Physical Activity Levels and Obesity Status of Oregon Rural Elementary School Children

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The goal of the GROW Healthy Kids and Communities project is to prevent obesity in rural children.

INTRODUCTION

In Oregon, and nationally, there is a dearth of data assessing the amount of time spent in physical activity (PA) at school among rural children and no data relating PA at school to health indicators such as BMI. This makes it challenging to associate school policies and resources to promote PA as critical among rural children.

PURPOSE

1.2% of this study was to measure PA levels during the school day among children attending rural schools in Oregon, and to determine the relationship of PA behaviors at school to BMI.

Research Design

This study is needed with a larger, multi-level, 5-year; USDA NIFA-funded project titled Generating Rural Optimal for Weight Healthy Kids & Communities (GROW HKC) to provide initial insights into the greatest potential to reduce the risk of disease associated with low PA levels.

METHODS

Measures

• PA levels of rural elementary school children

RESULTS

• On average, children wore pedometers for 357 (~2.5 hr/day); approximately 8% of a 6.5 hr school day.

Data Management and Analyses

• On average, children were classified as overweight or obese by sex and by grade.

Analyses

• Regression models were not used to examine relationships between BMI and MVPA at school.

CONCLUSIONS

• Do identified data were collected at the whole school population level (allowing for an opt-out consent process and greater study participation). This resulted in the opportunity to collect PA outside of school, eating behaviors, or demographics for inclusion in analyses.

• We did not control for day-to-day variations in school/class schedules (PE, recess) or local climate, but we did gather these data.

• School and class schedules indicated daily recesses and weekly PE were offered at all schools during the periods of data collection. PE programming ranged from 30-109 min/week, delivered by classroom teachers, PE specialists, or a combination of the two.

• Cumulative risk/strain, but observations by our research assistants indicated all schools allowed kids out to play at recess regardless of weather.

• Unfortunately, those opportunities for PA do not appear sufficient to provide children with even half the daily MVPA dose recommended to minimally protect them from chronic hypokinetic conditions.

• This is alarming as over 80% of our sample is bused to and from schools with one-way travel times ranging from 30-125 minutes, precluding participation in before- and after-school programs and leaving the burden of provisioning PA to under resourced families.

• Efforts to promote PA as a strategy for obesity prevention in rural schools should focus on adding opportunities for MVPA during school hours, as this is the component of PA with the greatest potential to reduce the risk of disease associated with low PA levels.

• There are numerous other factors which likely contribute to the observed relationship of MVPA at school to BMI that we did not measure due to the whole-school assessment protocol (PA outside of school, child eating behaviors, demographics, etc.); nonetheless, this study provides initial insights into the death rate of PA provided in rural schools and the potential effects this may have on child BMI.

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RESEARCH question in context

• On average, children were classified as overweight or obese by sex and by grade.

DISCUSSION

CAUTIONS

• This is the first study to objectively assess the relationship between PA (min/day) at school and BMI in rural children (6.5-12 yr) in Oregon.

• Regardless of grade level, on average children accrued >60 min/day of MVPA, during a 6.5-hr school day, higher MVPA was associated with lower BMI z-scores for boys and girls.

• Notwithstanding the potential impact of these findings, there is evidence to support the idea that more MVPA at school ultimately benefits child health and overall PA.

• Children were classified as "overweight" or "obese" using the age and sex matched reference data from CDC growth charts.

• Assessment of Physical Activity (PA; min/day at school)

• Assessment of Body Mass Index (BMI; kg/m^2)

• On average, children wore pedometers for 357 (~2.5 hr/day); approximately 8% of a 6.5 hr school day.

• The average participation in PA during the school day was 46 (±15) min, and 55 (±25) min for girls and boys, respectively.

• MVPA was associated with lower BMI (P < 0.001), independent of sex, wear time or day.

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• Data were collected on Monday-Friday and weekend days at each school.

• On average, children were classified as overweight or obese by sex and by grade.

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