Physical Activity Levels in Irish School Children

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Abstract

Objectives: This study aimed to assess the number of hours of physical activity engaged in by Irish school children per week, and compare them with the American Heart Association's recommendations. Both hours of physical activity per week and hours of television viewed per week were compared with sex, age and school location. Methods and Patients: Questionnaires were distributed to 9 co-educational schools (3 rural, 3 inner-city, 3 suburban). Irish school children (173 males and 116 females) between the ages of 10 and 12 years and 15 and 17 years participated. Results: Results showed that 81% percent of boys and 75% of girls met the criteria set by the American Heart Association regarding physical activity. Urban girls reported more physical activity than rural girls. Younger boys reported more physical activity than older boys while younger girls reported more physical activity than older girls. Finally, older girls also reported significantly less physical activity than older boys. The Irish school children surveyed watch an average of 15.5 hours of television per week. Boys attending urban schools reported watching less television than boys attending rural schools. Younger boys reported watching more television than older boys and suburban boys reported less television watching than boys in inner city schools. Conclusion: Older girls and rural school children appear to be particularly vulnerable to the development of sedentary rather than active lifestyles. This may provide two target groups for interventions to increase activity.

Introduction

Many modifiable risk factors for cardiovascular disease have been identified in childhood. These include physical inactivity, obesity and hypertension. Identifying children and adolescents at risk is the first step in modifying or preventing these risk factors. Encouraging increased physical activity is one way to assist young people in achieving a balance between energy intake and expenditure, and establishing healthy behaviour that will continue into adulthood. In addition to a positive contribution to weight control, physical activity helps young people to build and maintain healthy

bones and muscles, and contributes to psychological well being.[1] Public Health guidelines promote physical activity and steady-state aerobic exercise, which enhance cardiorespiratory

fitness and have an impact on body composition.[2] Body composition in childhood has been shown to have an impact on several aspects of adult health, including the risk of heart disease,

diabetes mellitus and hypertension.[3] Behavioural modifications, including increasing the amount of daily physical activity, have been shown to be beneficial in improving these cardiovascular

outcomes.[4] This is especially important since scientific reports and epidemiological studies have

shown that atherosclerosis begins in childhood.[5] Therefore, the earlier that preventative measures are initiated, the better the results that are achieved.

The American Heart Association (AHA) recommends that all children aged 5 years and older should participate in at least 30 minutes of enjoyable, moderate-intensity activities every day. They should also perform at least 30 minutes of vigorous physical activities at least 3-4 days each week to achieve a good level of cardiorespiratory fitness. They also suggest that children should increase their physical activity by reducing non-school sedentary time (e.g. watching television,

playing video games).[6]

This study aims to assess the hours of physical activity engaged in per week by a sample group of Irish school children, and to compare these with the recommendations of the AHA. Both the number of hours spent at physical activity and time spent watching television per week will be compared by sex, age and school location.

Materials and Methods

Questionnaires assessing the hours of physical activity per week as well as the hours spent engaging in non-physical activities (e.g. television watching, playing video and computer games, socialising with friends) were sent to nine co-educational schools. There were three schools in inner city Dublin, three schools in suburban Dublin and three rural schools. The questionnaires were distributed to children between the ages of 10 to 12 years old and also between the ages of 15 to 17 years old. There were 289 completed surveys returned (173 males and 116 females). The questionnaires were distributed to and collected from the children by their teachers. The children were encouraged to fill them in honestly and individually. The completed questionnaires were compared to assess how physical activity and the number of television hours per week

varied with age, sex and school location. The data was analysed using Microsoft Excel® and by performing unpaired T-tests.

Results

Analysis of the data revealed one clear trend. Boys report more hours of activity than girls, both in physical activity and television watching. This is independent of age and school location.

Activity Levels

Eighty-one percent of boys and 75% of girls met the criteria set by the AHA of at least 5 hours of exercise per week. There were several significant findings regarding activity levels. Urban girls engage in more physical activity than rural girls ($p<0.00003$) (Figure 1). Younger boys engage in more physical activity than older boys ($p<0.05$), while younger girls engage in more physical activity than older girls ($p<0.0001$). Finally, older girls also engage in significantly less physical activity than older boys ($p<0.0005$) (Figure 2).

