

Physical Activity Levels of School-Aged Children in a Ballroom Dance Classroom Program

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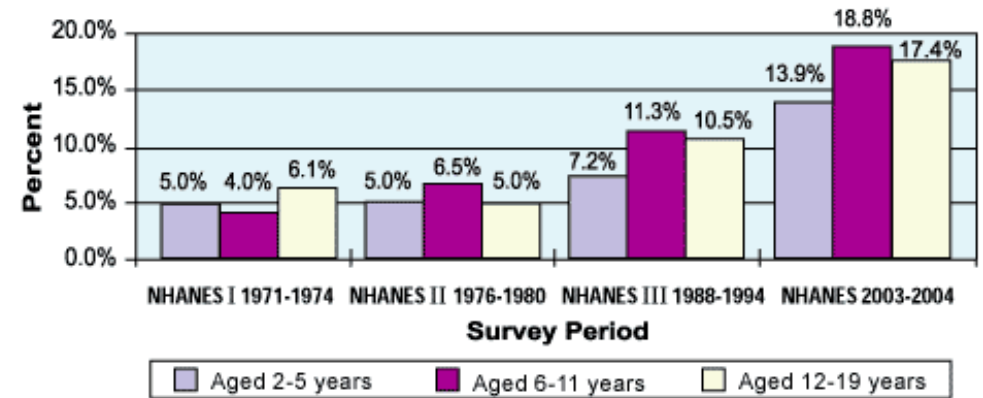
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Disclosure Slide

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Background



- Childhood obesity is increasing
- School based programs are used to modify physical activity behaviors
- Few programs have been evaluated and established programs may not meet recommendations of maintaining the appropriate level of activity



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Healthy People 2010

- Moderate physical activity for at least 30 minutes on 5 or more of the previous 7 days
- Vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion
- Daily physical education for all students
- At least 50% of school physical education class time spent being physically active



Physical Activity

- As recommended in June 2007 by the Expert Committee (AMA, HRSA, CDC):
 - Increasing physical activity in school through *intervention programs* and through creating school environments that *support* physical activity in general
 - Children should participate in at least *60 minutes* of moderate to vigorous physical activity accumulated *throughout* the day in *enjoyable* activity



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Project Objectives

- To describe the levels of physical activity achieved by students in a ballroom dance program
- To determine if students meet physical activity recommendations
 - To determine if a class composed of ballroom dance engages children in moderate to vigorous physical activity (MVPA) for at least 50% of class time

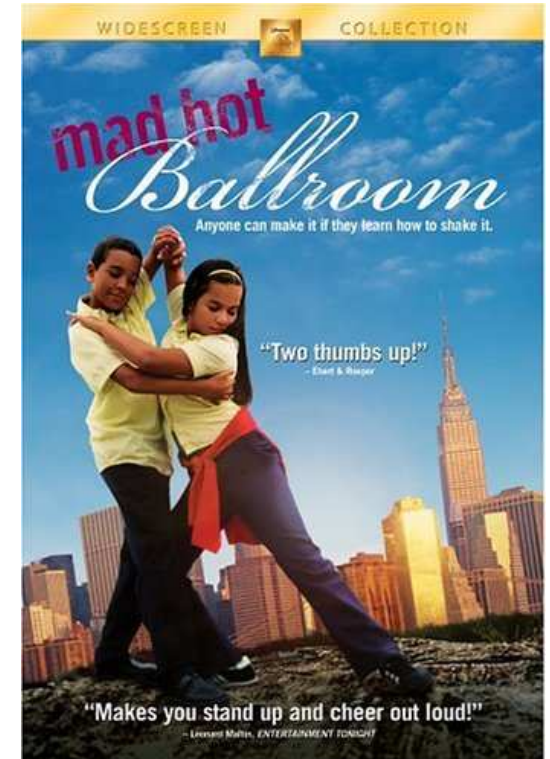


- **Hypothesis:** A dance program for school-aged children meets national recommendations to engage children in MVPA for at least 50% of class time.
- **Long term objective:** To establish effective school programs to modify behaviors in children that may impact subsequent morbidity and mortality as related to overweight.



