Student Knowledge of Physical Activity on Campus

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Abstract
The purpose of this study was to examine university student’s knowledge of physical activity and to explore the relationship between knowledge of physical activity and current levels of physical activity. Knowledge of physical activity was assessed using an instrument developed by the researcher based on ACSM physical activity recommendations. Current physical activity level was assessed using the short International Physical Activity Questionnaire (IPAQ). There was not a significant relationship between the IPAQ score and knowledge of physical activity ($r = 0.068$, $p = 0.604$). Most students scored high on the knowledge of physical activity instrument regardless of their current level of physical activity. These results can help health educators better understand reasons for low physical activity levels among university students.

Introduction
Adults between the ages of 18-65 years should receive the American College of Sports Medicine (ACSM) recommendation for physical activity. ACSM recommends adults should participate in at least a minimum of 20-30 minutes of aerobic physical activity at least three to five days a week (Haskell et al., 2007). It is also beneficial for adults to incorporate two or three days of muscular strengthening and endurance training (Casebolt, 2009). A total of 54% of students participate in physical activity (Pinto & Marcus, 1995). Physical activity gradually declines in most adults as they age, especially in females (Butt, Weinberg, Breckon, & Claytor, 2011).

Previous studies have examined knowledge of physical activity and current physical activity levels of individuals; however, only a few studies indicated a significant relationship between the two components. It is important for students to know physical activity recommendations and have knowledge about the benefits of physical activity to incorporate it into their daily lives and increase physical activity participation (Bodde et al., 2012).

Bodde et al. (2012) did find a significant relationship between physical activity and knowledge. The results showed that there was a significant difference in improvement of Nutrition Activity Knowledge Scale (NAKS) scores of the experimental and control group combined (5.55% improvement, $p = 0.04$). The NAKS was used to assess the participant’s knowledge of nutrition, weight loss concepts, and impact of physical activity on health. Physical activity was calculated as daily average minutes and increased by 10% in the two groups combined but was not significantly different. The Physical Activity Recommendation Assessment (PARA) was used to assess knowledge of physical activity recommendations and scores significantly improved between the two groups combined (31.67% improvement, $p < 0.001$).

Heinrich, Maddock, and Bauman (2011) found a significant difference when comparing knowledge of physical activity to actual behavior. Participants that were walking at the recommended levels or more ($r = 0.27$, $p < 0.001$) were more likely to think they needed more physical activity to achieve health benefits. The questions the participants answered included a variety of health and physical activity related questions. It was found that it is important to emphasize the health benefits of physical activity to increase physical activity levels. On the other hand, Keating et al. (2010) conducted a study on the difference between health-related knowledge and total physical activity. The results
showed that there was a low correlation between health-related knowledge and total physical activity \( (r=0.11) \) and there was a non-significant difference between health-related knowledge in levels of physical activity. Health-related fitness knowledge was assessed using a test developed by Keating and colleagues which asked questions based on nutrition, health, and weight management. Physical activity was measured using the Leisure Time Exercise Questionnaire (LTEQ), which analyzed physical activity patterns among participants. Similarly, Knox et al. (2012) used the method of a physical activity questionnaire to observe if results varied on the questionnaire pre and post aerobic physical activity intervention which incorporated 60 minutes of brisk walking and an informative physical education class. The results indicated that the physical activity questionnaire showed non-significant results post in the intervention group \( (p=0.727) \) and in the control group \( (p=0.838) \).

The purpose of this study was to examine the university student’s knowledge of physical activity and to explore the relationship between knowledge of physical activity and current levels of physical activity. The knowledge of physical activity was assessed using an instrument developed by the researcher based on ACSM guidelines as shown in Table 2. The knowledge survey included 10 true or false questions about physical activity guidelines and benefits. Current physical activity level was assessed using the short IPAQ. The results found in this study can help educators and students be more informed about physical activity and help them achieve health benefits through physical activity.

Methodology

Participants

A total of 61 students from a university participated in the study. The students that volunteered to complete the survey were included in the study and no demographics were collected. Completion of the surveys implied consent to participate in the study.

Instruments

The study was conducted through two surveys. Knowledge of physical activity was assessed using an instrument developed by the researcher based on ACSM guidelines as shown in Table 2. The knowledge survey included 10 true or false questions about physical activity guidelines and benefits. Current physical activity was assessed using the short International Physical Activity Questionnaire (IPAQ). The IPAQ is scored based on levels of physical activity which is indicated by metabolic equivalents (METS). The questions asked pertain to the individual’s physical activity level. Physical activity is assessed by asking how many minutes or how often does an individual participate in the activity. Categories are divided into low, moderate, and high levels based on the number of METS the individual achieved from physical activity (“Guidelines for Data,” 2005). The IPAQ survey is valid and reliable according to Booth et al. (2003) for the test-retest reliability for the short form IPAQ \( (p=0.76) \) and the concurrent validity for comparison between both the long and the short form IPAQ \( (p=0.67) \). The IPAQ was applicable for the student population because it allowed them to self-report physical activity which could be easily calculated into METS based on days and time spent doing physical activity.