Figure 1. Comparison of Activity Levels with Age in Irish School Children.

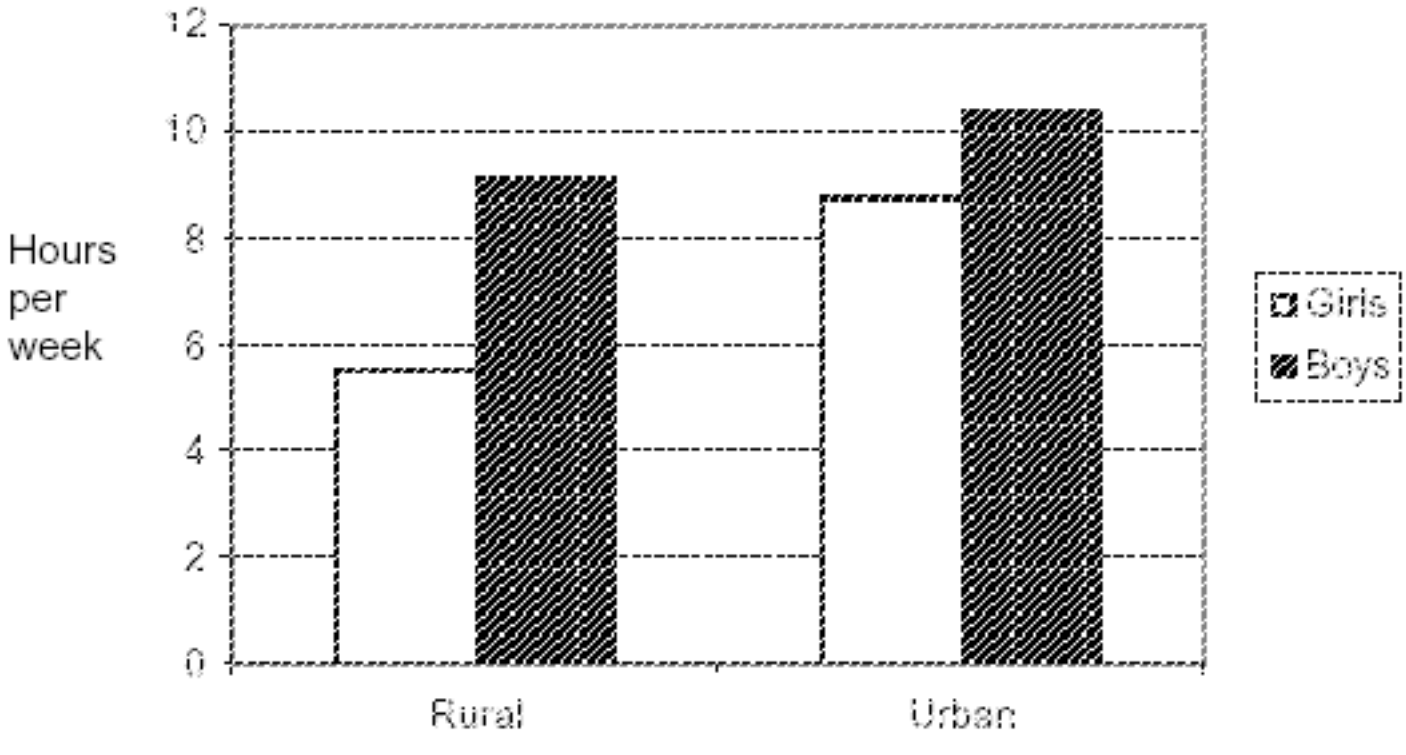
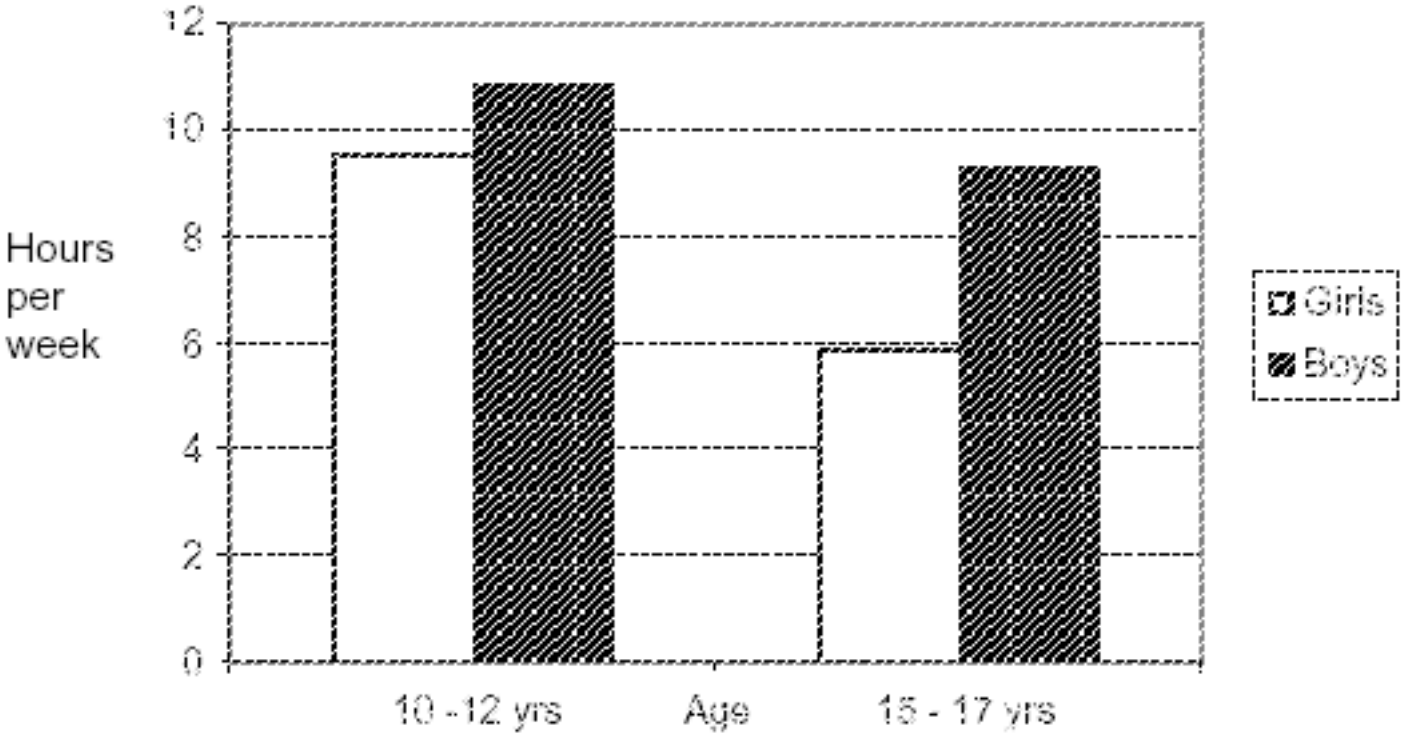


