

# Music in times of COVID-19

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## Introduction

In March 2020, the World Health Organisation (WHO) announced the first global pandemic officially caused by a coronavirus (World Health Organization, 2020a). COVID-19 was identified as a new respiratory illness resulting from infection with the novel coronavirus SARS-CoV-2, with the potential to spread across the globe. Public health measures (e.g., increased handwashing, reducing social contacts) were introduced to reduce the rate of transmission (Ayouni, Maatoug, Dhouib, Zammit, Fredj, Ghammam, & Ghannem, 2021). These measures also included the closure of spaces and events that would encourage high levels of social interaction along with 'lockdowns' confining people to the vicinity of their homes. Throughout the world, gatherings were banned, cultural and sporting events were cancelled, curfews were brought into effect, travel and commuting were restricted, and bars, restaurants, schools, and businesses were forced to close (Hale et al., 2021; Porcher et al., 2020). The scale of the disruption caused by the considerable number of cases, and the implementation of lockdowns led to widespread social and emotional disruption. Uncertainty, and financial insecurity arising from these measures cascaded into widespread increases in stress, fear, anxiety, panic attacks, depression, anger, and sleep disorders (Hossain et al., 2020). This created a unique situation where music-related behaviours and music therapy played an important role.

The current chapter will review how music was used in a range of contexts and settings to support the social, emotional, and physical needs that developed because of the coronavirus pandemic and resulting lockdowns. We aim to highlight the rapid changes that occurred in relation to music use in the general population and music therapy practices as the world adjusted to the new challenges posed by the unprecedented circumstances.

## Everyday Music Use in Lockdown to Promote Socio-Emotional Coping

### *The need for rapid, individualized, user-driven coping strategies*

The use of music for managing stress and promoting wellbeing in the general population during the novel coronavirus pandemic occurred in the context of pervasive mental health challenges resulting from the forceful societal lockdowns described above. While some travel constraints were already adopted during early 2020, the vast majority of restrictions on personal mobility, liberty, and social life were introduced extremely rapidly around the time of the pandemic declaration on 11th March 2020 (Hale et al., 2021; Porcher et al., 2020). In need of urgent health crisis management, governments, understandably, at first, did not prioritize the wellbeing needs of their citizens who consequently had to swiftly pursue and develop safe, accessible, and affordable coping strategies on their own (Hansen, in press A, in press B).

Following the announcement of the pandemic and the rapid onset of public health measures, many people may have experienced a decline in their mental health and wellbeing (Torales et al., 2020), particularly at the initial stages of lockdown (Fancourt et al., 2021). At the population level, people were more likely to report symptoms of mild depression (Fancourt et al., 2021) compared to representative data collected in 2003 and 2008 (Kocalevent, Hinz, & Brähler, 2013). Importantly, however, some groups were more susceptible to developing symptoms of depression than others (Fancourt, et al., 2021; Young et al., 2021). Those who were female (Torales et al. 2020; C. Wang et al. 2020; Young et al., 2021), young (Kiernan et al. 2021; H. Wang et al. 2020; Young et al., 2021), single, separated or divorced (Ribeiro et al., 2021), unemployed (Young et al., 2021), possessed lower education levels (Mazza et al. 2020), worked in the healthcare sector (Benfante et al. 2020), had limited access to personal protective equipment (C. Wang et al. 2020), or had received prior chronic or mental health diagnoses (Young et al., 2021), for example, suffered more severely.

These risk groups did, however, only partly overlap with the young, highly educated, socially supported, but infection-worried people who were more likely than average to adopt creative, artistic activities such as digital arts and writing, crafts, reading for pleasure, and music during lockdown (Mak et al., 2020). Some of these may indeed have belonged to the sizeable minority who experienced occasional positive effects of reduced social pressure and work burden (Pan et al. 2021). Thus, it bears mentioning that the lockdown-induced changes in musical consumption and creation patterns which will be reviewed here served psychological needs both for effective coping and for filling up additional leisure time and fighting boredom and social hypo-stimulation arising from home confinement.

