A Comparison of Current and Ideal Fitness Promotion Strategies in Washington State

GRANT M. HILL
BROOKE QUAM

Evidence suggests that being physically active improves a person's mental health, cognitive functioning, and physical and academic performance (Centers for Disease Control and Prevention [CDC], 2001; Sallis, 1994). Specifically, engaging in regular vigorous physical activity has been shown to reduce the incidence of cardiovascular disease, stress, obesity, and diabetes. Regular vigorous physical activity has also been linked to improved psychological health, increased HDL levels in the blood stream, a decrease in adult obesity, lower blood pressure, and increased cardiovascular fitness (Sallis, 1994).

In the Physical Best Activity Guide, AAHPERD (1999) listed the following benefits of exercise for youths:

- Makes the heart pump more strongly; helps lower blood pressure and resting heart rates; reduces the risks of heart disease; strengthens the bones and muscles; provides more energy to do school work, daily chores, and play; helps an individual maintain a healthy body weight; reduces stress. (p. 10)

Although these benefits are widely reported, Americans unfortunately continue to become more sedentary and obese with each passing year (Lambert, 2000). Physical education has the potential to improve youth fitness (Corbin, Dale, & Pangrazi, 1999). Consequently, physical educators are encouraged to design and teach educational activities that keep children active and prepare them for a lifetime of fitness-enhancing activities (Johnson & Deshpande, 2000). Despite a renewed emphasis on youth fitness, physical activity among American youths has declined in recent years. This decrease in physical activity may be partially linked to the reduction of required physical education. According to statistics compiled by the CDC, "the percentage of adolescents who have opportunities for daily physical education dropped from 42 percent in 1991 to 25 percent in 1995" (Lambert, 2000, p. 35). The decrease in required physical education may be due to a variety of factors, including a school district's budget constraints and decisions to support other academic areas instead (Dale, Corbin, & Dale, 2000).

In addition to the reduction of required physical education, socioeconomic factors such as urbanization and parental employment have also contributed to the decline in physical activity among youths. Many children are required to stay indoors because their parents will not allow them to play at unsupervised neighborhood parks and other recreational areas due to safety concerns. Consequently, televisions and computers have become the babysitters and entertainers for many of America's children, resulting in more sedentary activities (Ward, Everhart, Dunaway, Fisher, & Coats, 1998). According to Kohl and Hobbs (1998), every hour that a person spends watching television on a daily basis adds two percent to his or her body fat and increases the possibility of being obese in the future. Video games, music videos, Internet surfing, and other television and computer entertainment have replaced physical activity (Sherman, 2000).

There have been recent efforts to increase the role of physical education in schools. In 1993, America 2000, a document delineating national educational goals stressing the importance of physical education in promoting youth fitness, was published (Sadler & Tentiger, 1993). In 1995, the National Association for Sport and Physical Activity (NASPE) developed the national physical education standards, which define a physically fit person. Corbin and Pangrazi (1998) outlined an aggressive program for promoting "physically active lifestyles for youth[s]," which is also a part of Healthy People 2010 (U.S. Department of Health and Human Services, 2000). Despite their limitations of time, space, and equipment, many physical education programs are doing an outstanding job of improving student activity and...
fitness. In these programs, the physical educators are incorporating a variety of proactive fitness strategies: (1) providing regular fitness testing and reporting (Corbin, Dale, & Pangrazi, 1999), (2) developing a school fitness center (Bycura & Darst, 2001), (3) teaching fitness concepts (Strand, Scanling, & Johnson, 1998), (4) motivating students to be active outside of class (Kulinna & Krause, 2001), (5) utilizing technology to measure fitness and activity levels (McKenzie, 1999), (6) exhibiting an active and fit lifestyle (Melville, 1999), and (7) ensuring that students are active for the entire class period (Johnson & Desplande, 2000).

Because of the recent calls for a more comprehensive, fitness-related approach to physical education, a study was deemed necessary to determine which strategies K-12 physical educators are currently using to promote youth fitness. The authors also sought to determine which fitness promotion strategies physical educators thought should ideally be implemented in K-12 physical education programs. Finally, it was hoped that the results would indicate whether there is congruence between the recommendations of K-12 physical educators and the actual practice in K-12 schools.

**Methods**

In this study, four elementary and four secondary physical educators who had exemplary programs that promoted physical activity were asked to identify issues that affected the promotion of fitness within K-12 schools. In addition, an exhaustive review of the literature on youth fitness promotion strategies was conducted. Primary issues identified were (1) the types of fitness assessments that are used, (2) the specific activities that promote fitness, (3) the factors that affect the amount of time spent being active in physical education, (4) the frequency and importance that is placed on fitness testing, and (5) the role of teachers in modeling fitness for their students.

