

Physical Activity and Physical Exercise: Two Different Concepts

Actividad física y ejercicio físico: dos conceptos diferentes

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"Physical activity" has been defined as any movement requiring energy expenditure, while the term "physical exercise" involves a planned, structured and repetitive routine, generally performed with a goal or purpose in mind, and of a certain duration, intensity and frequency.

Using multivariate interventions in patients diagnosed with cardiovascular disease to achieve changes in their lifestyles is a Class IA recommendation in clinical practice guidelines. (1,2) Cardiovascular rehabilitation (CVR) is an essential secondary prevention strategy, making an active contribution to comprehensive care, and supported by abundant scientific evidence in terms of benefits. One of the biggest challenges is to maintain these changes in the long term. According to data from the Fourth National Survey of Risk Factors, almost half of the population does not perform the minimum amount of physical activity required to benefit their health, and prevalence of sedentarism is higher in those over 65 years of age. (3) Early studies showing the benefits of physical activity for survival have focused mainly on healthy individuals, making no distinction between primary and secondary prevention of CV disease. (4) Subsequent studies supported exercise-based CVR in patients with coronary artery disease and chronic heart failure. (5) Current guidelines from the most relevant cardiological societies recommend 30-60 minutes of moderate aerobic exercise at least 5 days a week, in addition to muscle strengthening exercises with 1-2 stimuli a week. This suggests that the recommended level of physical activity is comparable to that of healthy adults.

Physical activity has been shown to reduce mortality in a dose-response manner. The present recommendation is 500-1000 MET-min/week of aerobic exercise, which is equivalent to 150-300 minutes of moderate physical activity or 75-150 minutes of strenuous phys-

ical activity per week. This recommendation is based on the observation that the maximum survival benefit is gained with 500-1000 MET-min/week. (6)

In the study by Jeong SW et al. (7) to compare the impact of physical activity on mortality in primary versus secondary prevention patients, it was observed that while individuals without CV disease were mostly benefited by 1 to 500 MET-min/week of physical activity, the benefit for those with CV disease continued to be above 1000 MET-min/week. In fact, the adjusted mortality risk of individuals with CV disease with a high level of physical activity was shown to be comparable to or lower than that of their counterparts with no CV disease.

Since the late 1990s, several publications have warned about poor adherence to exercise after taking part in a CVR program. The latest have included instruments, ranging from accelerometers to cell phone applications, and shown that adherence decreases over time. (8-11) Other trends suggest the importance of adapting physical activity interventions by promoting resilience resources, such as a "sense of coherence", to improve both the ability to consistently adopt a physically active lifestyle over time, and the patients' quality of life after an acute coronary event. (12)

In our experience, in a CVR population of two groups, a group under in-person intervention twice a week, and a group under hybrid intervention consisting of in-person phase II intervention and distance phase III intervention, all included in the same physiotherapists-coordinated WhatsApp group, where exercise routines, motivational messages, experiences, fears, doubts and achievements were shared, adherence to physical exercise was defined as ≥ 1000 MET-min/week, and a questionnaire was used one year after completion of phase III. Energy expenditure (MET-min/week) was calculated as the sum of exercise

REV ARGENT CARDIOL 2024;92:246-247. <http://dx.doi.org/10.7775/rac.v92.i3.20779>

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intensity, frequency and duration. (13) We had a level of physical exercise ranging from 120 to 3240 MET-min/week, with a median of 945 MET-min/week. Only three patients (17.64%) failed to achieve the minimum level of physical exercise (500 MET-min/week) recommended for the general population. In a preliminary analysis, physical exercise equivalent to ≥ 1000 MET-min/week was associated with a younger age, and a higher intensity and longer duration of exercises. It is also noteworthy that muscle strengthening exercises ranked second among the types of exercise chosen by patients one year after completing phase III of the CVR program. As a result, and consistently with recent published data from the CardioRACE trial, (14) a high percentage of our patients with coronary artery disease perform muscle strengthening exercises plus aerobic exercises, as we have been able to convey that this combination improves the CV risk profile.

Therefore, keeping in mind that a switch to healthy habits and maintaining exercise is very likely to be associated with the individual's own characteristics, such as self-efficacy, balanced decision making, and use of behavioral processes, we should focus on these concepts as early as in the anamnesis, with CVR being favorable for this exchange. It is inevitable to address these concepts, historically associated to mental health, as identifying the aforementioned individual characteristics and motivating candidates will provide information on engagement in and long-term maintenance of exercise. (15,16)

In addition, a distinction should be made between the expressions "physical activity" and "physical exercise". While the impact of any energy expenditure or physical activity on survival is well-recognized, patients with coronary artery disease gain more benefit from structure and planning, and they should also achieve a goal (objective) in terms of secondary CV prevention. The amount of exercise is relevant for these patients, thus the need to consider frequency, intensity and duration. Adequate prescription of physical exercise, unexplored by most healthcare professionals, would then become part of our practice.

Ethical considerations

Not applicable.

Conflicts of interest

None declared.

(See authors' conflict of interests forms on the web).

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