In factor analysis on demographically representative, large-scale survey data collected during the early months of lockdown (April-May 2020) in France, Germany, India, Italy, UK, and USA ( $n=5,113$ ), Fink et al. (2021) found support for a bifurcation between those primarily experiencing negative and positive emotions. Whereas negative-experiencers chiefly listened to music and danced solitarily to regulate their own emotions and stress levels, positive-experiencers tended to sing, play, and listen with others at home and via the internet as a proxy for the social interactions and aesthetic experiences that they were deprived of. Relatedly, Henry et al. (2021) found that positive reframing and active coping strategies were associated with using music for entertainment, revival, achieving strong sensations, diversion, and mental work.

Despite some indications that negative-experiencers may have relied more on nostalgic music whereas corona-themed music was important to both groups (Fink et al., 2021), evidence on music selection behaviour during lockdown remains tentative. Between a quarter and half of respondents discovered new styles and artists (Cabedo-Mas et al. 2021; Ferreri et al. 2021; Fink et al. 2021), and between one and two thirds consumed nostalgic music (Fink et al. 2021; Gibbs and Egermann 2021), resulting in a quantitatively measurable increase compared to previous years (Yeung, 2020). Nostalgically themed Spotify playlists did, however, not generally gain followers (Sim et al., 2020), which could be suggestive of individualized rather than consensus-based nostalgia consumption. On the other hand, Tim Burgess' 750+ listening parties with interactive live commentary and sharing of concert memories and memorabilia on Twitter have indeed been associated with collective nostalgia (Lee & Kao, 2021).

Other survey studies found increased happy-music and decreased sad-music listening (Ferreri et al. 2021). Hansen et al.'s (2021) Coronamusic Database certainly contains a multitude of humorous and positively biased music videos, and these sentiments have been claimed to constitute defining traits of coronamusic (Hansen,

in press B). Conversely, negatively valenced music was prominently consumed by younger age groups (Vidas et al. 2021) who, as previously mentioned, generally experienced greater wellbeing impediments (Kiernan et al. 2021; H. Wang et al. 2020). Positive (66%), negative (11%), and mixed (19%) emotions were all featured amongst university students' reasons for selecting specific signature songs as typical for their lockdown life (Hurwitz & Krumhansl, 2021). Future research should investigate how these diverse music selection behaviours may relate to the divergent coping strategies, identified by Fink et al. (2021), aimed towards fulfilling emotional and social needs, respectively. Although many musical activities achieved these two goals concurrently, we will attempt to highlight behaviours most typical of either type.

### *Musical engagement for emotional needs*

The motivations for musical engagement that increased the most during lockdown were enjoyment, mood enhancement, relaxation, and energization (Fink et al., 2021). Mothers who used music to regulate their children's emotions in home confinement, for example, reported higher wellbeing and satisfaction with their parental role (Cho & Ilari, 2021). Indeed, many rated music the most effective creative activity for enhancing mental wellbeing goals such as enjoyment, maintaining a good mood, and venting negative emotions (Granot et al. 2021; Kiernan et al. 2021). Others have found that the coping effectiveness of musical engagement at least matched or outperformed competitors such as exercise, sleep, and changing location (Vidas et al. 2021). While pandemic social media usage and TV watching were negatively associated with life satisfaction, music listening showed the opposite relationship (Krause et al., 2021) and was also negatively associated with depression scores (Ribeiro et al., 2021). Interestingly, psychological distress only correlated negatively with music listening during—but *not* before—lockdown (Mas-Herrero et al., 2020).

Engaging with music thus became the potentially most frequent solitary leisure activity during lockdown (Finnerty et al., 2021). Various self-report studies suggest it was adopted for coping purposes by more than 50% of the general population (Cabedo-Mas et al. 2021; Fink et al. 2021; Kiernan et al. 2021), providing benefits especially for younger people and those to whom music already held great importance (Fink et al. 2021; Granot et al. 2021; Henry et al., 2021; Martínez-Castilla et al., 2021).

