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Years Spent in Secondary Physical Education and Levels of Physical Activity in College Students and Adults



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ABSTRACT

Physical education (PE) requirements in the United States vary and are often left to local districts in each state to decide. Considering the relationship between physical activity and obesity, and physical fitness with mortality, requirements relating to national recommendations for time spent in physical education appear important. Long term implications of participation in physical education are contradictory at best with the limited studies performed concluding conflicting results.

Purpose: To examine the relationship between years of participation in physical education at a high school level and levels of physical activity and fitness in college students and adults.

Methods: Forty-one participants ranging in age from 18-65 (mean age 33.6) were recruited utilizing an inter-collegiate mailing system. Participants completed a self-administered IPAQ long-form questionnaire as well as additional physical education related questions. Participants also completed a YMCA Step Test.

Results: When comparing participant results to national recommendations for physical activity 6 of 41 met vigorous physical activity guidelines (14.6%), and 0 met guidelines for moderate physical activity. When adding in vigorous outdoor housework those meeting vigorous guidelines went up to 11 of 41 participants (26.8%), and when adding in moderate outdoor and indoor housework those meeting moderate guidelines went up to 4 of 41 (9.7%). Mean score of 4.5 on the YMCA Step Test for all participants was between below average and poor with a standard deviation of nearly two scoring levels. No significant relationships were found when comparing time spent in physical education classes (required or total) to recalled moderate physical activity and fitness levels in college students and adults, while a significant relationship was seen when comparing the time spent in physical education classes (required and total) to recalled vigorous physical activity and fitness levels in college students and adults ($p=0.02$).

Conclusion: Further study to examine the relationship between physical education and long-term physical activity is needed with particular attention being paid to physical education requirements and their variances.

INTRODUCTION

Physical activity has been shown to prevent weight gain and significantly contribute to weight loss over the long term, along with reduction in associated health risks (Jakicic, 2005). When considering this relationship, and the consequences identified by the CDC associated with obesity, it is thought that interventions need to be in place to encourage lifelong physical activity; could physical education be the place to do so? It would seem that early intervention would be key, but results from current literature are conflicting with some studies providing support for participation in physical education in students and its effect on adulthood physical activity, and others showing little to no significant effect achieved.

This study aims to examine the relationship between years spent in physical education as a secondary aged student and levels of physical activity in college students and adults.

METHODS

Forty one participants were recruited utilizing an intercollegiate mailing system and word-of-mouth. After consenting to participate, participants completed the International Physical Activity Questionnaire, long form, and answered additional questions regarding their previous participation in physical education at the high school and collegiate level. The study procedures were approved by the University's Institutional Review Board (IRB).

Participants were provided a Polar Heart Rate Monitor and instructed on the YMCA Step Test Procedure (Figure 1). Following completion of participation in the study, participants were compensated with a five-dollar Target gift card. Statistical analysis of the survey results was performed using linear regressions using R Statistical Software.

Figure 1. Study Participant Performing YMCA Step Test



RESULTS

Years of required physical education, total years of physical education and enjoyment of physical education classes **did not significantly predict** adulthood levels of moderate physical activity or leisure time walking. However, age, total years of physical education participation, and step test results **significantly predicted** number of days of participation in vigorous physical activity ($p = 0.03, 0.02, \text{ and } 0.04$ respectively). Step test scores were found to be correlated with the number of days of engagement in vigorous physical activity in the last 7 ($r = 0.26$), total minutes of vigorous physical activity performed on those days ($r = 0.23$), and number of minutes spent sitting on a weekend day ($r = -0.27$).

Only 6 participants met national leisure time vigorous physical activity recommendations for health of at least 75 minutes per week (14.6%), which increased to 11 when household vigorous physical activity was added (26.8%). No participants met national leisure time moderate physical activity recommendations for health of at least 150 minutes per week, which increased to 4 when household moderate physical activity was added (9.7%).

Table 1. Participant Characteristics

Characteristic	Mean	Standard Deviation
Age (Years)	33.6	14.4
Height (Inches)	67.4	3.7
Weight (Pounds)	164.6	38.9
BMI	25.3	4.6
Obesity Classification	1.6	0.8
Years of Required P.E.	2.7	1.0
Years of Total P.E.	3.0	1.0
Enjoyment of P.E.	3.6	1.2

Note: P.E. = physical education

DISCUSSION

The hypothesis that more time spent in physical education equals more physical activity in adulthood was partially supported. Studies in the United States have found similar results concluding that, in general, physical activity decline was not prevented due to high school physical education participation (Palakshappa, 2015). Those outside of the U.S. have shown a different outcome relating higher levels of physical activity in adolescents to higher levels in adulthood (Telama, 2005). Overall the amount of published research relating to the long-term effects of physical education is limited making clear conclusions on recommendations hard to pinpoint.

CONCLUSION

The number of physical education classes taken appears to have a positive relationship with levels of physical activity as an adult as it relates to vigorous physical activity, but not to physical activity of a moderate level or that of walking during leisure time. Further study is needed with particular attention being paid to age and number of participants, physical education requirements and their variances, and records availability to ensure accurate participant recall.

REFERENCES

- Bennett, H., Parfitt, G., Davison, K., & Eston, R. (2016). Validity of Submaximal Step Tests to Estimate Maximal Oxygen Uptake in Healthy Adults. *Sports Med*, 46, 737-750. doi:10.1007/s40279-015-0445-1
- The IPAQ Group. International Physical Activity Questionnaire. (2002). Retrieved from <https://sites.google.com/site/theipaq/home>
- Jakicic, J. M., & Otto, A. D. (2005). Physical activity considerations for the treatment and prevention of obesity. *The American Journal of Clinical Nutrition*, 82(1). doi:10.1093/ajcn.82.1.226s
- Palakshappa, D., Virudachalam, S., Oreskovic, N. M., & Goodman, E. (2015). Adolescent Physical Education Class Participation as a Predictor for Adult Physical Activity. *Childhood Obesity*, 11(5), 616-623. doi:10.1089/chi.2015.0024
- Telama, R., Yang, X., Viikari, J., Valimaki, I., Wanne, O., & Raitakari, O. (2005). Physical activity from childhood to adulthood: A 21-year tracking study. *American Journal of Preventative Medicine*, 28(3), 267-273. doi:<https://doi.org/10.1016/j.amepre.2004.12.003>