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Promoting Physical Activity and Science Learning in an Outdoor Education Program

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ABSTRACT

Purpose. Outdoor and environmental education programs have been shown to have a positive impact on the educational, physical and emotional development of youth. Outdoor education programs are increasingly being used to foster a sense of community in schools and to provide students with learning opportunities related to the environment. This study assessed an outdoor education program aimed at increasing physical activity and improving science knowledge among elementary school children. **Methods.** Forty-four children (male $n=19$, age $M=9.7 \pm 0.4$) from an elementary school in an economically disadvantaged urban community participated in the study. To gather baseline physical activity information, the participants wore a pedometer for six hours during a typical school day. A subset of fourteen participants also wore an accelerometer during the same day at school. The one-week outdoor education program, which took place at a local day camp, provided a learning environment for the participants that focused on physical science, team building, physical education, and science inquiry lessons. During the program, the same participants wore pedometers and accelerometers for about five hours per day for five days. Steps and moderate to vigorous physical activity (MVPA) were recorded. All participants took a pre and post science test to assess science inquiry knowledge appropriate to participants' age group. **Results:** Average steps/hour and MVPA/hour at school were $M=391.12$, $SD=219.97$, and $M=3.31$, $SD=.58$, respectively; Average steps/hour and MVPA/hour during the outdoor education program were $M=1237.34$, $SD=716.14$, and $M=9.50$, $SD=1.44$, respectively. T tests showed steps/hour and MVPA/hour were significantly higher during the outdoor education program compared to at school, $t(43)=-28.02$, $t(43)=-29.34$, respectively, $P_s<.001$. Science test score increased from Pre $M=8.1$ ($SD=2.5$) to Post $M=9.4$ ($SD=2.0$), $t(43)=-4.19$, $p<.01$. **Conclusion.** Schools can utilize outdoor and environmental education programs to promote physical activity and improve science learning in elementary school children.