From the interviews and literature review, a list of 21 survey items was developed. For each item, the physical educators indicated whether the statement accurately reflected what was currently occurring at their school and whether or not it described what should ideally occur at their school. The response format was dichotomous (i.e., "yes-no" answers) rather than a Likert scale because it was determined that the data would be more meaningful for its intended audience if it were reported by percentages rather than by mean scores. The questionnaire was pilot tested with 30 physical education teachers and modified, based on their input, for content and clarity. The questionnaire was then mailed to 250 physical educators at elementary, middle, and high schools listed in the Washington State Guide for Public and Private Schools (GreatSchools.net, 2003). Only elementary, middle, and high schools with an enrollment of 300 or more students were considered since schools with lower enrollments often do not have a full-time physical education teacher. Consequently, every sixth eligible school that was listed in the guide received a survey. The study was limited to schools from Washington in order to enhance the meaningfulness of the group data as well as to be available for comparisons to other states. A follow-up mailing was sent two weeks after the original. Eventually, 170 surveys were completed and returned for a 48.6 percent return rate.

**Results**

**Demographics.** The average respondent was 43 years old. Out of the 149 physical educators who indicated their gender, 75 (50.3%) were males and 74 (49.7%) were females. Ninety-seven percent of the respondents taught physical education, 19.4 percent were health teachers, and 16.0 percent taught another subject. The level of teaching as reported by the respondents was as follows: 54.7 percent elementary school, 35.9 percent middle school, and 25.3 percent high school. The three percentages add up to more than 100 percent because some of the participants in the study indicated that they taught at more than one level. The primary fitness tests that the teachers used on all three levels were the Presidential Fitness Test (49.4%), the Physical Best Test or Fitnessgram (8.2%), other fitness tests (32.4%), and no response (10.0%).

**Fitness Promotion Strategies.** Table 1 lists the percentages of responses for each questionnaire item. A majority of the respondents reported that they (1) keep their students active for more than 50 percent of class time, (2) modify traditional sports within their physical education curriculum in order to keep their students more
<table>
<thead>
<tr>
<th>Strategies</th>
<th>Currently Occurs</th>
<th>Should Ideally Occur</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$N$</td>
<td>$%$</td>
</tr>
<tr>
<td>Students active during at least 50 percent of class time</td>
<td>169</td>
<td>95.9</td>
</tr>
<tr>
<td>Modification of traditional sports to promote more activity</td>
<td>153</td>
<td>95.6</td>
</tr>
<tr>
<td>Integration of health and fitness components into physical education lessons</td>
<td>148</td>
<td>93.7</td>
</tr>
<tr>
<td>Physical education curriculum aligns with state standards</td>
<td>134</td>
<td>85.4</td>
</tr>
<tr>
<td>Fitness testing occurs several times a year</td>
<td>135</td>
<td>79.4</td>
</tr>
<tr>
<td>Teacher exercises for at least 20 minutes</td>
<td>4</td>
<td>71.1</td>
</tr>
<tr>
<td>in target HR zone three to five times per week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School has extracurricular physical activity program</td>
<td>92</td>
<td>57.1</td>
</tr>
<tr>
<td>Students are required to develop individualized fitness plans</td>
<td>84</td>
<td>53.5</td>
</tr>
<tr>
<td>Students reset goals after fitness testing</td>
<td>71</td>
<td>43.8</td>
</tr>
<tr>
<td>Rewards/Incentives to pass fitness test</td>
<td>85</td>
<td>51.8</td>
</tr>
<tr>
<td>Graphic fitness score feedback to students</td>
<td>83</td>
<td>50.3</td>
</tr>
<tr>
<td>Fitness homework for extra credit</td>
<td>67</td>
<td>42.7</td>
</tr>
<tr>
<td>Report fitness scores to parents</td>
<td>71</td>
<td>38.1</td>
</tr>
<tr>
<td>Written tests on fitness concepts</td>
<td>58</td>
<td>33.9</td>
</tr>
<tr>
<td>District provides fitness promotion inservice for all teachers</td>
<td>52</td>
<td>32.9</td>
</tr>
<tr>
<td>Newsletters informing parents of upcoming fitness events</td>
<td>55</td>
<td>34.6</td>
</tr>
<tr>
<td>Interschool/Interclass competition in fitness testing</td>
<td>52</td>
<td>33.8</td>
</tr>
<tr>
<td>School has fitness room</td>
<td>53</td>
<td>32.7</td>
</tr>
<tr>
<td>Physical educator teaches classroom teachers how to incorporate</td>
<td>39</td>
<td>23.6</td>
</tr>
<tr>
<td>fitness breaks into regular school day for students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilize heart rate monitors in physical education class</td>
<td>29</td>
<td>18.7</td>
</tr>
<tr>
<td>Fitness scores are the primary criteria in physical education grading</td>
<td>19</td>
<td>12.0</td>
</tr>
</tbody>
</table>
active during class time, (3) integrate health and fitness components into their physical education lessons, (4) align their physical education curriculum with state standards, (5) administer fitness tests several times a year, (6) exercise in their target heart rate zone for at least 20 minutes, three or more times per week, (7) provide an extracurricular physical activity program for students to participate in after school, (8) require their students to develop individualized fitness plans, (9) provide their students with incentives to pass the fitness test, and (10) give students graphic fitness-score feedback. Most of the physical educators also recommended that schools should ideally use 19 of the 21 fitness strategies; the exceptions were interschool/interclass fitness-score competition and using fitness scores as the primary criteria in grading.

