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RESEARCH BRIEFS

Translating Research to Practice

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An International Physical Activity and Public Health Research Agenda to Inform Coronavirus Disease (COVID)-19 Policies and Practices

— Summarized for GP RED by the authors James Sallis, Deepti Adlakha, Adewale Oyeyemi, and Deborah Salvo

What if there was a single therapy available with strong evidence that it:

a) boosts immune function and reduces inflammation (the most important physiological mechanisms determining the severity of COVID-19 infections);
b) prevents and treats most of the chronic diseases that increase risk of severe COVID-19 infections; and
c) can reduce anxiety and depression produced by the health, economic, and social isolation stress of the pandemic?

Every health care professional would demand urgent production of that agent to be prescribed to every patient infected with the coronavirus, and the world would demand that agent be given prophylactically to everyone.

The surprising reality is that there is an evidence-based therapy, and it is available for free. It is **physical activity (PA)**. Active muscles produce chemicals that improve immune functioning, reduce inflammation, and decrease viral infections. PA is also a powerful preventive and therapeutic agent for heart disease, type 2 diabetes, and at least eight cancers – some of the most common pre-existing conditions that increase risk of severe COVID-19 infections. Plus, PA is as effective as medication and psychotherapy at preventing and treating anxiety and depression. Yet, PA is usually not prescribed for these conditions, and worldwide at least 23% of men and 32% of women are at risk because they do not meet PA guidelines.

There is now ample evidence to justify a much greater emphasis on educating policy makers, health professionals, and the general public about the numerous potential benefits of PA, especially during the coronavirus pandemic, and making PA promotion a global public health priority. One pathway to increasing the prominence of PA as a solution is to conduct research to demonstrate its specific health and societal benefits during the COVID-19 pandemic and evaluate strategies for effectively promoting PA during this time.

In a recent publication, we proposed seven research priorities for PA research relevant to the COVID-19 pandemic and explain the relevance of each proposed study topic for policy or practice. Here are brief descriptions of some of the research priorities

offered in the paper, and some are related to safe and convenient places to be active:

1. **Examine the potential of PA as a mitigation strategy to moderate the impact of the novel coronavirus**
    - **Proposed study:** As part of COVID-19 testing for both clinical and surveillance purposes, administer a brief lifestyle survey to assess PA and sedentary behaviors, prior to the onset of any current illness.
    - **Rationale:** Because of PA's documented effects on immunity, inflammation and infection, those who do regular MVPA prior to infection may have less severe infections compared to those who do not.
    - **Policy implications:** Beneficial effects of regular MVPA on COVID-19 outcomes would justify increased efforts to implement evidence-based PA promotion as part of COVID-19 responses.

2. **Evaluate methods for managing safe use of PA locations**
    - **Proposed study:** Conduct population surveys before and after indoor and outdoor PA facilities are closed to determine the impact on people's PA practices. Alternatively, conduct retrospective studies in areas where baseline PA assessment is not possible due to timing.
    - **Rationale:** The variations of closure orders of places for PA around the world create a massive natural experiment. Outcomes could include PA, psychological health, infection rates, hospitalizations, and mortality.
    - **Policy implications:** Studies could inform policies on access to PA places and which mitigation practices (e.g., physical distancing) can have the most positive net effect on the pandemic, minimizing the risk of infection spread while maximizing the benefits of active populations.

3. **Evaluate local mapping of safe places to be active during the pandemic**
    - **Proposed study:** Use GIS mapping to identify safe community walking and cycling routes and develop access protocols for PA in hyperlocal outdoor environments. Evaluate the effect of publicizing maps of PA locations/routes on the PA levels of residents, crowding, and infection rates.
    - **Rationale:** Maps that highlight parks, green spaces, and convenient walking or cycling routes with marked distances can help people discover safe opportunities for local PA during the COVID-19 pandemic and beyond.
    - **Policy implications:** These studies could inform guidelines for PA promotion and access to outdoor environments during the current pandemic, future pandemics, and other times of crises.

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Conclusion

PA has multiple well-documented benefits that are directly related to reducing the impact of the COVID-19 infection itself, as well as helping the global population cope with the stress caused by the pandemic. PA is not being systematically used to reduce harm from the current pandemic. There is an urgent need for research that can inform more effective policies and practices in the short-term and prepare global public health for better responses to future crises.

We encourage investigators from around the world to conduct studies like those recommended, and to do so as soon as possible. We recommend that investigators coordinate their study methods, measures, and analyses so results across countries will be as comparable as possible. This is important so country-context similarities and differences can be documented and distinguished from methodological differences. To facilitate coordination of studies across sites, we created a repository of PA and COVID-19 research studies that supports researchers with similar interest to connect. See link and Google form: https://forms.gle/rZ9k4TNruSVnpKiv9. We invite PA researchers, scientific organizations, and global scientific networks to disseminate and contribute to this repository.

Full paper:

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