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Strategies to Address the Obesity Epidemic and Unintended Consequences

Timothy Makubuya

With the increasing obesity rates in children, most notably in the recent decades, physical educators, therapists, coaches, trainers, and physicians are all scrambling to combat childhood obesity through exercise and physical activity prescriptions. Yet, with ever-changing environments, professionals find it extremely challenging to moderate what is becoming the world's most pressing health set back. Involvement in sport, recreation, and physical activities is by far what most exercise specialists would recommend. At the same time there is research pointing out that some practices originally intended to address reduction of childhood obesity rates can actually work in the opposite direction. The unintended consequence can be *poor* nutrition and *decreased* physical activity among others. Obesity as it turns out is related to many environmental factors and presents a far more complex challenge for society than often realized.

This paper first reviews the economics of obesity and the risks to those who are obese. Then, the shortcomings of some strategies meant to decrease obesity rates are discussed along with the role educators can play in maximizing helpful outcomes and avoiding unintended negative outcomes.

The Economics of Obesity

It is absolutely clear that the world's economy is rapidly falling as the cost of health care in most countries including the United States rises and becomes completely unaffordable for increasing numbers of citizens. McCormick, Stone, and Team (2007) note that obesity imposes a significant human burden of morbidity, mortality, social exclusion and discrimination. There is also a significant healthcare cost associated with treating obesity and its direct consequences, and social care costs are higher for the obese. Higher levels of sickness and absence from work among the obese reduce productivity and impose costs on businesses. Obesity also imposes other costs. Many people are not in employment as a direct result of obesity, either on health grounds or for other reasons, even discrimination in the workforce. Thus, any pertinent effort by health and physical educators in the schools and communities not only to engage but also to teach and sensitize the citizenry would help balance

national budgets. Even *future* health care costs are higher for persons who have an increased waist circumference, which suggests that there may be a potential for significant resource savings through prevention of abdominal obesity (Haggard, Olsen, Søgaard, Sørensen, & Gyrð-Hansen, 2008).

The relationship of immune responses to healthy weight needs more research. Sheridan et al. (2011) notes that influenza is a significant public health threat, killing an estimated 250,000 to 500,000 people worldwide each year. More than one in ten of the world's adult population is obese and more than two-thirds of the U.S. adult population is overweight or obese. Yet, no studies have compared humeral or cellular immune responses to influenza vaccination in healthy weight versus overweight and obese populations despite the clear importance to public health.

It is possible that obesity has a negative impact on the effectiveness of flu shots. Beck, Karlsson, and Sheridan (2010) reported that obesity in mice impaired the animals' ability to fight influenza infections and increased the percent dying from influenza, compared to lean mice with the same infections. In 2010, her team showed that obesity seemed to limit the ability of mice to develop immunity to influenza. Also, the fatality rate was higher in obese mice – none of the lean mice died, but 25 percent of the obese mice died. This suggests but does not prove that vaccines may not be as effective in obese and overweight as in healthy weight humans. Physical educators could additionally advocate for programs to combat and regulate obesity, especially in the most vulnerable age groups, on these grounds.

Unintended Consequences

Some times the best-intentioned strategies for reducing obesity overall and childhood obesity in particular have an unintended consequence. Unintended consequences might arise from an inability to control all facets of a strategic program or from the complexity of the issue as it exists in an environment with many facets and factors.

The U.S. Department of Agriculture formulated a number of policies that were originally intended to combat obesity but end up failing. The food assistance program for needy families restricts what can be purchased, but due to malpractices people have found different ways to manipulate the benefits to purchase unhealthy snacks for their infants, children, and families. In the long term this program has backfired as a solution to providing food assistance. Some of the food that is purchased under the Supplemental Nutrition Assistance Program (SNAP) is not healthy but is cheap, thereby increasing the health risks when risky practices were originally targeted.

Physical educators with large numbers of school children benefiting from these food assistance programs can seek to intervene for better outcomes. Teachers can discuss with students the disadvantages of unhealthy snacks and processed foods. Balancing calorie consumption with expending energy

through physical activity can also be discussed. Teachers can encourage participation in after school physical activity or sport programs.

Video games and electronic activities are popular today but contribute to the many hours children and youth are sedentary rather than active. A strategy that has been used to address this is the development of exergames. Exergaming appears to hold promise as a method for increasing physical activity among inactive children and might be a possible intervention for childhood obesity (Fogel, Miltenberger, Graves, & Koehler, 2010). Recent findings indicate that children who are intrinsically motivated to play an exergame tend to report high exertion, which may in turn promote physical activity. Boys seemed to be more physically active than girls when playing exergames.

However, Daley (2009) notes that although studies have produced some encouraging results regarding the energy costs involved in playing active video-console games, the energy costs of playing the authentic versions of activity-based video games are substantially larger, highlighting that active exergaming is no substitute for real sports and activities. He further states that a small number of exergaming activities engage children in moderate-intensity activity, but most do not. Only 3 very small trials have considered the effects of exergaming on physical activity levels and/or other health outcomes in children. Evidence from these trials has been mixed with positive trends for improvements in some health outcomes in the intervention groups noted in two trials. Exergaming might be beneficial if supplementing regular authentic game play, but an unintended contributor to sedentary behavior if substituted for more active play. Therefore physical educators should help children who enjoy video games establish a good balance of activities.

While engaging in physical activity is an obvious strategy in fighting the obesity epidemic, teachers, coaches, and parents need to establish good balance in activity programs. More is not always healthier. Just like adults, children and youth can suffer overuse injuries, so moderation in training, especially with highly motivated young athletes, is paramount. Variation of activities as opposed to focus on a single activity at a young age is also a healthy approach that minimizes overuse injury. Overweight youth can be more susceptible to some injuries, for example, impact from running activities, so moderation should always be the motto for teachers.

In promoting participation in sports, even as a means to address the obesity epidemic, some parents, teachers, and coaches can overlook the unintended consequences of attempting to achieve a body weight that is ideal for participation in the sport but not necessarily healthy. For example, some football participants might believe it is advantageous to add even fat weight to perform well at certain positions, while wrestling participants might attempt unhealthy ways to reduce body weight and water to compete in a certain weight class.

Conclusion

There are many, many valid reasons for addressing overweight and obesity in youth today. Individuals benefit from maintaining a healthy weight and society benefits with reduced health care costs. The causes of obesity, though, are many and they are complex. Strategies developed to reduce overweight and obesity can have unintended consequences. Some sound as if they would be effective but they do not achieve the original goal. Teachers, coaches, and parents as well as those establishing public policy should consider the possible results from programs. It is easy to assume the answer to the obesity epidemic is simple when it is more often complicated. The overall health and well-being of children and youth participants should be first and foremost when guiding them toward achievement of a healthy weight.

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