Combating Obesity in K-12 Learners

Teaching K-12 Students to Combat Obesity

TRISTAN WALLHEAD

Students must enjoy physical activity before they will use their motor skills outside of class.

A traditional goal of physical education has been to promote an appreciation for physical activity that will inspire students to become lifelong movers (National Association for Sport and Physical Education [NASPE], 2004). With the rising trend of child and youth obesity, it is clear that few of our students are developing regular physical activity habits. Because habits developed early in life may persist into adulthood (Telama, Yang, Laakso, & Vilkari, 1997), physical educators, from a curricular and instructional perspective, must be more effective in getting overweight K-12 students to acquire the skills, knowledge, and attitudes that will motivate them to become more active. The skills and knowledge of physical activities come primarily from participation in those activities, and so we must get the overweight K-12 students to be more active. This goal is reflected in two of NASPE's (2004) national standards for physical education, which state that students should "exhibit a physically active lifestyle" and "maintain a health-enhancing level of physical fitness." The increase in the percentage of students who are overweight suggests that contemporary K-12 physical education programs in the United States are not currently meeting these standards. If we continue advocating for physical education as one of the most viable intervention programs to reach overweight and obese children, then this issue of physical activity levels must be addressed.

Physical education has two main mechanisms for getting overweight students to "go healthy" and make the choice to be more active. The first mechanism is for K-12 educators to use their lesson time effectively to promote more moderate-to-vigorous physical activity (MVPA). The second mechanism is to make the physical education experience sufficiently motivating for overweight students to choose to be active outside of lesson time.

The first mechanism has been recognized nationally within the *Healthy People 2010* goals with the recommendation that a minimum of 50 percent of lesson time in physical education be spent in MVPA (U.S. Department of Health and Human Services [USDHHS], 2000). So the first question is whether the curricular and instructional choices of physical educators are effective in reaching this goal. Evidence suggests that physical education has frequently demonstrated an inability to meet the challenge of this goal. Studies by Simons-Morton, Taylor, Snider, Huang, and Fulton (1994) and Stratton (1996) found that, on average, less than 10 percent of physical education time is spent in MVPA. Much of the inactive time was not spent on motor-cognitive tasks such as quizzes, assessments, or instruction, but on management or transition routines or even off-task behavior. If we are to come closer to meeting the *Healthy People 2010* goals for lesson activity levels, physical educators must be made more accountable for their effective use of lesson time. Teachers must be trained to minimize management and transition time and to employ behavior management strategies that reduce off-task behavior. We cannot make a case for more curriculum time if the time we currently have is not well utilized.

Emerging evidence suggests that the goal of spending 50 percent of lesson time

in MVPA is achievable with careful selection of curricular and instructional strategies. Hastie and Trost (1999), for example, demonstrated that with a student-centered curriculum model that integrates student responsibility for the management of peers, students could spend up to 63 percent of their lesson time on MVPA, regardless of their ability level. The sport education model (Siedentop, 1994) used within this intervention may be particularly applicable for overweight K-12 students, who are often socially ostracized within sport-based activities. Within the model, all students have role responsibilities, and accountability for participation is based on team goals. These group contingencies may explain the high activity levels observed in students of all ability levels and may be applicable for overweight students who do not perform well on an individual basis.

However, getting students more physically active during lessons may not be the most powerful mechanism that physical educators have for reducing the prevalence of obesity in K-12 students. Although physical education is still mandated in nearly all 50 states of the United States, participation in physical education in secondary schools is declining in terms of overall enrollment and in the number of physical education classes students have per week (Lowry, Wechsler, Kann, & Collins, 2001). This reduction in curriculum time may limit physical education's potential to influence directly the activity level of overweight and obese students. For example, if students were to spend 100 percent of the physical education lesson time on MVPA, but chose to be inactive at all other times, it would still be insufficient to meet the Surgeon General's recommendations for health-promoting levels of physical activity (USDHHS, 2001). If physical education is to play an important role in reducing the prevalence of overweight and obese children, the second mechanism—making the physical education experience sufficiently motivating for overweight students to choose to be active outside of lesson time—must be achieved. Although this assertion is consistently supported by many pedagogues, the empirical evidence for a causal linkage between students' experience with and attitudes toward physical education and their choice to be active outside of lesson time remains poorly examined (Wallhead & Buckworth, 2004).