Even though many people reported increased music listening during lockdown when asked directly (Cabedo-Mas et al. 2021; Carlson et al. 2021; Ferri et al. 2021; Fink et al. 2021; Hurwitz & Krumhansl, 2021; Ziv and Hollander-Shabtai 2021; see, however, Krause et al. 2021), consumer-based user statistics from streaming platforms tell the opposite story (cf. Hansen, in press A). Analysis of aggregated weekly streaming counts on Spotify of top-200 songs in 60 countries, for example, showed that consumption decreased quantitatively as opportunities for everyday listening during commuting and public exercising disappeared (Sim et al., 2020). Since playlist followership exhibited similar declines, the authors argue these changes could not merely be explained by migration towards more specialized niche repertoire. Subjective and objective reports, however, agree that many consumers replaced audio-based platforms with video-based alternatives such as YouTube (Carlson et al. 2021; Sim et al. 2020). Hence, to fulfil emotional coping goals, engagement with music may have become more attentive, immersive, multimodal, and active, manifesting in greater perceived consumption despite fewer measurable listening hours (Hansen, in press A, in press B).

### *Musical engagement for social needs*

The migration of music consumers from audio- to video-based streaming services may reflect that, platforms in the latter category—such as YouTube—afford substantially greater degrees of active participation than is traditionally possible on Spotify and Pandora. Granot et al. (2021) applied multilevel regression models to demonstrate that when it came to reducing loneliness and creating a sense of togetherness, music-related activities outperformed news watching, movies and games, eating and cooking, physical exercise, housework, reading, hobbies, and spiritual practice, but not actual socializing with others. Music also provided diversion from the crisis more effectively than other activities—including socializing—whereas movies and games worked just as well towards this end. Deprived of opportunities for face-to-face encounters, individuals like the positive-experiencers identified by Fink et al. (2021) may thus proactively have pursued dynamic user interaction and co-creation online to compensate for lockdown-induced social isolation.

Greater rates of pandemic music making were observed in people with high openness to experience (Finnerty et al., 2021), and those scoring high on the Social Reward factor from the Barcelona Music Reward Questionnaire more frequently attended virtual concerts and played and composed music during lockdown (Ferreri et al., 2021). People who regularly went to concerts before lockdown were also more likely to make music to cope once live music had ceased (Fink et al., 2021).

Such music making for social coping took multifarious forms. Key examples from the Coronamusic Database (Hansen et al., 2021) and other sources include various formats of joint, virtual singing and playing by choirs and ensembles (Draper & Dingle, 2021; Morgan-Ellis 2021), live-streamed concerts (Swarbrick et al., 2021), digital raves (Palamar & Acosta, 2020), online listening parties (Lee & Kao, 2020), and daily rituals of clapping for healthcare workers (Imber-Black, 2020) and making music from balconies (Calvo & Bejarano, 2020).

Calvo and Bejarano's (2020) interviews with participants engaging in balcony singing and playing revealed that their motivations were dominated by social and identity-based themes such as battling loneliness, connecting with neighbours, celebrating birthdays, solidifying cultural or national identities, commemorating the dead, and fulfilling one's duty as an artist. Entertainment, affect expression, and stress relief were, however, also mentioned. Although participation varied widely from 4% in Mexico to 36% in Spain, music-making from balconies was generally associated with strong feelings of togetherness (Granot et al., 2021).

Substantial proportions of dancing groups (86%), choirs (83%), and instrumental ensembles (60%) adopted virtual formats rather than fully ceasing activities during lockdown (Draper & Dingle, 2021). Although many such initiatives were severely troubled by technological challenges and lower ratings of group identification and psychological needs satisfaction in virtual compared to physical formats (Draper and Dingle 2021), they generally succeeded in maintaining identity, sense of purpose, empowerment, and social anchoring during difficult times (Morgan-Ellis 2021).

