



Opinion

## **Music and health in times of the COVID-19 pandemic**

Klaus W. Lange and Yiqi Sun

Institute of Psychology, University of Regensburg, Regensburg, Bavaria, Germany

**Correspondence:** Klaus W. Lange, University of Regensburg, 93040 Regensburg, Germany. Email: klaus.lange@ur.de

**Received:** 3 December 2021; **Accepted:** 22 January 2022; **Published:** 25 January 2022

**Citation:** Lange, K.W., and Sun, Y. (2022). Music and health in times of the COVID-19 pandemic. *J. Dis. Prev. Health Promot.* 6, 1–3.

**DOI:** 10.5283/jdphp.35

---

### **Abstract**

Elevated stress levels resulting from fear of the coronavirus, physical distancing measures and economic problems can be expected to cause psychological trauma and detrimental effects on mental health. Music appears to have salutogenetic effects, contributing to wellbeing and supporting health, and may fulfill the functions of mood regulation and social cohesion. Playing or creating music, dancing and listening to music can activate various brain regions involved in cognitive and emotional functions, thereby possibly exerting beneficial effects on physiological and psychological health. Participation in musical activities can provide an effective means of alleviating stress, anxiety and depressed mood. Music may also serve as a proxy for social interaction and may be capable of generating new or stronger social bonds. Preliminary evidence suggests a role of making and listening to music in meeting social needs and improving emotional self-regulation and coping during coronavirus-related lockdowns. Music-related behaviours appear to aid in stress-management, and their potential therapeutic value in the current pandemic deserves further consideration and warrants more systematic research. Since the capacity of music to modulate the behaviour of individuals is supported by various studies, music may be utilised as a communication tool and its effectiveness in promoting adherence to public health advice should be investigated.

**Keywords:** COVID-19; Music; Salutogenesis; Stress relief; Public health communication.

---

Music-related activities have been greatly affected by the current coronavirus disease 2019 (COVID-19) pandemic. The cancellation of musical and other cultural events has often resulted in the absence of music in public spaces (Botstein, 2019; Agarwal and Sunitha, 2020). The toll of the pandemic on professional musicians has been great, with many affected by loss of employment, financial difficulties and mental health problems (Spiro et al., 2020). Moreover, in singers recovering from COVID-19, the restoration of full vocal function may be compromised by various post-COVID-19-related medical conditions, such as pulmonary or laryngeal sequelae (Helding et al., 2020). While numbers of live performances have declined, virtual concerts have thrived, with both lay and professional musicians videoconferencing and streaming performances from home. At a population level, preliminary evidence suggests that music and music-related behaviours could play a role in the management of the present COVID-19 crisis (Lange and Sun, 2021).

Given our experience with the psychological responses observed during previous pandemics of rapidly spreading infectious diseases, increased stress levels resulting from fear of the coronavirus, physical distancing measures and economic problems can be expected to cause psychological trauma and detrimental effects on mental health (Lange, 2020; Lange, 2021). Policies focusing on tempering the impact of the pandemic on mental health may equal the importance of those seeking to mitigate its physical effects. Music appears to have a universal salutogenetic effect, contributing to wellbeing and supporting health. Participating in any kind of musical experience and music making has been demonstrated to have an impact on positive emotions (Lamont, 2012; Croom, 2015; Campayo-Muñoz and Cabedo-Mas, 2017). These effects can be increased when music occurs in a social context (Wuttke-Linnemann et al., 2019). Therefore, music has been widely used in psychological and therapeutic interventions in order to enhance physical and mental health (Peters, 1987; Bunt and Pavlicevic, 2001).

Participation in musical activities can provide an effective means of alleviating stress, anxiety and depressed mood, and music may also serve as a proxy for social interaction (MacDonald et al., 2012). Emerging neuroscientific evidence indicates that playing or creating music, dancing and listening to music can activate various multisensory and motor integration regions in the frontal, parietal and temporo-occipital lobes, which are involved in cognitive, emotional and motor functions. Making music is therefore a powerful way of engaging a multisensory and motor network and inducing changes and linking brain areas within this network (Altenmüller and Schlaug, 2012). Musical activity is a stimulus for brain adaptation and plasticity (Wan and Schlaug, 2010) and may thereby exert beneficial effects on physiological and psychological health (Altenmüller and Schlaug, 2012). However, the exact mechanisms underlying psychoneuroimmunological responses to music remain unclear, as does the issue of whether musical engagement as a socio-emotional coping strategy may be effective during an event with as significant a collective impact as the current pandemic.

