

FITNESS

Physical Fitness Test Administration Practices and Students' Cognitive Understanding of Physical Fitness

Susan L. Eastham

Abstract

The purpose of this study was to examine physical education teachers' physical fitness test administration practices, specifically how physical education teachers helped their students to develop a cognitive understanding of the health-related physical fitness components before and after test administration. Ten middle school and high school physical education teachers from Central California were interviewed about their test administration practices. The teachers were asked to describe how they conducted the tests and how the students were educated about the health-related fitness components before and after test administration. The results of the study identified only three of the teachers giving specific health-related fitness instruction to their students. The teachers described various instructions given to the students before test administration about the test purposes, but none of the teachers reported discussing with their students that the purpose of the test was to promote a physically active lifestyle. Only half of the teachers reported providing the students with their test results after test administration, and if an explanation of the test results was given to the students, it was typically brief. For students to make the connection between the test results and health-related fitness, it is important for teachers to provide specific health-related fitness instruction. When

Susan L. Eastham is an associate professor, Department of Kinesiology, California State University, Stanislaus. Please send author correspondence to seastham@csustan.edu

effective test administration, instruction of health-related fitness, and interpretation of test results to the students occur, physical fitness testing can be a valuable assessment that leads students to be more likely to adopt a physically active lifestyle.

Physical fitness tests are administered regularly in the United States, and even without a national mandate, physical fitness testing is often required at the state, county, district, or school level (Cale & Harris, 2009; Morrow, Fulton, Brenner, & Kohl, 2008; National Association for Sport and Physical Education & American Heart Association, 2012). The FitnessGram is a criterion-referenced health-related physical fitness test battery and is one of the most commonly used test batteries in schools (The Cooper Institute, 2013; Lee, Burgeson, Fulton, & Spain, 2007; Morrow, Zhu, Franks, Meredith, & Spain, 2009). The primary goal of the FitnessGram is to motivate students to participate regularly in physical activity (The Cooper Institute, 2013). Regular physical activity is important because it is associated with good health and greatly reduces the risk of developing or dying from certain diseases, such as coronary artery disease, high blood pressure, high cholesterol, type 2 diabetes, and some cancers (Kahn et al., 2002; McMurray & Ondrak, 2013; U.S. Department of Health and Human Services [USDHHS], 1996). A physically active lifestyle not only reduces the risk for chronic diseases but also helps to decrease stress, improve muscle tone and strength to prevent injury, and increase self-confidence and the ability to perform various motor tasks (Roberts, 2000). Additionally, there appears to be a positive relationship between academic achievement and physical fitness (Bass, Brown, Laurson, & Coleman, 2013; California Department of Education, 2005). Students who are physically fit appear to perform better academically, are more attentive, and have fewer discipline problems (Kahn et al., 2002).

Knowing the benefits of a physically active lifestyle and the consequences of physical inactivity, too many children are still failing to engage in regular physical activity. Physical fitness testing is one means of promoting physically active lifestyles (The Cooper Institute, 2013). Although physical fitness tests have been administered in schools for many years, the topic of physical fitness testing has been debated and the value of measuring children's physical fitness levels has been questioned (Cale & Harris, 2009; Lloyd, Colley,

& Tremblay, 2010; Naughton, Carlson, & Greene, 2006). It has been argued that if the goal of physical fitness testing is to motivate children to develop a physically active lifestyle, the emphasis should be on assessing physical activity rather than physical fitness (Lloyd et al., 2010). Additionally, it is not clear that children who perform well on physical fitness tests are physically active, and children who are physically active do not always perform well on physical fitness tests (Naughton et al., 2006). It appears as if children's physical fitness test results are influenced by factors other than physical fitness. Factors such as age, maturation, heredity, and environmental conditions appear to influence the test results of children to a greater extent than they do in adults (Harris & Cale, 2006; Morrow, 2005; Naughton et al., 2006). In adults, there is a strong positive relationship between physical fitness and physical activity, but in children the relationship is unclear (Naughton et al., 2006).