Figure 2. Comparison of Activity Levels with Age in Irish School Children



Television Watching

Hours spent watching television, playing video games and using computers were collated and analysed. Irish school children watch an average of 15.5 hours of television per week. It was reported that urban boys watch significantly less television than rural boys ($p<0.01$) (Figure 3). The younger boys watch more television than older boys ($p<0.03$), and suburban boys watch less television than inner city boys ($p<0.02$) (Figure 4).

Figure 3. Comparison of Television Hours between Rural vs. Urban School Children

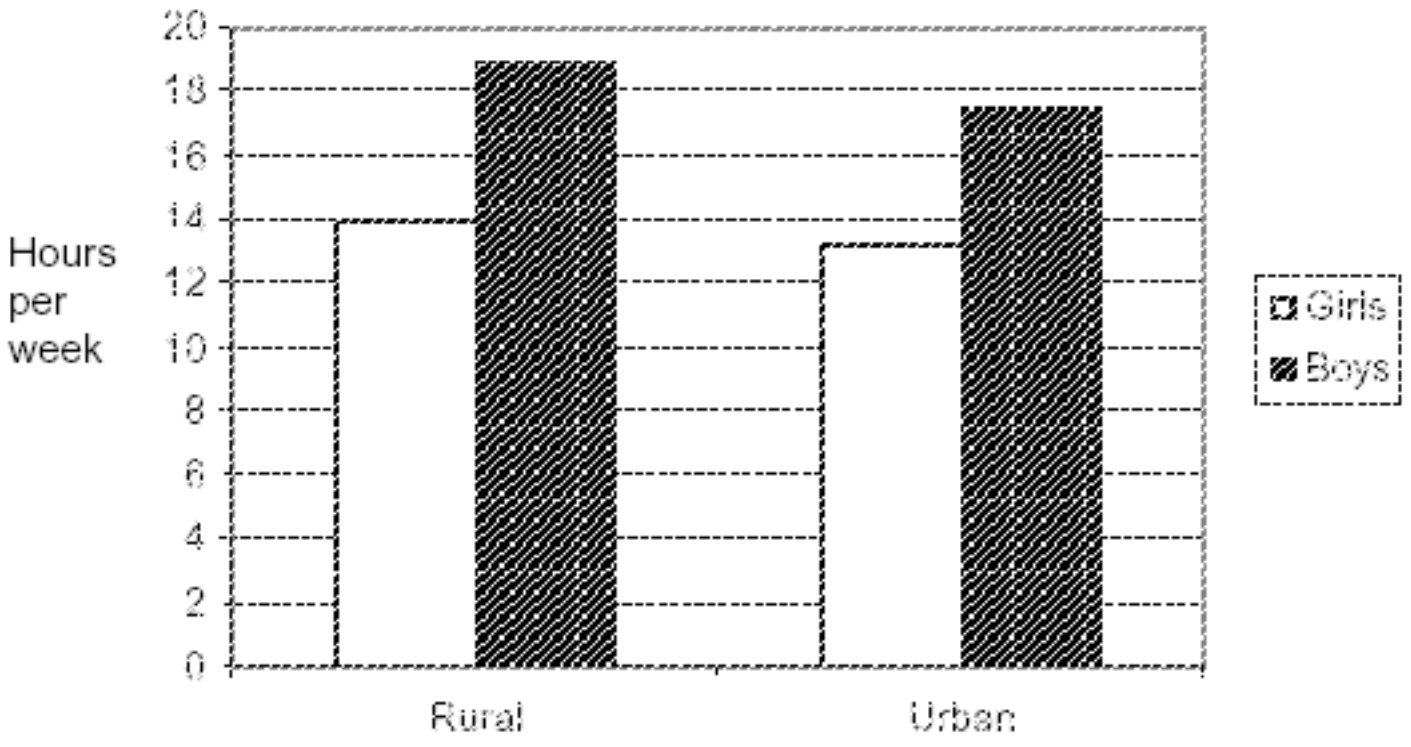
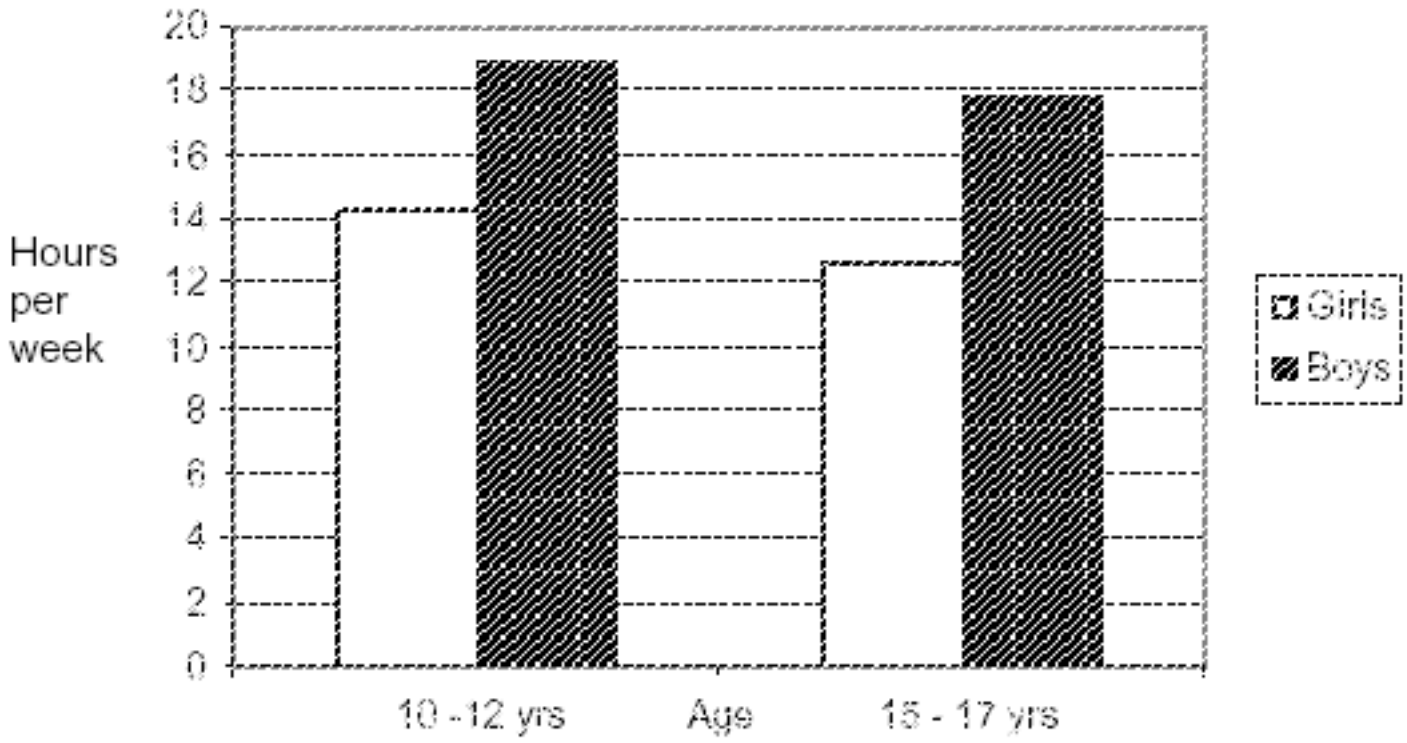


