
LA INFLUENCIA DE LA PRÁCTICA DEPORTIVA EN EL INSTITUTO SOBRE LA ACTIVIDAD FÍSICA EN ADULTOS

INFLUENCE OF HIGH SCHOOL SPORT PARTICIPATION ON ADULT PHYSICAL ACTIVITY

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RESUMEN
ANTECEDENTES: Aunque la necesidad de practicar deporte se cita a menudo, pocos estudios investigan cómo la práctica deportiva en el instituto influye la actividad física en la edad adulta. Este estudio examina esta relación utilizando el Cuestionario Internacional de la Actividad Física (IPAQ).

MÉTODOS: En 2012, 1350 adultos de Southern Illinois fueron encuestados evaluando los niveles actuales de actividad física. Las variables que se incluyeron fueron: la edad de los participantes, el peso, la altura, y la práctica deportiva en el instituto. El IPAQ se utilizó para resumir los niveles individuales de actividad física. La media se calculó con los niveles de actividad física declarados por cada participante y se utilizaron las correlaciones y los t-tests independientes para evaluar los datos.

RESULTADOS: Los individuos que participaron en deportes de competición en el instituto resultaron tener niveles de actividad física más elevados que los participantes que no. Se encontraron diferencias significativas en los niveles de actividad física en el tiempo total de ejercicio moderado y el tiempo total de caminar. Se ha constatado que los participantes que no participaron en deportes en el instituto pasan sentados una cantidad total de tiempo significativamente más elevada, en comparación con aquellos participantes que sí compitieron en el instituto.

CONCLUSIONES: La participación en el deporte del instituto no puede predecir las tendencias del futuro en relación a la actividad física; sin embargo, este estudio sí que muestra que la actividad física derivada de la participación en el deporte del instituto se puede extender a la edad adulta. Como no se encontraron diferencias significativas en el Índice de Masa Corporal (IMC) entre individuos que participaron en deportes en el instituto, es importante decir que la participación en el deporte del instituto puede ser un factor importante que contribuye en la obesidad adulta.

Este estudio puede mostrar que los deportes en el instituto ayudan a llevar un estilo de vida activo, pero no diferente que el de aquellos que participan en actividades recreativas.

Palabras clave: inactividad, inactivo, recreativo, salud y educación.

PALABRAS CLAVE: (3-10) inactividad, inactivo, recreativo, salud y educación.

ABSTRACT
BACKGROUND: Although the need for physical activity is often cited, few research studies examine the influence of high school sport participation on adulthood physical activity. This study examines this association using the International Physical Activity Questionnaire (IPAQ).

METHODS: In 2012, 1350 adults in southern Illinois were surveyed assessing current physical activity levels. Variables included: participant’s age, weight, height, high school sport. The IPAQ was used to summarize individual physical activity levels. Participant’s self reported physical activity levels were averaged and correlations and independent t-tests were used to assess the data.

RESULTS: Individuals who participated in competitive high school sports reported to have higher physical activity levels than participants that did not. Significant differences in physical activity levels were present in total moderate exercise time and total walking time. Participants who did not participate in high school sports reported significantly higher total time spent sitting compared to those participants who did compete in high school sports.

CONCLUSIONS: High school sport participation cannot predict future physical activity trends; however, this study does implicate that physical activity derived from high school sport participation can transition into adulthood. As no significant differences were found in BMI between individuals who participated in high school sports, it is significant to note that high school sport participation may be a significant contributing adult obesity factor. This study can imply that high school sports aids in an active lifestyle but not any different than those who participate in recreational activities.

