

Understanding the impact of COVID-19 on children's physical activity levels in NSW, Australia

In March 2020, COVID-19 was declared a global public health pandemic by the World Health Organisation (WHO). Governments responded in various ways; locking down cities, imposing stay at home restrictions, implementing school closures, cancelling community sport, all to prevent the spread of infection and reduce COVID-19 mortalities.¹ More than 1.5 billion children worldwide across 165 countries, including Australia, were affected by the closures.² As the world became accustomed to a "new normal" with social and physical distancing set to remain an intermittent part of everyday life, it is important to understand if and how these measures might influence children's lifestyle behaviours including physical activity.³

Regular physical activity benefits physical and mental health both in the short and long term. Recommendations indicate that children should be physically active for 60 minutes or more per day to enable the myriad of positive physical and mental health outcomes. Despite this, more than 80% of the world's global adolescent population do not achieve such guidelines with Australia having some of the highest inactivity rates⁴ with clear inequalities in participation by gender and geography. Hallal et al (2020) reported that if current population trends to continue the global target of reducing physical inactivity will not be met. This indicates that the physical inactivity crisis, defined by not meeting physical activity guidelines, could persist long after schools and community sports resume, and into the future.^{4,5} Whilst the ultimate impacts of COVID-19 remain unclear it is already apparent that there is potential for COVID-19 to accelerate the inactivity trajectory significantly affecting global health and wellbeing.

We developed a method to examine the impact of COVID-19 on children's physical activity levels during the 3-month period June to August 2020 in New South Wales (NSW) Australia, integrating the study within an on-going evaluation of an NSW Government Active Kids program. The NSW Active Kids program is a government-led, state-wide, universal program that provides vouchers to subsidise the cost of children's registration in structured physical activity programs.^{6,7} Eligible activities for accreditation with Active Kids must be moderate intensity, be delivered for more than 8 weeks and be delivered by an accredited recreation or sports provider. Example activities include dance, team sports and martial arts. As part of the evaluation of the Active Kids program,^{6,7} we invited 450,634 parents/carers, who had registered their children, aged 4.5-18 years old, for an NSW Active Kids voucher and indicated consent to be contacted, to complete an online survey.⁷ The survey included questions

to understand the physical activity and sport behaviours of their children throughout COVID-19. Physical activity was captured using the validated single-item question "In a typical week, how many days was the child physically active for at least 60 minutes?" This could be made up of different activities including walking, cycling to school and sport at lunchtime or an exercise class."⁸ This question allowed the proportion of children achieving physical activity guidelines to be calculated. Screen time, a major indicator of sedentary behaviour, was also reported combining screen time during leisure, watching TV/videos, internet use, computer/smartphone games and social media platform use in the past week.

Sixteen thousand one hundred and seventy-seven parents/carers responded (response rate 3.6%) on behalf of children and adolescents (2% 4-8 years old, 26% 9-11 years old, 23% 12-14 years old; 20% 15-18 years old) enabling population-representative results by age, sex and socio-economic status (determined using the postcode of residence and categorised using the Socio-Economic Index for Area, specifically the Index of Relative Socio-Economic Disadvantage⁹) resultant even though the response rate was low. 12% were from the most disadvantaged and 38% from the least disadvantaged areas. At the point of voucher registration in 2020, adults reported that 15% of children met physical activity guidelines indicating that the Active Kids program was reaching an insufficiently active cohort of children. During the NSW COVID-19 community restrictions, parents/carers reported that 40% of children's voucher activities were postponed, 38% were continuing but in a modified form, 12% were cancelled and only 6% remained unaffected. Since the COVID-19 restrictions, most respondents reported that children's physical activity levels had decreased (a lot: 31%, a little: 39%) with the decrease most notable amongst adolescents aged 12 years or over. COVID-19 influenced the setting for undertaking activity, with most children being active at home (82%) whilst a large proportion went to public spaces (52%). Most children's screen time increased (a lot 48%, a little 37%). Children from higher socioeconomic areas had greater increases in screen time than did those from lower socioeconomic areas. This decline in children's physical activity was not observed in 2018 and 2019, in fact, increases in children's physical activity levels were observed previously, independent of socio-demographic characteristics.¹⁰

Our study findings suggest that COVID-19 influenced children's physical activity but did so differentially across socioeconomic strata. Left unchecked, these short-term negative impacts on

physical activity and screen time observed could persist and threaten a further deterioration in global inactivity rates. Programmatic and policy strategies such as Active Kids could arguably be reoriented towards promoting physical activity and reduced screen time during pandemic periods as well as in usual times to good effect. Such efforts should focus on young people who are insufficiently active, those from lower socioeconomic areas, and those from culturally and linguistically diverse communities.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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