

# Effects of Preference Based Physical Activities for Children Ages 6-10 Years in a Private School Setting



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## BACKGROUND & SIGNIFICANCE

Many children are not obtaining recommended levels of physical activity. Research has shown that if an individual has no preference in an activity then participation is globally decreased. The decreased amount of physical activity impacts their fitness and overall health. Pediatric physical therapists have an opportunity to collaborate with private schools to explore novel approaches for incorporating physical activity into the curriculum for children with and without disabilities. Therefore we hypothesized that children are more likely to participate in activities they prefer, thus increasing their overall health and wellness when play time at school is preference based.

## PURPOSE

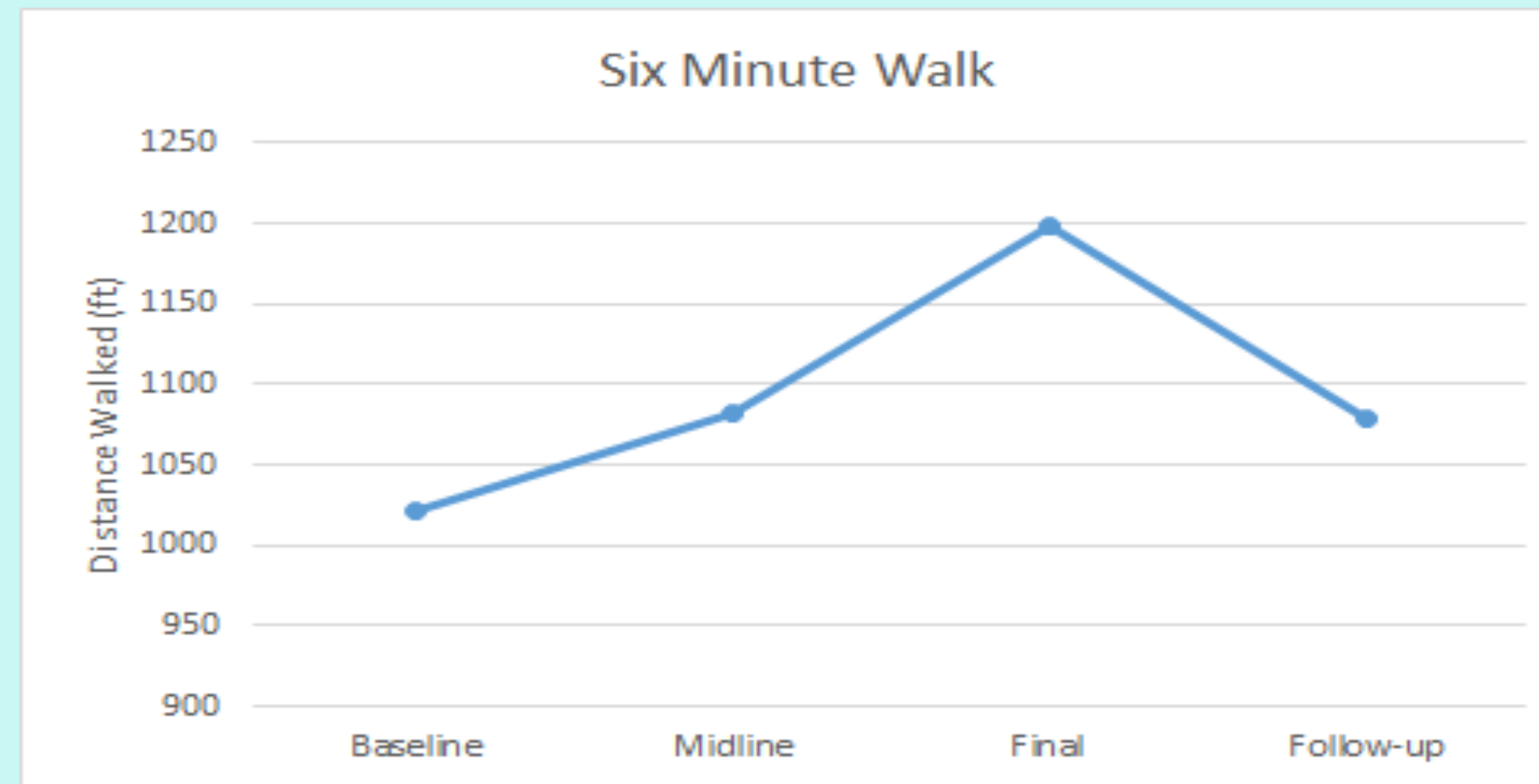
The purpose of this study was to investigate the impact of an innovative preference based physical activity program on fitness levels of children ages 6-10 enrolled in a private school.

