

## "Singing is what we do (together) - redefining "together". A comparative study".

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### Abstract

This article discusses the impact that the Covid-19 pandemic has had on singing with children in schools by providing a descriptive analysis of a comparative look at children's experiences of their singing habits and emotional well-being during the first Covid-19 lockdown. Covid-19 has established itself as (for now) an ever-present variable in our daily lives. This paper offers a descriptive analysis of a comparative study of the Covid-19 lockdown(s) influence on children's singing habits and emotional well-being in Italy, Austria, and Finland. A survey was carried out on children and young people aged 10-20 from Austria, Finland, and Italy on how the Coronavirus lockdown has impacted their everyday lives and their general well-being. Attributes analysed are age, gender, emotional response on the change of singing habits, singing habits before and after Covid-19 lockdown. Until it is certain that rehearsals and communal singing can take place without health risks, alternative options should be explored to effectively plan online teaching in the future. It is the hope that this research, which is only but a start, will spark further research into the matter and contribute to the development of systems and platforms where children can continue their educational and music educational growth by ensuring an uninterrupted singing experience.

### Keywords

Singing with children, online singing, Covid-19, social isolation, well-being, lifelong learning.

### Introduction

Singing with children in an educational context is usually done as a face-to-face joint activity. Covid-19 caused a break in the continuity of this educational process (ISM, 2020) and has established itself as a ubiquitous variable (for now) in people's daily lives. All aspects of people's lives were and still are affected by the impact of the epidemic. The Covid-19 lockdown forced children into social isolation and into a situation where making music and singing

together in person was not possible. Online portals such as Microsoft Teams, Zoom, Slack, Google Meet, EduPage, among others, became increasingly popular and the medium for rehearsals and teaching (Cayari, 2020). It was not possible to sing together in person for a long time, and there are still uncertainties whether singing together indoors is possible without health risks (Kähler, 2020).

For this reason, most music educators and voice teachers took the opportunity to learn about new ways to plan and deliver online voice lessons effectively. The importance of online teaching in this time of crisis cannot be denied, and educators should ensure the most effective methods of online teaching and instruction should the situation repeat itself. The lessons learned from the Covid-19 pandemic in 2020 will force a new generation of laws, regulations, platforms, and solutions for future instances. If the singing community is ever forced to sing together online again, good preparation is key.

Among the many opportunities for making music, the human voice is always readily available. Not only is there the availability and convenience aspect of always having one's musical instrument with one, but it is also widely acknowledged that singing has psychological and physiological benefits that affect one's overall well-being. Salminen (2020) also shows in her study that the effects of singing from a psychological and social perspective support the idea of singing in improving social inclusion. Children should be taught to sing throughout their school career and beyond. Early 20th-century Hungarian composer and educator Zoltán Kodály believed that music education could engage students spiritually, culturally, and emotionally. He also believed that singing should be the starting point for musical literacy, seen as a necessity rather than a luxury. The Kodály concept (n.d.)<sup>1</sup> starts from the basic assumption that the singing voice is nature's built-in musical instrument and that it is the birth right of every child to learn how to express themselves musically through the singing voice. Hallam (2010) provides clear research evidence on the impact of active engagement with music on children and young people's intellectual, social and personal development. The evidence of the impact of musical skills on language development, literacy, numeracy, intelligence measures, general achievement, creativity, fine motor coordination, concentration, self-confidence, emotional sensitivity, social skills, teamwork, self-discipline and relaxation speaks for itself. Welch (2020) shows a growing research literature on the benefits of artistic engagement in promoting

<sup>1</sup> <https://kodalymusicinstitute.org/about-kodaly-music-institute>

children's further progress, such as literacy and numeracy, as well as their physical, psychological (including emotional) and social development.

What makes singing such a unique experience and an effective form of artistic expression? Singing is one of the oldest forms of expression, if not the oldest. Songs, which are one of the oldest forms of musical genres, primarily reinforce the text's intended meaning by musically amplifying and enriching the emotional content of the written text. The beauty of singing is that it transcends cultures and traditions; different cultures have different musical traditions and are characterised by their own style of singing and combination of musical elements. Nonetheless, the essence of singing remains the same, whether in different cultures or even in different stylistic eras, which is to convey feelings and emotions (Coutinho et al., 2019). Using music and songs to convey emotions can be a valuable tool in guiding children to understand their feelings. Adachi and Trehub (1998) show that children can express emotion through song. Welch (2005, p. 249) discusses a "symbiotic interweaving of singing and emotion" and summarises the contribution of Gabriellson and Örnkloo (2002) who point out that children "become more expert [with age] at recognising and expressing intended emotion in singing as well as speaking". Songs to express joy, sadness, loneliness, worship, and many other emotions can be found in almost all musical cultures. Songs do not exclusively express personal feelings but also have the power to express shared feelings of a broader community - they can unite people by sparking a shared expression of emotions, feelings, opinions and beliefs. Songs and the medium of a song are the vehicles for conveying such messages. Beethoven's "Ode to Joy" brought the message of human rights and brotherhood to 19th-century audiences, and it was not until 1972 that the Council of Europe adopted it as the European anthem<sup>2</sup>. We have seen famous artists in the past use songs to unite people for humanistic reasons and in global fundraisers to save lives or raise the level of social responsibility. Singing seems to represent a universal language of emotion and is a very accessible form of artistic expression (Shankman et al., 2019). It offers also musically untrained people a way to express emotions and benefit from the inter- and intrapersonal communication that singing offers (Welch, 2005). Choral singing, in particular, affects social, emotional, physical and cognitive domains positively (Livesey et al 2012). The national lockdowns during the Covid-19 pandemic have changed the access to choral singing and hence reduces the access to those benefits.

