

## BRIEF REPORT

## Physical activity during COVID-19 quarantine

The World Health Organization recommends that children and adolescents aged 5-17 should engage in at least 60 minutes of moderate to vigorous intensity physical activity a day. Physical activity is defined as bodily movement performed by skeletal muscles that demand energy expenditure. The physical benefits of this include musculoskeletal and cardiovascular health, a healthy body weight and neuromuscular awareness, for coordination and controlling movement. The psychological benefits include managing anxiety and building self-esteem, which are both important for children's psycho-social development.<sup>1</sup>

However, the COVID-19 pandemic has restricted physical activity in people of all ages. In many countries, both indoor and outdoor sports and recreational facilities, such as gyms, public swimming pools and playgrounds, are closed. Online communication for work, leisure and shopping is now part of daily family routines and children are using the Internet for school work and social interaction. However, it is important that children participate in and enjoy physical activity, as part of a broader set of life skills during their leisure time.

In a parallel field, a new concept known as physical literacy is now renowned in many different countries. Although they are related, physical literacy and physical activity are independent of each other. Physical literacy is the motivation, confidence, physical competence, knowledge and understanding that people need to value and take responsibility for engaging in physical activity for life.<sup>2</sup> It is a multidimensional concept that encompasses cognitive, emotional and social components that have a mutually beneficial relationship with motor skills and forms of physical activity. Importantly, physical literacy does not result from physical activity. It needs to be separately developed as a life skill, preferably before adolescence. Therefore, promoting physical activity alone does not necessarily lead to physical literacy. Physical literacy can be viewed as a positive feedback cycle where the development of a variety of fundamental movement competencies occurs concurrently with the intentional development of confidence through the provision of positive challenges, which ultimately enhances motivation to foster continued participation in physical activities.<sup>3</sup>

We need to look forward to how schools can increase physical literacy after COVID-19. Circus arts are gaining interest in physical education as one way of doing this. The suite of circus training tools includes individual and group activities, such as clowning and acrobatics, manipulation, equilibrium and aerial skills (Figure 1).<sup>4</sup> A Canadian school-based study of children aged nine to 12 years

focused on 101 children whose physical activity levels were increased when they were given school-based circus arts instruction three times a week for approximately 60 minutes. Various outcomes were compared with a control group of 110 age-matched children who received standard physical education at schools with the same socioeconomic status. The circus arts group demonstrated statistically significant improvements in motor competence and confidence. Boys typically do better than girls when it comes to motor skills, but this gap narrowed in the circus arts group.<sup>4</sup>

Creating and maintaining physical literacy in children with disabilities is particularly important, as they are under-represented in organised sport and are a vulnerable group during this pandemic. Another Canadian programme that was specifically created for children with autism used equipment such as boxes, bubbles, balloons, foam dice and scarves, to create simple fun games to improve children's physical activity levels, skills and confidence.<sup>5</sup>

Clearly, there are restrictions on what kind of programmes and activities children can get involved in during the pandemic, especially when quarantine and social distancing measures are in place. Fun interventions like the circus arts programme and activities for children with disabilities are just some of the ideas that parents and educators may want to consider. There are several worthwhile digital platforms that show how these activities can be introduced into everyday indoor and outdoor routines. The Canadian programme 'PLAYBuilder' is a cloud-based system which delivers activities that can be conducted at home, to keep children active and mentally engaged during the coronavirus pandemic (<https://sportforlife.ca/>). 'Appetite to Play' is another Canadian initiative designed to promote and encourage healthy eating and physical activity in early childhood. The programme offers self-assessment and planning tools, tips, recipes, games and other activities for parents and carers (<https://www.appetitetoplay.com/>). The 'SIMPLE Movement' Programme from the United Kingdom aims to help each child achieve their unique potential in reading and writing as well as in sports and playing. This easy-to-follow animated online programme promotes building developmental skills in a fun and pleasant manner (<https://www.simplephysicalliteracy.com/>). The pandemic has highlighted structural shifts in society that may lead to less physical activity in the future and this calls for novel approaches. It is very important that parents and educators do not allow children to adopt more sedentary lifestyles and greater screen time. If this happens, it will distract them from achieving and sustaining ongoing physical literacy, both now and in the future.

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**FIGURE 1** Circus arts physical literacy programme in children

#### KEYWORDS


physical activity, physical education, sports

#### ACKNOWLEDGEMENT


The authors would like to thank Canada for allowing us to include the circus programme image in our paper.

#### CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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