

What Middle School Physical Educators Know About Health-Related Fitness

What Was the Question?

Castelli and Williams (2007) examined the health-related fitness (HRF) content knowledge of 73 middle school physical education teachers and their self-efficacy in teaching these concepts to middle school students effectively enough to meet the state and national standards.

What Was Done?

The participants completed a questionnaire to determine their self-efficacy in teaching the HRF principles addressed in the South Carolina Physical Education Assessment Program's (SCPEAP) HRF knowledge test designed to assess ninth graders. After completing the questionnaire, participants completed the SCPEAP HRF test. The data were collected at the beginning of a SCPEAP-sponsored physical education Institute (PEI) for professional development. The test was constructed to assess students' knowledge of HRF and their ability to design and develop an appropriate physical activity program to achieve a specific level of personal fitness. The HRF knowledge test contained a brief case study about a 15-year-old student named Mary, listing her physical activity level, number of siblings, sport interests, and Fitnessgram results, followed by three sections of progressively more difficult questions. The first part of the test required identification of the fitness component measured and whether a specific score was within the healthy fitness zone (HFZ) by using the chart provided. The second section of the test required test takers to create realistic fitness goals to improve an HRF component that was identified as being below the HFZ. The final section of the test re-

quired the test taker to select one HRF component that Mary needed to improve and design a nine-week program for her to reach the goal set for her in part two. The knowledge tests were scored independently by two trained evaluators who achieved 83 to 100 percent inter-rater reliability on all three parts of the test. Participant scores were compared to those established by SCPEAP as passing scores for ninth-grade students.

What Was Found?

While the self-efficacy questionnaire revealed overwhelming confidence among teachers that they would score above a 70 percent on the HRF knowledge test, only 38 percent of the teachers scored a "meets or exceeds" on the performance standard for ninth-grade students. Teachers were more successful on part one of the test ($M = 83.51$; identifying fitness components) than on part two ($M = 68.52$; fitness goals), and significantly better than on part three ($M = 41.80$; designing a fitness program). The teachers had trouble using appropriate terminology when asked specific questions regarding each of the fitness components (such as what component the push-up test measures). Using the term "body muscle" rather than muscular strength or muscular endurance was a common error. The teachers also had difficulty determining where fitness scores would fall in Fitnessgram's healthy fitness zone, despite having the standards available. Further, they failed to identify clear goals that would improve fitness test scores for the case study example. On part three of the knowledge test, teachers made a variety of errors regarding the FITT principle (frequency, intensity, time, and type),

which ninth-grade students are commonly expected to know. The teachers also had difficulty determining the intensity of a workout or relating measurable responses to the workout ("heart rate" or "target heart zone").

What Does the Study Mean?

Despite physical education teachers' confidence in their ability to teach HRF principles and concepts, it is clear that more must be done to prepare preservice teachers in this area. In addition, regular professional development or graduate coursework should be offered for inservice teachers, so they can develop the skills needed to help students to achieve state and national standards. Teaching programs that require an HRF class, in addition to exercise physiology coursework, are designed to prepare candidates to do just that. It is vital for all physical educators to have the self-efficacy, as well as the knowledge and skills to teach the basic HRF principles in order to help young people apply them in their daily life.

Reference

Castelli, D. M., & Williams, L. (2007). Health-related fitness and physical education teachers' content knowledge. *Journal of Teaching in Physical Education, 26*, 3-19.

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