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<sup>2</sup> <https://www.coe.int/en/web/about-us/the-european-anthem>

Singing also has the power to give people - both singers and listeners - access to a long-lasting and deepening spiritual experience. Singing has been how people have expressed their feelings and accompany emotional, ceremonial occasions such as worship in church since the beginning of time. Singing religiously inspired songs not only creates a special connection to God but also to each other (Atkins & Schubert, 2014). Songs are even thought to have transcendent powers (Tafone, 2020). Ethnographic and anthropological studies (Seeger, 2004) have shown that songs have historically been used to evoke a particular response from nature (rain songs) or on a spiritual level (a song for protection from danger). Reimer (2009) refers to "the power of music to alter the reality of human experience and to alter humans' way of being" (p.43). He goes on to discuss this power as it has the possibility of reaching to the roots of the human condition: "[H]umans are conscious of their individual and collective existence in a world both including them and transcending them, on which they are dependent for life and meaning and to which they contribute life and meaning".

Singing can be seen as one of the valuable forms of lifelong learning as it fits perfectly with the criteria established by Dozza (2017) for what can be considered lifelong: It is "a natural and social process that is built from the early days and weeks of life and even before, and that spans the entire course of life, until old age". Lifelong learning begins from the time in the womb until the end of life. During the Covid-19 pandemic, parents became the primary educators at home and had to take on new roles customarily assigned to teachers. However, this presented a significant opportunity for both caregivers and children. Sulistiono and

Nudiati (2021) indicate that these conditions are consistent with the concept of lifelong learning, that (1) the learning that individuals receive does not come from the individual's mind, but from the distribution of daily information; (2) individual learning is not a matter of mental processes, but what is embedded in individual practice is material, social, and semiotic; and (3) information is disseminated as lifelong education and placed in different practices so that learning has a different meaning for each individual. The role of families during Covid-19 in helping children in their new (online) learning environment can also be seen as a positive aspect, in the sense that learning took place in a new social environment, with new material and with different outcomes, which places the onus on the learner (and their support system) to ensure the effectiveness of the learning process - a skill that can undoubtedly be seen as a positive asset to lifelong learning. Some of these skills applied to the participants' singing

experiences during the Covid-19 lockdown sparked renewed interest, leading to a possible lifelong interest and passion for singing and making music together.

## **1. Literature overview**

### **1.1 Engaging virtually**

Since the outbreak of the Covid-19 pandemic in the early 2020s, life as it was known in all sectors of society has changed dramatically. Standard forms of education and socialisation were abruptly disrupted, and alternative forms of education, socialisation, and leisure came to the fore. Social distancing was introduced in many parts of the world as a preventive measure against the ongoing threat of the Covid-19 pandemic. Due to the lack of physical togetherness, many regular aspects of musical activities either ceased altogether or changed significantly. The necessary shift to virtual learning, socialising, and recreational activities is not new in the Covid-19 pandemic. As early as 2000, Stiles (2000) pointed out the importance of creating engaging learning experiences for learners and the need for educators to recognise that learning is a social process and the importance of creating effective learning environments that facilitate the active acquisition of subject-specific and general subject knowledge.

Dillenbourg et al. (2002) argue that a virtual learning environment is an explicitly represented and specifically designed information space, a social space where pedagogical interactions take place in the environment, turning spaces into places. A space/place in which students are not only active but also actors: they co-construct the virtual space. Dillenbourg et al. (2002) further state that virtual learning environments are not limited to distance education but can be combined with traditional classroom activities by integrating heterogeneous technologies and different pedagogical approaches. Virtual environments, as they have been cautiously used since the first lockdown in the early 2020s, have been largely exclusive to the virtual (online) realm, but have now evolved into hybrid environments where virtual environments overlap with physical environments. Britain and Liber (2004) reported the development of e-learning as the subject of various sponsored strategic initiatives to promote e-learning to improve the quality of educational provision and empower learners. Governments world-wide have been gently forced to adapt, design or refine e-learning strategies following the social isolation that followed enforced government restrictions.

According to Kavuma (2003), virtual learning environments enable electronic learning suitable for modern society and liberate learning in terms of instructional ideals. Kavuma's

research findings indicated that virtual learning environments could enhance learners' learning experiences, but whether the virtual learning environment's ability to improve student learning outcomes were inconclusive. However, Barker and Gossman's (2013) study showed that a virtual learning environment improves learning and motivation to learn, as reported by student participants.

Due to the exponentially rapid development of online technologies and the increasing dependence and access of children and adolescents to the Internet, there is a paradigm shift in the way students use the Internet as part of their daily lives (Prensky 2001, Cakirpaloglu et al. 2020). The considerable time spent on social media platforms contributes to new spaces and opportunities for young people to form identities and create and maintain relationships (Rice & Barman-Adhikari, 2014; Way & Malvini Redden, 2017). One cannot afford to overlook the paradigm shift from formal learning to informal learning platforms in recent years. Learners born in 1982 or later are referred to as Millennials, are considered adept at using technology, and according to Prensky (2001) and Selwyn (2012), rely on using technology as part of their learning profile, which often leaves them frustrated and unfocused when technology and digital platforms are not accessible to them when learning. Thang and Ng (2020) show that Social Networking Sites as a learning tool is becoming more popular nowadays and that informal learning through social networks is accepted as normal and the rule rather than the exception among young people. Although their study showed that suburban and rural students seem to use Social Networking Sites for informal learning more often than urban students, the results are conclusive enough to suggest that Social Networking Sites is an important source of knowledge retrieval for young people. These sites are sources of learning, but they also represent digital neighbourhoods where young people understand and cultivate their identities (Brough et al., 2020).

As can be seen from the above, the Internet or virtual world as a learning platform is nothing new to young people per se.

### **1.2 Virtual singing**

Pre-Covid-19 research on virtual singing exists, but not to the extent and intensity of some recent work, as will be seen later. Libeaux et al. (2007) investigated the virtual singing environment as an alternative to unsatisfactory acoustic conditions. The results of the study showed a satisfactory realism of the simulation in terms of the singers' subjective evaluation of the choral sound and confirmed their ability to sing along with the virtual singers. However,

the study did not consider the loss of social and emotional benefits of singing in such a virtual environment. While the study by Libeaux et al. (2007) deliberately did not examine the health and well-being benefits, if any, of group singing in a virtual choir environment, the study by Daffern et al. (2019) did, describing a specific system that allows users to participate in a group singing activity in a 360-degree virtual reality and hear themselves singing alongside the other singers in the recorded environment. The paper does not necessarily provide conclusive evidence for using virtual recordings as satisfactory environments for promoting health and well-being. However, it merely demonstrates a promising way in which the specific tool can explore the health and well-being benefits of group singing, and in particular, control the social interactions inherent in actual group singing activities.

