A Case for Basketball in Health-Related Physical Activity, Education, and Research

Ted A. Kaplan

"I love this game" is the slogan used to promote the National Basketball League. This sentiment is shared by basketball's many aficionados. Not only is basketball the nation's third most popular spectator sport (6), with some of the most popular athlete role models and the highest participation team sport in the United States, but it has the third highest participation among all physical activities in this country (3).

Public health research and policy are pointing to the importance of establishing lifetime physical activities. Unfortunately, basketball has been lumped with the other two most popular American team sports—football (which is not a lifetime sport) and baseball (which is not a fitness activity)—and with all other team sports, as not being on the "list" of approved lifetime fitness activities (16). It is my purpose here to outline the advantages of basketball, both as a lifetime fitness activity and as a potential tool for the health-related physical activity movement.

Basketball as a Fitness Activity

While no articles were found prospectively measuring the effect of basketball as a training stimulus, cross-sectional and seasonal studies of competitive players have demonstrated that basketball players are moderately aerobically fit (2, 7, 13). In a study conducted in Finland, basketball players were among the former team sport athletes that showed decreased cardiovascular mortality (12).

Classical energy expenditure tables indicate that basketball is a relatively high-energy consumption activity (0.138 kcal·min⁻¹·kg⁻¹, or 580 kcal·hr⁻¹ for a 70 kg person) (10), and observation of the game makes it reasonable to conclude that basketball stimulates aerobic endurance, muscular strength, and muscular endurance through running and jumping. Upper extremity muscles are involved as well, through passing, shooting, and dribbling. It may be hypothesized that full-court games involve more dynamic motion than half-court games, which appear to be more anaerobic.

Ted A. Kaplan is with the Baggy Creek Gang Camp, Winter Park, the Department of Pediatrics at the University of Florida, Gainesville, and the Department of Pediatrics at the University of Miami School of Medicine, Miami, FL 33101.
Basketball is played by young and middle-aged adults, as well as children, in competitive leagues and informal recreational play. There is widespread availability of leagues for girls and young women, as well as for wheelchair athletes. Opportunities for college intramural or intercollegiate competition for men or women are widespread at colleges large and small. While reputedly a “tall-person’s game,” all types of people can excel and play a role on a team, as evidenced by the range of National Basketball Association professional players being from 5’3” to 7’7” for the 1993–1994 season (14). Lower-than-regulation and adjustable height baskets are also available, and “biddy-ball” leagues for young children have been organized. The ability to play a vigorous, unscheduled game at many public parks seems to be a unique feature of basketball in the United States. Basketball is one of the few sports that can be played, in some form, in or outside of the home, as well as indoors and outdoors at schools, parks, and other community facilities. Access to indoor and outdoor facilities is good in most communities. The game can be played vigorously by as few as 2 players (as in tennis, an “authorized” lifetime fitness activity) up to 10 players, and skills can be practiced by one player. Only a limited amount of clothing and equipment is required.

The injury profile of basketball is reasonable compared to popular team sports and most individual lifetime activities (4, 9; Table 1). Basketball is also not considered a high-risk sport for eating disorders, unlike several of the other activities promoted as lifetime activities (8, 15).

Advantages of Basketball

Among other candidate lifetime fitness activities, basketball’s message is more frequently reinforced by near continuous coverage of games on television and radio and in the print media, as well as by commercial endorsements by the popular stars of the game. This could be considered a rebuttal to the documented high prevalence of marketing of “junk foods” on television and to the impact

Table 1 Injury Data on Basketball Versus Other Team and Individual Sports

<table>
<thead>
<tr>
<th>Sport</th>
<th>Pre-high school</th>
<th>High school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>10.2%</td>
<td>6–37% boys, 8–31% girls</td>
</tr>
<tr>
<td>Football</td>
<td>10–20%</td>
<td>12–81%</td>
</tr>
<tr>
<td>Baseball</td>
<td>2%</td>
<td>14–81%</td>
</tr>
<tr>
<td>Soccer</td>
<td>1–5%</td>
<td>13–30% boys, 17% girls</td>
</tr>
<tr>
<td>Running</td>
<td>18–50%</td>
<td>13–33% boys, 7–35% girls</td>
</tr>
<tr>
<td>Tennis</td>
<td>ND</td>
<td>0–3% boys, 3–7% girls</td>
</tr>
<tr>
<td>Swimming</td>
<td>ND</td>
<td>0–1% boys, 0–9% girls</td>
</tr>
</tbody>
</table>

Note. References given in parentheses. ND = no data given for this population.
of television itself as a sedentary force (5). Basketball also appeals to minority and immigrant cultures, and can serve to bring groups together as players or as spectators.

Basketball, being rooted in the traditions of the status quo sports-related physical education curricula (11), can be a bridge to implementing more health-related activities into new physical education curricula. Perhaps most important is that basketball is seen as, and truly is, fun.