Although problems of physical fitness testing do exist, there is support for physical fitness testing as a valuable and appropriate assessment tool for evaluating physical fitness and promoting a physically active lifestyle if the tests are administered correctly. When physical fitness testing is used appropriately, students are more likely to develop a physically active lifestyle (Hopple & Graham, 1995; Silverman, Keating, & Phillips, 2008). Physical fitness testing should not be conducted as an isolated event administered merely to comply with the state requirements, but used as an educational tool that helps students gain knowledge and understanding about physical fitness and the benefits of physical activity (Keating & Silverman, 2004; Lloyd et al., 2010). When physical fitness tests are used as a meaningful assessment, and students are taught about the health-related fitness components, they are more likely to understand the value of a physically active lifestyle and engage in regular physical activity (Cale & Harris, 2009; Dale & Corbin, 2000; Dale, Corbin, & Cuddihy, 1998; Pearman et al., 1997).

Because the value of physical fitness testing depends largely on how tests are administered (Ferguson, Keating, Bridges, Guan, & Chen, 2007; Harris & Cale, 2006), investigating test administration practices is important. Research conducted on physical fitness testing has primarily focused on collecting reliability and validity data on individual physical fitness tests. Although several studies have

examined individual tests, limited research has been performed on whole test batteries or on school-based physical fitness testing practices (Cale & Harris, 2009). The most researched area on school-based physical fitness testing includes studies on attitudes toward physical fitness testing, which generally found students' attitudes toward fitness testing to be negative or neutral, whereas teachers' attitudes were only slightly positive (Ferguson et al., 2007; Hopple & Graham, 1995; Mercier & Silverman, 2014). However, research examining current physical fitness testing practices in the schools is limited (Keating, 2003). Knowing how teachers use physical fitness testing in the schools can increase the understanding of physical fitness testing implementation and help facilitate effective physical fitness testing practices in the schools. With effective and appropriate physical fitness testing practices, students can learn to value a physically active lifestyle (Ferguson et al., 2007; Naughton et al., 2006). When students understand the value of physical activity in promoting physically active lifestyles, the primary goal of physical fitness testing can be accomplished.

The purpose of this study was to examine teachers' physical fitness test administration practices, specifically how physical education (PE) teachers help their students to develop a cognitive understanding of the health-related physical fitness components before and after test administration. This study addressed the following questions:

1. How do PE teachers help their students develop a cognitive understanding of the health-related physical fitness components?
2. Prior to physical fitness testing, to what extent do PE teachers develop their students' cognitive understanding about the health-related physical fitness components?
3. After physical fitness testing, to what extent do PE teachers interpret test results to their students?

This study provides a better understanding of how PE teachers incorporate health-related physical fitness instruction in the curriculum, which is important in promoting a physically active lifestyle that leads to improvements in health-related physical fitness instruction and therefore makes physical fitness testing a valuable assessment.

Method

Participants

In-depth interviews were conducted with a convenience sample of 10 PE teachers from 10 schools in Central California. The PE teachers were recruited via regular or electronic mail and asked to participate in an interview about their physical fitness test administration practices. Criteria for participating in the study included current employment as a PE teacher at a middle or high school and having administered the California Physical Fitness Test (CaPFT). In California, the CaPFT is required for all public school students in Grades 5, 7, and 9, via the FitnessGram test battery (California Department of Education, 2015). Of the participants, 50% ($n = 5$) were middle school teachers, 50% ($n = 5$) were high school teachers, 60% ($n = 6$) were male, and 40% ($n = 4$) were female. The teachers' ages varied, with most of the teachers being experienced educators who had been teaching for more than 10 years. Only two of the participants had been teaching for less than 10 years. Additionally, the participants had administered the CaPFT more than 10 times, with only one participant having administered the test less than five times. Each participant was identified with a number (i.e., Teacher 1 [T1], Teacher 2 [T2], etc.), with T1–T5 being the middle school teachers and T6–T10 being the high school teachers.