Keywords: Inactivity, inactive, recreation, health, & education
INTRODUCTION

During the process of aging the amount of time spent exercising or partaking in physical activity (PA) decreases (Flaghouse Inc., 2010; Flegal, Graubard, Williamson, & Gail, 2005). The World Health Organization identified physical activity as being a top public priority to secure the health of our world (Suggs, McIntyre, & Cowdery, 2010). Physical inactivity in adulthood can result in increased risk for heart disease, diabetes, osteoporosis, and cancer and contribute to the loss of muscle mass and an increased probability to acquire injuries (Flaghouse Inc., 2010; Flegal et al., 2005; Howard & Gillis, 2009; Sherry, Blanck, Galuska, Pan, & Dietz, 2010; Sithole & Veugelers, 2008; Stalmatakis & Weiler, 2010; Wearing, Hennig, Byme, Steele, & Hills, 2006). Consequences of physical inactivity can limit the capabilities of individuals in all aspects of their lives.

As people age research has shown that the amount of physical activity they perform decreases (Haskell et al., 2007). Connections between obesity and sedentary lifestyles worry educators and have stimulated research efforts to further examine adulthood physical activity levels and trends (National Center for Health Statistics, 2010; Sherry et al., 2010). Physical activity recommendations have changed over the years suggesting American adults need to be more physically active. As adult physical activity has become an issue of interest, particular attention has been geared towards accessibility and environmental adaptations that facilitate healthy lifestyles such as biking paths, walking sidewalks, and parks.

The Center for Disease Control and Prevention (CDC) recommend that adults in the United States should partake in a minimum of 30 minutes of moderate intensity PA preferably every day of the week (CDC, 2010; Dana et al., 2008). However, an individual’s family, job, and other obligations can limit and inhibit adults from participating in PA. Many individuals are unaware that they are not performing enough PA in their daily lives (National Center for Health Statistics, 2010; Suggs, McIntyre, & Cowdery, 2010). Individuals may believe that they are meeting PA quota during their daily routines but in reality the majority are falling short. PA not only has physical health and fitness benefits, but it has also been shown to increase self-esteem, improved physical capacity, and increase potential for social interaction (Flegal et al., 2005; Virdis et al., 2009). Although the benefits of PA and consequences of not partaking in PA are well documented, questions still exist why a significant portion of the population are not meeting the suggested PA requirements (Flegal et al., 2005).

Children are taught about PA and exercise through physical education, parental influences, and participation in extracurricular activities. Through elementary school, children are taught the importance of PA in Physical Education (PE) classes which are required by most school districts (Maddison et al., 2007). The National Association for Sport and Physical Education (NASPE) recommends a minimum of 150 minutes of PA per week for elementary aged children, whereas high school age children are recommended to accumulate 225 minutes of PA per week. As children maturate ownership of their health decisions increase and they must make appropriate choices to maintain their level of PA (Howard & Gillis, 2009). Physical education is not the only avenue to accumulate PA in school. High schools and sometimes middle schools offer sport participation opportunities for students to engage in. High school sports participation is at an all time high with 55.2% of all enrolled students choosing to engage in such activities (Goodarz et al., 2009). Thus, high school athletes receive a significantly greater amount of skill and fitness instruction, motivation to achieve and maintain a high level of physical fitness, and greater opportunities to engage in sport specific PA.

It is understood that those participating in high school sports receive constant information and practice to fulfill their personal PA requirements; however, the question arises as to whether or not non sport participating high school students receive an adequate amount of PA education that properly prepares them to maintain an appropriate level of PA into adulthood. Previous studies dating back to 1988 have examined predictors of adult PA. Studies have found that adults who exercise were as physically active as children and scored higher on fitness tests (Barnekow-Bergkvist, Hedberg, Janlert, & Jansson, 2001; Dennison, Straus, Mellits, & Charney, 1988;
The purpose of this study is to examine if the amount of PA performed by adults’ differs between those who participated in competitive high school sports and those who did not.