Despite predating the COVID-19 pandemic, live-streamed concerts experienced a notable upsurge during this time. While the wellbeing implications of new virtual concert setups remain to be thoroughly investigated, emerging empirical studies suggest that virtual performances presented real-time elicit higher levels of perceived social connection than pre-recorded concerts or originally live-streamed concerts that were watched after the fact (Swarbrick et al., 2021). Wearing virtual reality headsets may further increase feelings of physical presence and connection with the artist (Onderdijk et al., 2021). Intriguingly, felt social connection with performers and fellow

audience members increase with the salience of the coronavirus crisis in virtual concert contexts (Swarbrick et al., 2021).

This last finding, in particular, contributes to a growing research literature alluding to the purportedly exceptional coping potential of topically tailored musical repertoires. Specifically in the context of the COVID-19 pandemic, Fink et al. (2021) applied light gradient-boosted regressor models to show that interest in other people's corona-related music was the by far strongest predictor of successful coping through making of and listening to music during lockdown. In other words, those who actively engaged with corona-themed repertoires benefitted most noticeably from music as a socio-emotional coping tool. This finding emphasizes the significance of achieving a scientific understanding of what has been termed the coronamusic phenomenon (Hansen, in press B; Hansen et al. 2021). Google search trends for "music AND corona" in 2020 suggest that interest in this phenomenon increased dramatically in mid-February, peaked in mid-March, and had levelled off by June (Hansen, in press A). Early survey studies from April and May show that 57% developed a moderate-to-extreme interest in coronamusic in France, Germany, India, Italy, UK, and USA (Fink et al., 2021), and 87.5% of Israelis had been exposed to coronamusic video clips (Ziv and Hollander-Shabtai, 2021). Additionally, more than half of Spaniards resided in neighbourhoods with balcony singing and a quarter of them actively took part (Cabedo-Mas et al., 2021). Some also increased their attendance of live-streamed concerts (Carlson et al., 2021) which was significantly associated with overcoming social isolation (Ferreri et al., 2021).

## **Impact of COVID-19 on Music Therapy Approaches**

### *Adapting music therapy for remote delivery*

In addition to on everyday coping in the general population, the coronavirus pandemic had a direct effect on music therapy services which effectively changed overnight. Physical distancing measures coupled with safety concerns for vulnerable clients and low supplies of personal protective equipment meant that music therapists rapidly pivoted to online delivery formats. Remote technologies such as Zoom, Microsoft Teams, Skype, Google Hangouts, WhatsApp and the humble telephone were all used to implement music therapy delivery via telehealth (Cole, Henechowicz, & Kang, 2021; Knott & Block, 2020). An international survey of music therapists in Asia, Europe, and the US indicated that 32.1% of music therapy services were forced to stop globally given the lack of available telehealth approaches (Agres, Foubert, & Sridhar, 2021). Agres and colleagues (2021) identified that even after the lockdowns ended, many music therapists were no longer allowed to use musical instruments during face-to-face sessions, and many were forbidden from singing. These changes meant that therapists had to adapt how they delivered music therapy in order to maintain a therapeutic relationship with their clients. The proportion of music therapists using technology to deliver their practice has increased from 30% in 2006 to 85.7% during the coronavirus pandemic (Agres, Foubert, & Sridhar, 2021).

To support the rapid uptake of telehealth approaches, The American Music Therapy Association (AMTA) produced formal guidelines and considerations for remote practice (AMTA, 2020). However, many services started using telehealth approaches before official guidelines were released and documented their experiences to inform future practice. For example, the North London Music Therapy Phone Service had pivoted to a remote service as early as the 19th of March 2020, and was nominated for an award for the speed with which

they were able to transform their service (Rizkallah, 2020). Additionally, during the COVID-19 pandemic, numerous resources for developing telehealth services rapidly emerged on the internet such as audio, videos, and music-making instructions (Knott & Block, 2020). Music therapists now have a wider array of resources to draw from to help them to curate asynchronous sessions (i.e., the music therapist directs people to pre-recorded material that they can engage with at a time that is convenient for them) alongside or instead of synchronous sessions (Knott & Block, 2020; Kantorová, Kantor, Hořejší, et. al., 2021).

