

Childhood Obesity and Physical Education

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Abstract

The purpose of this paper was to explore the different effects of childhood obesity on the physical, cognitive, social, and personality developmental processes of adolescents. In addition to this, I explored the positive and negative effects of physical education on childhood obesity. The main debate of this study was whether physical education has an overall positive or negative effect on childhood obesity. I examined both of these factors in adolescent development by analyzing the studies of other researchers, as well as the information in our class textbook, in order to form connections and common trends in the different areas in development regarding obesity. As a result, physical education has been proven to have an overall positive affect on childhood obesity. Physical education provides a way for obese children to be active in ways that they may not be outside of school, as well as leaves them with the steps to maintaining a healthy lifestyle. For future research, it may be helpful to analyze what types of physical education activities are most effective in lowering the obesity rate in children. For now, though, it is at least comforting to know that physical education has made an impact in the obesity rate, as well as the self-esteem of obese children in the United States.

Keywords: childhood obesity, physical education, adolescence, development

Childhood Obesity and Physical Education

“Among children in the United States, prevalence rates have tripled over this time period [three decades], resulting in a 16% obesity rate among America’s children and adolescents; an additional 18% are overweight,” (Kirschenbaum; Gierut; 2013). Based on this statistic, it can be said that childhood obesity is a severe, growing problem in the United States educational system, and has been spiraling out of control for years. The causes of this ongoing problem vary widely between genetic factors and lifestyle choices. However, one common factor in any form of childhood obesity is a lack of physical activity. To reverse the negative effect this lack of activity is having on our young ones, physical education programs were adjusted so that teachers knew how to properly motivate and educate obese students. This paper used peer-reviewed articles from scholarly journals to explore these adjustments, as well as the positive and negative effects of them on the growing obesity rate in children and adolescents. By reviewing expert recommendations on different forms of physical education from the study of Kirschenbaum and Gierut, and different methods of motivation from the article by Blom, Bronk, Coakley, Lauer, and Sawyer, I was able to determine the multiple positive impacts of physical education on obese children. Also, by studying the ways that children and adolescents develop physically, cognitively, and socially, I was able to understand the application of different teaching methods that can be used with different levels of development. Therefore, I was able to attain an improved, useful knowledge on teaching aspects of motivating obese students through physical education.

Literature Review

In order to properly assess the information provided by our class textbook, I have broken the information up into the three categories mentioned in the introduction: physical development,

cognitive development, and social and personality development. This helped to organize my thoughts and correctly categorize the different aspects of development in relation to obesity.

Adolescence

Physical Development. The human body and nervous system develop at different rates depending on multiple different aspects of maturation. The nervous system starts off this stage by forming neurons that send chemical signals to the brain, promoting the start of physical development. Obesity is affected by this when relating brain development to emotional issues and stress levels. “Adolescent brain development also produces changes in regions involving dopamine sensitivity and production,” (Feldman; 2008). What this means is that adolescent brain development is different between adolescents, and some may wind up being more prone to emotional and physical stress. For example, if a child is obese in his or her young stages of development, when the brain begins to develop higher levels of dopamine, the knowledge of his or her obesity issue may or may not take an imminent toll on his or her emotions, causing problems in aspects of social and personality development, as well (i.e. personal isolation, low level of motivation, low self-esteem). To counteract these psychological problems that overweight or obese children may be having, we can offer support either from ourselves, counselors, or professional psychiatric services so that the child may first get into the right mindset to make an improvement in his or her lifestyle. The road to a healthy lifestyle is not always easy for everyone, especially for children. They need all the support they can get, and it starts with us as physical educators.

Next, the environment in which a human is required to thrive has a significant effect on the individual’s physical development. For example, if the individual’s surroundings make it

unsafe to be physically active (i.e. unclean air to breathe, gang violence), then the child is going to be less likely to participate in physical activities outside of school. Also, if the individual's family life is neglectful and not motivational, the child is going to generally have a lower self-esteem and motivational level, which will also prevent them from working out aside from school. A large part of environmental constraints involving obesity is related to an individual's nutrition. In an unsafe environment, it is extremely difficult to achieve a prime physical activity level. This can be seen occasionally in the low socioeconomic areas of Adrian, Michigan. Some of the "suburbs" of urban Adrian do not appear to be safe enough to participate in physical activity outside for reasons such as gang violence, geographical surface, etc. As a result, the children in classes that I have observed are leaning towards being overweight or obese. To put a stop to this growing problem, we can encourage children to partake in after-school activities, such as the Boys and Girls Club, where we can be sure that they will be safer than in their potentially unsafe neighborhood.