Haupt (2003) embarked on a pioneering project in recording Thomas Tallis' Spem in Alium. For the technology available to Haupt in 2003, the product was admirable, but can be described as a highly digital and electronically manipulated product that does not truly reflect the concept of Virtual Choirs as it is known today and as introduced by Eric Whitacre in 2011. The Virtual Choir concept as used by Whitacre<sup>3</sup> came about when he heard a recording made by one of his fans singing all the vocal parts of one of his choral works. The Virtual Choir concept involves people from around the world collaborating and singing the same composition in synchronisation to form a unified sonic product. Carvalho and Goodyear (2014) examined the projects of Whitacre Virtual Choir and find that they provide compelling examples of what can be achieved through engaged collaborations within informal learning networks. Carvalho and Goodyear also mentioned the intensity of the emotional experiences evoked by the Virtual Choir final products, both for participating choir members and for those who listen to them.

Circle and Hoppmann (2010) reported on an online choral class at an American multi-campus college to reach more students and provide opportunities for more students to participate in a choir who may have never done so or enjoy singing. The authors addressed the necessary structure for such an endeavour, student accountability, and faculty adaptability as necessary aspects for the success of what was considered a new and groundbreaking endeavour in 2010.

When singing together in the same physical space, certain natural acoustical factors play a crucial role in the final sound of the choir. The final composite choral sound elements are determined by precision, vowel formation, intonation, and room acoustics, among other

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<sup>3</sup> <https://ericwhitacre.com/the-virtual-choir>

factors. Jers and Ternström (2005) conducted an intonation analysis of a multi-channel choral recording with regard to intonation, synchronisation, and the extent to which singers in a vocal group agree with each other. The study's goal was to find objective measures that could help define what is known as the "chorus effect" (the combined sound of many sources that are similar but uncorrelated at the level of the waveform of the sound). Parncutt and McPherson (2002) define the chorus effect or ensemble effect as that character of sound that prevents one from hearing exactly how many voices are singing in unison. The minimum is three voices, which is different from voices singing in one or two voices. So, the chorus effect is influenced by factors such as intonation and individual voice characteristics (vibrato, timbre). Jers and Ternström's (2005) study shows some expected effects of intonation dispersion and an unexpected lining up of vibrato.

### 1.3 Covid-19 related singing

The literature on how the Covid-19 lockdown and subsequent lack of continued regular singing habits affected children is proliferating (Cabedo-Mas, 2020; Coibion et al., 2020; Corvo & De Caro, 2020; Dey, 2021; Fink et al., 2021; Giordano et al., 2020; Granot et al., 2021; Krause et al., 2019; Martínez-Castilla et al., 2021; Mas-Herrero et al., 2020; Pettinger, 2021; Porshi, 2020; Razai et al., 2020; Theorell et al., 2020; Torales et al., 2020; van der Sandt & Coppi, 2021). In a literature review of the effects of Covid-19 on the musician and return to singing, Vance et al. (2021) reviewed the prominent literature on the following aspects: Effects on the voice, aerosol and droplet transmission, singing and musical instruments and the spread of Covid-19, psychosocial effects, effects on patients with a vocal prosthesis, voice and speech therapy, treatments, and return to singing and playing instruments. In addition to the recommendation to have virtual rehearsals or performances to reduce potential transmission when singing and playing instruments, the main conclusion of the literature review by Vance et al. (2021) is that wearing masks, instrument covers, smaller choirs, performing outdoors, good ventilation with social distance, shorter rehearsals, regular cleaning of frequently touched surfaces and hand washing, avoiding contact with others, and temperature shielding are the measures to be taken to regulate the effects of Covid-19.

Some research on the direct impact of the Covid-19 pandemic on singing and the emergence of virtual choirs as an alternative to singing has already seen the light of day, such as the experiences of professional voice coaches during the Covid-19 period (Primov-Fever et al., 2020). Theorell et al. (2020) conducted a study with Scandinavian choral singers and asked them the question, "What do you miss most as a choral singer?" Each participant was asked to

rate the importance of different elements related to the experience of choral singing. Their study shows that the social aspect of choral singing has a greater weight than the other components on the perception of loss during changes in choral singer routines in response to the Covid-19 pandemic and that singers were affected aesthetically, emotionally, and physically. Martinec's (2020) study mirrors Sandén's (2020) findings in that current technologies cannot replace the necessary human connections and subtle interactions in face-to-face rehearsals, especially the magic that occurs when singers breathe together, feel together, and create a profound aesthetic experience together, person-to-person in a group. In the recent study conducted on the experiences of choristers and facilitators during the Covid-19 pandemic in the UK, Daffern et al. (2021) concluded that "the possibilities of technology have clarified the potential access it could provide to group singing experiences in more normal times. However, the limitations imposed by current virtual choral models, which cannot provide the shared experience of singing together, have highlighted the recognition of the importance of face-to-face group singing to perceived well-being, with the connectedness and social capital formed in the process of singing together central to the benefits of this experience".

During the current Covid-19 crisis, research has already demonstrated the benefits of music in enhancing well-being. As reported in a study by Corvo and De Caro (2020) and van der Sandt and Coppi (2021), Italians responded immediately and spontaneously to counter loneliness and distress with song and music. In a cross-cultural survey study in which respondents were from eleven different countries, music was found to be more or equally effective than other strategies (hobbies, physical activity, information seeking, reading, eating/cooking, productive activities, mindfulness, watching movies) in achieving various well-being goals (Granot et al., 2021). Pettinger (2021) reported singing as a creative outlet for coping and a creative response to the Covid-19 crisis. In Spain, a survey study showed how adults of different ages increased their use of music during a lockdown, which positively affected their perceived well-being (Cabedo-Mas et al., 2021). Giordano et al. (2020) reported the impact of listening to music to promote emotional well-being in Italian hospital staff by reducing feelings of anxiety, sadness and worry.