Several case studies and cross-sectional surveys indicate that a range of music therapy practices, including those for dementia, paediatric patients, rehabilitative and palliative care were able to offer remote options from the early stages of the pandemic. Telehealth approaches to music therapy are now being used in both solo and group contexts (Knott & Block, 2020; Kantorová et. al., 2021). For example, a joint music-making and listening programme for people with dementia and their caretakers was moved to an online format (Molyneux, Hardy, Lin, et al., 2020). Rather than meeting in person, group music therapy sessions were held using Zoom videocall software, with a similar structure to in-person sessions. However, given that singing or playing with synchronous feedback was not possible via this platform, a series of activities that required turn-taking were developed. Molyneux and colleagues (2020) highlighted key learnings that helped to facilitate the sessions more smoothly. The resulting advice included: (i) Provide clear verbal instructions to ensure participants can follow the structure, because more subtle physical gestures may not be easy to understand in a remote setting; (ii) look into the camera rather than at the screen to facilitate more direct engagement from participants; and (iii) manage each participants' microphone during turn-taking activities using the mute function to minimise disruption. It is important to recognise that while opportunities for music-making are limited, continuing online provided continuity and social interactions for participants who may have otherwise become completely isolated due to physical distancing restrictions (Molyneux et al., 2020).

In one mental health setting, co-improvisation approaches were replaced with receptive approaches that involved playing improvised and pre-composed music (Eugster, 2021). Active listening approaches were used to help people living in a psychiatric in-patient setting to manage high levels of acute stress during the COVID-19 pandemic. Due to safety protocols, it was not possible for all of the in-patients to engage in active music making. Instead, the music therapist moved to a larger room to facilitate distancing and engaged in thorough before- and after-cleaning protocols. The music therapist reported that this approach led to spontaneous musical interactions including vocalisations, dancing, and body movements, which supported further dialogue.

Paediatric patients have also benefitted from remote music therapy during the coronavirus pandemic. In a series of case studies, Goicoechea (2021) outlines how telehealth approaches were successfully adopted for children with a range of health conditions, including a five-year-old that needed a heart transplant, an 11-year-old receiving dialysis, and a 16-year-old experiencing grief. Videocall software was used to deliver individualised music therapy that followed in-person models of care as closely as possible. Song writing, music listening, and music discussions were all successfully facilitated using telehealth. The flexibility of the telehealth approach was also beneficial because it meant that participants could participate from the comfort of their own home. This helped to provide patients with an additional avenue of support when they later transitioned out of the hospital environment. However, direct comparisons between in-person and virtual singing sessions for children indicate that there are greater benefits from in-person sessions (Grebosz-Haring, Schuchter-Wiegand, Feneberg, et al., 2021). A very small study that was conducted before and during the pandemic indicated that both in-person and

remote weekly singing sessions may lead to improvements in mood. In-person sessions were also associated with significant decreases in levels of salivary cortisol, whereas virtual sessions were associated with increases. The cortisol decreases for in-person sessions was mirrored by a decrease in self-reported stress levels, and an increase in self-reported calmness (Grebosz-Haring et al., 2021). This finding suggests that even though remote music therapy can be beneficial, in-person sessions may lead to enhanced efficacy. However, it is not possible to be conclusive with this comparison given that the in-person sessions were conducted in a completely different context (i.e., pre-pandemic), compared to the remote sessions (i.e., during the pandemic). It is also possible that the reported differences in cortisol and stress levels may be related to the acutely stressful nature of the pandemic itself. Future research comparing the efficacy of remote sessions compared to in-person sessions should ensure to adequately control for the broader context, perhaps by running different types of sessions at the same time, or by using cross-over trial designs.

