

Effectiveness of a home-based cardiovascular disease prevention program during the COVID-19 pandemic

Chockalingam P. ¹; Natarajan V. ¹; Sekar T. ¹; Rajaram A. ²; Yusuf MM. ³; Gunasekaran S. ³; Nayar PG. ⁴; Chockalingam V. ⁵

¹Cardiac Wellness Institute, Chennai, India
²Kauvery Hospital, Chennai, India
³Apollo Main Hospitals, Chennai, India
⁴Malar Fortis Hospital, Chennai, India
⁵Dr. MGR Medical University, Chennai, India

Funding Acknowledgements: Type of funding sources: None.

Background: Home-based cardiovascular disease (CVD) primary prevention (HBPP) and cardiac rehabilitation (HBCR) programs which occupied a small proportion of the overall Preventive Cardiology work in the past have become mainstream during the COVID-19 pandemic.

Purpose: This study aims to analyse the effectiveness of a home-based CVD prevention program implemented during the pandemic in India.

Methods: A retrospective study was conducted on pre-pandemic and pandemic enrollees. Health behaviour, CVD risk factors, physical and mental component score (PCS, MCS) from SF-12 questionnaire, body mass index (BMI), 6-minute walk distance (6MWD), and clinical and biochemical parameters were assessed. A multidisciplinary team consisting of Physician, Physiotherapist, Dietician and Counselling Psychologist provided the program using tele-health platforms.

Results: Of the 66 subjects (55 ± 13 years, 73% male), 17 (26%) enrolled pre-pandemic and 49 (74%) enrolled during-pandemic, 28 (42%) were HBPP and 38 (58%) were HBCR participants. Majority of the subjects (n = 51, 77%), with significantly more HBCR than HBPP participants, harboured 4 or more risk factors (p = 0.04). In the 60 (91%) program completers, BMI, 6MWD, PCS and MCS had improved significantly. SBP, DBP, LVEF, HbA1c, total cholesterol and LDL had improved significantly in affected subjects. Completely home-based participants (n = 44, 67%) who never had any in-person contact with the team during the program also showed significant improvement. No adverse events were reported.

Conclusion: Comprehensive home-based CVD prevention programs are effective in improving anthropometric, clinical, biochemical and psychosocial parameters, are a safe alternative to conventional programs and could potentially become the standard-of-care in the post-pandemic era.

Abstract Figure. Outcomes in program participants

	All subjects n=66			HBPP n=28			HBCR n=38		
	Pre	Post	p	Pre	Post	p	Pre	Post	p
BMI, kg/m ² (mean±SD)	26.3±6	25.7±5	0.0002*	27.7±7	26.9±7	0.0044* (n=22)	25.3±4	24.7±4	0.0036* (n=35)
HR, bpm (mean±SD)	74±12	76±12	0.5357 (n=45)	76±11	80±16	0.5209 (n=14)	75±16	74±10	0.7121 (n=33)
SBP, mmHg (mean±SD)	123±14	125±16	0.6695 (n=45)	120±13	115±10	0.2719 (n=14)	125±15	122±16	0.4171 (n=33)
DBP, mmHg (mean±SD)	78±9	75±9	0.1812 (n=45)	77±7	76±9	0.7697 (n=14)	77±10	74±10	0.1520 (n=33)
6MWD, meters (mean±SD)	406±82	486±82	<0.0001* (n=47)	427±89	490±85	0.0005* (n=14)	394±91	475±84	0.0003* (n=33)
2MST, steps (mean±SD)	66±16	64±12	0.7314 (n=6)	67±11	68±6	0.8868 (n=5)	NA	NA	NA
PCS (mean±SD)	40±11	48±8	0.0001* (n=34)	42±11	49±5	0.0692 (n=12)	38±11	47±8	0.0037* (n=22)
MCS (mean±SD)	51±9	55±6	0.0177* (n=34)	50±9	55±6	0.1775 (n=12)	51±10	55±7	0.0358* (n=22)

Abstract Figure. Management of ACS in participants