The problem for health professionals in higher education is determining what factors contribute to the reduction of adult PA as they progress through life. Sports play an important role in promoting physical activity for young people and this study sought to examine the association of high school sport participation and adulthood physical activity levels. Many factors have been examined concerning the reduction of PA, but the role of high school sport participation has received little attention in the literature (Hurst, 2009; Sherry et al., 2010). Data from this study will provide impetus for physical educators and health educators to provide broader physical activity opportunities for youth, and encourage greater participation in extracurricular activities as they may have a positive influence on adults PA levels.

Self report physical activity questionnaires are commonly used to examine physical activity levels in large populations. The International Physical Activity Questionnaire - short form (IPAQ) has been widely used even though it reports varying correlations with objective measures (Lee, Macfarlan, Lam, & Stewart, 2011; Helmerhorst, Brage, Warren, Besson, and Ekelund, 2012). Furthermore, the IPAQ – short form is commonly used in other studies and reported as a desirable measure for physical activity estimation (Helmerhorst et al., 2012).

This study examined the current PA levels of individuals who participated in high school sports versus individuals who did not participate in high school sports. This study advocates for sport participation and possibly the notion that more recreational activities should be offered as sport alternatives to meet the needs of different students. This project could provide evidence that organized physical activities instill strong PA behaviors that could contribute to long-term PA trends. It is hypothesized that individuals who participated in high school sports exercise more thus yielding an overall lower BMI.

This research study addressed the following research questions:

1. Do adults who participated in competitive high school sports partake in more vigorous/moderate exercise, walk more, and sit less than adults who did not participate in competitive high school sports?
2. Does a difference in BMI exist between adults who participated in high school sports and those who did not?
3. Does a difference exist between genders, sport participation, and BMI?

METHOD

Subjects. Study participants included all students and university employees at a Midwest university. The research team was granted access to all students and university employee’s email addresses through the freedom of information act officer at this university. Data were collected using a questionnaire administered through Survey Monkey. Each participant was emailed the research study description and link to the questionnaire. Subjects were informed that participation was completely voluntary and they could withdraw themselves from the study at anytime. It was made clear by stating that participants were free to decide if they wanted to participate or not. 1350 subjects participated in this study, which well exceeds the criteria for statistical power for the tests used in this study.

High School Sport Participation. The current study focuses on sports offered and funded by the high schools’ participants attended. Club sports, recreation activities, and extracurricular activities were not to be considered high school sports. High school sport participation requires an individual to complete a full season of the desired sport offered by their high school. Examples of high school sports that were reported by participants include football, soccer, baseball, basketball, softball, track and field, cross country. Recreation activities were recorded as demographics but were not included as high school sport participation. Examples of recreational activities that were reported by participants include water sports, recreational running, fast walking, bowling, biking, horseback riding, ultimate frisbee.
Instrument

Demographics. A total of 1350 participants, 808 females (59%) and 542 males (40%) completed the survey. Participant’s age ranged from 18 years of age to 72 years old. Participants were categorized into age intervals of 18-24, 25-34, 35-44, and 45+ (See Table 1). Subjects were also asked to report their height (inches) and weight (pounds). In addition, each individual was asked to report what sport they primarily participated in while in high school. Participants were allowed to report specific sport, recreational activity, or both. Lastly, participants were asked to report how many years they participated in their primary sport or recreational activities.

TABLE 1. Participant Demographics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percent of Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1350</td>
<td>100</td>
</tr>
<tr>
<td>Participated in HS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports Participants</td>
<td>881</td>
<td>65.3</td>
</tr>
<tr>
<td>Non HS Sport</td>
<td>471</td>
<td>34.9</td>
</tr>
<tr>
<td>Participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24 years</td>
<td>481</td>
<td>37.7</td>
</tr>
<tr>
<td>25-34 years</td>
<td>356</td>
<td>26.4</td>
</tr>
<tr>
<td>35-44 years</td>
<td>203</td>
<td>15</td>
</tr>
<tr>
<td>45 +</td>
<td>309</td>
<td>22.9</td>
</tr>
</tbody>
</table>

Assessment of Physical Activity. Adult PA was assessed using the International Physical Activity Questionnaire (IPAQ). The IPAQ has been widely used and studies report varying results with objective measures (Lee et a., 2011; Maddison et al., 2007). Lee et al (2011) concluded that at times the IPAQ-short version can report moderately low validity due to response overestimation. Overestimation is common limitation in many self report PA surveys. Helmerhorst et al., (2012) conducted a review of 34 different physical activity questionnaires. They concluded that the IPAQ-short version was identified as a reliable and valid tool to assess self reported PA (Helmerhorst et al, 2012).