### *Music therapists' perspective of remote approaches compared to in-person approaches*

The opportunity to transition to a remote format was broadly welcomed by music therapists (Kantorová et al., 2021). However, music therapists also highlighted the limitations of technology-based approaches and inherent challenges that arise from not being in the same room (Agres, Foubert, & Sridhar, 2021; Cole, Henechowicz, & Kang, et al., 2021). Technological issues that disrupted the flow of communication between client and therapist included poor and unreliable internet speeds, difficulty in achieving dual sound (i.e., two or more simultaneous audio streams) and poor sound quality (Agres, Foubert, & Sridhar, 2021). For example, some music therapists report difficulties with using videocall software for synchronous music playing between the therapist and client, due to time delays and acoustic feedback issues (Cole, Henechowicz, & Kang, et al., 2021; Molyneux, Hardy, Lin, et al., 2020; Goicoechea, 2021). Time delays can be minimised when the therapist and client both use ethernet cables rather than relying on wi-fi connections. However, it seems that the future success of telehealth music therapy may depend on software improvements or by introducing specialised music making software that can facilitate synchronous music playing, to music therapy settings (Goicoechea, 2021). Greater access to software that allows for better real-time music making, including simultaneous instrument-playing and singing, will vastly improve the quality and variety of remote music therapy interactions (Goicoechea, 2021).

Another technological challenge is that videocall and music-making software is not typically adapted for the needs of people with limited physical mobility or intellectual disabilities (Agres, Foubert, & Sridhar, 2021). This is particularly challenging for remote music therapy intended to support physical rehabilitation. Future attempts to deliver music therapy using telehealth approaches will need to consider the accessibility and reliability of the technology used to ensure that they meet the needs of specific client groups.

Although some technological limitations may be possible to address in the future, remote interactions will always be more limited when the client and therapist are not in the same room. In a large, cross-sectional survey from music therapists in Asia, the US, and Europe, 38% reported that 'not being in the same room' reduced their capacity to know the right timing for interventions. Reduced physical proximity and limited visual access limit the degree to which therapists can attune to and empathize with the client (Agres, Foubert, & Sridhar, 2021). In these scenarios, therapists and clients are required to take turns to play music which potentially limits the vitality and richness of the interaction and eliminates the possibility of achieving musical resonance (Kantorová et al., 2021). The reduced richness in the interactions may also lead to reduced levels of engagement and attention with

the therapeutic sessions evidenced by clients who are more easily distracted and more easily exhausted (Agres, Foubert, & Sridhar, 2021). Not being in the same room also makes it more difficult for the therapist to maintain healthy boundaries in the client-therapist relationship (Kantorová et al., 2021). This may be part of the reason that 48-60% of music therapists across two studies felt that remote sessions were not as effective as in-person sessions (Agres, Foubert, & Sridhar, 2021; Cole, et al., 2021). Similarly, neurologic music therapists reported that not being in the same room limited the degree to which they could deliver some sensorimotor approaches (Cole et al., 2021).

Although most aspects of neurologic music therapy could be delivered, therapists reported specific difficulties with gait training. Gait training requires physical supports and therefore cannot be delivered in a remote environment (Cole et al., 2021). Although it is clear from the case studies above that remote music therapy is better than no music therapy, there may be additional benefits from physical in-person music therapy that cannot be readily replaced with technology. Hybrid approaches to music therapy, which use a mix of both in-person and remote sessions to provide a more flexible and accessible service while maintaining the full clinical benefits of music therapy, should be considered.

## **Emergence of COVID-19-Specific Music Therapy Practices**

Along with the transition of longstanding music therapy services into remote formats, entirely new music therapy practices were also developed during the novel coronavirus pandemic. Safety procedures meant that hospital patients had less physical contact and human interactions with healthcare staff. Visors, bodysuits, facemasks, and extensive hygiene procedures across hospital and care home settings, reduced the degree to which healthcare staff could effectively interact with and reassure patients. Music therapy was identified as a strategy to overcome the barriers posed by physical distancing measures in a range of settings, including (i) in high-risk settings (e.g., intensive care units); (ii) to support rehabilitation of long-term COVID-19 symptoms; and (iii) for mental health management for patients and healthcare staff.

