

Commentary

Physical activity, physical fitness, and body mass index in the Chinese child and adolescent populations: An update from the 2016 Physical Activity and Fitness in China—The Youth Study

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In this special issue of the *Journal of Sport and Health Science*, analyses of the most recent national prevalence estimates from the 2016 Physical Activity and Fitness in China—The Youth Study (PAFCTYS) are presented. These include the prevalence of moderate-to-vigorous physical activity (MVPA),¹ physical fitness,² and weight status³ among school-aged children and adolescents in the Mainland of China. Using the PAFCTYS dataset, 2 empirical studies have examined the correlates of the immediate school or community environment and family characteristics associated with school children's MVPA.^{4,5}

The results of these prevalence studies^{1–3} are startling and impactful on public health, especially when one considers that there were more than 166 million Chinese school children in 2016.⁶ Among the school children surveyed, only about one-third (29.9%) met the recommended guidelines of a minimum of 60 min of MVPA daily,¹ and only 3 in 10 achieved an “excellent” or “good” fitness mark set by national physical fitness standards.² About 37% failed to adhere to the daily screen-time viewing recommendations of 2 h or less, and 12% were obese, based on body mass index percentile scores.³ Disparities in the prevalence estimates of these behavioral health indicators are also noted, with differences observed between boys and girls, older children (in junior middle and junior high schools) vs. young children (in primary schools), and children living in rural areas versus those living in urban areas.

When compared to international studies and other Chinese domestic reports, these results should come as no surprise. Worldwide, approximately 80% of adolescents (ages 13–15 years old) are reported⁷ as being insufficiently physically active, that is, they spend less than 60 min of their daily time engaged in MVPA, the recommended minimum level for this age group.⁸ Likewise, children in most countries score low on

overall physical activity (PA) levels, high on sedentary behavior levels,⁹ and show a rising level of prevalence of obesity.^{10,11} The statistics for the Mainland of China are consistent with those reported in international epidemiological studies, which show an overall low prevalence of MVPA,^{12,13} a growing level of sedentary behaviors,^{14–16} and a rising trend in obesity^{17,18} among Chinese youth.

From the perspectives of public health and health promotion, the findings on the prevalence of these risk behaviors and risk factors from the 2016 PAFCTYS are of great significance. These results^{1–3} provide little positive news and show a sustained, chronic pattern of high prevalence of physical inactivity and unhealthy weight. If no action is taken, this pattern will likely result in negative consequences and lead to the development of non-communicable diseases,^{19,20} which will, in turn, track into young adulthood.²¹ Clearly, these reports highlight the need for effective policies and initiatives that promote active engagement in PA in schools and communities and role modeling in families, all of which can increase PA levels among Chinese children and adolescents.

These studies also suggest the importance of conducting regular public health surveillance in China in order to track and monitor various types of PA (e.g., strengthening activities and aerobics), inactivity (e.g., screen time, such as watching TV and playing video games), fitness levels (e.g., cardiorespiratory fitness), and weight status. Public health surveillance is on-going as part of PAFCTYS and is meant to provide longitudinal data that will allow researchers to study trends in PA, fitness, and body mass index among the youth population in China. The updated data and the knowledge gained through this effort are likely to inform the development of health promotion policies and programs for Chinese youth populations in the future.

The health benefits of regular PA among youth are well established,²² and the *Healthy China 2030* blueprint specifically emphasizes the need for children to engage in at least 1 h of PA daily in school and for China to reach a level greater than 25%

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of the youth population in achieving an “excellent” rating in fitness.²³ However, promoting an active and healthy lifestyle among Chinese school students remains a significant challenge in practice.²⁴ Although numerous government PA promotion policies exist for schools,^{24–26} there is little or no evidence showing that these policies have had an impact on changing the level of PA among school-aged children. Similarly, although reviews and studies by international research communities have provided evidence on the health effects of school-, community-, and family-based interventions in promoting PA during school and outside of school time,^{27–30} few efforts have been made to either translate or adopt these evidence-based programs into school and community practice in China.

PAFACTYS represents the largest and most comprehensive PA and physical fitness survey study of school-aged children and adolescents in recent Chinese history. However, as noted in each of these papers,^{1–5} PAFCTYS has notable design and methodological limitations that should serve as a caution in data interpretation and be addressed in future research. These include a non-probability sample, a cross-sectional research design, reliance on subjective PA measures, and a lack of criterion-referenced standards for assessment and fitness testing. In particular, the lack of a prospective study design significantly limits our insight into trends and changes in many of the health outcomes included in these reports. Notwithstanding these limitations, PAFCTYS findings on PA, inactivity, and weight status offer a significant public health opportunity for developing effective policies, strategies, and interventions aimed at curbing the obesity epidemic, increasing PA, and maintaining an active lifestyle among Chinese children and adolescents in school, community, and family settings.

Barbara E. Ainsworth⁹ has called for a multidisciplinary approach to PA promotion. These studies echo her call, and show that China needs a coordinated public health effort in order to develop actionable PA policies, build community capacities, and implement evidence-based PA programs that promote PA and improve fitness among Chinese children and adolescents.

Competing interests

The author declares that he has no competing interests.

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