

Digital home-based multidisciplinary cardiac rehabilitation: the way to counteract physical inactivity during the COVID-19 pandemic?

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Introduction: Centre-based cardiac rehabilitation (CR) programs have been forced to close due to the need for physical and social distancing imposed by COVID-19 pandemic. A major problem emerges concerning the potential harmful effects resulting from the suspension of the centre-based CR programs, leading to physical inactivity and unhealthy lifestyle routines. Therefore, the development of alternative delivery models to maintain access to CR programs and to avoid physical inactivity should be organized and tested.

Purpose: To assess the physical activity (PA) levels in a group of patients with known cardiovascular disease (CVD), after completing 3-months of a home-based multidisciplinary digital CR program, organized as an alternative method to the centre-based CR suspended program.

Methods: One hundred and sixteen patients with CVD (62.6 ± 8.9 years, 95 males) who were previously attending a face-to-face CR program were included and the following parameters were assessed at baseline and 3 months: self-reported PA and sedentary behaviour, adherence to the online CR program, cardiovascular and non-cardiovascular symptoms, feelings towards the pandemic, dietary habits, risk factor control, safety and adverse events. The intervention consisted in a multidisciplinary digital CR program, including online exercise training sessions, online educational sessions, psychological online group sessions, risk factor control, nutritional and psychological consults and patient regular assessment by cardiologist and nurse.

Results: Ninety-eight CVD patients successfully completed all the online assessments (15.5% drop-out). It was observed a significant increase from moderate-to-vigorous PA (230 ± 198 mins/week to 393 ± 378 mins/week, $p < 0.001$) and a decrease of the sedentary time at 3-months (6.47 ± 3.26 hours/day to 5.17 ± 3.18 hours/day, $p < 0.001$). Seventy percent of the patients met the PA recommendations and 41% reached more than 300 minutes per week of moderate to vigorous PA at 3 months. Almost half of the participants (46.9%) did at least more than one online exercise training session per week and attended at least one of the online educational sessions. There were no major adverse events reported and only one minor non-cardiovascular event occurred.

Conclusion: Patients with CVD, who suspended centre-based CR due to COVID-19 pandemic and started a home-based multidisciplinary digital CR program, had a significant improvement in moderate to vigorous PA after 3 months. Therefore, home-based CR programs showed to be a good option for selected clinically stable patients, who are eligible for CR and cannot attend a centre-based CR program due to COVID-19 pandemic or eventually other reasons.