

# Breaking pandemic chain reactions: telehealth psychosocial support in cardiovascular disease during COVID-19

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Can one pandemic intensify the existence of another? The outlook for patients with cardiovascular disease (CVD) during COVID-19 is grim. Evidence indicates a relationship exists between COVID-19 and the onset or exacerbation of heart disease; two conditions are categorized as pandemics by the World Health Organization. Pre-diagnosed CVD increases the risk of death from COVID-19 by almost 70% following acute myocardial injury<sup>1</sup> and patient behaviours are compounding this risk. Initially, patients were not presenting to the hospital, and activity in cardiology units decreased anywhere from 50% to 80%.<sup>2</sup> 'Time is heart' and time from symptom onset to first medical contact has in some instances quadrupled<sup>3</sup> since late January 2020. In the context of health-care systems being pushed to their limits in countries with adequate infrastructure and unimaginable outcomes in countries without it, our response to the array of existing and rebound cardiovascular conditions is crucial. As a global society, how do we begin to address or even consider preventing pandemic chain reactions?

COVID-19 is characterized by the rapid transmission of the SARS-CoV-2 virus. Symptoms that present at onset include fever, cough, shortness of breath, fatigue, and loss of taste. Long-term outcomes associated with this disease are unclear; however, evidence suggests an increased likelihood for COVID-19 positive patients to experience heart disease; as the trajectory of illness has been shown to significantly affect heart function resulting in myocardial injury (MI). Psychological symptoms related to anxiety, stress, depression, social isolation, and poor sleep quality confound COVID-19 positive patients' overall risk

of heart disease. This is of importance as cardiovascular disease (CVD) is the leading cause of death and disability, worldwide. Thus, the impact of COVID-19 on exacerbating rates of CVD can have potentially devastating international health and economic consequences. Identifying and implementing strategies to reduce the onset of heart disease in patients who have tested positive for the virus or are presenting with psychological symptoms during the COVID-19 pandemic is urgently needed to reduce rates of MI or onset of heart disease.<sup>4</sup> The following presents an overview of specific strategies that can be used to mitigate the psychological impact of COVID-19, as well as its long-term effects on the development of CVD.

The COVID-19 pandemic has provided an opportunity to reflect on telehealth practice and increase its use judiciously when monitoring needs to be maintained. Most importantly, this crisis has enabled telehealth to become invaluable as it can address isolation, maintain a feeling of social belonging, and decrease anxiety and depression. Telehealth provides a mechanism to support mental health and well-being in association with physical health management.<sup>5</sup> Several cognitive and relaxation strategies can be used through telehealth and self-help alternatives that are convenient and cost-effective. For instance, music interventions have been shown to have beneficial effects on the anxiety of persons with CVD as well as on blood pressure, heart, and respiratory rates and sleep, and can be used with or without the presence of a music therapist. Preliminary evidence indicates similar findings in relation to music therapy when delivered to patients diagnosed with COVID-19.<sup>6</sup>

Recently, mindfulness-based interventions (MBI) have provided additional advantages for patients with CVD with demonstrated effectiveness for improving depression, anxiety, and health-related quality of life.<sup>7</sup> Superior benefits have been gained with MBI when