Nutrition plays an important role in physical development. This concept is not a hard one to grasp—if an individual has good nutrition (i.e. correct serving sizes, staying away from processed foods, daily servings of fruits, vegetables, and protein), it is less likely that the individual will be obese, and vice versa. As our book states, "The most common nutritional concern during adolescence is obesity," (Feldman; 2008). Poor nutrition and lack of exercise are the leading non-hereditary factors in childhood obesity. A large portion of poor nutrition is related to environmental factors. Some children, typically those from lower socioeconomic statuses, do not have access to healthy food due to scarcity in a certain geographical area or simply lack of funding to buy these healthy foods. *Adolescence* also states that "...the major nutritional issue is not regulating how much they eat but ensuring the consumption of a sufficient

balance of appropriate foods,” (Feldman; 2008). What this means is that most adolescents rely on foods that are easy to prepare, such as fast food and sweets, whereas their diets should be more focused on those that provide the vitamins and minerals needed to progress through development healthily, such as fruits and vegetables. What we can do to help stop this issue is to appropriately educate our student in the area of a healthy diet. I have personally seen children in classrooms tune out lessons on nutrition in health classes; it is true that they will not always listen. However, I can attest to the fact that the same lecture on nutrition all the time may get boring after hearing it multiple times. To counteract this, we can make the lessons more fun. For example, teach the lesson on healthy eating, and follow it with a class party of only healthy foods and games related to the content learned. The students will enjoy themselves, while also taking steps to improve their diets. As far as parenting is concerned, we can take these lessons one step further and implement them in the home, as well. For example, an educator could recommend to a teacher to go on a diet plan as a family, rather than just the student alone. Studies have proven that when individuals either work out or diet as a group, they are more likely to be successful due to the support of others going through the same trials that they are experiencing. If the educators could inform the parents of this fact, the parents could ensure that their children are getting proper health education, as well as acting on what they have learned. Therefore, nutrition is one of the most important aspects of physical development, if not the most important one.

Cognitive Development. Different aspects of cognitive development are crucial to the progression of an adolescent through their developmental period. According to multiple different philosophers of adolescence, there are many ways that information can be processed. First, according to psychologist Jean Piaget, cognitive development is taken in different stages. The difference between these stages lies in the level of thinking that an individual is capable of at

approximate ages of their lives. For example, an individual in the formal operational stage (approximately 12 years old to adulthood), is supposedly characterized by “development of logical and abstract thinking” (Feldman; 2008). What this means is when an adolescent reaches this stage of cognitive thinking, he or she begins to reflect on decisions, explanations, and rules and construct their own opinions of them. This can sometimes lead to “questioning of parents and other authority figures far more strenuously,” (Feldman; 2008). This issue in cognitive development relates to obesity and physical education because in the scenario that an adolescent begins to make unhealthy lifestyle choices that could lead to obesity, rules or opinions of authority figures may not have a significant effect on their mindset towards these lifestyle choices. This could make it harder to convey the importance of physical education to an adolescent. As a result of that mindset, it may be difficult to get students to believe the content that we feed them about nutrition and exercise. However, if we work to warn them of the health risks that obesity poses, and take steps to demonstrate how serious the problem really is, we may be able to get through to them.