The IPAQ short version was used examining PA in the last 7 days and consists of a total of 7 questions (Maddison et al., 2007). The IPAQ is an international universally accepted PA assessment tool, which has been tested for repeated reliability and validity (Helmerhorst et a., 2012; Maddison et al., 2007). Information obtained from the IPAQ allows investigators to assess the time individuals spend doing vigorous and moderate intensity exercise as well as the total amount of time spent walking and sitting. The IPAQ asks participants to record how much time each individual spends partaking in PA.

The IPAQ was designed to be a universal PA self reported measure. The IPAQ was tested across 12 different countries which included over 2,500 participants for reliability and validity (Maddison et al., 2007). Validity can be problematic with self reported survey response accuracy; therefore, specific examples of activities were provided for moderate and vigorous physical activities. The IPAQ - short version has been shown to have a Cronbach alpha of 0.8 in previous studies while the current study reports a Cronbach alpha of 0.72 (Maddison et al., 2007). The IPAQ -long form may address more facets of physical activity, however, the IPAQ-short form was chosen for this study because it is short and simple to complete. For the purposes of this study the IPAQ-short version deemed more appropriate for email solicitation.

Procedure

Each participant received an email from the research team and the participants were reminded that the completion of this survey was completely voluntary and could withdraw at anytime during the survey. Participants were encouraged to accurately answer each question before finishing and returning the survey. After the completion of the survey, participants submitted their results to the research team via electronic submission. The completed surveys were stored in an electronic file that only the research team had access too. Once survey administration was complete; surveys were recorded and analyzed in SPSS version 20.
Data Analysis

This study sought to answer each of the research questions that addresses differences in current PA levels between individuals who participated in high school sports and those who did not; differences between individuals who participated in recreation sports rather than high school sports and finally if any differences in BMI were present between participants.

The demographic portion of the survey includes high school sport participation, recreation sport participation, age, height (inches), weight (pounds), and the top sport/recreation each individual participated in during high school. PA levels will be addressed as being: vigorous exercise, moderate exercise, walking, and sitting. Individuals will indicate how many days each of the PA levels are exhibited. Individuals then indicated how much time during the day each PA level is performed. The number of days was multiplied by the amount of time each individual spends participating in PA to provide the researcher with a total amount of PA for each of the PA levels. Average data were used in the statistical analysis of individual PA levels.

Descriptive statistics (minimum, maximum, mean, and standard deviation) were determined on the variables: age, height, weight, and high school sport and recreation participation. Frequencies were calculated in order to assess the number of responses for each of the following variables: gender, sport participation, top high school sport, and top recreation activity. Averages for each variable were taken for the following: total vigorous exercise (in time), total moderate exercise (in time), total walking time, and total sitting time.

Current PA levels were analyzed among subjects’ who participated in competitive high school sports and those who did not. Information for this comparison included high school sport participation and subject’s vigorous, moderate, walking, and sitting time during the last 7 days. This study sought to analyze differences of PA levels among high school sport participation. This statistical analysis was used to determine if high school sport participation yielded higher adult physical participation using relationship correlations, T-tests, and ANOVA analyses. Significant alpha level was established at 0.05.

RESULTS

A total of 881 (65.3 %) reported to have participated in high school sports while 471 (34.9%) reported to have not participated in high school sports (See Table 2).