## METHODS & MATERIALS

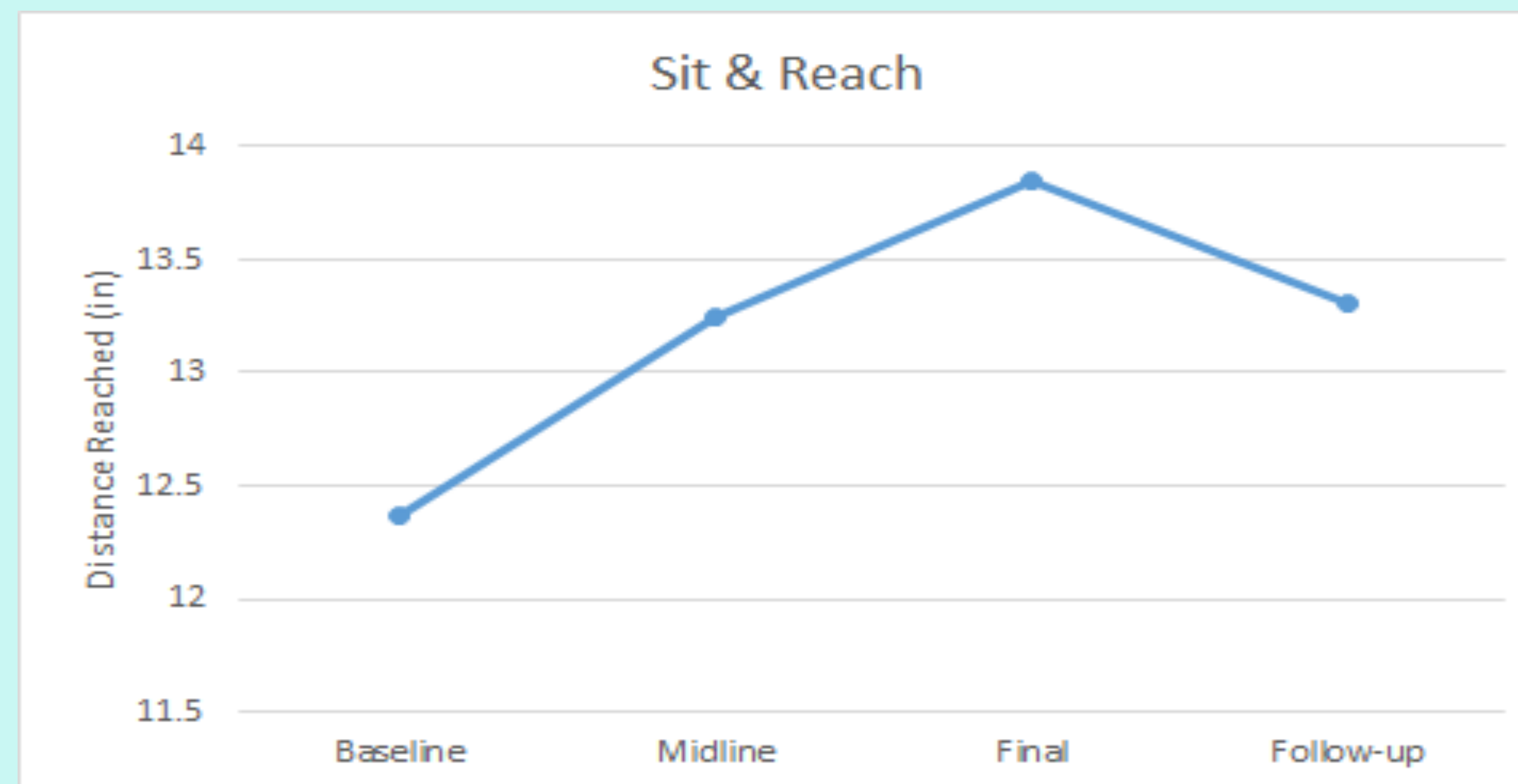
A single cohort, repeated measures design with a follow-up assessment 3 months post-intervention was used to examine the potential benefits of preference based physical activity on fitness levels in children aged 6-10 years at Advanced Learning Academy in Maitland, FL. Fitness levels were assessed using the Six Minute Walk Test (6MWT), the Curl Up Test, and the Sit and Reach. All subjects completed the Preferences for Activities of Children (PAC) assessment form at the beginning of the school year. Teachers were provided with the top five preferences for children from the PAC and recommendations with how to incorporate those preferences into the physical activity program. These sessions were themed based upon the top five responses that allowed for the children to have a say in the program that they completed. The physical activity program was implemented 30 minutes/day, 3 days/week for 30 weeks as a component of the school curriculum. No funding source was utilized.

