Appalachian STATE UNIVERSITY BOONE, NORTH CAROLINA

Mornings In Motion, School-Based Dance For Health And Wellness: Feasibility And Physical Activity Outcomes (Poster)

By: **Dana E. Brackney PhD, RN, Emily Daughtridge MFA,** and **Marco Meucci, PhD**

Abstract

Play-based dance in schools provides an alternative to sports-centric activities. An interdisciplinary research team with academic backgrounds in Exercise Science, Nursing, and Dance developed *Mornings in Motion,* a whole-child intervention that engages second grade children for wellness. This quasi-experimental study reports outcome measures and recommendations for replication in other school communities.

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Mornings in Motion, School-Based Dance for Health and Wellness: Feasibility and Physical Activity Outcomes

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BACKGROUND

Physical activity in childhood promotes positive health behavior and prevents chronic health conditions (e.g. heart disease, Type 2 Diabetes). Markers of cardio-metabolic pathology appear earlier in obese and inactive youth. Obesity prevention requires community-based, accessible activities for youth.

Play-based dance in schools provides an alternative to sports-centric activities. An interdisciplinary research team with academic backgrounds in Exercise Science, Nursing (CDCES, BC-ADM) and Dance developed *Mornings in Motion*, a whole-child intervention that engages second grade children for wellness.

This quasi-experimental study reports outcome measures and recommendations for replication in other school communities.

STUDY DESIGN

This quasi-experimental study with comparison group and without randomization includes analysis between groups. Participants (*n*=21) in this study attend a K-8 school where 41% of students qualify for free/reduced lunch.

Trained graduate assistants measured the three primary outcomes: physical activity, acceptance, and anthropometric measures.

Activity trackers recorded volume (minutes) and intensity (calculated percentage of heart rate reserve) of physical activity throughout the school day including the before school 30 minute dance activity.

Garmin VivoSmart HR+.

DANCE INTERVENTION

Activity	Description
Warm Up	•Students gathered in a circle for activities to engage the imagination and prepare the body for more complex activities to follow. •Students participated in warm up activities designed to cultivate awareness, develop community, and establish ground rules for classroom management. •Warm up activities included directed improvisations to encourage creative, interpersonal sharing, intentional breathing, joint manipulations and gentle stretching.
Concept Exploration and Skill Building	•The students' creative ideas were solicited and incorporated into guided explorations involving core-initiated movements contrasting in size and speed, changing spatial levels, traveling through space and coordination. These dynamic explorations were designed to increase physical activity.
Free Dance	•Students experienced play based, free dance activities in the context of a music listening game to encourage increased physicality through high energy improvisations.
Dance Choreography	•Students engaged in a structured process of learning and practicing choreography. The choreography was thematically related to a concept from the NC core curriculum for 2nd graders and was structured to maintain an elevated heart rate. •Students' creative contributions were integrated into the choreography to increase intellectual connection, personal investment and motivation.
Cool Down	•Students sat in a circle and were guided through a mindful breathing practice to allow integration of their experiences, development of body/mind awareness and refocus their attention for the school day ahead.

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DATA ANALYSIS

Participant descriptors, intervention acceptance (percentage of attendance), and anthropometric measures are reported with descriptive statistics and categorical data. Heart rate reserve percentages were used to categorize minutes of activity as sedentary (<25%), moderate (25-39%), meets guidelines (40-49%), and recommended for aerobic fitness (≥50%).

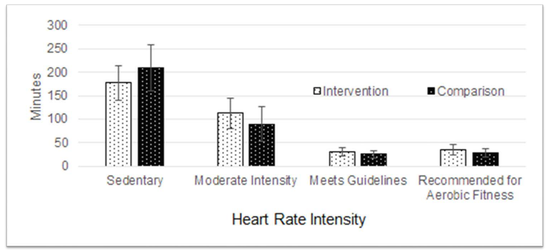
RESULTS

Seventy-five percent of early arriving second grade students (more girls than boys) attended *Mornings in Motion*. The class design provided opportunity for intermittent physical activity at varied intensities (active, moderate, vigorous). Participants (n=11) averaged 122 minutes of active time during the school day, which is 41 minutes higher than comparison (81 minutes). Participants also averaged 70 minutes of school day physical activity at a moderate-to-vigorous intensity (33 minutes moderate intensity + 37 minutes vigorous intensity). Comparison students averaged (58 minutes) at a moderate-to-vigorous intensity in their school day. Participants averaged 5 to 20% more daily activity than other participants. No differences in body measures between groups were observed.

Table 1. Participant Characteristics of Intervention and Comparison Group

Participant Characteristics	Intervention (n=11)	Comparison (n=10)
Age range (years and months)	7y 0m - 8y 0m	7y 1m - 8y 0m
Age Average (years and months)	7y 6m	7y 7m
Sex frequency	1 male 10 female	5 male 5 female
Race frequency	9 white 2 non-white	7 white 3 non-white

Figure 1. Average Heart Rate Intensity Minutes by group



CONCLUSIONS

The *Mornings in Motion* program was feasible as a before-school activity. The time used was a "waiting time" for early arriving students. *Mornings in Motion*, a whole child physical activity program, contributed to the achievement of second grade students meeting the 60 minutes or more of moderate-to-vigorous daily physical activity recommended by the CDC *Physical Activity Guidelines for Americans*. *Mornings in Motion* participants were active at an intensity supportive of health and fitness. Participants accumulated more active minutes during the school-day than comparison peers. No biometric differences were observed in this brief 8-week intervention program. More girls participated in the program than boys, and anecdotal reports indicated that dance may already be considered a gendered activity by age eight.

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