Similarly, a survey study conducted in Australia by Krause et al. (2021) found a positive relationship between music listening and life satisfaction. A cross-cultural study (USA, Italy and Spain) found that music (both listening to and making music) was the most chosen coping activity during the pandemic (Mas-Herrero et al., 2020). In another cross-cultural study conducted between six nations from three different continents, more than half of the respondents reported using music for coping. Individuals who experienced increased negative

emotions used music for solitary emotion regulation, while individuals who experienced increased positive emotions used music as a proxy for social interaction (Fink et al., 2021). Several studies, such as Fink et al. (2021), emphasise the importance of real-time musical responses to social crises and individualised adaptations in musical behaviour to meet socio-emotional needs.

#### **1.4 Benefits of singing together**

In addition to the social benefits of singing, it is believed and proven to be a wholesome, good experience that promotes mental health and well-being (Balsnes, 2018; Charlotte, 2020; Clift, 2012; Clift & Morrison, 2011; Clift et al., 2010; Cohen, 2009; Fancourt & Steptoe, 2019; Gabrielsson, 2011; Gick, 2011; Grape et al., 2002; Grape et al., 2009; Grape et al., 2010; Judd & Pooley, 2014; Kirsh et al., 2013; Kreutz, 2014; Livesey et al., 2012; Maury & Rickard, 2020; Mellor, 2013; Olsson et al., 2013; Schladt et al., 2017; Skingley et al., 2018; Stacy et al., 2002; Stensæth, 2018; Stewart & Lonsdale, 2016; Theorell, 2014; Vaillancourt et al., 2018; Williams et al., 2018; Willingham, 2021). How participation in a communal activity affects human well-being is being researched in several areas. In a study of the mental health and community well-being benefits of group singing in Australia, the authors highlighted that the "individual mental health benefits associated with singing in groups include increased levels of social connectedness, increased sense of belonging, physical and emotional benefits, and reduced personal stress" (Gridley et al., 2011). Norton (2015) indicates that the benefits associated with group singing, such as positive affect or mood, controlled deep breathing, social support, social cooperation and coordination, cognitive stimulation, and which require regular engagement and practise, as reported in a study by Clift and Hancox (2010), could just as easily result from other group activities. However, group singing can activate physiological processes that are not addressed by participation in only social groups. Sanal and Gorsev (2014) investigated the psychological and physiological effects of singing by quantifying the effects of choral singing on singers' emotional state and anxiety levels. They concluded by finding that singing had a positive impact on psychological indicators of effect and anxiety. Their study was unable to convincingly demonstrate the positive physiological effects only due to the study's limitations. The results of the study on the effect of music on human stress response by Thoma et al. (2013) may help to understand the positive effects of music on the human body. Kreutz et al. (2004) studied the effects of choral singing on secretory immunoglobulin A, cortisol, and emotional state. As with all other studies, the outcome was positive in favour of singing, as the results suggest that choral singing positively affects both emotional affect and

immune defence. Pearce et al. (2016) believe that in addition to the physical and psychological processes that link singing to improved health and well-being, the social aspects of group singing are also likely to play a vital role in health and well-being outcomes.

### 1.5 Music and emotions

The relationship between music and the mind leads to a brief consideration of the individual sphere of emotion, which is an indispensable part of being human. Emotions are one of the most pervasive aspects of human existence and are related to virtually every aspect of human behaviour-action, perception, memory, learning, and decision making (Sloboda & Juslin 2001). However, the answer to the question of what emotions are, is as evasive today (Pawłowska, 2020) as it was in 1884 when William James (1884) first posed the question. Fehr and Russell (1984, p.464) claim that "everyone knows what an emotion is, until asked to give a definition". Another reason is the "disruptive" role attributed to emotions as motivators of human behaviour. Although the way emotions are viewed has changed considerably over time, one of the prevailing views has been that rationality can be hijacked by the pirates of emotion (Cacioppo & Gardner, 1999). Emotions can be seen as a simple concept with a scientific construct that includes both a body of tacit and explicit knowledge. Pawłowska (2020) claims that because emotions remain in the sphere of individual experience, they are natural and spontaneous properties of human beings. To date, there is no clear indication of what they are, when they arise, what they depend on and how to deal with them. One should consider the sociology of emotions and how social conditions play a role in the emergence of emotions, dynamics, timing and emotionality in the individual and interactional, community and organisational dimensions (Pawłowska, 2020, p.9). Emotions are to be studied through several scientific disciplines, psychology, social psychology, micro-sociology and cultural anthropology.

Measuring children and young people's emotions can be a controversial topic since Delplanque and Sander (2021) assert that reliable methods of measuring emotions are risky in terms of scientific validity. Mauss and Robinson (2010) state that "while various explicit and implicit measures of emotion are currently available, there is still no generally accepted method to measure a person's affective state" since emotions are subjective and vary across cultures. Geethanjali et al. (2017) assert that "[E]motion is a subjective and conscious occurrence which is illustrated mainly through psycho physiological expressions and biological reactions". Schindler et al. (2017) indicate a lack of assessment tools to capture the broad range of

emotions, despite the long-standing interest in emotions. Concerning the current study, it might be interesting to consider the success of Toet and van Erp (2019) with exploring an "EMojiGrid" as a tool to assess experienced and perceived emotions. Their study validity and reliability compared with other methods may be a useful affective self-report tool to assess both experienced and perceived image-related emotions.

The Covid-19 pandemic viewed as a social phenomenon had a direct impact on people's emotional well-being. Music and song in managing and navigating emotions can be viewed through a psychological approach – how and why people experience emotional responses to music and how and why individuals experience music as an expression of emotion. Vuilleumier (2014) asserts that "research in psychology has often emphasised a different kind of aesthetic emotions elicited by music, beyond basic emotions such as joy, sadness, and fear, or dichotomous distinctions between pleasant and unpleasant emotions". Vuilleumier (2014) continues by identifying "music-specific" emotions: joy, sadness, tension (fear or anxiety), wonder, nostalgia, tenderness, power, peacefulness, and transcendence. This notion that emotion elicitation processes in the context of art may differ from those of everyday emotions is supported by Kawakami et al. (2014). At first glance, musical emotions are emotions related to the aesthetical value of music or those emotions that are evoked and expressed through music. How one reacts to music and how music can affect one's emotional state, i.e. musically evoked affective responses, is strongly correlated with the emotional arousal of music (Goupil & Aucouturier, 2019).

