ABSTRACT

Physical Fitness and Postural Health among Punjab Schoolchildren: Implications for SDG-Aligned Health Promotion

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Background : Physical inactivity, excessive screen exposure, poor fitness, and postural deviations during adolescence may increase future non-communicable disease risk and affect well-being. Schools provide an important setting for early prevention.

Objective :To assess physical fitness and postural health and examine their associations with lifestyle factors and academic stress among school-going adolescents in Punjab, India.

Research Methods/ Implementation Methods :This cross-sectional study included 300 students from grades 8–10 in three selected schools in Punjab, recruited through convenience sampling. Lifestyle characteristics and academic stress were assessed using a structured questionnaire and the Educational Stress Scale for Adolescents. Physical assessment included body mass index, sit-and-reach test, shuttle-run test, 50-yard sprint, and APECS-based postural screening. Associations were examined using the chi-square test, with significance set at $p<0.05$.

Results :Low flexibility was observed in 48.0% of participants, while 14.0% required improvement in shuttle-run performance, 32.3% in sprint performance, and 25.7% demonstrated poor posture. Additionally, 55.6% reported at least two hours of daily screen time, 30.3% slept fewer than seven hours, 51.7% were underweight, and 74.0% experienced moderate-to-high academic stress. Screen time was significantly associated with shuttle-run performance ($\chi^2=33.563$, $p<0.001$). Postural alignment was associated with flexibility ($\chi^2=13.720$, $p=0.008$) and shuttle-run performance ($\chi^2=18.682$, $p=0.001$). Shuttle-run performance was also associated with academic stress ($\chi^2=13.596$, $p=0.009$).

Conclusion/Lesson Learned :Integrated school programs incorporating fitness screening, physical activity, postural education, ergonomics, and stress management may strengthen adolescent health and support SDG 3 and SDG 4.

Keyword : Adolescents; physical fitness; posture; academic stress; school health; sustainable development goals