Procedures

Following a pilot study, the researcher modified the interview protocol to improve interview effectiveness. Interviews were scheduled at the school site of each of the 10 participants. The interview protocol included interview instructions, questions to be asked, and a space to take notes on participant responses (Creswell, 2002) and was used to guide the researcher through the interview process to help ensure consistency from interview to interview.

The instrument for the study was a 45-min individual interview including open-ended questions for examining physical fitness test administration practices. The questions were meant to investigate how PE teachers help their students develop a cognitive understanding of the health-related physical fitness components. In the interview, the PE teachers were asked to describe how they prepared

the students for the tests and how the test results were reported and interpreted to the students. Because instruction on health-related physical fitness components helps promote physical activity (Dale & Corbin, 2000), the questions specifically focused on the teachers' descriptions of how they educated their students about the health-related physical fitness components before and after physical fitness test administration. To help answer the research questions, the researcher asked open-ended questions with probes to obtain additional information when the responses were incomplete or vague (Creswell, 2002).

Following each interview, the digital recordings were transcribed and then sent via electronic mail to the participants, which allowed them to verify the accuracy of their responses.

Data Analysis

Data were analyzed via organizing the data, describing the data, and summarizing the data (Creswell, 2002). To organize the data, the researcher coded the transcripts using a marginal coding technique (Creswell, 2002; Miles & Huberman, 1994). Once organized, the data were described via a cross-case analysis (Miles & Huberman, 1994). A cross-case analysis can help deepen the understanding and explanation of the data by allowing examination of multiple cases and identification of recurring themes. Once entered into the matrix, the data were partitioned and clustered into the variables consistent with the research questions. This process of describing the data helped the researcher to refine, summarize, and reduce the data into a more manageable format. The final step of the analysis involved summarizing the data through identification of common themes. The researcher used data summary tables to refine, summarize, and reduce the data so the common themes could be recognized. The researcher also conducted triangulation of the data to ensure reliability of the coding procedures.

Results

Research Questions

The first question, "How do PE teachers help their students develop a cognitive understanding of the health-related physical fit-

ness components?” examined how the teachers were educating their students about fitness concepts. If the purpose of physical fitness testing is to help students develop an active lifestyle, how are teachers helping the students to develop a cognitive understanding of the health-related fitness components? Three themes emerged from this question. The first emergent theme involved classroom availability. The participants were asked if they had access to a classroom. If a classroom was available for the teachers to use, they might be more likely to provide in-depth instructions about fitness testing and the health-related fitness components. Most of the middle school teachers (4 of the 5) had access to a classroom. Three teachers (T1, T2, and T5) described using a classroom to give instruction. Access to a classroom, however, did not guarantee that the teachers would use it to provide formal instruction. None of the high school teachers had access to a classroom, but two teachers (T7, T9) expressed a desire to have one so they could conduct more formal, in-depth discussions about fitness and health. T7 described instruction as being “nothing in-depth because we don’t have a classroom.” When asked if he had access to a classroom, T9 responded,

No, not really because everything is occupied. We have the wrestling and weight rooms, but they aren’t conducive to anything. If I had time and I found something I could use, I would love to. Kids are into watching something. Something I could show them. I would like to do it, but I don’t have the money or the facilities to do it.

Access to a classroom did not ensure that teachers would use the classroom to provide instruction to the students, but most of the middle school teachers who had access to a classroom used it for instruction. High school teachers who did not have access to a classroom expressed the desire to have one.

The second emergent theme was about health-related fitness instruction. The teachers were asked to explain how they conducted health-related fitness instruction. Three middle school teachers (T1, T2, and T5) described giving specific health-related fitness instruction. All three of the teachers had access to a classroom and described explaining to the students why the health-related fitness components

are important and how they relate to the physical fitness tests. T5 said,

I feel it's important for kids to understand why we do what we do. So they understand that cardiovascularly we're trying to get our heart rate up and into that target heart rate zone for a certain length of time. And they understand that we're working on muscular strength when we're working in the weight room and doing push-ups.