A recent review of the determinants of children's physical activity illustrated that psychological variables such as achievement orientation, perceived competence in an activity, and intention or opportunity to be active are very important in determining levels of physical activity (Sallis, Prochaska, & Taylor, 2000). This information has important connotations for the curriculum-and-instruction community because research has suggested that each of these psychosocial variables has the potential to be manipulated by the K-12 physical educator (Ntoumanis, 2001). Of the large-scale interventions that used physical education programs, the only ones that were successful in increasing students' out-of-lesson physical activity time were those embedded within a specific pedagogical motivational framework that aimed at influencing these mediating psychosocial variables (McKenzie, Nader, Strikmiller, Yang, Stone et al., 1996). In other words, students are likely to want to continue their involvement in an activity only if the pedagogical strategies that physical educators employ allow the overweight students to leave class feeling self-determined and competent in their own abilities.

To achieve this goal, physical educators must use curriculum models and instructional strategies that foster a mastery-oriented environment. These strategies could include giving students choices and responsibilities during lessons. For example, using the inclusion style of teaching (Mosston & Ashworth, 2002) and allowing some flexibility in how long students can engage in each task are more likely to foster self-determined motivation. The educator could also foster autonomy towards physical activity experiences by incorporating some role responsibility within lessons. This responsibility may allow overweight students to leave the gymnasium with a greater feeling of control of their physical activity experiences. This responsibility could take the form of equipment management, leadership in fitness activities, self-regulation of scoring procedures, or even peer-teaching opportunities. Curricular models that have many of these autonomy-supporting facets include adventure education (Dyson & Brown, 2005) and sport education (Siedentop, 1994).

Teachers could also support motivating experiences for overweight students by offering tasks that are designed to be cooperative in nature, in which accountability and feedback are provided for team-based process and product goals. These tasks foster social inclusion and may allow overweight students to feel more related to their peers during physical activity. They also allow overweight individuals to make more effort in their physical activities, since individual recognition of achievement is not the primary goal. Curricular models that espouse this type of pedagogy include cooperative learning (Dyson, 2001) and adventure education (Dyson & Brown, 2005).

When monitoring the progress of overweight students, educators must be wary of social comparison in their assessment and evaluation procedures. If we are to prevent student self-exclusion, evaluation must be made private and should focus on individual improvement rather than on normative comparison. This pedagogy should be particularly emphasized during the commonly used practice of fitness testing. The data obtained during these tests must be used not for normative comparison to either the national statistics or the class ranking, but rather used to set individual goals for improvement.

Finally, one of the key strategies for increasing physical activity is to offer overweight students an extracurricular outlet for their curricular innovation. A lunch recess program that coincides with the curriculum program may give motivated overweight children the opportunity to continue with activities and achieve health-enhancing levels of daily physical activity.

In summary, what seems clear from a curricular and in-

structional perspective is that, although content may give students some physical skills, an appropriate pedagogy that fosters enjoyment is what can truly motivate overweight students to maintain habits of physical activity.

References

Dyson, B. (2001). Cooperative learning in an elementary physical education program. *Journal of Teaching in Physical Education, 20*, 264-281.

Dyson, B., & Brown, M. (2005). Adventure education in your physical education program. In J. Lund & D. Tannehill (Eds.), *Standards-based physical education curriculum development* (pp. 154-175). Sudbury, MA: Jones and Bartlett.

Hastie, P., & Trost, S. G. (1999). Student physical activity levels during a season of sport education. *Pediatric Exercise Science, 14*, 64-74.

Lowry, R., Wechsler, H., Kann, L., & Collins, J. L. (2001). Recent trends in participation in physical education among US high school students. *Journal of School Health, 71*(4), 145-152.

McKenzie, T. L., Nader, M. D., Strikmiller, P. K., Yang, M. S., Stone, E. J., Perry, C. L., et al. (1996). School physical education: Effect of the child and adolescent trial for cardiovascular health. *Preventive Medicine, 25*, 423-431.