Singing is a musical activity that evokes strong emotional responses; Kreutz et al. (2012) suggest that singing can evoke strong activations in subcortical regions associated with emotional processing. Morton and Trehub (2007) assert that songs are essential across age and culture because of their social and emotional regulation. From the moment infants are lulled or stimulated with appropriate songs to the activities and games of preschoolers and school children accompanied by sounds, through songs. Songs play an essential role in regulating emotions, as Sloboda and Juslin (2001) found, and songs also promote and enrich identity and group solidarity. Songs are also used in marking specific rites of passage (Lertzman, 2002; de Cácia Oenning da Silva, 2006), used for political purposes (Suodenjoki, 2019), and songs provide a socially acceptable means of expressing strong feelings (Ziv, 2019).

Songs are apparent means to convey basic emotions, and as Vuilleumier (2014) claims, even "music-specific" emotions. The physical properties of music lead to a specific individual response to the experience of music and the emotional processing of music. In summary,

Lundqvist et al. (2009) found that the emotion induced in the individual is the same as the emotion expressed in the music, and this is also consistent with the notion that music can induce emotion through a process of emotional contagion. A smile is contagious - singing songs with inspiring and uplifting lyrics cannot help but uplift and influence one's emotions.

Music and its means of communication and how people use music to support their understanding and interpretation of social issues can also be found in anthropological and ethnomusicological studies. "Music represents an important aspect of the identity of both individuals and groups and is an inevitable part of daily life impregnated with cultural codes that are part of the symbolic system of our society" (Stajčić, 2018, p.291). As an indispensable part of societies, music and musical sounds are also seen as inextricably linked to the communities that produce them (Cottrell & Impey, 2018, p.525). Not only is music an integral part of people's leisure time (Hallam et al., 2017), but the therapeutic value of music should also be noted - musical sounds have a profound effect on morale, personality and the cultivation of human emotions due to the affective and emotional charge (Hosseini & Hosseini, 2018).

## 2 Method and sample description

This study was conducted in collaboration between the Free University of Bozen/Bolzano (Italy), Mozarteum University (Austria), the University of Jyväskylä (Finland), and De Montfort University (United Kingdom) and approved by the respective universities' Ethical Committees. The quantitative research was conducted in the form of an online questionnaire followed by data analysis. Questions were organised and grouped around participants' emotional- and social well-being, as well as singing habits. Children and adolescents aged 10-20 years from Austria, Finland, and Italy were asked how the first Covid-19 lockdown affected their daily lives and general well-being. Due to the lockdown and resulting physical isolation, an online survey proved to be a reliable and easy-to-use tool. The formation of the sample (Riva et al., 2004) was strictly controlled and the construction of the questionnaire was done in a way that ensured reliability by including enough multiple factors and a high enough number of options to measure the variables accurately.

The necessary ethical clearance procedures have been followed and informed-consent rules from all researchers' institutions. The study required participants to give informed consent for their data to be used. Steps were taken to ensure that participants willingly and with their

knowledge and consent participate in the study. The necessary steps were followed to get the consent of underage participants. The survey's design was to ensure that no psychological stress or anxiety or other harm or negative consequences beyond that usually encountered by the participants in their life outside research will be endured. Participants did not receive financial inducement for their participation.

### Sample description

The population for this study is defined as all children and adolescents between the ages of 10 and 20 who actively sing, whether as soloists, choral singers, or participants in regular music classes, with a mean age of 15.13 years. There were altogether 636 participants, 163 Austrian, 141 Finnish and 332 Italian participants. The sampling was intended to incorporate as many as possible environments where children would possibly be singing. The diversity in the sample is to be noted; most of the Austrian participants were from school choirs, most from Finland's participants sang during school music lessons, whereas Italy's participants were mainly from choirs outside the school environment. Results show for example, in their rooms, or with game consoles, YouTube, Spotify.

It is also notable that a significant number of participants do not sing in a choir (either in school or in a choir outside the school environment). Amongst the non-choir singers ( $n=169$ ), there was a healthy distribution of other singing activities: 16.57% took voice lessons, 32.54% took part in singing during religious ceremonies, 47.93% usually sang during music lessons, 28.40% participated in singing with their family singing, and 81.07% indicated that they usually sing alone.

### Research tools

A conventional questionnaire was used in the present study. The possible weaknesses thereof is acknowledged: are hard to put into words. The description of emotion can be considered ambiguous because the association between words and feelings is also subjectively influenced by the cultural and social environment of the participants. In this study, care was taken to translate the questionnaires carefully to capture the intended meaning in different cultures and languages, but it must be said that the differences in intensity, context and other semantics between cultures may be lost in translation (Toet & van Erp, 2019). The use of a Likert scale in the questionnaire seems to have its pitfalls in a cross-cultural study. The style of answering between the Italian and Austrian participants seems to differ from that of the Finnish

participants. This could be attributed to the cultural differences between the respondent groups. Without further studies or in-depth clarifications, a cautious interpretation of the data is therefore warranted. The current study may have the same shortcomings or limitations as Pisano et al.'s (2020) study, taking into consideration that "the outcomes of potentially distressing situations, even in case of natural disasters (Alvarez & Hunt, 2005) are co-determined by the interaction of several factors including: the parents' psychological response to the pandemic, which influences the children's reaction; mental and physical well-being of parents and children before the event; quality of interactions between parents and children before enduring the pandemic and, lastly, resilience, in coping with adversities".