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contrasted to health education, relaxation training, and supportive psychotherapy; effects are comparable with traditional cognitive behaviour therapy that is demanding and less suitable for self-help formats. MBI have also shown emerging evidence for the reduction of inflammatory immune markers in adult populations, which are known predictors of CVD. It is then not surprising that the American Heart Association (AHA) has released a scientific statement in favour of meditation for cardiovascular risk reduction.<sup>8</sup> Since this release, strengthening beneficial evidence continues to emerge in support of MBI for improved psychological and physiological CVD risk factors and outcomes. Importantly, given the context of chronicity related to CVD and the isolation experienced during a pandemic, dyadic psychosocial telehealth interventions provide a contemporary immediate avenue to support patients and their caregivers.<sup>9</sup> A brief dyadic MBI has recently shown improvement in health-related quality of life and psychological distress in atrial fibrillation patients.<sup>9</sup> Delivery of MBI using telehealth has the capacity to markedly reduce risk in an already vulnerable population. Timely psychosocial interventions require immediate implementation to stem the tide of avoidable COVID-19 consequences. There is Level 1 evidence to support the use of telehealth for patients with CVD.<sup>10</sup> Whether the usual barriers to access for patients with CVD such as socioeconomic status, geographical isolation, cultural or linguist diversity, frailty, or chronic comorbid conditions create barriers for patients to access health-care,<sup>10</sup> or a pandemic such as COVID-19, widespread, sustained implementation of telehealth with MBI provides an opportunity to effectively reduce or mitigate psychological impacts of physiological cardiovascular function.

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## References

1. Guo T, Fan Y, Chen M, Wu X, Zhang L, He T, Wang H, Wan J, Wang X, Lu Z. Cardiovascular implications of fatal outcomes of patients with coronavirus disease 2019 (COVID-19). *JAMA Cardiol* 2020;**5**:811–818.
2. European Society of Cardiology. *Fear of COVID-19 Keeping More than Half of Heart Attack Patients Away from Hospitals: Heart Attack Patients Worldwide Avoid Hospitals or Present Too Late to Benefit from Life-Saving Treatment*. ESC Press Office Press release, 2020. <https://www.escardio.org/The-ESC/Press-Office/Press-releases/Fear-of-COVID-19-keeping-more-than-half-of-heart-attack-patients-away-from-hospitals> (21 September 2020).
3. Tam C-CF, Cheung K-S, Lam S, et al. Impact of coronavirus disease 2019 (COVID-19) outbreak on ST-segment-elevation myocardial infarction Care in Hong Kong, China. *Circ Cardiovasc Qual Outcomes* 2020;**13**:e006631.
4. Jaarsma T, van der Wal M, Hinterbuchner L, Köberich S, Lie I, Strömberg A. Flexibility and safety in times of coronavirus disease 2019 (COVID-19): implications for nurses and allied professionals in cardiology. *Eur J Cardiovasc Nurs* 2020;**19**:462–464.
5. Neubeck L, Hansen T, Jaarsma T, Klompstra L, Gallagher R. Delivering healthcare remotely to cardiovascular patients during COVID-19: a rapid review of the evidence. *Eur J Cardiovasc Nurs* 2020;**19**:486–494.
6. Trevino KM, Raghunathan N, Latte-Naor S, Polubriaginof FC, Jensen C, Atkinson TM, Emard N, Seluzicki CM, Ostroff JS, Mao JJ. Rapid deployment of virtual mind-body interventions during the COVID-19 outbreak: feasibility, acceptability, and implications for future care. *Support Care Cancer* 2020;1–4.
7. Zou H, Cao X, Geng J, Chair SY. Effects of mindfulness-based interventions on health-related outcomes for patients with heart failure: a systematic review. *Eur J Cardiovasc Nurs* 2020;**19**:44–54.
8. Levine GN, Lange RA, Bairey-Merz CN, Davidson RJ, Jamerson K, Mehta PK, et al. Meditation and cardiovascular risk reduction: a scientific statement from the American Heart Association. *J Am Heart Assoc* 2017;**6**:e002218.
9. Shaffer KM, Tigershrom A, Badr H, Benvenuto S, Hernandez M, Ritterband LM. Dyadic psychosocial eHealth interventions: systematic scoping review. *J Med Internet Res* 2020;**22**:e15509.
10. Inglis SC, Clark RA, Dierckx R, Prieto-merino D, Cleland J. Structured telephone support or non-invasive telemonitoring for patients with heart failure. *Cochrane Database Syst Rev* 2015;**10**:doi: 10.1002/14651858.CD007228.pub3