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Maintaining Children's Physical Activity: A Challenge During the COVID-19 Lockdown

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Dear Editor,

Although current evidence suggests that children are less vulnerable to COVID-19, pandemic limitations pose a severe threat to their physical, mental, and psychological status. School closure, lack of outdoor activity, inadequate physical activity at home, and increased screen activities can potentially disrupt children's healthy lifestyles. Evidence shows that short-term changes in physical activity may become permanently embedded, leading to an increased risk of metabolic and cardiovascular disease in children. We made suggestions for improving children's physical activity indoors and outdoors. The important role of parents and teachers and the potential role of electronic media and screen activities as a double-edged sword were also discussed.

The Importance of the Issue

The COVID-19 has threatened world health with more than 125 million confirmed cases worldwide up to the time of writing this manuscript and is still spreading globally (1). The most important way to deal with the spread of COVID-19 in the past year has been social distancing, which has led to the global 'stay-at-home' policy. This strategy results in changes in lifestyle behaviors, including less physical activity, especially in children (2-4). Evidence shows that short-term changes in physical activity may become permanently embedded, leading to increased risk of metabolic and cardiovascular disease in children (5).

Recommendations for Children's Physical Activity

The World Health Organization (WHO) recommends that children aged 5 - 17 should engage in at least 60 minutes of moderate to vigorous-intensity physical activity a day (6). The activities should cover the following subheadings.

Aerobic activities: In these activities, young people move their large muscles for a long period. The children must perform physical activity daily for 60 minutes. Examples of aerobic activities include bicycling, running, swimming, and playing sports.

Strength training: These activities make muscles work more than in normal situations. This activity is called the muscle-strengthening act. These should be implemented at least three days a week, with activities such as performing calisthenics, climbing trees, and playing tug-of-war and weight-bearing activities.

Bone strengthening: These activities put pressure on the body's bones that increase bone development and resistance. This part of activities should also be done at least three days a week, with exercises, such as tennis, badminton, jumping rope, running, football, and basketball.

Almost all countries have imposed restrictions to control the COVID-19 epidemic. Closure of schools, parks, and sports clubs and replacement of face-to-face training with online classes have prevented children from achieving recommended levels of physical activity worldwide. As a result, sedentary lifestyles and excessive screen activities are exploded, leading to negative physical, mental, and psychosocial outcomes (7-10). Thus, it is necessary to find strategies to increase children's physical activity in the lockdown period.

Outdoor Physical Activity

Children should be encouraged to engage in the appropriate and enjoyable physical activity, exercise with moderate to severe intensity, and have rest periods between them. Even though these activities are short, they lead to health goals. Under current lockdown conditions, children can be

taken to the park for playing, cycling, and running if they do not violate local laws. Children should be encouraged to run and jump by doing activities, such as hide-and-seek and tag, to have fun with exercise and develop their skills. In addition, these kinds of activities improve balance and proprioception, which consequently results in enhancing bone density.

Indoor Physical Activity

If for any reason children have to stay at home, parents should plan fun activities, such as dancing, playing, and throwing the ball in the basket. To increase muscle strength, it is not necessary to use any free weight; instead; some practices, such as push-ups or bridges, could be done for the same purpose. Doing some activities, such as kneading dough and baking bread, helps increase the strength and coordination of the hand muscles. Other activities that can be used at home include Jumping rope, obstacle course, bubble wrap attack, animal races (jumping like a frog), balloon ball, following the leader (in activities, such as jumping), wrestling, headstands, pillow fight, etc. that can be very helpful for children. A key point is parents' support and role modeling in doing the recommended exercises. The involvement of parents in these activities can be very helpful for them. This activity can lead to weight loss, improved cardiorespiratory and muscular fitness, and prevention of weight gain among parents. Earlier studies have shown that parental involvement increases the likelihood of continuing exercise in children (11) and reduces the risk of psychological distress during the lockdown period (12).

The Potential Role of Social Networks

Creativities, such as #PlayApartTogether that encourage gaming for socializing and stress reduction, may promote health behaviors (13). Creating friendly groups on social networks may increase the amount and attractiveness of physical activity for children. Children's sports videos or home exercise applications can also be used to help children. Electronic media may facilitate the regulation of children's daily physical activity (14). However, screen activities can be a double-edged sword.

Concerns with screen time activity

Global movement behavior guidelines recommend that preschool children engage in no more than one hour and school-age children no more than two hours of sedentary screen time (15). Prolonged screen activity is associated with snacking and reduces physical fitness, increases blood pressure, serum lipids, and insulin resistance in children and youth aged 5 to 17 years (16, 17). Inappropriate posture during screen activity is another concern. Usually, poor seating posture and ergonomic adjustments can lead to real issues with back and neck pain. Over time, children's posture becomes slouched into a rolled, rounded curve with shoulders slumped with a forward head (18). Teachers can play an important role in correcting this issue during online classes. They should check the children's posture if possible, limit their prolonged sitting, and encourage changes in posture, such as regular stretching and standing. Parents should also know and promote the movement behavior and required ergonomic adjustments.

Finally, if children have a fever or are ill, they need to get enough rest and avoid strenuous activity. As a guideline, the Borg Scale can easily be used by parents to assess the exertion of children's activities who are not under the supervision of a coach. Children should be asked to exercise at moderate intensity (19). We hope these suggestions can help keep children healthy for the future.

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Footnotes

Authors' Contribution: EM & HD: substantial contributions to the conception or design of the work; ED & MM: the acquisition and analysis or interpretation of data; EM & HD: Drafting the work or revising it critically for important intellectual content; All authors: final approval of the version published, agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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