In a number of instances, a majority of the respondents advocated the use of specific fitness strategies, but were not currently implementing them in their programs: students reset goals after fitness testing (43.8% actual vs. 92.1% ideal), fitness homework for extra credit (42.7% actual vs. 66.4% ideal), report fitness scores to parents (38.1% actual vs. 83.7% ideal), newsletters informing parents of fitness events (34.6% actual vs. 86.3% ideal), written tests on fitness concepts (33.9% actual vs. 74.3% ideal), district provides fitness promotion inservice (32.9% actual vs. 96.0% ideal), school has fitness room (32.7% actual vs. 86.2% ideal), teach classroom teachers to incorporate fitness breaks into regular school day for students (23.6% actual vs. 55.6% ideal), and utilize heart rate monitors in class (18.7% actual vs. 73.2% ideal).

**Discussion**

Most of the respondents agreed with fitness experts that physical education should aggressively promote fitness (Johnson & Deshpande, 2000). In addition, most of them said that they: (1) conducted regular fitness testing (Corbin, Dale, & Pangrazi, 1999), (2) required student-generated fitness plans and goals (Wright, Patterson, & Cardinal, 2000), (3) provided fitness activity homework (Kulina & Krause, 2001), (4) modeled active and healthy lifestyles (Cardinal & Cardinal, 2001), and (5) devised reporting mechanisms that provided both students and parents with accurate and timely reports (Sadler & Tentiger, 1993).

However, while most of the respondents use curriculums that promote the development of both health and fitness and try to model active, fit lifestyles, many of them do not use the fitness strategies that they advocate. One particular concern is the low percentage of physical educators who indicated that they report fitness test results to parents. This lack of communication with parents is unfortunate because both parents and students need to receive a consistent message that emphasizes the health benefits of physical fitness and activity (AAHPERD, 1999). Communicating this information directly to parents may give students more incentive to be active and also provide parents with valuable information that they can use to promote fitness at home. In order to build this link with parents, physical educators should strive to acquire technology that supports the fitness activities used in their classes. Specifically, they should record fitness scores and student goals, graph student progress, and electronically send progress reports to parents. Ideally, physical educators should also use various software programs that allow them to produce their own award certificates for students who meet fitness or activity standards. In addition, they should develop their own web sites and include information on fitness testing as well as about what students can do in order to improve their level of fitness.

Although using heart monitors was strongly recommended, only a very few of the respondents reported that they actually used them in their programs. This is unfortunate because there is software available that can download the information from heart monitors so that students’ daily activity can be monitored accurately, and daily activity levels may be the best predictor of future health benefits (Deal & Deal, 1995). Reasons for the low percentage of heart monitor use may include cost, lack of training, and inconvenience (McKenzie, 1999). These results, and the general interest in accurately measuring student activity levels (Strand & Roesler, 1999), suggest that companies that produce and distribute heart monitors and other motion-sensing devices have a huge opportunity to market their products to physical educators.

While most of the respondents noted the importance of having fitness rooms in schools, a majority of them said that their schools did not have fitness rooms or equipment that students can use after school, particularly at the elementary school level. The lack of fitness facilities may be due to cost constraints, poor district funding, or lack of space on school campuses. For those students who have access to community facilities and fitness equipment at home, becoming familiar with and learning how to use this equipment properly at school might increase the chances of them using it outside of class (Bycura & Darst, 2001). In addition, these facilities would allow physical educators a place to exercise, which is essential given the importance of the instructor’s fitness in motivating students (Melville, 1999). These fit-
ness centers should include weight machines, various aerobic devices, and mats for stretching and curl-ups. Information concerning the fitness concept as well as rules for safe usage should be posted on the walls (Moen, 1996).