Music may be capable of generating new or stronger social bonds between individuals and communities (Tarr et al., 2014). Historical experience, such as the singing in Milan “from street to street” during a plague outbreak in 1576–1578, has shown the value of music in moderating mood and fostering social cohesion in the emotional turmoil and social isolation of past epidemics (Chiu, 2020). A nationwide Spanish survey conducted in a sample of 1,868 people during the lockdown in April 2020 assessed the subjective experience of participants in regard to music as a means of improving psychological wellbeing (Cabedo-Mas et al., 2021). The respondents reported an increase in time devoted to a variety of musical activities, such as singing, playing an instrument, listening to music or dancing, as well as a perception that music facilitated relaxation and escape and improved mood and social wellbeing (Cabedo-Mas et al., 2021). A cross-cultural survey comprising demographically representative samples, with a total of over 5,100 participants from Europe (France, Germany, Italy, United Kingdom), India and the United States, assessed whether listening to and making music could provide successful socio-emotional coping strategies during the initial coronavirus-related lockdown in spring 2020 (Fink et al., 2021). More than half of the respondents reported using music as an aid to coping with emotional and social stress factors. However, as a coping aid, music itself played a secondary role to purposeful music-related behaviour and the ways individuals engaged in and interacted with music (Fink et al., 2021). Participants expressed a special interest in novel corona-related musical repertoires explicitly addressing the current pandemic and its effects on people’s lives and feelings. While individuals experiencing heightened negative emotions used music chiefly to reduce loneliness and stress, those experiencing increased positive emotions employed music as an imaginary exchange and social surrogate (Fink et al., 2021).

A pilot study from Italy examined the effectiveness of receptive music therapy as a support intervention to reduce

stress and improve wellbeing in 34 hospital staff assisting patients with COVID-19 (Giordano et al., 2020). The 5-week intervention employed a remote receptive music therapy, using specific playlists for relaxation, stress and anxiety reduction, energy recovery, concentration support and tension release. Following the intervention, the participants reported a significant reduction in intensity of fear, tiredness and sadness (Giordano et al., 2020). While the favourable findings of this pre-post-intervention comparison point to the value of a minimally invasive and cost-effective music therapy-based approach in clinical staff exposed to highly stressful situations, trials using more sophisticated designs are required for confirmation.

Music is universally recognised as a communicative medium (Mehr et al., 2018). Music can affect human behaviour, mainly through its emotional impact (Juslin and Sloboda, 2010), attracts more effectively the attention of individuals compared to speech alone (Egermann et al., 2015) and allows for rapid and massive transmission of information to a variety of audiences, transcending cultural and language barriers (Mehr et al., 2018). Music can broadly disseminate information related to the current COVID-19 pandemic and may reach populations not reached through traditional media, such as newspapers, radio and television. Therefore, music may be capable of increasing the capacity to inform a larger proportion of the population about public health measures. In addition to the use of music in stress relief and promotion of wellbeing, music may be employed in policies seeking to prevent transmission of the coronavirus. An interesting example is provided by Quebec (Cournoyer Lemaire, 2020). The government of this Canadian province solicited assistance from local musicians in an attempt to increase public adherence to government health recommendations. In response, numerous musical pieces of all genres were produced, the great majority of which used easily comprehensible lyrics, providing information on the symptoms and prevention of COVID-19, as well as musical parameters, such as major mode, clear rhythm and fast tempo, which are known to attract attention and induce positive emotions (Gomez et al., 2007). This music was presented regularly in the news and online media platforms, coming to the attention of millions of people (Cournoyer Lemaire, 2020). While the capacity of music to modulate the behaviour of individuals is supported by research, its effectiveness in promoting adherence to public health advice remains unknown and its use as an innovative and effective public health communication strategy should be investigated.

In conclusion, music may play a role in mood regulation and social cohesion. Musical activity is an easily accessible and lockdown-compatible coping behaviour, which may be capable of effectively strengthening the resilience of both individuals and communities. The available evidence emphasises a role of making and listening to music in meeting social needs and improving emotional self-regulation and coping. Music-related behaviours appear to aid in stress management, and their potential therapeutic value in the current COVID-19 pandemic deserves further consideration and warrants more systematic research (Lange and Nakamura, 2020).

**Conflict of interest**

The authors declared no conflict of interest.

