LETTER TO THE EDITOR

Responding to a global pandemic: Republic of Slovenia on maintaining physical activity during self-isolation

We read the letter to the Editor from Drs. Burtscher, Burtscher, and Millet with great interest and thank them for their contribution in highlighting the urgent need to emphasize the importance of maintaining consistent, daily physical activity (PA) during times of indoor confinement, especially its positive, direct effects on lowering stress, and optimizing one's immunity, mental health, and overall well-being. We share the authors' concern that currently, there is not enough emphasis placed on maintaining PA levels, especially since data clearly indicate that national policies to the global pandemic can lead to drastic changes in the general public's non-residential mobility patterns. \(^1\) We believe it is incumbent on research scientists to establish, promote, and communicate a harmonized approach to PA guidelines in times of (self) quarantine. \(^2\) Clear messaging on confinement PA best practices will become especially important as some countries relax their response to their initial wave of COVID-19, even while others experience a second wave (or more) of spiking infection rates in the weeks and months to come.

Confinement causes negative psychological effects, including fears of longer quarantine duration, infection, frustration, boredom, financial loss, and stigma. \(^3\) With these concerns in mind, the Republic of Slovenia has implemented several strategies that we would like to communicate, especially since many directly address the authors' concerns raised in their letter (ie, inclusion of vulnerable populations, communication gaps, and long-term mental health). We wish to also draw attention to novel considerations, especially surrounding the combination of isolation and the impending heat stress associated with the northern hemisphere summer.

For context, the Republic of Slovenia is a small, central European nation within the European Union (population: 2 095 861); it shares a political border with the north-eastern region of Italy (Friuli-Venezia Giulia), one of the hardest-hit areas of the global pandemic in Europe. \(^4\) On March 12, at 18:00, Slovenia declared an epidemic on the basis of Article 7 of the Infectious Diseases Act due to the growing number of coronavirus infections, and all workplaces, schools, and other public services were temporarily suspended from March 16, 2020. \(^5\) A national plan was activated based on the expert opinion of Slovenia's public health agency (NIJZ) and following the declaration of the World Health Organization (WHO) that COVID-19 was indeed a pandemic. Rules regarding business operations, cafes, and movement were subsequently relaxed on May 4, 2020, with kindergardens and schools for the first 3 primary school grades set to open May 18, 2020, for a total of 63 days when most public services were suspended and the greatest social distancing and self-isolation measures were in place.

Burtscher and authors' concern that especially vulnerable segments of the population will fall short of staying physically active is a valid one. For the past 30 years, the vast majority of Slovenian schoolchildren (aged 6-19) participate in a nation-wide, school-based physical fitness surveillance program “SLOfit”; this system has allowed teachers and researchers access to high-quality, standardized data on physical fitness and education, used to directly inform public policy. Because of its ongoing commitment to standardized testing, Slovenia has the most consistent physically active children in the world, \(^7\) largely due to the number of PA minutes they receive through their school system. \(^8\) Therefore, it was especially important for Slovenia to consider how to make up these valuable minutes when societal infrastructures, like when schools were rapidly closed. Slovenia has conducted, and continues to implement, the following countermeasures to minimize inactivity risk: First, we created a multidisciplinary task force to draft a set of national physical activity guidelines for use during COVID-19, in-line with WHO and NIJZ recommendations. This task force consists of experts in kinesiology, sport science, environmental physiology, pedagogy, medical doctors, and epidemiologists. The guidelines were developed within 5 days of the government’s call for strict self-isolation and social distancing, and distributed/published online to various government agencies (in the native Slovene language), popular media, university websites (eg, http://en.slofit.org/COVID-19_PArecommendations), and are now published following international peer review. \(^2\)

Burtscher and colleagues raise important arguments for exercising outside, including attaining adequate vitamin D.
intake, among others, and Slovenia’s PA guidelines emphasize performing activities outdoors (where and when possible) either alone or with those in your immediate family bubble. This outdoor strategy was possible because although Slovenia did prohibit using park infrastructure (e.g., playground apparatus, sitting on benches) early in its response, they did not close the national parks system or prohibit access to public rural spaces to people living in that region, and although there were strict measures limiting people’s movement to only their local municipality, the country has since begun to lift these movement restrictions (from 4.5.2020).