The disadvantages of running, a frequently recommended lifetime fitness activity, as compared to basketball, are numerous. While both can be done outdoors with minimal equipment, in order to be done indoors, running requires less commonly available indoor tracks or expensive treadmills or health club memberships. While runners can be injured by cars and dogs on streets, basketball courts are generally off-limits to these types of hazards. Although stereotyped as a tall-person’s game, basketball players actually come in a wide range of successful physiques; running more strictly rewards a thin build. While there is no described sport-specific adverse psychological sequelae for basketball players, runners are renowned for burnout, eating disorders, and compulsive behaviors. Basketball has widespread competitive opportunities, while those for runners are more limited, based on an elitist, competitive structure. Basketball has many popular role models, whereas running has few well-known stars. While the sport-specific basketball training done by adults is similar to what can be done with children, sport-specific high-mileage running training is not appropriate for children. Basketball is popular among multicultural participants from all socio-economic groups in the United States, whereas less diversity is found among those who participate in the sport of running. While basketball is a social activity rewarding teamwork, running is a solitary activity.

Similar and additional disadvantages can be seen for the other lifetime sports. Walking has limited fitness benefits, limited competitive opportunities, and therefore no role models. Cycling has many of the same disadvantages as running, as well as requiring expensive equipment and exposing the athlete to the possibility of severe injury. Swimming also has many of the drawbacks of running, and there is limited access to facilities that are expensive to build and operate and are rarer in colder places and inner cities. The drowning risk and high level of skill required merely for survival—even more so to obtain fitness benefits—is a further obstacle for many people. Tennis shares some of running’s drawbacks and some of basketball’s good features, but suffers from the requirement for more expensive equipment, and the limited access to facilities, especially for economically disadvantaged people. Competitive tennis also needs to reduce its high-pressure competitive ethic to improve its risk–benefit ratio as a positive health activity for children.

Soccer shares many of the advantages of basketball. However, it requires more players and space to play, and fields with goals and informal (nonleague) playing opportunities are much less available in the United States. There is minimal visibility of American role models in the sport, and soccer outside the United States is famous for the thuggery of its fans. A greater baseline level of fitness is probably needed to comfortably begin active soccer participation than for basketball, except at the goaltending position, which is not a fitness or health-related activity. Certainly, and in consideration of the tremendous popularity of
youth soccer programs, soccer should be considered with basketball as a good health-related activity choice.

Of course, basketball, soccer, or other sufficiently vigorous team sports, if selected as a physical activity, do not have to be the exclusive choice of activity, and cycling, walking, or running can be part of a "basketball as exercise" program, as transportation, warm-up/cool-down, or training for competitive play.

Fostering Basketball as a Lifetime Physical Activity

There are a number of ways to maximize the ability of children to learn how to play basketball successfully and to enable even more frequent and enjoyable participation, thereby increasing children's overall activity and fitness levels. These methods involve physical education programs, scientific efforts, and community programs, and they include the following:

- Teach skills and rules early on.
- Use lower baskets and smaller court/ball for smaller children.
- Allow both free play and organized play in physical education programs, after school programs, intramural programs, and recreational leagues.
- Enlist the involvement of role models and corporate sponsors in promoting participation.
- Engage in more research to document fitness benefits, analogous to the well-studied and promoted effects of other "lifetime" activities.
- Allot a greater portion of facility construction resources and space to basketball courts.
- Foster development of "midnight leagues" for youth and safe opportunities for open community play during day and night.

Recommendations for Future Research

Sports medicine and exercise science research topics regarding basketball seem wide open, and based on the above discussion, are at least as critical to furthering public health goals as research on running and cycling. A Medline search from 1976 to 1994 on basketball revealed only 110 sources, 83 in the most recent 5 years, with none involving basic training effects or physiological responses during play. In contrast, for running, 678 studies were found in the last 5 years. In Index Medicus for 1993 alone, 168 studies were found on running (34 on basketball), 84 in the category of "physiology."

Some pertinent topics for research would include the following:

- Examination of nutrition beliefs and practices used for weight gain, and determinants of thinness, as has been explored for obesity and weight loss in other groups.
- Study of the predictors of height and other indicators of success in basketball and study of the abuse of human growth hormone.
- Research on the effects of basketball in different formats—solo practice, informal play, competitive seasons—on development of the various components of physical fitness. This would also involve measuring the actual
training stimulus provided by these various playing contexts and measuring the fitness and body composition of younger players at various levels of play.

- Experimentation into the safety and effectiveness of basketball as a therapeutic exercise for various chronic diseases, which have been shown to benefit from other forms of exercise, most commonly walking, running, swimming, and cycling (1).
- Further attention to the medical and surgical complications of play.

By taking a fresh look at the sports that are promoted by the exercise science community, and with full inclusion of basketball, the physical activity lifestyle that we desire might be more widely, and enjoyable adopted. "I love this game" would be a great expression to hear from more people, no matter what the game is.

References