T2 described the importance of helping students make connections between the health-related fitness components and the tests. She explained to the students that "each test has a reason that it's important to your health and well-being for your lifetime, not just while you're in seventh grade taking the test for the State." Two teachers (T1, T3) said that the students were given a written test on health-related fitness components. T1 stated,

I don't just tell them, they have to know why. They have a test on the components of fitness. What are they? What tests can we do for them? What can we do? And so they know, I hope, by testing, they know the reasons for them.

Another teacher (T3) described wanting to spend 1 day/week on instruction, but did not want to reduce their activity time. T3 said,

There should be one day a week that should be a health day, but if you're taking away an activity period to have a sit down cognitive discussion about the health and how it connects, then you're not getting that activity time.

None of the high school teachers described giving specific health-related instruction that was presented in a planned, formal manner, but all of them reported incorporating instruction to some extent into their lessons. T8 said, "I try to explain those things to them, like why running is important. Why cardiovascular fitness is important. I try to explain those kinds of things. Why flexibility is important." The amount of instruction on health-related fitness instruction varied among the teachers. The middle school teachers were more likely to spend time on specific health-related instruc-

tion; however, all of the teachers made some effort to incorporate the instruction into their lessons.

The third emergent theme involved the students' knowledge of the Healthy Fitness Zones (HFZ). The teachers were asked to describe the instruction they provided to their students about the HFZ. The FitnessGram is a criterion-referenced test that places students in a "Healthy" or "Unhealthy" category. The participants were asked to describe student knowledge about the HFZ. One teacher (T9) did not tell the students the HFZ, because he did not know what they were; however, most of the teachers (90%) reported telling the students the HFZ and that their students knew what scores they needed to achieve the HFZ. T2 said, "I keep a chart, 'Look, you've improved.' I circle it if they are in the fitness zone. The kids know what the fitness zone is; at least I hope they know, we keep repeating it." T8 explained to the students, "This is the HFZ. This is where you need to be. This is what is healthy for you, to be in this zone." T6 stated that she tapes the HFZ chart on the gym wall by the testing stations for the students to see. Although most of the teachers thought it was important for the students to know the HFZ, they expressed frustration about the students only striving to achieve a passing score. The teachers described students stopping once they reached the HFZ even if they could do more. T4 explained,

We always had listings of what the passing scores were, but we didn't like to broadcast that ahead of time because they'll always go to the test. They'll always go just to here instead of going to the next level.

T6 said, "Something that I've seen in administering the test is that they know once they get to a certain point and they pass they just stop instead of trying to do their best." It appeared that most of the students knew the HFZ for the tests; however, a problem with the students knowing the passing score was that it kept them from trying to exceed it.

The second research question, "Prior to physical fitness testing, to what extent do PE teachers develop their students' cognitive understanding about the health-related fitness components?" addressed instructions provided to the students before test administration. Two themes emerged from this question. The first theme

identified how the students practiced the test protocols. The teachers were asked to describe how they prepared the students for the test. Because the tests in the FitnessGram include specific test protocols, the teachers were asked to describe how the students practiced the protocols to prepare for the test. All of the teachers described including at least some practice of test protocols. A majority of the teachers (60%) provided “some” practice for the tests, whereas the rest of the teachers reported “extensive” practice of test protocols. The middle school teachers were more likely to have their students practice extensively. T1 stated, “We practice the form all the time. They’re always doing the form so they’re used to it. So when we go to testing, they’re used to doing the test.” T2 said, “We go over the protocols [before the pretest] and as we are going through the year.”

The second theme described instructions the students received about the test purposes. The participants were asked to describe what instructions they gave their students about the purpose of the test. The teachers gave various responses about what they told their students about the purposes of the test. Three of the teachers (T1, T2, and T6) specifically addressed the health-related fitness components when discussing the purposes of the test. Most of the teachers identified the importance of health and physical fitness. T1 discussed core strength and said, “If you have it, you can prevent injuries.” T8 explained to the students that “they’re trying to figure out how healthy or unhealthy you are.” Two of the teachers (T4 and T8) discussed the increase in obesity rates. T4 explained, “We talk about the prevalence of childhood obesity and why we are trying to improve your fitness level.” T8 described how she explained to the students that the State is “trying to figure out how healthy or unhealthy as a whole the kids in California are. That’s important because, as you know, obesity is on the rise and we’re trying to get rid of that.” T2 was the only teacher who specifically identified the importance of lifetime fitness when she described telling the students that “each test has a reason that it’s important to your health and well-being for your lifetime.”