Figure 4. Comparison of Television Hours with Age in Irish School Children



Discussion

Our results target particular groups in which development of interventions to increase physical activity may be beneficial. We found that physical activity was more prevalent in urban than in rural areas. This is consistent with an analysis of the 2002 Behavioural Risk Factor Surveillance

System.[7] Possible reasons for our results may be that rural school children living on farms do not regard farm labour as exercise, or perhaps our results reflect a lack of recreational facilities in the rural areas surveyed.

Our results regarding gender and age differences are consistent with previous studies in several

respects.[8] One such consistency was that girls were less physically active and watched less television than boys. We cannot assume on this basis that physical activity is the direct converse of inactivity. There was also a decrease in physical activity with age, especially in females. Possible explanations for our findings include that boys tend to overestimate the number of hours spent at activity and in sedentary pursuits, and females are being modest. Self-esteem may interfere with opportunities for physical activity as girls age. Girls may be spending more time doing homework or sedentary school and social activities than boys.

Conclusion

Physical activity can make a major contribution to general health, energy and an overall sense of well-being. Although a large percentage of adolescents met the criteria of the AHA, the decline in physical activity with increasing age suggests that many young people are not maintaining exercise patterns that will predispose to healthy adulthood. Older females as well as rural school children are more vulnerable to developing sedentary rather than active lifestyles. While we should encourage all Irish school children to engage in physical activity, these particular groups should be primary targets in tailoring school and community interventions to promote an increase in activity among young people.

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