Question 5 and question 8 of the questionnaire specifically addressed participants' emotions during the Covid-19 social isolation (lockdown) and how they felt about not being able to sing with the people they usually sing with. "During the Covid-19 social isolation (lockdown) I felt..", and "Not being able to sing with other singers made me feel..". After studying different views on the definition of emotions (Frijda, 2007a; Frijda, 2007b; Mayer, 2020; Oatley, 2007; Pawłowska, 2020; Payne, 1989; Reizenzein, 2007; Scherer, 2005), the following emotions were selected: happy, afraid, calm, sad, angry and agitated as emotions that participants were asked about. These emotions are based on the primary human emotions identified by Panksepp (Montag and Panksepp, 2017) and, according to Helfrich (2018), intercultural concepts. It can be assumed that the Covid-19 is an emotional event that elicits individual emotional responses that are associated with and influenced by social and cultural influences (Mayer, 2020). According to the literature, it is generally assumed that the chosen emotions are present in the emotional spectrum of most cultural groups (Scherer et al., 1986).

### 3 Findings and Discussion

This article reports on the perceptions of the emotional well-being of children and adolescents and their experiences of their singing habits and emotional well-being during the first Covid-19 lockdown. This discussion takes place against the backdrop of participants emotions.

The impact of the Covid-19 pandemic on the world population is currently evaluated and investigated in numerous studies world-wide. The public debate on the issue is becoming more and more widespread with the media (Kwai & Peltier, 2021; Savage, 2020) reporting on the long-term effects on the well-being of people – contributing to possibly worsening the

psychological effects on people. In their study, Houston and First (2021) show that those experiencing the most media exposure to the pandemic had more stress and depression.

The results displayed here might not be statistically significant, despite efforts to ensure the extensiveness of the sample. However, the data offers an exciting insight into the present situation and motivates further, more rigorous research. It is the hope that the results will offer families points of reflection for improved care of their children and educators to consider improved methods of singing with children.

#### 3.1 Basic Emotions

In Figure 1, it can be seen that the majority of participants from all three countries felt calm during social isolation, followed by a feeling of sadness and then agitation. In all three cases, there is a slight standard deviation from the mean.

	Country	Mean	N	Std. Deviation
<i>During the COVID-19 social isolation I felt happy.</i>	<i>Austria</i>	2.85	163.00	.92
	<i>Finland</i>	3.11	141.00	1.05
	<i>Italy</i>	2.53	332.00	1.12
<i>During the COVID-19 social isolation I felt afraid.</i>	<i>Austria</i>	1.90	163.00	1.01
	<i>Finland</i>	2.29	141.00	1.05
	<i>Italy</i>	2.49	332.00	1.26
<i>During the COVID-19 social isolation I felt calm.</i>	<i>Austria</i>	3.43	163.00	1.07
	<i>Finland</i>	3.50	141.00	.98
	<i>Italy</i>	3.08	332.00	1.21
<i>During the COVID-19 social isolation I felt sad.</i>	<i>Austria</i>	2.95	163.00	1.29
	<i>Finland</i>	3.09	141.00	1.14
	<i>Italy</i>	3.08	332.00	1.33
<i>During the COVID-19 social isolation I felt angry.</i>	<i>Austria</i>	2.71	163.00	1.29
	<i>Finland</i>	2.51	141.00	1.17
	<i>Italy</i>	2.56	332.00	1.30



<i>During the COVID-19 social isolation I felt agitated.</i>				
	<i>Austria</i>	2.98	163.00	1.38
	<i>Finland</i>	3.04	141.00	1.17
	<i>Italy</i>	2.93	332.00	1.28

Table 1: Emotions

Interestingly, in all three countries, most participants felt calm during social isolation, with a convincingly low standard deviation from the mean. Exactly how participants interpreted being calm is undetermined. Generally assumed, being calm means being free of agitation or negative disturbance - that is, a positive emotional state rather than a negative one.

### 3.2 Emotions – gender differences

In the questionnaire, participants also had to indicate their gender as part of the demographic data. Gender identity generally refers to how a person feels and who they see themselves as when it comes to their gender. There are many possible gender identities, and three were listed in the questionnaire: *male*, *female* and *other*.

Of the participants, the majority were female (73,11%), with male singers representing 25,47% of the sample and a total of 9 singers identify as being of diverse gender. In the gender distribution, it can be seen that there are fewer male singers in all three countries than female singers. Where it is not the purpose here to discuss or find answers as to why there are fewer male singers than female singers, it must be noted that this is a popular topic for research worldwide. For now, suffice it to say that the authors concur with Freer's (2007) view that research-based teaching practices must be sought that will positively impact the experiences of all of students, particularly boys. Adolescent boys need to be asked what they like and dislike about singing. There may be some things in their answers that will cause a re-examination of what music educators do, how they do it, and why. In fact, another possible research topic as an outflow from this study. This study did not consider the complexity of dealing with children and young people's cross-gender identification. As the term "other" is rather vague when it comes to understanding one's gender characteristics, gender diversity in children and adolescents has been increasingly reported in recent years (Flores et al., 2016) and that both gender identity and gender expression result from a combination of biological and psychosocial factors (Turban & Ehrensaft, 2018), the issue of gender expression in children and adolescents' singing activities is not part of this study. Due to the low occurrence of "other" cases, the data

are not considered significant. It should be noted that according to Spagnolo et al. (2020), updated and disaggregated data are needed to truly understand the extent to which sex and gender influence health outcomes in the Covid-19 pandemic.

The data show that the differences between the emotion scores of the sexes are significantly higher for the male participants only for two emotions, "happy" and "calm". This correlates with Chaplin and Aldao (2013) findings, who showed in their study of gender differences and moderators of differences in emotion expression from infancy to adolescence that girls show more internalising emotions such as sadness and anxiety.

Emotions - gender differences.