Next, another view on cognitive development is the information-processing perspective. While Piaget explains cognitive development in a broad, delicately outline manner, this theory provides a much more specific and detailed way to look at information processing. While this may be effective to some, it also means that the general idea of cognitive development may be overshadowed by the extreme specificity of the details. The information-processing perspective focuses on the encoding, storage, and retrieval processes in retaining information. What this means in regards to obesity is that if an individual has trouble with the encoding aspect of physical education information, he or she will not be able to properly store that information for later use in order to improve their lifestyle choices. This is also an aspect of cognitive

development that could make it more difficult to teach the importance of physical education to an obese student. If they cannot retain the knowledge, they cannot make the specific lifestyle changes that will reverse the effects of obesity. However, we can help them retain it, even when they do not have the means of retaining the information. By simply taking extra time with them outside of class, or referring them to a health specialist, we can move at a pace that they are comfortable learning at. As a result, we can put them on the same learning level as their peers.

The last view on cognitive development is that of Lev Vygotsky, which takes into account the effects of social and cultural factors in cognitive development. This is a very important theory in regards to obesity because obesity is commonly paired with low self-esteem, which may result in a lower level of social activity due to shyness, fear of rejection, or self-isolation. Furthermore, culture has a significant effect on obesity because if an individual's culture contains, for example, gender stereotypes, it may be more difficult for females to achieve optimal physical fitness because of limited allowances of physical activity. According to Vygotsky, "...adolescents' cognitive development was dependent on interaction with others," (Feldman; 2008). What this means is an adolescent's ability to retain and use information is directly related to the social and cultural influences that surround them. For example, if the customs of a certain culture include eating foods that are not necessarily acceptable for achieving optimal health, then the student is not going to avoid those foods for the sake of their health as easily as other students might. However, to complement their cultural actions, we as physical and health educators can inform them of foods that are acceptable for a healthy diet, and also that exercise can counteract the effects of negative food choices. This way, the student still gets to partake in cultural norms, but is not sacrificing their body in order to do so. Also, as stated previously, if a parent is also educated on these "acceptable foods", then the family could work

together to improve the health of their child, overall. Again, the culture is not lost or neglected, and the student is improving his or her lifestyle at the same time. Therefore, though Vygotsky's theory on cognitive development differs from previous theories, it still holds a significant effect on obesity in children and adolescents.

Intelligence levels can be measured in many ways. In relation to physical activity and obesity, it is not suitable to compare the results of an IQ test to an individual's ability or motivation to participate in physical activity. A safer alternative is Howard Gardner's eight different forms of intelligence. Specifically, the form of intelligence that relates to bodily kinesthetic skills relates the most to the situation. In the event of measuring an obese student's ability to retain physical education knowledge or participate in class, it can be deduced that the obese student does not have a high bodily kinesthetic intelligence. Therefore, this prevents them from having a full understanding of the information provided by a physical educator, because bodily kinesthetic skills are not in their "zone of proximal development," as Vygotsky would describe it.

Social and Personality Development. Social and personality development may be the most crucial aspect of development when relating to obese children or adolescents. First, it must be known that the level of attachment between an individual's family, friends, and educators plays a main role in their social and personality development. For example, if from an early age a child has a bad relationship with his or her parents, the child is more likely to develop negative personality traits and will also be more likely to have trouble making close connections with future peers, educators, or coworkers. Next, the fact that the adolescent also takes on the roles of a family member, friend, and student is very important to the development of their personality. For example, pressure from parents, friends, and teachers may be motivators in a child's life, or

may bring the child's self-esteem down. This is important when relating to obesity because if the expectations from those around them are too high or low, the child will feel increased levels of disappointment when the expectation levels are not met or exceeded.

Self-concept, self-esteem, and identity are controlled almost completely by society. Stereotypes, gender roles, and pressures from the media cause adolescents to sometimes develop a negative self-image when those expectations are not met. A very common example includes the pressure of models in fashion magazines on younger girls. It is one thing if an average sized female adolescent looks at a stick-thin model on the cover of a magazine and strives to look the same. That goal may be somewhat in the average girl's reach, with hard work, confidence, and perseverance. However, if one changed the scenario to be an obese female adolescent striving to look like the model, the goal becomes almost impossible. When taking into account the stereotypical laziness of most obese children and the lowered confidence levels due to already detrimentally low self-esteem, the emotional effects on this obese girl are likely to become detrimental to the further development of her personality, as well.