When the teachers were asked to describe instructions to the students about the purposes of the test, none of the responses included explanations about motivating the students to be physically active, the intended purpose of the test. The teachers were asked the follow-

ing question: “Do you think physical fitness testing helps motivate the students to be physically active?” The participants clearly did not think that physical fitness testing motivated the students to be physically active. A few of the teachers responded that it might be motivating for some of the students, but the majority did not think so. The teachers identified activities they thought were more motivating to the students, for example, the Governor’s Fitness Challenge and the Family Fitness Challenge. A high school teacher (T8) found certain activities taught during PE class motivated more physical activity outside of school than the fitness tests. T8 explained,

I don’t think it helps. Looking at the kids that [*sic*] I have, I don’t think that it motivates them to do anything outside of school. It motivates some of them to do well outside of the test because of their competitive nature. I’ve found that when I introduce tennis, a lot of kids that [*sic*] are very negative about tennis and think it’s dumb, but then they get playing and understand the game. I’ve actually had numerous kids who were like, “I’m going to join the tennis team.” You don’t get those things from the FitnessGram. You don’t get, “I did 20 push-ups because I did really bad [*sic*] my freshman year on the FitnessGram.” I think that with some of the things they understand the importance if I explain the importance to them. Then they might think they should do some of them on their own. But that’s a select group of kids.

Responses about the purposes of the test varied, but most of the teachers included a discussion about physical fitness and health. A few of the teachers included a discussion of the health-related fitness components in their responses. None of the teachers, however, described instruction about promoting lifetime physical activity, which is the intended purpose of the FitnessGram test battery.

The third research question, “After physical fitness testing, to what extent do PE teachers interpret test results to their students?” examined how the teachers explained the test results to the students. Two themes emerged from this question. The first theme identified who received the test results (i.e., students, parents) after test administration. The participants were asked to describe if the students and parents received the test results. Only half of the teachers

reported giving the test results to the students. The middle school teachers were more likely than the high school teachers to give the students the test results. The responses indicated that the students received the results either verbally or by seeing them on their fitness charts. Two middle school teachers described displaying the scores on a graph for the students to see, to help increase understanding of the test results. T1 said, "You write it in a chart and it doesn't mean much, but you put it in a graph, and they really start to understand what is going on." T3 also explained that he mostly gave the students the scores verbally but that he also tried "to put them on an Excel program and onto a graph so they can visually see if they're going up, or down, and see how they compare to everyone else." The responses were more varied for whether the parents received the test scores. Half of the teachers were unsure whether the parents received the results. T10 stated, "I think the district just sends them home to the parents, but you would have to ask our department chair about that." When asked if the parents received the test results, T7 replied,

I don't know. I don't think so because a couple of people that I had in class last year said that they passed but then found out that they failed when they got to school the next year because they were signed up for another PE class. They said, "I didn't sign up for a PE class."

T2 said that forms had been purchased but never used. She explained, "Years ago when the FitnessGram was started, the superintendent bought us all the forms that we needed if we used the FitnessGram to just print out and send home to parents. We never took advantage of it."

For the parents who received the results, the results were most often sent home through the district. T1 stated, "Formally the district right now, they send something home that tells the parents what the fitness scores are." The teachers' responses varied on who received the test results. If students received the tests results, the results were given to the students verbally. If the parents received the test scores, the scores were sent by the district, although many teachers did not know if the parents received the test results.

