



Availability of School Based Physical Activity: Summary of Findings From WV School Principals

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Background

- Over the last 20 years, obesity rates among adults and children in the U.S. have steadily increased. Since the early 1980's obesity rates among adults have doubled, while rates among children have tripled.^{1, 2, 3}
- In West Virginia (WV), a largely rural state, adult obesity rates are currently among the highest in the nation, with similar trends observed among WV's youth.^{4, 5, 6, 7}
- A major factor linked to increased obesity is lack of physical activity (PA). Along with increases in obesity, WV has experienced decreased levels of PA.⁸

Schools can play an important role in increasing PA and thereby combat childhood obesity through their physical environment, PA programs, and educational outreach for students as well as for the community.^{9, 10, 11}

Availability of school-based PA opportunities may be particularly important in rural areas where economic and environmental resources are fewer and obesity rates higher than in urban areas.^{12, 13, 14}

Research Questions

- What types of school-based PA opportunities exist within WV schools both during and outside of the school day and to whom are they offered?
- Are school facilities made available for public use beyond school hours?
- Do parents know about these opportunities?
- Do PA activities outside the school day differ by rural/urban or socio-economic status (SES)?

Methods

Procedure: The present study utilizes data collected as a part of a statewide, multi-component evaluation of the West Virginia Healthy Lifestyles Act, funded through the Robert Wood Johnson Foundation. Results presented here are based on principal surveys. Data from a question regarding access to facilities was taken from parent surveys.¹⁵

Principals of all "traditional" public schools in WV (N=696) were surveyed during the 2007-2008 school year; specialized schools such as vocational centers and alternative learning centers were not included. Surveys were conducted electronically and by standard mail. All principals received the initial request to complete the survey and two follow-up requests, if necessary. Data used for the present study related to questions about PA opportunities

A stratified proportional sample of parents was surveyed (N=1500) via telephone. Parents of children in selected grades were asked to participate in a survey about changes in school policy and student health. In order to ensure a representative sample interviews were conducted in all 55 counties, an equal number of parents were interviewed for each of the grades selected, and the number of interviews conducted was proportional to the size of the schools attended by students.

Additional demographic data was obtained from the WV Department of Education (DoE) and from the 2000 census. The percentage of students receiving free and reduced meals per school was calculated from data provided by the DoE for 2007-2008 school year and collapsed into three categories: 0-33%, 34-66%, and 67%+, a proxy for school SES. The percentage of schools located within high, medium, and low population density counties were calculated using census data as a proxy for rurality. Population density data (persons/sq. mile) were collapsed into three categories: low=less than 49, medium=50-199, and high=200+.

Methods

Principal Surveys:

As part of the evaluation of the WV Healthy Lifestyles Act, principal surveys included questions relating to health education, nutrition, physical education, physical activity, school level policies, and demographics. Data from questions relating to PA and physical education were the focus of this study.

Analysis:

Descriptive statistics were calculated using SPSS 16.0. Chi square tests were conducted to assess differences in PA opportunities outside the school day (PA facilities available and PA programs to families) across population densities and percent of students receiving free and reduced meals.

Results

- 84% of WV school principals completed the survey (N=586 of the principals, including 391 elementary schools, 108 middle schools, and 87 high schools).
- The average enrollment of elementary schools=301(±159), middle schools=451(±188) and high schools=736(±423).
- Two-thirds of WV schools reported 34-66% of students receiving free and reduced lunch, one fifth of schools reported more than 67% of students receiving free and reduced meals.
- Based on population density data from the 2000 Census, 25% of schools were located in counties with fewer than 49 persons per square mile, 45% of schools were located in counties with a 50-199 persons per square mile, and 30% of schools were located in counties with the highest (200+ persons/sq. mile) population density.

Opportunities Within & Outside of the School Day

Table 1. School Based Opportunities for Physical Activity

	Elementary	Middle	High
Opportunities within the School Day			
Average PE time ± σ (minutes/year)	3500 ± 2397	3870 ± 2132	---
Schools offered recess or free play during school day*	97%	62%	---
Schools offered PE elective*	---	19%	89%
Opportunities outside the School Day			
School facilities are made available outside of the school day	91%	94%	98%
PE or PA programs are offered to families*	22%	7%	10%

* p<.001

Opportunities by Group

Table 2. PA Opportunities for Students, Faculty, and Community

	Students	Faculty & Staff	Community
PA Programs			
Aerobics/Cardiovascular Fitness	17%	14%	8%
Dance, Gymnastics	13%	1%	2%
Team Sports (not interscholastic)	51%	2%	9%
Weight Training	17%	7%	5%
None	27%	24%	29%

Parents: "Are public school facilities (buildings and/or grounds) available for individuals in the community to use for physical activity outside of school hours?"
63% reported "yes"

Results

PA Opportunities outside of the School Day & Population Density

- No significant differences were found between population density and the percentage of schools making facilities available or the percentage of schools offering PA/PE programs to families.

PA Opportunities outside of the School Day & Free and Reduced Meals

- No significant differences were found between the percentage of students receiving free and reduced meals and the percentage of schools making facilities available or the percentage of schools offering PA/PE programs to families.

Discussion

Summary: The findings presented here indicate that opportunities within and outside of the school day are mixed. Time for recess/free play during the day was reported by the majority of elementary (97%) and more than half of middle school principals (62%). These percentages are consistent with findings from 2002 that reported 94% of elementary schools offering recess, and 64% of middle schools offering free time for PA.¹¹

Though the majority of principals indicated that school facilities were available (91-98%), only 63% of parents perceived them to be available. This may require promotion/efforts to increase awareness or could be due to the fact that few schools actually offered PA programs after school hours, or that reservations/costs are associated with facility use. It may also be due to the low percentage of schools offering structured programs to families, students, parents, and the community.

Differences in school based opportunities for PA outside the school day were not evident across levels of population density (low, medium, high) or by percent of students receiving free and reduced lunch. While it is encouraging to know that no potential difference in PA opportunities exists between rural areas of lower and higher economic and environmental resources, the percentage of schools offering programs to students, families, and the community remains low (7-22%). Further research in this area is warranted, including methods to increase the percentage of schools offering PA programs.

Limitations & Future Directions: Given the high percentage of schools offering PA opportunities within the school day, future research should assess whether these opportunities are leading to increased levels of PA and decreased obesity. Also, future work should distinguish between availability of outdoor facilities and indoor facilities, while also capturing barriers to availability and use. Within the schools, audits/inventories of the physical environment should be conducted to ascertain potential resources or deficiencies for facilitating PA opportunities during and outside of the school day. The use of population density by county and free and reduced lunch may have limited conclusions that can be reached about differences in availability of facilities and PA/PE programs for families, but the current findings show that overall, WV schools are making strides to create school-based PA opportunities for parents and families even among the most rural and economically deprived regions.

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