There is no difference for moderate PA between participants who participated in high school sports compared to participants who did not participate in competitive high school sports (See Table 2). Furthermore, a significant difference was present between the numbers of days each group partook in PA, but there was no significant difference in the amount of time each group exercised per day. Individuals who did not participate in high school sports reported to sit significantly longer than those who participated in high school sports (p < 0.05) (See Table 3). Lastly, high school sport participants reported to spend more time walking compared to non-high school sport participants (See Table 3).

<table>
<thead>
<tr>
<th>TABLE 2. Physical Activity Levels</th>
<th>Moderate PA</th>
<th>Vigorous PA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Days/week</td>
<td>Mins/day</td>
</tr>
<tr>
<td>HS Sport Participant</td>
<td>2.8</td>
<td>46.4</td>
</tr>
<tr>
<td>Non HS Sport Participant</td>
<td>2.2</td>
<td>42.8</td>
</tr>
</tbody>
</table>

Note: Differences, *: p<0.05

<table>
<thead>
<tr>
<th>TABLE 3. Total Sitting and Walking Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting (min/week)</td>
</tr>
<tr>
<td>HS Sport Participant</td>
</tr>
<tr>
<td>Non HS Sport Participant</td>
</tr>
</tbody>
</table>

Note: Differences, *: p<0.05

Forty percent of study participants who participated in high school sports reported to meet the moderate
physical activity guidelines 1-2 days per week and 18% reported to meet the desired requirements more than 3 days a week. Twenty-two percent of high school participants reported to meet the vigorous physical activity requirements 1-2 days per week while 11% reported to meet requirements more than three days per week. Furthermore, 37% of participants who did not participate in high school sports reported to meet the moderate physical activity guidelines 1-2 days per week and 22% of the participants reported to meet the guidelines more than three days per week. Thirty-three percent of non-high school sport participants reported to meet the vigorous intensity physical activity requirements and 12% reported to meet the requirements 3+ days per week. (See Table 4)

**TABLE 4.** Physical Activity Level Percentage

<table>
<thead>
<tr>
<th></th>
<th>Moderate PA (%)</th>
<th>Vigorous PA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-2 Days/week</td>
<td>3+ Days/week</td>
</tr>
<tr>
<td>HS Sport Participant</td>
<td>40.2</td>
<td>18.3</td>
</tr>
<tr>
<td>Non HS Sport Participant</td>
<td>37.8</td>
<td>22.1</td>
</tr>
</tbody>
</table>

Additionally, there was no significant difference between genders and BMI. There was a reported 11 percent of non-high school sports participants reported to meet the vigorous intensity physical activity requirements and 12% reported to meet the requirements 3+ days per week. There was not a significant difference in total BMI, but patterns of certainty are unclear (p<0.006). Significantly strong correlations were present between sport participation and total vigorous and moderate exercise (p<0.001). Strong correlations were also present in total walking time and the total amount of time sitting during the last 7 days.

**DISCUSSION**

It is argued that adolescent sport participation contributes to a physically active adult lifestyle (Vanreusel et al., 1997; Weiss, O’Loughlin, Platt, & Paradise, 2007). Research suggests that characteristics acquired during youth and adolescent sport participation transition into adulthood PA (Beunen et al., 2004; Vanreusel et al., 1997). PA socialization is the basic assumption in physical education curriculum and many physical educators use sport socialization as a core objective. It can be speculated that individuals who participate in high school sports have more experience practicing PA through sport participation that result in conditioning individuals to be physically active. It is assumed that PA habits that are acquired in youth are carried into adulthood but patterns of certainty are unclear (Dishman, 1989). Interestingly, significant differences were only present between days of vigorous PA among high school sport participants and non-high school sport participants. These findings suggest that adolescent sport participation may not provide as much clarity in defining contributing factors of adulthood PA.

