
An Epidemic Hits Campus: The Challenge of Obesity for Future Students and Campus Recreation

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Campus recreation programs and the national professional organization expect continued growth in the years to come, however, the future of the health of college students is troublesome. With the increase in childhood and adolescent overweight and obesity, attracting the nonuser to campus recreation programs could become more challenging than in the past. Campus recreation professionals will need to raise their awareness of the factors that influence overweight and obesity, and leisure-time physical activity in college students. This knowledge can subsequently be used to increase programming and service options to attract nonusers, create a culture of healthy living on campus, and increase the likelihood of future student participation.

The field of campus recreation has experienced tremendous growth over the past few decades. This leisure service has reached a point where the typical college has one stand-alone recreation facility on campus and one shared indoor recreation facility (Downs, 2003). As for outdoor facilities, almost 70 percent of these institutions have at least one shared facility. The highest rate of growth occurred within the past ten years, with more than 50 percent of the facilities in use by the colleges surveyed by Kerr & Downs having been built or renovated since 1995 (Downs, 2003). It also appears that facility growth will continue for the foreseeable future, as an estimated 400 indoor

facilities and more than 300 outdoor facilities will be built or renovated within the next five years.

Campus recreation services continue to grow as well, with new programs and administrators offering or exploring the possibility of offering food operations, climbing walls, batting cages, massage therapy, and challenge ropes courses and more. This growth serves as further evidence that the field is expanding to meet the needs of increasingly diverse university communities.

The State of Weight in America

As the prevalence and extent of obesity continues to rise in the U.S., campus recreation professionals need to be aware of how this epidemic could impact student participation in the generations to come, as overweight and obesity are associated with lower levels of physical activity (National Institutes of Health, 1998). It was estimated that in 2000 approximately 64 percent of American adults aged 20-74 years were overweight¹ and nearly 31 percent obese² (Flegal, Carroll, Ogden, and Johnson, 2002). These are increases from 56 percent and 23 percent, respectively, in 1988-1994. By comparison, approximately 15 percent of 6 to 11-year olds and 16 percent of 12 to 19-year olds were overweight in 1999-2000, compared to 11 percent for both groups in 1988-1994³ (Ogden, Flegal, Carroll, and Johnson, 2002). Weight status of children and adolescents is relevant because overweight children are at risk of becoming overweight adults (Guo, Roche, Chumlea,

¹ Overweight is defined as a Body Mass Index (BMI) of 25.0-29.9 kg/m² (National Institutes of Health, 1998)

² Obesity is defined as a BMI of 30 kg/m² or more. Class I obesity is 30.0-34.9 kg/m², Class II obesity is 35.0-39.9 kg/m², and Class III (morbid) obesity is 40.0 kg/m² or more.

³ Children and adolescents are not classified as obese due to growth and maturation factors. Childhood and adolescent overweight is defined as a BMI at or above gender- and age-specific 95th-percentile cutoff points calculated at 6-month intervals.

Gardner, and Siervogel, 1994; Serdula, Ivery, Coates, Freedman, Williamson, & Byers, 1993).

The prevalence of overweight is currently highest for women aged 55 to 64 (73%) and men aged 65 to 74 (77%), and is lowest for both genders in the 20 to 34 age group (52% and 58%, respectively) (Freid, Prager, MacKay, & Xia, 2003).

It is estimated that approximately 35 percent of undergraduate students are overweight or obese, while the future of incoming students is not promising given the increasing prevalence of overweight children and adolescents (Lowry, Galuska, Fulton, Wechsler, Kann, & Collins, 2000). Even more troublesome is the fact that not only more children and adolescents are becoming overweight, but the extent they are becoming overweight faster. Jolliffe (2004) found that the prevalence of overweight adolescents increased 182 percent during the period of 1971-2000, as compared with a 247 percent increase in extent during the same time period.

Interestingly, this information seems to contradict evidence that the sport and recreation industry continues to grow among children and adolescents (National Sporting Goods Association). This would bode well for their future health, as school-age sports participation is a good predictor of adult leisure-time physical activity (LTPA) (Kraut, Melamed, Gofer, and Froom, 2003). It should be noted however, that the industry's financial growth and individual health improvement are different concepts with differing criteria. Additionally, it appears that much growth in the sport and recreation industry is attributable to an increased frequency of participation among current participants, rather than through the addition of new participants. Only 15 percent of American adults aged 18 years and older, participate in 30 minutes

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of activity five or more days per week, and only 31 percent engage in twenty minutes of activity three or more days per week – regardless of intensity level (USDHHS, 2000). While 65 percent of students in grades nine through 12 have reported participating in sufficient vigorous physical activity, data also indicated that high school students' physical activity levels tend to decline from grade nine through 12 (Grunbaum, Kann, Kinchen, Williams, Ross, Lowry, & Kolbe, 2002). As adolescents age, those who engage in vigorous or moderate levels of physical activity, are likely do so through organized sports participation (Mota & Esculcas, 2002).