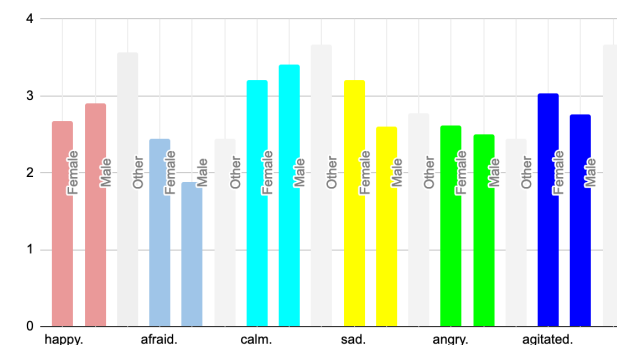


Figure 1: Emotions – gender differences

### 3.3 Socialisation and companionship

When participants were asked if they miss spending time with their friends, as well as with their fellow singers, responses tended toward "I *often* miss spending time". The Likert scale responses were as follows:

1= I <b>always</b> missed...
2= I <b>often</b> missed...
3= I <b>sometimes</b> missed...
4= I <b>rarely</b> missed...
5= I <b>never</b> missed...

Table 2: Likert scale

The frequency of missing time spent with friends also tended toward "often," in contrast to the fellow singers (Table 3 and Table 4). When the values were combined and reduced to just three, namely 'always/often', and 'sometimes' and thirdly 'rarely/never', participants' always/often missed spending time with their friends, as they did with their choir mates. Brooks et al. (2020) and Jiao et al. (2020) assert that mental health considerations for children quarantined because of Covid-19 are intensely challenging due to the loss of regular companionship. As with the emotional experience of being in social isolation, female participants showed the highest score on the emotional experience of not singing with their fellow singers.

<i>Value Label</i>	<i>Value</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cum Percent</i>
Always	1	183	28.77	28.77	28.77
Often	2	331	52.04	52.04	80.82
Sometimes	3	107	16.82	16.82	97.64
Rarely	4	11	1.73	1.73	99.37
Never	5	4	.63	.63	100.00
<b>Total</b>		636	100.0	100.0	
<i>Value Label</i>	<i>Value</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cum Percent</i>
	0	4	.63	.63	.63
Always	1	116	18.24	18.24	18.87
Often	2	250	39.31	39.31	58.18
Sometimes	3	156	24.53	24.53	82.70
Rarely	4	63	9.91	9.91	92.61
Never	5	47	7.39	7.39	100.00
<b>Total</b>		636	100.0	100.0	

In a study by Shorer and Leibovich (2020) on young children's emotional adjustment during the Covid-19 onset, it is shown that their emotional adjustment during stressogenic events is highly dependent on parents' emotional state and parental emotion regulation and playfulness. Their study showed that parental emotion regulation completely mediates the relationship between stress exposure and children's stress responses. These findings highlight the importance of parental emotional competence in children's emotional adjustment during

stressful times. The results suggest that children were mainly calm during social isolation (lockdown) and generally sad because they could not sing along with their friends - this can be interpreted more as a positive outcome and could also be due to the regulatory role that parents and/or caregivers played in the emotional management of the effects of the Covid-19 lockdown. Phelps and Sperry (2020) contend that children depend on their parents or guardians to determine how they respond during a crisis. Researchers have found that children who have been exposed to trauma tend to have higher levels of psychological well-being when the adults in their lives are available to calm them down and help them with their overwhelmed emotions (Mowder et al., 2006).

### 3.4 Singing habits during lockdown

The work of Buheji et al. (2020) provides insights into the impact of the Covid-19 outbreak on children's mental and physical health and the need for a concrete framework to help them overcome the difficult and uncertain times of the pandemic. Such a framework could include an unfailing reliance on the child's singing infra-structure, including the possibility of a well-organised and skilled online/virtual singing environment. In the data, one can see, and quite expectedly, that the majority of participants either sang less than before or stopped singing entirely during the lockdown (Table 5).

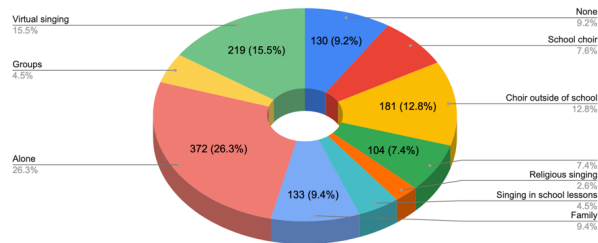
<i>Value Label</i>	<i>Value</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cum Percent</i>
	0	2	.31	.31	.31
I sang more than before.	1	95	14.94	14.94	15.25
I sang as much as before.	2	152	23.90	23.90	39.15
I sang less than before.	3	361	56.76	56.76	95.91
I stopped singing.	4	26	4.09	4.09	
<b>Total</b>		636	100.0	100.0	100.00

Table 5: Singing during social isolation as compared to before

It is hoped that, should this study be repeated in the future when the international community is faced with a similar situation, the results will be different. "During the Covid-19 outbreak and possible future epidemics, their needs to be a simple yet robust framework that helps the children and their parents to be resilient and overcome the challenges and instabilities that most probably would occur due to lockdown" (Buheji et al., 2020).

Of the type of online singing participants were able to participate in, 15.5% participated in "virtual singing (virtual recordings)," 4.5% were part of a "group," 7.6% sang as part of their school choir, 12.8% sang in an "out-of-school choir," 7.4% sang at religious ceremonies, 2.6% of participants sang during "school lessons," 9.4% sang with their "family," and 26.3% reported that they sang "alone".

What type of online singing did you do during the COVID-19 social isolation?



In a study by Choi et al. (2020) on the value of the arts as an educational strategy and coping mechanism during the Covid-19 pandemic, the authors argue that creative experiences are essential for psychosocial development and well-being and that these activities help children develop skills and coping strategies such as creativity, resilience, and problem solving, especially during prolonged traumatic experiences. The reasons for the non-participation in singing activities of the 9.2% of respondents are not known and could be unpredictable or unavoidable reasons but securing and funding appropriate educational and recreational infrastructures to constructively engage children when they are confined at home should be a priority for all governments.

The silver lining of the non-online-singers situation is that the majority of participants in all three countries sang online on a scale from "sometimes" to "regularly". Finland had the highest percentage of participants who did not engage in online singing (Austria – 17.18%, Italy – 18.37%, Finland - 59.57%). This result could be explained by the fact that Finland experienced a much shorter and less harsh lockdown than Italy and Austria.