Participants Characteristics

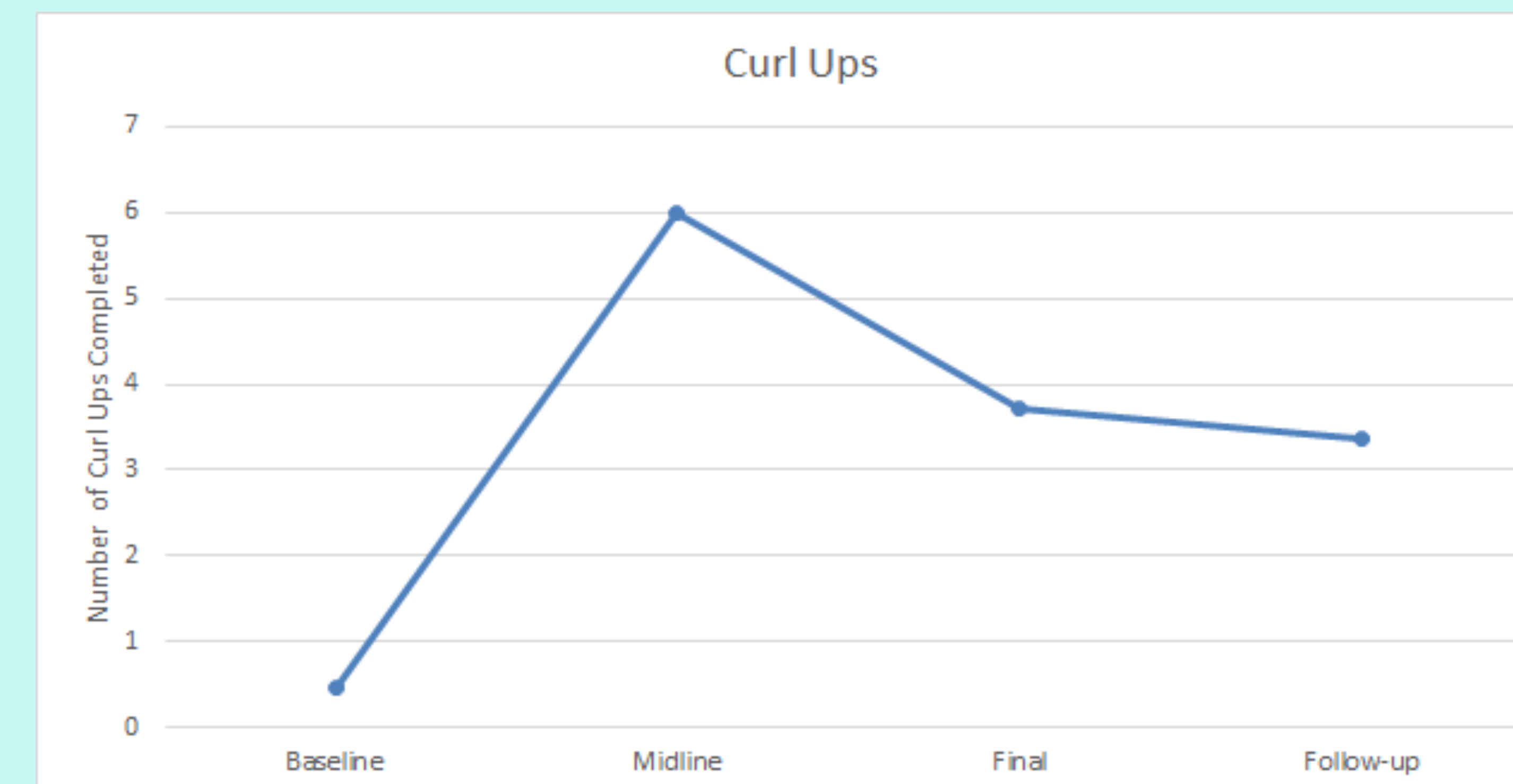
Category	Total
Age	Mean = 7.9 (1.5) years
Males	13
Females	3
Grades K-1	9
Grades 2-3	7