This leaves physical education or leisure-time physical activity (LTPA) as options, and since only one-third of students in grades nine to 12 were found to have participated in daily school physical education in 2001, students are left to juggle homework, employment, social time, exercise, and other recreational pursuits during their available leisure time (Grunbaum, et al., 2002). It is also theorized that the largest decline in LTPA occurs in Americans aged 18 to 24 years, indicating that young adults are choosing other activities even after given more personal freedom beyond high school (USDHHS, 2000; Grubbs & Carter, 2002).

The nutritional situation across the nation is similarly discouraging. Portion sizes of several types of foods have increased at home, restaurants, and fast food locations, which is problematic given researchers' findings that Americans do, in fact, eat everything on their plates (French, Lin, & Guthrie, 2003; Nielsen & Popkin, 2003; Diliberti, Bordi, Conklin, Roe, & Rolls, 2004; Rolls, Roe, Kral, Meengs, & Wall, 2004; Rolls, Roe, Meengs, & Wall, 2004). In addition, these habits have made their way to our children – recent research indicates that caregivers overfeed infants and toddlers (Devaney, Ziegler, Pac, Karwe, & Barr, 2004). Ultimately, it appears that the physical activity and weight problems of American adults have become the problems of American youth.

Determinants of Physical Activity

There are numerous determinants of physical activity that campus recreation professionals can identify to increase participation and further benefit our campus communities. Although this article focuses on barriers to activity, it is important to note that removing these barriers does not guarantee participation, and that we should continue to explore the concept of facilitation as it relates to campus recreation (Raymore, 2002). According to Sallis and Owen (1999), the following barriers are discussed with the following categorization in mind:

- Intrapersonal
- Social Environmental
- Physical Environmental

Intrapersonal: Whatever determinants may influence an individual's leisure-time activity decisions, these factors first encounter the filter that is the human experience. Individual self-efficacy and outcome beliefs have been identified as consistent intrapersonal determinants of physical activity and adherence in adults and adolescents (Buckworth and Dishman, 2002). Success with exercise and healthy living begins with the belief in the ability to implement behavior change and an expectation of positive outcomes. Enjoyment is also a major reason for participation among children and adolescents (Borra, Schwartz, Spain, and Natchipolsky, 1995). These factors contribute to a person's self-perception as to whether he/she is an "exerciser" or "nonexerciser," and provide insight into his/her likelihood of success (Yin and Boyd, 2000).

Among **social environmental** factors, support of physical activity from parents, other adults, siblings, and friends is positively associated with adolescent physical activity (Anderssen and Wold, 1992; Zakarian, Hovell, Hofstetter, Sallis, and Keating, 1994). However, the family can also exert a negative influence. Children of obese parents engage in less physical activity and begin their television viewing and computer-use habits as early as age two (Klesges, Eck, Hanson, Haddock, & Klesges, 1990; Sallis, Patterson, McKenzie, & Nader, 1988; Rideout, Vandewater,

& Wartella, 2003). Between the ages of three to five, children of obese parents also demonstrate a preference for high fat foods (Fisher & Birch, 1995). Additionally, families face the challenges associated with socioeconomic status (a lower SES is associated with an increased risk of obesity), and even the ability to recognize when their children are at risk for becoming overweight or obese (Strauss & Knight, 1999; Etelson, Brand, Patrick, & Shirali, 2003).

Peers and popular culture are prime influencers of the college-aged population. College students are attracted to physical activity that is social in nature and relatively informal (Vanreusal, Rensen, Beunen, Claessens, Lefevre, Lysens, & Vanden, 1997).

While male students' Stage of Change (SOC) is also partially moderated by ones friends' social support, and family social support is more dominant for females' SOC, it has been suggested that the peer relationships developed during college serve to replace familial influence (Wallace, Buckworth, Kirby, and Sherman, 2000). Unfortunately, while peer pressure can be an effective way to create social norms that support healthy living, it can also exert a negative influence. By the time they reach college, female students are already more likely than males to underreport their weight (Brener, McManus, Galuska, Lowry, & Wechsler, 2003; Strauss, 1999). Males have their own issues, such as an increase in the incidence of muscle dysmorphia (Pope, Gruber, Manwenth, Bureau, deCol, Jouvent, & Hudson, 2000). The popular media also contribute to unrealistic social norms of appearance by underrepresenting and negatively portraying overweight and obese people (Greenberg, Eastin, Hofschire, Lachian, & Brownell, 2003).

Fortunately, a key **physical environmental** challenge faced by many health and fitness settings is not as pronounced for campus recreation. Access to facilities, typically not an issue on residential campuses, is positively associated with physical activity in youth of all ages (Garcia, Broda, Frenn, Coviak, Pender, & Ronis, 1995; Zakarian et al., 1994). Rather, the most likely challenge is attracting students to take advantage of the programs and services. Regardless of campus characteristics, the programs and facilities must be convenient, af-

fordable, comfortable, and safe (King, Blair, Bild, Dishman, Dubbart, Marcus, Oldridge, Paffenbarger, Powell, & Yeager, 1992; Young, Ross, & Barcelona, 2003).

