



Editorial

Physical Training, the Pandemic and Sustainable Living

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Physical exercise is a stimulus that induces psychological and physiological responses which lead to cell adaptations of different organ systems [1,2]. This process aims to improve physical abilities and motor/sport skills [3]. The effectiveness of physical exercise has been widely demonstrated in all ages [4–6], as well as in people with pathologies or disabilities [7–9]. The literature shows that the beneficial effects of physical exercise depend on intensity, frequency, duration, and volume [4,10,11]. Similarly, several research groups have investigated the effects of different physical exercise methods or settings (e.g., supervised vs. unsupervised [12,13], indoor vs. outdoor [14,15], and group vs. individual [16,17]). The recent COVID-19 pandemic has led to the development and increasing use of different training methods, including sustainable exercise such as outdoor exercise (i.e., physical activities in natural environments [18]) and telecoaching (i.e., remote exercise through the use of information technologies and digital communications [19]). These strategies were developed to maintain good health and an adequate level of physical fitness among the population since most of the literature agrees that the practice of physical activities reduced during the COVID-19 pandemic [20].

In this Special Issue, eight papers were published, including five research articles, two reviews, and one brief report with the aim of examining any impact of COVID-19 on psycho-physical wellbeing or the effectiveness of any type of physical activity/exercise/sport during the pandemic.

The first paper of this Special Issue (Contribution 1) is a literature review in which the authors investigated any possible relationship between SARS-CoV-2 infection and alterations in the structure and function of respiratory muscles. In this literature review, the authors examined ultrasound imaging techniques, respiratory muscles strength tests, and pulmonary function evaluation for monitoring respiratory muscles. However, among the rehabilitation strategies for respiratory muscles in COVID-19 patients, the authors demonstrated the beneficial effects of physiotherapy treatments, breathing exercises, and traditional Chinese exercises, suggesting that they should be adapted to the specific individual condition, i.e., accounting for the severity of the disease, any comorbidities, and the age of the subject.

The second review of this Special Issue (Contribution 2) aimed to assess the effectiveness of any physical activity interventions in sedentary people during the COVID-19 lockdown by considering only randomized controlled trials (RCTs) that included a control group. Eleven RCTs met the inclusion criteria with a total of 1770 participants consisting of 898 participants for the intervention group and 872 for the control group. The main findings of this review are as follows: pedometers installed in smartphones increased physical activity levels; the type of interventions (for example, supervised vs. unsupervised) can influence the amount of physical activity practiced; the use of smartphone apps increased the moderate-to-vigorous physical activity (MVPA) level in children and their parents; a gardening course administered via the web increased the MVPA level in people who took it; a 1 h individually tailored session of physical exercise increased the level of physical



Citation: Giustino, V.; Battaglia, G. Physical Training, the Pandemic and Sustainable Living. *Sustainability* **2024**, *16*, 4524. <https://doi.org/10.3390/su16114524>

Received: 21 May 2024

Accepted: 22 May 2024

Published: 27 May 2024



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activity compared to the control group; the web-based physical activity interventions are significantly effective for improving different physical and mental spheres.

The research article by Silva and colleagues (Contribution 3) aimed to analyze the effects of a long-term detraining period (9 weeks), due to the COVID-19 lockdown, on the maximal aerobic speed (MAS) in male soccer players belonging to the under-16 category of the national league. Participants were categorized according to the weekly training volume (i.e., >180 min/week vs. <180 min/week) during the lockdown. The MAS was measured before and after the detraining period through the Bronco's test. The authors found no significant within-group changes in MAS before and after the detraining period. As for the between-group analysis, the group with a training volume of >180 min/week showed significantly higher levels of MAS both before and after the detraining period.

The study by Mulè and colleagues (Contribution 4) measured the lifestyles of a sample of 533 Italian university students during the COVID-19 pandemic, considering the degree courses, chronotype, and sex. Participants were administered an online survey at the start of the second lockdown that included different questions aimed to assess the circadian typology, the practice of physical activity in a usual week, the quality of sleep during the previous 30 days, eating habits, and the length of time spent using electronic devices during the day. The main results showed that students pursuing a degree in sports science reported higher levels of physical activity, better quality of sleep and eating habits, shorter time spent using electronic devices compared to nursing students. Regarding chronotype, students categorized as evening-type yielded worse results compared to other students. Concerning sex, female students reported better results in some questions of the collected survey.

In another research article (Contribution 5), the authors evaluated the differences in some characteristics, such as fear of COVID-19, anxiety, neuroticism, and general self-efficacy, in a sample of 276 Italian university students, dividing the participants between those who engaged in physical activity during the second wave of lockdown and those who did not. The authors noted that the students who engaged in physical activity during the second wave of lockdown showed lower levels of fear of COVID-19, anxiety, and neuroticism and higher levels of general self-efficacy. Moreover, some gender differences were also found.

Ortenburger and colleagues (Contribution 6) investigated the relationship between sense of coherence and health behavior in 121 male and female Taekwondo athletes, belonging to Polish clubs, using the Questionnaire of Life Orientation, the Pain Strategies Questionnaire, and the Health Behavior Inventory. Among the main findings, the authors found that the sense of coherence was higher for men. Moreover, there were positive correlations between diverting attention away from feelings and thoughts of pain with reinterpreting pain sensations and with the behavioral strategy.

The last research article of this Special Issue (Contribution 7) analyzed the impact of the COVID-19 lockdown on biological parameters and physical performance in Italian soccer players belonging to Serie A. The research group considered the competitive seasons before and after the COVID-19 lockdown. For each of them, the authors assessed anthropometric and hormonal responses, muscle damage, and physical performance before the preparatory period and at the end of the competitive season. The authors' main findings revealed a lower body fat percentage in the preparatory period of the competitive season after the COVID-19 lockdown than the competitive season before the COVID-19 lockdown. Cortisol and testosterone concentrations increased in both seasons from the preparatory period to the end of the competitive season. Blood lactate concentrations decreased during the competitive season before the COVID-19 lockdown with no changes during the competitive season after the COVID-19 lockdown.

This Special Issue also contains a brief report (Contribution 8) in which the authors described a project on eating disorders entitled, “#How can we help you?”, and outlined the initial feedback received and the future directions to take. An Instagram profile was created with the aim of directing those suffering from an eating disorder to clinical assistance. The contents shared included stories of people who overcame an eating disorder by providing

information on changing and managing nutrition. The authors analyzed the needs of users and the interactions of the Instagram profile. As for future research directions, the group aim to establish a support system by developing an integrated psychoeducational program to evaluate the effectiveness of the Instagram profile.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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