concepts.	Do members of the work unit build on each other's ideas in order to achieve the best possible outcome? ²	Strongly disagree (1)	Strongly agree (5)
My classmates and I trust and rely on each other.	In our workplace, we trust each other. ¹	Strongly disagree (1)	Strongly agree (5)
The classroom is a place of positivity.	Our workplace is a place of laughter and smiles. ¹	Strongly disagree (1)	Strongly agree (5)
My classmates keep me informed of lessons if I miss class.	People keep each other informed about work-related issues in the work unit. ^{1,2}	Strongly disagree (1)	Strongly agree (5)

1. Adapted from Eguchi et al. (2017).²⁴

2. Adapted from Kouvonen et al. (2006).²⁵

Conclusion

Social cohesion is a crucial social determinant of health and an important component of the 7 Domains of Health, reflecting the interconnectedness, relational quality, and social bonds within communities. Its impact spans various domains, including mental and physical well-being, risk reduction, healthcare access, resilience, equity, and overall quality of life, and it is associated with better mental and physical health, reduced risky behaviors, disease prevention, access to healthcare, resiliency, health equity, and overall quality of life. While existing research underscores the effica-

cy of art therapy and group singing in strengthening social cohesion, limited attention has been directed towards the efficacy of school choral and music programs in cultivating socially adept and physically and mentally healthy youth. To address this gap, the implementation of the Social Cohesion Youth Group (SCYG) scale, adapted to middle- or high-school students from the Worker Social Capital scale, is a promising method for quantifying the impact of group singing on strengthening social cohesion among adolescents, ultimately demonstrating the importance of the continued funding of school music programs.

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