6MWT improved from 1020.73 feet (SD 219.81) at baseline to 1067.73 feet (SD 219.11) at 10 weeks and 1198.86 feet (SD 242.94) following the program. While not statistically significant ( $F(1,10)=1.585, p=.21$ ), 37.5% of students made positive growth between baseline and mid-line, and 86% positive growth between baseline and final. Following the summer months, a significant decline in performance was noted on the 6MWT to 1078 feet (SD 272.16;  $p=.03$ ).



Sit and Reach Test demonstrated a significant overall improvement ( $F(1,10)=2.028, p=0.01$ ) indicating an increase in hamstring and lumbar flexibility. This was primarily driven by improvements noted from baseline of 12.36 inches (SD 5.42) to immediately following the 30 weeks of activity with 13.85 inches (SD 5.82;  $p=.01$ ). As with the other measures, there was a slight decrease in flexibility noted after the summer months to 13.30 inches (SD 4.95) but did not reach significance ( $p=.30$ ).



The Curl Up Test demonstrated overall significance in improvement in core strength from 0.45 repetitions (SD 1.51) at baseline to 3.73 repetitions (SD 4.17) following completion of the 30 week program ( $p=.02$ ). While the students demonstrated a decrease in curl up performance over the summer months to 3.36 repetitions, it was not significant ( $p=.68$ ).

## RESULTS

The participants in the study consisted of 16 children ranging in age from 6 to 10 years, with a mean age of 7.9 years (SD 1.5) and included 3 females and 13 males. Despite intervention being intertwined with the school day, there was a 31% drop out rate due to relocation or absence on data collection days. In addition to the results shown in graphs 1-3, there was a decrease in all measurements noted from final data collection to follow-up after the summer months, reaching significance with the 6MWT (SD 272.16;  $p=.03$ ). This trend in decreasing performance on fitness tests suggests that not participating in the program may lead to lower levels of physical performance, along with other potentially confounding variables such as access to activity space and family lifestyle.

## CONCLUSION

The results of this study demonstrate a positive response to the preference based physical activity program in children aged 6-10 years enrolled in an inclusive private school. There may have been floor effects with the Curl Up, as many of the children had a difficult time following the cadence and thus depicting poor abdominal strength. This limitation along with a small sample size suggests the need for a further study with control of these variable to accurately determine validity of intervention. The findings from this study suggest preference based physical activity may have a positive impact on fitness levels in young children with and without disabilities. While these results certainly provide an exciting groundwork for further collaborations with pediatric physical therapists in the classroom, more research is needed to determine the efficacy of this novel approach. With the limitations of this study in mind, a follow-up study is currently underway.

## REFERENCES

Faulkner G, Zeglen L, Leatherdale S, Manske S, Stone M. The relationship between school physical activity policy and objectively measured physical activity of elementary school students: a multilevel model analysis. *Archives of Public Health*, 2014;72(20): 1-9.  
 Law M et al. Patterns of participation in recreational and leisure activities among children with complex physical disabilities. *Developmental medicine & Child Neurology*, 2006;48:337-342.  
 Cohen KE, Morgan PJ, Plotinkoff RC, Callister R, Lubans DR. Physical activity and skills intervention: SCORES cluster randomized controlled trial. *Medical and Science in Sports and Exercise*. 2015; 47(40); 765-774.  
 Troiano RP, Berrigan D, Dodd KW, Masse LC, Tilert T, McDowell M. Physical activity in the United States measured by accelerometer. *Medicine and Science in Sports Medicine*. Physical Activity Guidelines Advisory Committee Report Part G. Section 9: Youth. Health.gov. [http://www.health.gov/paguidelines/Report/G9\\_youth.aspx](http://www.health.gov/paguidelines/Report/G9_youth.aspx).