Physical Inactivity and COVID-19: When Pandemics Collide

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The 3 new *Lancet* series papers on physical activity¹⁻³ build on the evidence presented in 2 previous series^{4,5} that underlined the pandemic magnitude of physical inactivity, its health, social, environmental and economic global consequences, and the urgency to take immediate multisectoral actions to make active living an affordable and accessible choice for all population groups. These messages were based on unquestionable evidence of the beneficial effects of physical activity on virtually every system of the body, supporting it as a “best buy in public health.”⁶ Increasing physical activity could save 5.3 million lives per year,⁴ and it is critical for the prevention and control of multiple noncommunicable diseases (NCDs) that account for 74% of deaths globally.⁷ However, an estimated 1 in 3 adults and 3 in 4 adolescents worldwide did not meet the physical activity guidelines before the pandemic.^{8,9} Now in 2021, the failure to take seriously evidence-based recommendations to increase physical activity has contributed to the estimated 4.2 million COVID-19 deaths worldwide.¹⁰ It is clear that the inactivity pandemic is foundational in the global explosion of NCDs that have collided so tragically with the COVID-19 pandemic.¹¹

The COVID-19 pandemic has generated more interest in the little known benefits of physical activity for infectious diseases, including reduced risk of infection, enhanced immune system function to prevent and hasten recovery from infections, and increased effectiveness of vaccination.^{12,13} Evidence is also emerging of physical activity benefits specific to severe COVID-19 outcomes, defined by hospitalization, intensive care unit admission, or death. A study was conducted in over 48,000 COVID-19 patients who had multiple physical activity measures prior to diagnosis. After adjusting for demographics and chronic diseases, compared with those meeting physical activity guidelines, those who were inactive were 2.26 times more likely to be admitted to the hospital, 1.73 times more likely to need intensive care unit care, and 2.49 times more likely to die.¹³ Other than advanced age and history of organ transplant, physical inactivity was the biggest risk factor for severe COVID-19 outcomes. Other studies have shown similar associations.^{14,15}

Partly because evidence-based interventions (eg, behavior change training) and national policies (eg, provide safe facilities for walking and bicycling)⁷ to promote physical activity were not sufficiently implemented before or during the COVID-19

pandemic,¹⁶ there is evidence the pandemic itself (and various restrictions to limit spread of the virus) had detrimental impacts on physical activity globally.^{17,18} Despite highly variable measurement methods, most studies described a significant decrease in self-reported or objectively assessed physical activity, along with increased sedentary behavior (sitting), regardless of age, health status, or geographic location, when comparing pre-COVID-19 periods with COVID-19 lockdowns and/or post-COVID-19 periods. This decrease in activity is particularly concerning in those already at risk of poor health outcomes, including people with disabilities, previous NCDs, poor mental health, and those who are already inactive or obese.^{17,18}

The long-term health effects of this worldwide decrease in physical activity remain to be determined, but it is clear that public health leaders missed key opportunities to act on the extensive evidence of physical activity benefits before and during the pandemic. Limited attention to promoting physical activity might have been due to low awareness of its benefits for infectious diseases,⁶ as well as the lack of direct evidence of benefits for COVID-19 outcomes. However, evidence about the benefits of physical activity for NCDs and mental health have been well known for decades and should not have been ignored. Pandemic-related anxiety and stress continue to affect the global population,¹⁹ and it was evident from early in the pandemic that most deaths occurred among those with preexisting NCDs.¹³

While the World Health Organization and some countries acknowledged inactivity as a risk factor for severe COVID-19, many countries did not. Experts anticipate that COVID-19 will likely become endemic and other infectious diseases will emerge.²⁰ Therefore, we propose high priorities for research and public health action to promote physical activity. Physical activity should be considered a critical component of pandemic control measures, and physical activity experts should be part of infectious disease response teams. Because physical activity has been shown to enhance the efficacy of vaccines,¹² funding should be directed to investigate whether it might prolong the efficacy of the COVID-19 vaccines and impact effectiveness against new strains of the virus.

Physical activity creates a healthier population⁴ that is more resilient to infection¹² and less likely to develop severe COVID-19 outcomes.¹³ Therefore, updating public health messaging to reflect evidence of physical activity's role in protecting against infectious diseases as well as NCDs is critical. Children and adolescents, the elderly, and people with disabilities should be specifically targeted for intervention strategies, given the high prevalence of inactivity in these groups and potential for numerous physical and mental health benefits.^{2,3}

The COVID-19 pandemic continues to advance in many countries, and it will likely take many months before most of the world's population is vaccinated. Urgent action is needed to tackle the collision of the inactivity, NCD, and COVID-19 pandemics (also known as a syndemic), including effective public health strategies to promote physical activity as a means of reducing health inequities,

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morbidity, and mortality from COVID-19 and NCDs.^{11,13} Therefore, we recommend that global action and collaboration across multiple sectors of society, guided by the World Health Organization Global Action Plan for Physical Activity, be implemented immediately around the globe.⁷

Let us learn from past mistakes and not continue to ignore physical activity as an important pandemic control measure. With future pandemics looming, a failure to act now should be considered public health malpractice.

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