# Adherence to remote cardiac rehabilitation during the coronavirus pandemic

Nabutovsky I.[1]; Klempfner Y.[1]; Nachshon A.[1]; Yeshayahu S.[1]; Breitner D.[2]; Heller A.[2]; Klempfner R.[1]

[1]Chaim Sheba Medical Center, Cardiac Rehabilitation Institute, Tel Hashomer, Israel
[2]Tel Aviv University, Sackler Faculty of Medicine, Tel Aviv, Israel

**Introduction:** The global crisis of COVID-19 has highlighted how the health care system needs to adapt. With the announcement of a partial lockdown, cardiac rehabilitation centers in Israel were closed and patients were left without regular training and risk factor management. However, the Remote Cardiac Rehabilitation Programs (RCRP), which had been previously developed, continued to function. The purpose of this study was to evaluate the performance of RCRP during the pandemic.

**Methods:** We compared retrospective cohort data on the performance of RCRP patients and care teams over two time periods: (P1) nine weeks before lockdown; and (P2) seven weeks during the lockdown. Included in the analysis were parameters of exercise adherence, objective training efficacy, and satisfaction.

**Results:** The analysis included 38 patients, 92% male, age 58 ± 11 enrolled in the RCRP predominantly following myocardial infarction or coronary interventions (57%). Patient activity during the lockdown period increased with higher average exercise minutes per week as well as higher exercise minutes performed at the designated target heart rate (all P for trend < 0.05). In a mid-study survey, over 86% of patients responded that they felt safe and satisfied with the RCRP.

**Conclusions:** The RCRP has proven to be reliable and effective in maintaining the mental and physical health of patients in the face of a national crisis, even with a substantial reduction in staff. Automation by flexible rules, incorporated in the system, resolved numerous time-consuming tasks, thus allowing for more time to be dedicated to human interaction.

| Assessed parameter | Entire study duration | Period 1 | Period 2 | P value |
|---|---|---|---|---|
| Aerobic minutes per week, average | 221.1 | 205.5 | 241.7 | 0.01 |
| Number of Aerobic sessions per week, median | 3.8 | 3.6 | 4 | NA |
| Average number of Minutes at Target HR per session, per week (% of session time at target HR) | 116.2 (52.5%) | 107.7 (52.4%) | 127.2 (52.6%) | < 0.001 |
| The average %HRR during aerobic session, per week | 75.7 | 75.4 | 76.1 | 0.47 |
| Steps per day, average | 8,830 | 9,000 | 8,600 | 0.06 |
| Mobile application entries per week, average | 4.43 | 4.3 | 4.6 | 0.50 |

Patients activity before (P1) and during (P2) the lockdown
Abstract Figure. The clinical program management center a