### 3.5 Feelings about singing online

Of the participants who participated in some form of online singing, 42% were neither satisfied nor dissatisfied with online singing, 31% reported being dissatisfied with online singing, and 27% reported being satisfied with online singing. Virtual, online singing should not be seen as a substitute for life (in attendance) performances or live rehearsals; instead, role players should seek to consider the various educational benefits of the online experience and view it as a value-added alternative to the absence of singing. The findings of this study are in line with Martinec's (2020) study suggesting that online singing still has a long way to go in terms of development before it is accepted and seen as equivalent to a traditional singing experience; the majority of participants experienced online singing as "much worse" than traditional face-to-face singing<sup>4</sup> (Figure 3).

For me, online singing, as compared to singing in presence, face to face, .....

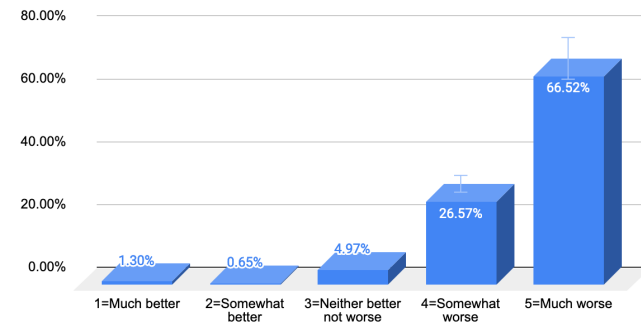


Figure 3: Online singing compared to singing in presence

As online technologies develop exponentially fast and children and young people's dependence on and access to the internet increases, there is a paradigm shift in the way students use the Internet as part of their daily lives (Prensky, 2001; Cakirpaloglu et al., 2020). However, most participants stated that they "sometimes" enjoyed singing online, with the following highest percentage of participants not enjoying it at all<sup>5</sup>. This is even though Thang and Ng (2020) show that Social Networking Sites as a learning tool is becoming increasingly popular

<sup>4</sup> Likert scale: Much better, somewhat better, neither better nor worse, somewhat worse, much worse

<sup>5</sup> Likert scale: Never, Rarely, Sometimes, Often, On a regular basis

nowadays and that informal learning through social networking sites is generally accepted as normal and the rule rather than the exception among young people. The Internet and being online are not only sources for learning, but they also represent digital neighbourhoods in which young people understand and cultivate their identities (Brough et al., 2020).

The data show that children also still sense the value and perhaps the magic of physically making music and singing together in the same space, not only for the sonic experience but also for the social experience. As one Austrian participant aptly remarked: *Es ist einfach nicht dasselbe* - it is just not the same!

The last question of the questionnaire was open-ended<sup>6</sup>. The results extracted from the responses to this question from all three countries are consistent with the study by Theorell et al. (2020), which shows that the social aspect of singing together has a strong influence on singers' perceptions of the benefits of singing. It can be concluded that current technologies are not able to replace the integral human connections and subtle interactions that occur in face-to-face rehearsals, especially the magic that happens when singers breathe together, feel together, and create a profound aesthetic experience together person-to-person in the group.

#### 4 Limitations and future research

There are a number of limitations to the present study that may affect the context and interpretation of the results and data analysis. Although efforts were made to ensure cohesion and yet diversity in the sample and broad distribution, the demographic of respondents was self-selecting to children and adolescents who have access to the Internet and have the technology and ability to participate in an online survey.

For this reason, although the aim was to examine how the lockdown influenced children and young people's emotional well-being and singing habits, there is likely a disproportionately large sample that includes more participants who have engaged in online singing than others. The gender distribution of the sample is also skewed towards female participants. This could reflect the general engagement of group singing for children in all three countries; the high proportion of female participants could also indicate differences in the perceived value of the experience, again a subject for further research.

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<sup>6</sup> "Can you summarise your experiences/feelings while singing online in social isolation (lockdown, quarantine) in a few sentences?"

A cross-national study of this nature cannot, by its nature, provide an in-depth longitudinal study of the experiences of children and young people participating in online singing; further studies with additional samples to triangulate with the current study's dataset would be very valuable. In addition, it would be interesting to look at participants' longer-term engagement with online singing models once the limitations caused by Covid-19 are removed, and the technology improves.

Wolf (2020) refers to three different models of vocal pedagogy in working with children. This aspect could be further explored to arrive at a model of vocal pedagogy for successful singing with children online. Schaumberger (2020) discusses the job profile and skills and competences of children and youth choir directors. Based on the writings of Schaumberger (2020), it may be useful to initiate research to develop another skill for choir directors - to work skillfully and successfully in an online environment with singing children.

If children could sing together, tune their voices against other voices, coordinate their vocal efforts into a shared sonic experience, then the results of the study could be different; online and virtual singing experiences could almost certainly increase, and more positive benefits could be observed. Developments in technology would also provide the opportunity to systematically investigate the impact of sharing a physical and acoustic space on the represented experience of group singing.

#### 5 Conclusion

Although online singing has been a lifeline for many singers during the Covid-19 lockdown world-wide, the possibilities of technology have highlighted the potential access to singing experiences in more normal times that it could provide. However, the limitations imposed by current online singing options, which cannot provide the shared experience of being physically together, have highlighted the recognition of the importance of physical togetherness to perceived well-being, with connectedness and emotional well-being central to the benefits of this experience. Future developments in technologies for online singing need to capture something of the essence of physical togetherness and singing as a shared experience. As technological advances continue to accelerate, virtual communal singing has the potential to become a reality soon. However, according to Daffern et al. (2021), this needs to be developed "hand-in-hand with a better understanding of what makes singing together so unique, highly valued and ultimately 'magic'".

The findings of this study of children's singing habits and emotional experiences during lockdown present a unique perspective for understanding why singing, together and alone, is such a fragile but unique and meaningful experience for many. Co-existence and co-creation through singing need to be further explored to understand the impact of its absence on children and young people's well-being and to re-create the benefits of in-person singing activities convincingly.

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