Participant BMI was calculated for 1342 participants (9 missing values). A total of 39 (2.9%) participants were calculated as to being underweight, 600 participants (44.4%) were normal, 391 participants (28.9%) were overweight, and 312 (23.1%) were obese. A total of 880 (65.2%) participated in high school sports while 470 (34.8%) did not participate. There was not a significant difference in total BMI between individuals who participated in high school sports (2.7 ± 0.8) and those who did not (2.8 ± 0.9). Of the participants who participated in high school sports; a total of 17 (1.3%) participants reported to be underweight, 408 (30.2%) reported to be normal, 258 (19.1%) reported to be overweight, and 198 (14.7%) reported to be obese. Participants who did not participate in high school sports 22 (4.7%) participants reported to be underweight, 194 (41.1%) reported to be normal, 133 (28.2) reported to be overweight, and 122 (25.8%) reported to be obese that participated in high school sports. Out of all the participants, if injuries were not present, every other participant reported to have participated in some form of recreation activity.

Additionally, there was no significant difference between genders and BMI. There was a reported 11 percent of non-high school sports participants reported to meet the vigorous intensity physical activity requirements and 12% reported to meet the requirements 3+ days per week. There was not a significant difference in total BMI, but patterns of certainty are unclear (p<0.006). Significantly strong correlations were present between sport participation and total vigorous and moderate exercise (p<0.001). Strong correlations were also present in total walking time and the total amount of time sitting during the last 7 days.

**TABLE 5.** Participant Body Mass Index Percentage(s)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>HS Sport Participant</th>
<th>HS Sport Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Underweight</td>
<td>39</td>
<td>2.9</td>
<td>17</td>
</tr>
<tr>
<td>Normal</td>
<td>600</td>
<td>44.4</td>
<td>408</td>
</tr>
<tr>
<td>Overweight</td>
<td>391</td>
<td>28.9</td>
<td>258</td>
</tr>
<tr>
<td>Obese</td>
<td>312</td>
<td>23.1</td>
<td>198</td>
</tr>
</tbody>
</table>

**DISCUSSION**

It is argued that adolescent sport participation contributes to a physically active adult lifestyle (Vanreusel et al., 1997; Weiss, O’Loughlin, Platt, & Paradise, 2007). Research suggests that characteristics acquired during youth and adolescent sport participation transition into adulthood PA (Beunen et al., 2004; Vanreusel et al., 1997). PA socialization is the basic assumption in physical education curriculum and many physical educators use sport socialization as a core objective. It can be speculated that individuals who participate in high school sports have more experience practicing PA through sport participation that result in conditioning individuals to be physically active. It is assumed that PA habits that are acquired in youth are carried into adulthood but patterns of certainty are unclear (Dishman, 1989). Interestingly, significant differences were only present between days of vigorous PA among high school sport participants and non-high school sport participants. These findings suggest that adolescent sport participation may not provide as much clarity in defining contributing factors of adulthood PA.
A major finding in this study was no significant differences in moderate-intensity PA and walking. Public health professionals have geared efforts for personal health by focusing on moderate-intensity PA and walking (Haskell et al., 2007; Weiss et al., 2007). Public health professionals emphasize and promote moderate-intensity PA because many contemporary activities include moderate-intensity PA and walking. Furthermore, many cotemporary activities can be integrated into the routines of daily living such as a brisk walk, grocery shopping, gardening, or taking out the trash. It was hypothesized that high school sport participation would result in significantly higher activity levels for adults. Study participants who participated in high school sports did not have significantly higher levels of moderate-intensity PA. High school sport participants reported higher levels of moderate-intensity PA but results were not as predicted. In addition, no significant differences were present between the two groups (p = 0.48) and total number days individuals walked or total time walked over a week (p = 0.93). Research suggests that youth and adolescent sport participation transitions into increased adulthood PA levels, this study argues that high school sport participation is not necessarily a conclusive factor in explaining adulthood PA (Beunen et al., 2004; Boutelle, Jeffery, & French, 2004; Dishman, 1989; Vanreusel et al., 1997).