### *Intensive-Care Units*

Music was used in intensive care units to overcome the barriers of social isolation and re-humanise the experience of intensive care (Ettenberger, Sgobbi, Eguchi, et al., 2021; Rivi, Melegari, & Blom, 2021; Reidy & MacDonald, 2021; Silva Junior, Machado, Alves et al., 2021). A meta-analysis based on 14 randomised controlled trials indicates that music listening can help to reduce anxiety in mechanically ventilated patients (Bradt & Dileo, 2014) and provides support for using music with COVID-19 patients who are mechanically ventilated. Similarly, music was introduced for COVID-19 patients to reduce the burden from extended isolation (Rivi et al., 2021). Patients with COVID-19 who were admitted to intensive care units would not be able to see their friends and family until they were discharged, and restricted visitation schedules may have been particularly traumatic for patients and their loved ones given the high mortality rate (Rivi et al., 2021).

Despite the challenges of physical restrictions, some music therapists found ways to deliver music therapy in the most restricted parts of intensive care units (Reidy & Mac Donald, 2021). Wireless speakers were used to bring music into isolation rooms, and music therapy sessions were able to continue through screens (Reidy & Mac Donald, 2021), and nursing staff played live music in intensive care (Silva Junior, Machado, Alves, et al.,

2021). An initial qualitative study from Paraíba in Brazil, identified that live music playing in intensive care units was beneficial to patients because it was associated with reduced stress and improved mood (Silva Junior, Machado, Alves, et. al., 2021). Qualitative reports from seven nurses who were working clinically at the time identified that some patients' sad facial expressions transformed into happy faces and noticed several members of staff also became emotional. These findings are broadly consistent with formal evaluations of music therapy in intensive care units that identify that music listening can help to reduce anxiety (Bradt & Dileo, 2014), stabilise stress levels, attenuate stress, and reduce caregiver anxiety (Yue, Han, Luo, et al., 2021). Further evaluations will help to identify specific strategies required to tailor music interventions to meet the needs of patients in the context of COVID-19.

### *Supporting rehabilitation of long-term COVID-19 symptoms*

Music may be useful to help with long-term rehabilitation of long COVID-19 symptoms. Typical long-term effects of COVID-19 include anxiety, breathlessness, pain, and difficulty sleeping (Del Rio, Collins, & Malani, 2020), and there is strong evidence to suggest that music can be used to manage these symptoms. Numerous randomised controlled trials, systematic reviews, and meta-analyses demonstrate the clinical benefits of music for pain management (Lee, 2016), insomnia (Jespersen, Koenig, Jennum, & Vuust, 2015) and pulmonary obstructive disorder (McNamara, Epsley, Coren, McKeough, 2014). Although these previous studies do not look directly at COVID-19, their approaches could be adapted for COVID-19. Current rehabilitation programmes for COVID-19 tend to focus on the core issues related to breathlessness and respiratory function by using progressive exercise programmes and multicomponent interventions (Goodwin, Allan, Bethel, et al., 2021). Preliminary studies suggest that there may be an added benefit of including music in psychological interventions. For example, one study with 70 participants incorporated soothing music listening to a series of pulmonary exercises and psychological group interventions and found that this combination of interventions reduced symptoms of anxiety and improved insomnia for people with COVID-19 (Ying, Yan-Qing, Yan, et. al., 2021). Unfortunately, the study did isolate the relative contributions from each component of the interventions, so the degree to which music is contributing to the added benefits is not clear from this study. Nonetheless, given the evidence that demonstrates the role of music in reducing pain (Lee, 2016), insomnia (Jespersen, Koenig, Jennum, & Vuust, 2015), and improving physical function in the context of respiratory disease (McNamara, Epsley, Coren, McKeough, 2014), there is good reason to think that music could also be beneficial in the context of long-COVID-19 symptom management.