There are two approaches to personality development. First, there is the psychodynamic approach, which "...states behavior is shaped by inner forces and conflicts about which adolescents have little awareness or control," (Feldman; 2008). In other words—and relating directly to obesity—an adolescent's inner struggles, such as insecurity in one's own body, are uncontrollable and come naturally to the mind without precursory initiative. The second approach is the trait approach, which focuses on "...a set of five broad trait factors that describe basic personality," (Feldman; 2008). While the psychodynamic approach makes a valid point about uncontrollable inner forces, the trait approach leaves much more room for change, which is always possible in the ever-fluctuating personalities of adolescents during that developmental

period. For example, an obese child would most likely start out with a shaky Neuroticism trait, meaning more clearly emotional instability. Where that child would start out being insecure in his or her appearance, he or she could transition to being secure in his or her appearance if steps were taken to reverse the effects of obesity in that child. Both approaches make valid points in personality development; however, the trait approach is more applicable to the constant changes in adolescent development.

As both physical and health educators, as well as parents, our job is to simply pay attention to the actions of our students and children. The best thing possible to alter social or personality disorders in obese children is to alter their level of self-esteem and self-efficacy. In the Health Benefit Model for health educators in Michigan, one of the most important elements is self-efficacy. What this means is that if the student believes that they can alter their lifestyle to become healthier and better fit, they can achieve these goals more easily and apply themselves more intensely. The main way that they can come to this belief is if it is consistently instilled in them by adult figures around them. That is where parents and teachers come into play; if we can successfully change their views of themselves to be more positive, then we can eventually lead them to success in achieving their goals. Most children use these older adults as role models, and more often than not, they base their actions off of the actions of their elders. Therefore if we as educators and parents model healthy behaviors, and instill the belief in our children that a healthy lifestyle is attainable, then the children will eventually believe it and implement that lifestyle into their daily activities.

Treatment of Childhood and Adolescent Obesity

Kirschenbaum and Gierut's article was full of statistics that provided significant emphasis on the point of obesity becoming a far greater problem in our youth than it already is.

“Wang et al. asserted that 86.3% of American adults will be overweight or obese in less than 20 years,” (Kirschenbaum; 2013). This is a direct result of childhood obesity, seeing as obesity in younger years has been proven to be more prevalent in older years as the individual ages. To counteract the effects of obesity on children and adolescents, and ultimately preserve the health of future generations, expert groups recommended four interventions that have been proven effective. These recommendations are self-help groups, outpatient cognitive behavior therapy (CBT), immersion CBT, and bariatric surgery.

First, self-help groups are better known as organizations such as “Weight Watchers, Take Off Pounds Sensibly (TOPS), and Trevose” (Kirschenbaum; 2013), that provide group support in a journey through weight loss. This provides participants with peers going through the same problems to help one another through the struggles of weight loss. The article stated that “...those that remained in treatment [Trevose] for 5 years averaged...17.3% of initial weight loss,” (Kirschenbaum; 2013). This is applicable to adolescents because, if the initiative to seek help is taken, they can “...accompany their parents to some widely available programs,” (Kirschenbaum; 2013). Therefore, self-help groups have been proven effective in steps to weight loss.

Outpatient cognitive behavior therapy can be described as psychotherapy which, in the case of obesity, focuses on steps to feel better by first taking steps to change lifestyle choices. This option requires great responsibility, and though it has been proven somewhat effective, it also involves “...relatively modest weight losses and inconsistencies in weight change...[that] may frustrate participants and their parents,” (Kirschenbaum; 2013). Many participants have been known to drop out of these programs due to this frustration. Therefore, though outpatient

CBT has been proven effective, it is only minimally effective for those that possess high levels of perseverance and responsibility.

Immersion CBT is quite different from outpatient CBT, and can be more popularly identified as “fat camp” or something along the lines of such an action. “Immersion treatment places young people in a therapeutic and educational environment for extended periods of time, thereby removing them from obesogenic environments,” (Kirschenbaum; 2013). As a result, the option to partake in obesogenic behaviors is removed for a long period of time so that participants may learn better lifestyle choices, ultimately decreasing and reversing the effects of obesity. Also, immersion CBT “...helps weight controllers attribute their successes to their own efforts... [which]...could increase self-efficacy, reinforce enhanced self-regulatory skills, and maximize commitment,” (Kirschenbaum; 2013). What this means is the skills the individuals learn during their time in these programs often transfer into their behaviors once away from the program, which demonstrates a significant improvement. Therefore, out of all the recommendations given, immersion CBT appears to be the most effective when considering long-term lifestyle changes.