Procedures

Surveys were distributed to every fifth person at three buildings on campus: the student union, a classroom building, and the library. The three main buildings were chosen because of the high traffic throughout the buildings and the variety of students. This allowed the surveys not to be bias toward any specific major, program, or college. One day each week one of the three buildings was chosen for distribution of surveys. The students were asked to fill out the surveys at the location and return it to the researcher. This method was chosen so that one researcher could effectively and efficiently administer the survey to a diverse group of university students.

Statistical Analysis

Pearson’s product moment coefficient was calculated to determine the relationship between knowledge of physical activity and current physical activity level. Descriptive statistics were also calculated in order to describe the knowledge and activity behaviors of university students. Frequencies were used to analyze the knowledge of physical activity survey. The frequencies indicated which questions were most commonly answered correct and incorrect.

Results

Descriptive statistics for the IPAQ questionnaire survey are reported in Table 1. IPAQ mean (3,146.07) and mean knowledge (9.38) scores were reported in the descriptive statistics.

The frequencies in Table 2 show the number of students that answered the questions from the knowledge survey correctly or incorrectly. All 61 students (100%) answered question four correctly which asked if physical
activity can improve the quality of life. The most frequently missed was question seven which asked if depression and anxiety can be increased by physical activity. Question seven was answered correctly by 51 (83.6%) students and incorrect by 10 (16.4%) students. A total of 93.8% of questions were answered correctly over time.

The Pearson’s Product Moment Correlation coefficient was used to examine the relationship between knowledge of physical activity and current physical activity levels (IPAQ score). The results indicated that there was not a significant relationship between the IPAQ score and knowledge of physical activity \((r = .068, p = .604)\). Table 2 showed that majority of the students answered questions that pertained to the knowledge of physical activity correctly resulting in high knowledge of physical activity scores regardless of IPAQ score.

### Table 1

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPAQ</td>
<td>3.146</td>
<td>2.777</td>
<td>0</td>
<td>11.730</td>
</tr>
<tr>
<td>Knowledge</td>
<td>9.38</td>
<td>1.035</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

### Table 2

<table>
<thead>
<tr>
<th></th>
<th>Correct (#/%)</th>
<th>Incorrect (#/%)</th>
</tr>
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<tbody>
<tr>
<td>Women should not participate in resistance training.</td>
<td>57 (93.4%)</td>
<td>4 (6.6%)</td>
</tr>
<tr>
<td>Physical activity is defined as movement produced by the muscles that increase heart rate and energy expenditure.</td>
<td>56 (91.8%)</td>
<td>5 (8.2%)</td>
</tr>
<tr>
<td>The recommendation for resistance training for an adult is 2-3 days/week.</td>
<td>58 (95.1%)</td>
<td>3 (4.9%)</td>
</tr>
<tr>
<td>Physical activity can improve the quality of life.</td>
<td>61 (100.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>The recommendation for cardiorespiratory exercise for adults is 3-5 days/week for 20-60 minutes.</td>
<td>55 (90.2%)</td>
<td>6 (9.8%)</td>
</tr>
</tbody>
</table>

### Discussion

The purpose of this study was to examine university student’s knowledge of physical activity and to explore the relationship between knowledge of physical activity and current levels of physical activity. Physical activity and knowledge of physical activity was shown to have no significant relationship indicated by the correlation value.

The results from this study are similar to the results of the study conducted by Knox et al. (2012) which found that there is not a relationship between knowledge of physical activity and physical activity participation. Although students have a high level on knowledge about physical activity this does not mean that they participate in high levels of physical activity. The results indicate that even those with lower levels of physical activity understand physical activity guidelines and benefits. Clearly, lack of knowledge about physical activity is not a major barrier to participation among college students.

Some of the possible limitations to this study were the self-reported physical activity values, knowledge of physical activity questions, and no demographic collection. Students supplied their perceived physical activity level and their weekly amount of physical activity. Based on the frequency results, the majority of the students were able to answer the questions correctly. The questions asked that were created by the researcher could have been too general for the students. Demographic information was not collected from the students in this study. Student demographics were not collected because that was not a primary focus of the study.
For future studies and further research demographics should be collected. The demographics collected can be used to examine students’ knowledge and physical activity levels based on sex, age, and race. This will allow an in depth observation on which students have acquired more knowledge than others about physical activity. There should be a method or an instrument to measure physical activity. The researcher would be able to have verification of the amount of physical activity each participant engages in. A larger sample size could be useful in future studies to have a better representation of university students and to compare it to other universities.

**Conclusion**

Based on this study, new methods need to be examined to encourage students to participate in physical activity. Since this study indicated that there was no relationship between knowledge and physical activity, educators should find new ways to promote physical activity on college campuses. Educators and universities can possibly examine the underlying reason why the students do not participate in physical activity in order to discover ways for students to get the recommended amount of physical activity.

**References**


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