Based on these previous findings, practitioners are currently implementing music therapy regimes to build lung function. Initiatives such as the ENO Breathe program developed by the English National Opera are using vocal training techniques and breathing exercises developed and used by opera singers to support breathing control and reduce associated anxiety (Brunjes, 2021). Over the course of a six-week programme, participants are introduced to a range of breathing exercises (e.g., blowing bubbles in a glass of water using a straw, singing the shape of their names if written in the air in cursive and gently stretching their neck) and online resources designed to support participants between sessions. According to ENO Breathe, up to 90% of participants experience improvements in breathlessness and anxiety from taking part in the programme (Brunjes, 2021). However, the full results of a randomised clinical trial to examine the impact of the ENO project on lung function, anxiety and general health are not yet available. They will eventually shed light on the clinical benefits of this program.

Meanwhile, regional health trusts across the United Kingdom are beginning to adopt the ENO approach to help long-COVID-19 survivors while the final results are awaited (Brunjes, 2021).

### *Mental health management for patients and healthcare staff*

The COVID-19 pandemic placed an enormous emotional burden on healthcare staff (Benfante, et al., 2020). Longer working hours and an increased risk of contracting COVID-19 made healthcare workers vulnerable to acute stress and mental health concerns such as anxiety or depression (Rivi, Melegari, & Blom, 2021). In acknowledgement of the intense acute levels of stress experienced by hospital workers during the first pandemic wave, new music therapy phone lines were established to support hospital workers (Rizkallah, 2020). In the UK, this was initially done on an ad-hoc basis by local charity groups and was eventually replaced by a national music therapy service for staff supported by the National Health Service (NHS). Given the sense of emergency during the early stages of the pandemic, music therapy in this context was delivered on a short-term basis. Psychological first-aid techniques were used as the basis of care rather than cognitive behavioural or psychotherapeutic approaches. This means that the music therapist put a greater emphasis on actively listening to the stress being experienced by the client in the present moment, without encouraging them to reflect on previous experiences or perceived associations. Rizkallah (2020) identified that healthcare staff needed a place to talk and offload on a short-term basis, to cope with the daily stress that they were experiencing. Clients were given the opportunity to engage in music-making, playlist-building and music listening, however none of the 22 service users opted to participate in the music aspects of the service and relied wholly on talking to their music therapist. Further evaluation is required to determine why healthcare staff would opt in for music therapy sessions on a voluntary basis and then decline to participate in music-related activities. Nonetheless, this case report demonstrates a clear role for music therapists in an emergency response.

## **Concluding Remarks and Recommendations**

Faced with sudden societal lockdowns and enforced social isolation during the early months of the novel coronavirus pandemic, the general population developed a wide range of lockdown-compatible psychological coping strategies. Music played an exceptionally prominent role amongst these strategies, showing superior coping potential compared to many other available pastime activities. Depending on individual predispositions and the severity with which people were affected by the pandemic, musical coping behaviours served to regulate emotions and stress levels, compensate for social hypo-stimulation, and/or fight boredom with much-needed entertainment and diversion. Consequently, music selection was exceptionally diverse with concurrent elements of sad and happy emotions and exploratory alongside nostalgic repertoires. However, findings that interest in corona-themed music was especially popular and constituted the strongest predictor of how much music helped people regulate emotions and feel connected to others suggest that contextually tailored musical innovations could have been particularly adaptive for managing past and future societal crises.

Unique adaptations were made to music therapy approaches to support and rehabilitate people with coronavirus. Physical distancing measures such as masks, visors, aprons, and time limits reduced the degree to which medical staff and visitors could interact with coronavirus-infected patients. To bridge the isolation created by physical distancing measures in hospitals and intensive care units, music was introduced to help COVID-19

patients feel emotionally connected to people. Music therapists adapted their practice almost overnight using telehealth approaches so that they could continue to provide treatment services to their patients when they needed it most. New initiatives, such as the ENO Breathe programme, were introduced, employing vocal techniques, and breathing exercises used by opera singers to improve lung function and associated anxiety. Overall, the emerging research literature on the use of music during lockdown converges on the conclusion that music has been instrumental in the fight against the novel coronavirus pandemic and its associated effects, to support the social, emotional, and physical needs of a range of populations, including healthy people in lockdown, patients in intensive care units, and healthcare workers in hospital settings.

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