**References**

- Agarwal, V., and Sunitha, B.K. (2020). COVID-19: current pandemic and its societal impact. *Int. J. Adv. Sci. Technol.* 29, 432–439.
- Altenmüller, E., and Schlaug, G. (2012). Music, brain, and health: exploring biological foundations of music's health effects. In: MacDonald, R., Kreutz, G., and Mitchell, L. (eds.). *Music, health and wellbeing*, pp. 12–24. Oxford: Oxford University Press.
- Botstein, L. (2019). The future of music in America: the challenge of the COVID-19 pandemic. *Music. Q.* 102, 351–360.
- Bunt, L., and Pavlicevic, M. (2001). Music and emotion: perspectives from music therapy. In: Juslin, P.N., and Sloboda, J.A. (eds.). *Music and emotion: theory and research*, pp. 181–201. New York, NY: Oxford University Press.
- Cabedo-Mas, A., Arriaga-Sanz, C., and Moliner-Miravet, L. (2021). Uses and perceptions of music in times of COVID-19: a Spanish population survey. *Front. Psychol.* 11, 606180.
- Chiu, R. (2020). Functions of music making under lockdown: a trans-historical perspective across two pandemics. *Front. Psychol.* 11, 616499.
- Campayo-Muñoz, E.Á, and Cabedo-Mas, A. (2017). The role of emotional skills in music education. *Br. J. Music Educ.* 34, 243–258.
- Cournoyer Lemaire, E. (2020). Extraordinary times call for extraordinary measures: the use of music to communicate public health recommendations against the spread of COVID-19. *Can. J. Publ. Health* 111, 477–479.
- Croom, A.M. (2015). Music practice and participation for psychological wellbeing: a review of how music influences positive emotion, engagement, relationships, meaning, and accomplishment. *Music. Sci.* 19, 44–64.
- Egermann, H., Fernando, N., Chuen, L., and McAdams, S. (2015). Music induces universal emotion-related psychophysiological responses: comparing Canadian listeners to Congolese Pygmies. *Front. Psychol.* 5, 1–9.
- Fink, L.K., Warrenburg, L.A., Howlin, C., Randall, W.M., Hansen, N.C., and Wald-Fuhrmann, M. (2021). Viral tunes: changes in musical behaviours and interest in coronamusical predict socio-emotional coping during COVID-19 lockdown. *Humanit. Soc. Sci. Commun.* 8, 180.
- Giordano, F., Scarlata, E., Baroni, M., Gentile, E., Puntillo, F., Brienza, N., and Gesualdo, L. (2020). Receptive music therapy to reduce stress and improve wellbeing in Italian clinical staff involved in COVID-19 pandemic: a preliminary study. *Arts Psychother.* 70, 101688.
- Gomez, P., Danuser, B., and Phelps, E.A. (2007). Relationships between musical structure and psychophysiological measures of emotion. *Emotion* 7, 377–387.
- Helding, L., Carroll, T.L., Nix, J., Johns, M.M., LeBorgne, W.D., and Meyer, D. (2020). COVID-19 after effects: concerns for singers. *J. Voice*, doi: 10.1016/j.jvoice.2020.07.032.
- Juslin, P.N., and Sloboda, J.A. (eds.) (2010). *Handbook of music and emotion: theory, research, applications*. Oxford: Oxford University Press.
- Lamont, A. (2012). Emotion, engagement and meaning in strong experiences of music performance. *Psychol. Music* 40, 574–594.
- Lange, K.W. (2020). Mental health problems in COVID-19 and the need for reliable data. *Mov. Nutr. Health Dis.* 4, 64–69.
- Lange, K.W. (2021). Coronavirus disease 2019 (COVID-19) and global mental health. *Glob. Health J.* 5, 31–36.
- Lange, K.W., and Nakamura, Y. (2020). Lifestyle factors in the prevention of COVID-19. *Glob. Health J.* 4, 146–152.
- Lange, K.W., and Sun, Y. (2021). Music, health and COVID-19. *Ir. Med. J.* 114, P394.
- MacDonald, R., Kreutz, G., and Mitchell, L. (eds.) (2012). *Music, health and wellbeing*. Oxford: Oxford University Press.
- Mehr, S.A., Singh, M., York, H., Glowacki, L., and Krasnow, M.M. (2018). Form and function in human song. *Curr. Biology* 28, 356–368.
- Peters, J.S. (1987). *Music therapy: an introduction*. Springfield, IL: Charles C. Thomas Publisher.
- Spiro, N., Perkins, R., Kaye, S., Tymoszuk, U., Mason-Bertrand, A., Cossette, I., Glasser, S., and Williamon, A. (2020). The effects of COVID-19 lockdown 1.0 on working patterns, income, and wellbeing among performing arts professionals in the United Kingdom (April–June 2020). *Front. Psychol.* 11, 594086.
- Tarr, B., Launay, J., and Dunbar, R.I.M. (2014). Music and social bonding: “self-other” merging and neurohormonal mechanisms. *Front. Psychol.* 5, 1–10.
- Wan, C.Y., and Schlaug, G. (2010). Music making as a tool for promoting brain plasticity across the life-span. *Neuroscientist* 16, 566–577.
- Wuttke-Linnemann, A., Nater, U.M., Ehler, U., and Ditzen, B. (2019). Sex-specific effects of music listening on couples' stress in everyday life. *Sci. Rep.* 9, 4880.