The Centers for Disease Control and Prevention (CDC) and American College of Sports Medicine (ACSM) issued recommendations for adults (18-65 years of age) and concluded a minimum of 30 minutes of moderate-intensity PA (5 days a week) and a minimum of 20 minutes of vigorous-intensity PA (3 days a week) or a combination of both moderate and vigorous intensity PA is beneficial for health (Haskell et al., 2007). The percentages presented in this study are similar to national averages in the United States.

Furthermore, this study reported a significant difference in total amount of time spent sitting between participants. Physical inactivity represents an important contributing factor of obesity in adults (Anderson, Hughes, & Fuemmeler, 2009; Zettle-Watson, & Britton, 2008). Study participants who did not participate in high school sports reported to spend significantly more time sitting compared to those who participated in high school sports. The fact that individuals who did not participate in high school sports in this study exhibited significantly lower PA levels as well as significantly higher sitting time causes reason for concern. This study suggests that high school sport participation may result in a positive PA perception that may not be present to those who do not participate in high school sports.

Individuals who did not participate in high school sports reported to participate in recreation activities 42% of their 4-year high school career. On the contrary, individuals who participated in high school sports participated in recreation activities 61% of their 4-year high school career. These statistics further complicate the notion that high school sports play a significant role being a primary contributor to adult PA behaviors and trends. Recreational activities can foster competitive characteristics associated with individual and team sports. This study is not concluding that high school sport participation predicts current and future PA trends but contributes to future PA practices. This study concludes that with the study sample, individuals who participated in high school sports reported significantly higher vigorous-intensity PA and significantly less time sitting as adults compared to those who did not participate in high school sports. Furthermore, significant differences were not present in moderate-intensity PA and walking time.

High school sports may not be the best form of PA for everyone; however, it can provide great opportunities for adolescents to achieve the recommended daily amount of PA in a variety of different activities. It may also provide the added benefit of the development of beneficial PA behaviors that can be continued into adulthood. Based on the data, it seems appropriate to also identify that recreational activities may also provide similar benefits to high school sports. In both high school sports and recreational activities, participants are motivated to participate because they choose to be there and thus must enjoy or see the benefits of participation in the activity. If participants value PA then they are more likely to participate in them and continue to participate, as they grow older. It appears that both high school sports and recreational activities both aid the development of this value system, as participation during adolescence seems to be correlated with participation during adulthood.
One important limitation for this study was the location. Surveys were only emailed to a midwest University during the summer of 2012 and the majority of the participants in this study were women. Data could be misleading due to understanding definitions of moderate/vigorous activity and memory recall. Lastly, potential socially desirable responses should be listed as a limitation if a participant felt uncomfortable reporting a low adult PA after being a high school athlete.

CONCLUSIONS

Future research should include examining specific recreation activities that could be included into high school and barriers associated with recreation inclusion. In addition, PA alternatives sponsored by the school should be assessed to see if alternatives were present and accessible for all students. Finally, future research should also include PA patterns and sport participation in junior high and the first 4-years after high school completion.

The results from this project are very applicable to the development of PA tendencies of adults. PA is an important concept that needs to be included in every adult’s daily regimen. This project presents data that suggests high school sport participation is only a portion of overall influence of adult PA. Study findings suggest that high school sport participation may not be as significant of an influence as hypothesized; however, physical education and recreational activities in elementary, middle, and high school are very important to human development and current PA and recreational programs should be further utilized rather than limited or eliminated from curriculums. In an education setting, these inferences can be used for classroom teachers and physical education teachers to reinforce the importance of PA participation in avenues other than sports. A combination of sport and recreational activities could provide balance that could more effectively influence adulthood PA. This study can imply that high school sports aids in an active lifestyle but not any different than those who participate in recreational activities.

REFERENCES