Methods

- Descriptive prospective study
 - School based arts in education program
 - public schools
 - 4th and 5th grade students
 - 10 week program consisting of 45-60 minutes of class per day twice a week
 - merengue, rumba, foxtrot, waltz, tango, swing, line dances



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Methods

www.americanballroomtheater.com

- Inclusion criteria: children enrolled in the 4th or 5th grade in 2 public elementary schools in New York City taking part in the ballroom dance curriculum (February – June 2006)
- Exclusion criteria: children without parental consent
- IRB and NYC DOE approved study



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Measurements

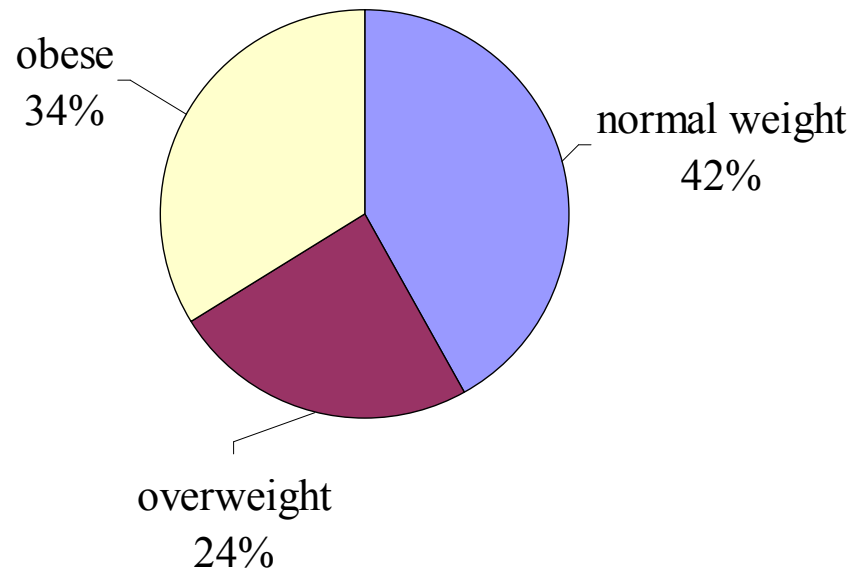


- Random classes during first half and second half of program
- Physical activity assessments
 - Subjective: System for Observing Fitness Instruction Time (SOFIT) observation method
 - Validated HR observation system
 - Objective: Heart rate monitoring
 - Determine % time subject maintains a HR representative of MVPA ($\geq 25\%$ HRR)



Results

- 79 (96.3%) of 82 subjects enrolled
- Age: 10.3 years old (8.5-11.9)
- Gender: 35 (44.3%) male; 44 (55.7%) female
- Ethnicity: 88% Hispanic/ Latino, 5% African American, 1% White, 1% Other, 5% Unknown
- BMI:



SOFIT Observations

	1st half	2nd half	Overall
Mean lesson length (min)	44.4	51.1	48.2
Activity (% class time)			
Sitting	9.2%	4.0%	6.2%
Standing	40.9%	29.0%	34.1%
Walking	16.3%	16.8%	16.6%
Very Active	33.7%	50.2%	43.1%*
Mean Minutes in MVPA	22.5	35.7	30.1
% of class time in MVPA	50.0%	67.0%	59.7%

*22.0 minutes



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HR Monitoring



	1st half	2nd half	Overall
# of students with HR recordings	14	62	76
Mean HR during class (bpm)	118.2	116.5	116.8
% of time at $\geq 25\%$ HRR	63.4%	69.7%	68.6%
% of students with $\geq 25\%$ HRR for $\geq 50\%$ of class time	64.3%	72.6%	71.1%



Limitations

- Direct comparison not available between subjective SOFIT data measuring classroom activity and objective HR monitoring data recording individual activity
- Standardized curriculum, but variability seen
- Differences in population, geography, and season affecting level of activity may limit generalizability



Conclusions

- A ballroom dance program does meet national recommendations of providing at least 50% of class time in MVPA.
- Recommendations for minimal time spent daily in both moderate and vigorous activity were met.
- Increasing time in MVPA is demonstrated as program progresses.
- Dance may be an appropriate means for children to achieve MVPA.



Future Directions

- Impact of the program on BMI and sustainability of results
 - Potential confounders: other activity, baseline fitness levels, dietary habits
 - Increasing length of intervention



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