The Role of Campus Recreation

The ways in which campus recreation programs can influence physical activity levels are many and multifaceted. The following suggestions are not meant to be an exhaustive list, but rather a few examples of ways in which campus recreation professionals can further encourage incoming students to take advantage of programs and facility offerings. For the sake of organization, suggestions are categorized as primarily education-based or programming-based.

Education

Americans sometimes make decisions regarding exercise based on inaccurate or incomplete information. For example, any numbers of people who cite a lack of time as the primary barrier to sport and exercise participation are likely under the false assumption that exercise must occur for a minimum amount of time for the session to “count.” Education-based marketing plans endorsing any physical activity of any duration inform sedentary members of the campus community that they need not make dramatic lifestyle changes to improve their health and quality of life (Andersen, Wadden, Bartlett, Zemel, Verde, & Franckowiak, 1999). This type of lifestyle marketing targets those who do not view themselves as “exercisers” nor those who are in the precontemplation or contemplation stages of change.

Cross-participation between the various areas of campus recreation is another method to increase head counts. Adolescent and young adult males are more likely to be interested in competition and team-oriented activities, while females are more likely to engage in exercise for weight management and social reasons (Kelder, Perry, Peters, Lytle, & Klepp, 1995; Tappe, Duda, & Menges-Ehrnwald, 1990). This implies that males are interested in activities such as intramural/club sports and the “pseudo competition” of strength training, whereas

females enjoy group exercise and intramural activities less focused on competition.

Social-norm education may therefore be an effective method to increase cross-participation by the genders. While this educational method initially appears to support these stereotypes, it can be used

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to highlight contradictions in the stereotypes. Marketing statements that “at any given time, X percent of the strength and conditioning room is female,” or asking, “did you know that X percent of all group exercise (or a specific type of group exercise session) participants are male,” illustrate the cross-participation that is already happening in the program.

Regardless of the unique messages that need to be sent on each campus, it is essential that students receive some type of message. Previous findings reveal that only about one-third of students reported ever receiving information from their school on physical activity, fitness, dietary behaviors, or nutrition (Lowry, et al., 2000). This information could be disseminated solely from the campus recreation program, or in conjunction with other campus organizations and departments. It is suggested that campus recreation programs align themselves with other campus departments to form a campuswide wellness network. This network creates and supports a culture that values wellness, rather than it being a special interest of a few.

Program Implementation

Programs and services that focus on increasing individual self-efficacy and fun will not only attract the new user, but will increase their chances of success, and therefore adherence (Sullum, Clark, & King, 2000). One example is to offer orientations to the strength and conditioning area for sororities or other female groups, which will

create familiarity and increase self-efficacy with strength training (Holloway, Beuter, & Duda, 1988). Additionally, general exercise programs designed by campus recreation professional staff and available for self-directed use can serve to build upon this increased self-efficacy in the strength and conditioning room, or other areas such as the pool or jogging track. These types of tools encourage self-monitoring and can be just as effective as programs involving personal attention in sustaining adherence levels (Weber and Wertheim, 1989). Technology similarly shows promise as a tool for enhancing physical activity (Harvey-Berino, Pintauro, Buzzell, & Gold, 2004).

Similar to lifestyle marketing for participants, recreational sport staff members must recognize the importance of purposeful exercise and activity. This means accepting people of all backgrounds, including those who are sedentary, overweight, or obese, and encouraging any level of physical activity in new participants. This will take effort, as even health professionals are not immune to anti-fat bias and stereotyping of the overweight as lazy, less intelligent, and/or worthless, and are even susceptible to the same pressures of image and attractiveness as participants (Teachman & Brownell, 2001; Schwartz, Chambliss, Brownell, Blair, & Billington, 2003; Nardini, 1998).

Changing this attitude requires analysis of all programs and noting where the current culture may contribute to an uncomfortable environment for staff as well as participants. Names of group exercise sessions should minimize the focus on body parts and intimidation (such as “Butts and Gutts” or “Extreme Cycling”) while maintaining honesty in their descriptions (Kennedy, 2004). In addition, programs should be inclusive of the less fit when possible. Adherence has been shown to decline with higher intensity activity compared with higher frequency, necessitating, for example, group exercise sessions of various durations, such as 30, 45, and 60 minutes (Perri, Anton, Durning, Ketterson, Sydeman, Berlant, Kanasky, Newton, Limacher, & Martin, 2002). This may require educating participants and reminding staff that there are many ways to live an active, healthy lifestyle, not just the treadmill at 60 minutes at a time.

Conclusion

It should be noted that each study cited in this article carries its limitations, one of which is the generalizing the research findings. Conclusions should be made with the same care that is made when reviewing data specifically pertaining to physical activity or higher education.

There are numerous factors that influence a student's decision to participate in campus recreation programs. While professionals analyze how to increase participation, it is important to mind the issues of incoming students, who will increasingly take on the persona of the "nonuser." The campus recreation facility must be one in which students feel welcomed, supported, and accepted, and in ways not consistently considered in the past. If campus recreation professionals continue to focus on those students who are already participating, it may result in reaching fewer overall students while the regular users' participation may actually increase. Increased headcounts are great, but a widespread impact on the campus community is even better.

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