The second theme addressed how the test results were explained to the students. The teachers were asked to describe how the test

results were explained to the students. The teachers reported giving “somewhat of an explanation” of the test results to the students or “no explanation” of test results to the students. A complete explanation of test results would involve specific individual instruction. None of the teachers described giving a complete explanation of test results to the students. Half of the teachers reported that they gave no explanation of test results to the students, with the other half responding that they gave somewhat of an explanation about the test results to the students. T2 responded, “It’s not on an individual basis as it is part of the general class time.” T7 described talking to the students while measuring their height and weight. He explained,

One comes up at a time. I weigh them, get their height, and then I talk to them personally. I say, “You know what? You want to know where you’re at right now?” If it’s someone with a real medical issue, I’ll talk to them. I never get on the heavy people. I encourage them to walk. There’s no way they’re going to run. I try to get them to walk at a pace that is comfortable and try to challenge them to lose weight each week or each month. They take it pretty good [*sic*]. But that’s one test I do personally, the BMI.

T8 said that she does not like to discuss weight with the students. She stated, “The one I stay away from is the height and weight. It’s hard because you want to say something, but how do you say that to a 13- or 14-year-old kid?” An explanation of test results would help give the test meaning; however, none of the teachers provided an in-depth explanation of the test results to the students. Several of the teachers provided no explanation of test results to the students. A majority (60%) of the teachers offered somewhat of an explanation of the tests results to the students.

Additional Findings

Additional themes emerged as the teachers responded to the interview questions relating to teacher training for test administration and incorrect test administration practices. While talking about test administration practices, the teachers described a varying amount of training, but overall it became apparent that teacher training was lacking. The teachers received little or no training from

the schools to administer the physical fitness tests. The teachers who were trained obtained voluntary training through conferences and workshops. All of the teachers reported receiving written materials (e.g., book, pamphlet) describing the test protocols. It also became evident that the teachers made several test administration errors. While describing test administration practices, some of the teachers explained how the students performed certain tests. Discussions regarding test performances were not planned, but occurred at different times during some of the interviews. In discussions of test practices, several of the teachers described administering tests incorrectly. The FitnessGram is a standardized test and includes specific test protocols for each of the tests.

Discussion

With the purpose of physical fitness testing being to promote students to be physically active, this study investigated how teacher practices of physical fitness testing might help accomplish this goal. The aim of this study was to examine PE teachers' physical fitness test administration practices and how the tests helped their students develop a cognitive understanding of the health-related physical fitness components relative to physical fitness testing.

The first research question asked the teachers to describe how they helped their students to develop a cognitive understanding of the health-related fitness components. Only the teachers who had a classroom available conducted planned, in-depth instruction about health-related fitness. Even though all of the teachers made some effort to incorporate health-related instruction, it appeared that access to a classroom increased the likelihood that the teachers would provide planned, specific health-related instruction to the students. To be a valuable assessment, physical fitness tests must be accompanied by health-related fitness instruction. Physical fitness tests have little meaning when administered simply to obtain a score and when the teachers fail to educate the students about health-related fitness and the importance of a physically active lifestyle (Keating & Silverman, 2004; Lloyd et al., 2010). Studies are limited on the relationship between health-related fitness instruction and physical activity; however, three studies (Dale & Corbin, 2000; Dale et al., 1998; Pearman et al., 1997) have examined this relationship.

According to these studies, when health-related fitness instruction is provided, a physically active lifestyle is more likely to be adopted. If the purpose of physical fitness testing is to be accomplished, it is imperative that teachers provide health-related instruction to their students and how it relates to physical fitness testing. When health-related fitness instruction is provided, the students are more likely to understand the benefits of physical fitness and adopt the behavior (Dale & Corbin, 2000; Dale et al., 1998; Pearman et al., 1997).