Mosston, M., & Ashworth, S. (2002). *Teaching physical education* (5th ed.). San Francisco: Benjamin Cummings.

National Association for Sport and Physical Education. (2004). *Moving into the future: National standards for physical education* (2nd ed.). Reston, VA: Author.

Ntoumanis, N. (2001). A self-determination approach to the understanding of motivation in physical education. *British Journal of Education Psychology*, *71*, 225-242.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine & Science in Sports & Exercise, 32*, 963-975.

Siedentop, D. (1994). *Sport education: Quality physical education through positive sport experiences*. Champaign, IL: Human Kinetics.

Simons-Morton, B. G., Taylor, W. C., Snider, S. A., Huang, I. W., & Fulton, J. E. (1994). Observed levels of elementary and middle school children's physical activity during physical education classes. *Preventive Medicine, 23*, 437-441.

Stratton, G. (1996). Children's heart rates during physical education lessons: A review. *Pediatric Exercise Science, 8*, 215-233.

Telama, R., Yang, X., Laakso, L., & Vilkari, J. (1997). Physical activity in childhood and adolescence as predictor of physical activity in young adulthood. *American Journal of Preventive Medicine, 13*, 317-323.

U.S. Department of Health and Human Services (2000). *Healthy people 2010* (Conference Edition). Washington, DC: Author.

U.S. Department of Health and Human Services (2001). *The Surgeon General's call to action to prevent and decrease overweight and obesity: Overweight in children and adolescents*. Washington, DC: Author.

Wallhead, T. L., & Buckworth, J. (2004). The role of physical education in youth physical activity. *Quest, 56*, 285-301.

Tristan Wallhead (wallhead@uwyo.edu) is an assistant professor in the Division of Kinesiology and Health at the University of Wyoming in Laramie, WY 82071.

McCullick

Continued from page 25

David Stodden and Jacqueline Goodway interpret the problem from the perspective of motor development and learning. The demands of tasks; the mechanical forces; and the intentions, motivations, perceptions, experiences, memory, attention, and physical maturation of students all play a part in the acquisition of movement skills. Their article shows that this problem is far from simple.

From the exercise physiology standpoint, Peter Rattigan and Greg Biren call attention to the fact that teachers are perhaps not as ill-equipped as they may think, and that the weapons for combating obesity are embedded in current policies. The authors contend that students need to be taught how their bodies work as much as how to work their bodies. Cautioning the reader not to assume that students know important information, the authors provide real questions that students have asked them.

Felicia Cavallini, Janice C. Wendt, and Desmond Rice argue that physical educators are not the only combatants in the fight against obesity and all teachers should be prepared to take part in the fight. They speculate that if all teachers were well-versed in physical education and wellness content they would have a more positive attitude towards including fitness in their lifestyle every day, which would benefit students in their future classrooms. In their daily relations with students, teachers would promote a healthier lifestyle through their own modeling and by fostering a desire for a sound body, mind, and lifestyle environment.

Biomechanist Scott Strohmeyer discusses the processes used to explain, analyze, and interpret movement. Strohmeyer believes that this is important in examining how people move and in suggesting alternatives to their movement patterns which will enable people to become more skilled movers and thus more likely to be active, which is an important step to fighting obesity. Strohmeyer presents an attention-grabbing perspective, to say the least.

To conclude the feature, Greg Welk and Roxane Joens-Matre represent the perspective of sport and exercise psychology. In their article they posit that in order to combat obesity most effectively, physical education teachers need an understanding of how self-esteem and physical self-worth affect youth physical activity patterns.

This series of articles clearly indicates that combating obesity in K-12 learners is hardly as easy as getting children to run more or to stop eating junk food and watching television. The sum of these articles suggests that the battle against obesity cannot be won alone—it takes everyone in the related disciplines and all their expertise to successfully beat this deadly disease.

Bryan McCullick (bamccull@uga.edu) is an associate professor in the Department of Kinesiology at the University of Georgia in Athens, GA 30602.