For those who cannot venture outside, due to national regulations, remote location, mobility, age, disability, or for any other reason, Slovenia also implemented several actions for promoting PA in the home, specifically targeting access for the elderly and children. Four strategies include the following: 1. Televised home physical activity—Strength, flexibility, and range-of-motion exercises led by qualified physical education teachers have been broadcast on national television from 18:00 daily. This activity is just one of several components within the national campaign #vadidoma, and #trenirajdoma, initiated by SLOfit and organized by Slovenian public TV, the Slovenian Olympic Committee (SOC), and Faculty of Sport at the University of Ljubljana, and intended to reach the largest and most diverse audience possible. 2. Online platforms—PA lessons are livestreamed on the Facebook platform. The SOC also prepared a series of promotion clips with top athletes who encourage people to continue exercising at home during isolation. 3. School system—95% of Slovenian schoolchildren are enrolled in the public school system. Physical education teachers in elementary and secondary schools continue to provide lessons to their students remotely each week, supported by media platforms (i.e., children and youth at home are required to complete the same number of PA minutes as they would be in person at school). Lessons are followed up by the schoolteachers. We know that many children may be falling short of these PA goals, and so, surveillance sampling has been incorporated into existing European projects specifically aimed at determining PA patterns during this quarantine time. 4. Targeting child health—In coordination with the SOC’s exercise clips, the Faculty of Sport has been performing a series of PA outreach specifically targeting primary-aged school children; these are airing in cooperation with a national TV educational show “Infodrom” which airs during the morning hours daily.

Future PA guidelines should highlight the importance of checking in (safely, remotely) on elderly neighbors and those most vulnerable around you. Checking in on the elderly will become increasingly important as the northern hemisphere summer begins, especially when considering 11 out of the 12 warmest years in Europe have occurred in the past two decades, making it the fastest-warming continent on Earth. The combination of isolation, stress, inactivity, and heat will undoubtedly increase risk of heat illness, especially in house-bound elderly, who do not derive the same physiological benefits to fan cooling compared to their younger counterparts, likely due to age-related decrements in sweating capacity.

Finally, we wanted to highlight the differences in movement patterns of people from Slovenia and New Zealand.
during COVID-19 self-isolation period over the past ~2 months. As a case example, the comparison between countries is interesting because both countries have relatively small populations (SLO: 2 095 861, NZ: 4 951 500), with low urban density, and a national identity closely tied to nature. Despite Slovenia being located proximal to one of the largest and most severe European outbreaks in northern Italy, it has seen an increase from baseline in park visitations from March 26, whereas in New Zealand, located in one of the most remote and isolated geographical regions of the world, access to parks decreased by over half (~55%) from baseline over the same time period (Figure 1). Both countries instituted swift restriction of movement for their citizens, but Slovenia did not ban national parks, walking on beaches, or access to rural lands for those living within that municipality, whereas New Zealand enforced a more aggressive national “lockdown” strategy, which has been instrumental to successfully eradicating new COVID-19 cases from the country (as of this writing). Total COVID-19 cases reported are comparable between countries [SLO: 1463 (103 deaths); NZ: 1497 (21 deaths)] as of 13.05.2020.

Ultimately, there is an urgent need for national and international harmonized approaches to ensuring PA is both encouraged and accessible to all citizens now, and through any future rolling waves of this pandemic—that is, what will government policies do to ensure their citizens are able to continue to have access to outdoor space, including greenspaces, especially for the most vulnerable children and older adults? Government policies must act to balance the immediate need for social distancing and (self)isolation to contain virus spread versus the known negative (and possibly dangerous) effects prolonged indoor isolation will have on increasing risk of heat illness, declining mental health and immune function in its citizenry. In the end, there will be a need to conduct objective measures of physical activity through direct fitness assessment, at a population level, since this will be the only way to fully quantify the effects of long-term confinement on the human body by measuring actual physical fitness decline(s), as soon as it is safe and possible to do so.

CONFLICT OF INTEREST
The authors declare no conflict of interest.

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