The second research question examined the instructions the students received before test administration. The teachers were asked to describe how the students were prepared for the tests. Physical fitness tests include specific test protocols that are important for students to practice prior to test administration (The Cooper Institute, 2013; Harris & Cale, 2006). All of the participants reported having their students practice the specific test protocols prior to the test. This is consistent with the Harris and Cale (2006) study that found most of the teachers studied reported helping the students to prepare for the tests. When the teachers were asked to describe the instruction they gave their students about the test purposes, their responses varied, with most of them including a discussion about the importance of health and physical fitness. When the participants were specifically asked if they thought the test motivated the students to be physically active, a few of the teachers responded that they thought it might be motivating for some of the students, but the teachers did not think the tests were motivating for most, if any, of the students. Whitehead and Corbin (1991) examined the relationship between external feedback statements during testing and intrinsic motivation to be physically active. The study indicated that students were more intrinsically motivated to be physically active when they received positive feedback statements during physical fitness testing. If the purpose of the tests is to motivate students to be physically active, it is important for teachers to consider how the tests are administered. When teachers have a good attitude about the tests and present them in a positive way, students are more likely to adopt a physically active lifestyle. Even though the purpose of the FitnessGram is to encourage students to be physically active, the teachers clearly did not think that it accomplished that goal. If

teachers receive more training about physical fitness test administration, they will better understand the purposes of the tests. With a better understanding of the tests, teachers will be more equipped to educate students, which increases the likelihood of students adopting a physically active lifestyle.

The third research question asked the teachers to describe how the test results were interpreted to the students. If the students have the opportunity to learn from the tests and how they are related to physical fitness, an investigation of how the test results are given to the students is important. This study was conducted in California, where the teachers are mandated by the State to give the test results to the students after completing the fitness tests (California Education Code, 1998). Only half of the teachers reported giving the test results to the students. If the teachers are not giving the test results to the students, an explanation of the test results is absent as well. When the students do not know the test results, it is impossible for them to understand how the tests relate to their own fitness. Providing the test results to the students and explaining what these results mean can help improve the students' cognitive understanding of health-related fitness and how it relates to the tests (Harris & Cale, 2006). Unfortunately, the teachers did not give the students specific instruction about their test results. For students to understand the health-related fitness components and how they relate to their personal fitness, the results need to be explained more completely. Only then will the goal of physical fitness testing, to promote a physically active lifestyle, be accomplished (Harris & Cale, 2006).

An additional finding of the study was that teachers received little training for administering the physical fitness tests. If teachers are expected to conduct a standardized test, they should be trained so the tests may be administered in a standardized way. The teachers who had received the most training for physical fitness test administration sought out training on their own through conferences and workshops. A few of the teachers received training when the test was first mandated in 1998 but have not received training since that time. All of the teachers reported receiving written information about test protocols and procedures, but it was apparent that most of the teachers did not read the materials carefully. The lack of teacher training and knowledge of proper testing protocols was evident during the

interviews, with half of the teachers describing administering tests incorrectly. Examining test administration errors was not a purpose of the study; however, during the interviews, the teachers' comments revealed test administration errors, and it is possible that more errors existed but were not mentioned. The FitnessGram is a standardized test that requires standardized administration; therefore, it is imperative that teachers receive training on how to administer the tests correctly so the incidence of test administration errors can be reduced and the reliability and validity of the tests can be increased (The Cooper Institute, 2013).

Conclusion

The purpose of this study was to investigate PE teachers' practices of administering physical fitness tests. Specifically, this study examined how teachers helped their students to develop a cognitive understanding of health-related physical fitness components before and after test administration. Physical fitness testing is commonly used in the schools with the purpose of motivating students to be physically active. If this goal is to be accomplished, it is important that teachers provide health-related fitness instruction in conjunction with physical fitness testing to increase students' understanding. Unfortunately, most of the PE teachers in this study provided little or no instruction on health-related fitness. In fact, half of the teachers failed to give the test results to the students. Perhaps, if the teachers were provided with more training in physical fitness test administration and how to incorporate health-related fitness instruction into the curriculum, they could provide more effective test administration, instruction about health-related fitness, and interpretation of test results to the students. When effective test administration, instruction of health-related fitness, and interpretation of test results to the students occur, physical fitness testing may be a valuable assessment that leads students to be more likely to adopt a physically active lifestyle.

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