Although most of the respondents indicated that fitness homework should be assigned for extra credit, most do not currently offer this option to their students. This is unfortunate because there is not enough time in physical education classes for students to get sufficient physical activity and assigning fitness homework for extra credit is an effective strategy that increases student activity levels (Darst, 2001). In order to provide consistency and focus, some teachers have used homework calendars that include different tasks for each day that, upon completion, must be signed by a parent or guardian (Mitchell, Barton, & Stanne, 2000). While this practice would undoubtedly increase the paper load for physical educators, the payoff would be healthier and more active students (Gabbei & Hamrick, 2001).

The results also indicate that although most K-12 physical educators believe that fitness promotion should be a total school effort, most districts do not conduct inservice training to help teachers work with the community and families of students in order to develop and implement a unified plan that promotes fitness. This is unfortunate since families, district employees, physical educators, and coaches should be encouraged to use school facilities during after-school hours in order to participate in fitness activities together (Kimiecik, Demas, & Demas, 1994).

The strong support for testing students' fitness knowledge indicates that the physical educators agree with Ernst, Pangrazi, and Corbin (1998) that students will more likely gain and maintain an active lifestyle if they understand the benefits associated with that choice. Only a small percentage of the respondents currently require those tests, however, perhaps because of the lack of time to teach and evaluate these concepts. In addition, since physical education usually lacks textbooks, disseminating fitness education concepts in a consistent, organized manner may be a formidable challenge. Recently, however, concept-based learning models that combine classroom lecture and discussion with fitness activities have been developed (Strand, Scantling, & Johnson, 1998). It is hoped that K-12 physical education teachers will use hard copy and electronic, concept-based teaching materials more often in the future.

A majority of the physical educators recommended that they would like to see their schools incorporate all of the fitness strategies except two: (1) interclass and/or interschool competition in fitness scores and (2) fitness scores as the primary criteria in grading. Although the respondents support fitness testing, this suggests that they agree with Ernst, Pangrazi, and Corbin (1998) that using temporal strategies such as peer pressure or grades to motivate students to improve their fitness levels may be ultimately counterproductive. Specifically, these strategies can cause students to lose motivation if they are unsuccessful.

While incorporating specific fitness promotion strategies into the physical education curriculum may result in more fitness information and vigorous activity for students, it is also important that physical educators use effective motivation and exercise adherence strategies in order to encourage students to continue participating in fitness activities (Kilpatrick, Hebert, & Jacobsen, 2002). Exercise should be meaningful and fun, allow students to improve and learn new skills, provide them with positive social experiences, make them feel successful, and help them reach their fitness goals (Kulina & Krause, 2001). Since research supports the idea that physical activity levels developed during childhood continue into adulthood (Malina, 1996), it is imperative that physical educators provide quality programs and caring support to help their students become lifelong movers (McKenzie, 1999). In addition, it is essential that state physical education organizations partner with K-12 physical educators in order to provide more proactive fitness leadership in schools and educate school boards, school administrators, and parents on the benefits of an active lifestyle as detailed in the Surgeon General's report (1996).

Although a higher response rate was expected, 48.6 percent is satisfactory for a mailed survey using random sampling. Several factors may have affected the response rate: (1) the questionnaires, which included a university logo, may have been perceived as advertising materials and thrown out without being read; (2) the surveys, which were addressed to physical education coordinators, may have been misdirected to someone else (e.g., the athletic director); and (3) nonrespondents may not have been fully committed to promoting fitness in their physical education classes. It is notable that the percentages for each item in this study were very similar to the responses of the 80 teachers who participated in the pilot study.

Future research should identify the specific reasons why K-12 physical educators are not using some of the fitness strategies that they advocate. In addition, it is important to de-

Continues on page 54
velop strategies that physical education teachers can use to overcome obstacles such as the lack of space, time, equipment, and funding in order to promote physical activity in their programs.

References


Grant M. Hill (ghill@csulb.edu) is an associate professor in the Department of Kinesiology and Physical Education, California State University—Long Beach, Long Beach, CA 90840. Brooke Quam (bquam@orc.esd.114.web.net.edu) is a physical education teacher and department chair at North Mason High School, North Mason, WA 98528.