Finally, bariatric surgery is defined as surgery to reverse the biological effects of obesity. An example of bariatric surgery would be a gastric bypass, in which the stomach is clamped in order to decrease the amount of food intake that is humanly possible by the individual. While this may seem effective, it is only effective in short term ways. Just because the surgery is done, does not necessarily mean that the individual knows how to properly take care of themselves after the procedure is complete. If an individual goes back to his or her old lifestyle, “...this extreme intervention may have substantial side effects,” (Kirschenbaum; 2013). These side effects could reverse the surgery, which results in wasted money, as well as steps backward in

the process of curing obesity. Therefore, just because the surgery is effective at first, does not mean it will be effective forever.

In conclusion to the article summary, experts recommended "...clear, simple, goal-oriented directions..." to "...help decrease childhood and adolescent obesity," (Kirschenbaum; 2013). The four recommendations by expert researchers are the main ways to achieve this goal, as well as improve lifestyle choices to better the individuals in the long run.

Maximizing the Benefits of Youth Sport

This brief article covered aspects of teaching and/or parenting to better motivate children and adolescents to play sports and participate in physical activity. Although it is common knowledge that youth sport is directly related to healthy development in children and adolescence, it "...does not automatically produce benefits," (Blom; 2013). "Research shows that positive outcomes depend on:

1. The manner in which sports are organized.
2. What occurs in a young person's relationships with parents, peers, and coaches [educators, in this case].
3. The meaning that a young person gives to sport experiences.
4. The way a young person integrates sport experiences into other spheres of life," (Blom; 2013).

This is evidence that supports everything that this paper has been describing, as well as summarizes it so that a student reader could understand the tasks at hand. First, if the manner in which the sports/physical activities are organized is negative and detrimental to a student's social and emotional development, the student is going to be less likely to participate due to anxiety and fear of the unknown. Relating back to the section on attachment to parents and

peers, these relationships can either be extremely supportive or extremely harmful to a child's development regarding physical activity. If the child is neglected at home, he or she will be more likely to have a low self-esteem, therefore also a low level of motivation to participate. This also relates directly to the third point in the above listings. If an individual gives sports or physical activity a low level of importance, that individual is less likely to partake in such, and more likely to develop a sedentary lifestyle, leading directly to obesity. Finally, the way an individual integrates physical activity into life experiences relates directly to cognitive development explained through Piaget's and Vygotsky's theories. If physical activity is not in the individual's "schema of learning" (Piaget), or "zone of proximal development" (Vygotsky), then the individual is less likely to grasp the concept of application of physical activity to daily life. Therefore, it is important that educators find ways to instill these aspects of youth sport appropriately so as to benefit every type of student in the class, including obese students.

The article also brought up some valid health points in relation to obesity. Mainly, "regular participation in sport and physical activity lowers the risk of diabetes, heart disease...and other related diseases," (Blom; 2013). These diseases, along with many others unmentioned, are known to be highly associated with obesity, and are serious conditions that should not be taken lightly by parents or educators. This benefit, along with other lifestyle benefits, such as "lower total cholesterol" and "favorable changes in and maintenance of body composition" is associated with levels of physical activity (Blom; 2013). Clearly, the pros of physical activity outweigh the cons when concerning childhood and adolescent obesity.

MDE Benchmarks

There are many benchmarks that can be applied to children of all ages in regards to being physically educated. One that particularly stands out in the face of childhood obesity is “Content Standard 4: A physically educated person achieves and maintains a health-enhancing level of physical fitness,” according to the MDE Benchmark content website. Examples of achieving this standard include supporting one’s own body weight in numerous muscular strength activities, demonstrating flexibility of major joints, and developing and implementing a plan for improving and maintaining a healthy fitness level. Childhood and adolescent obesity will ultimately hinder individuals from achieving healthy goals in these areas of physical development. There are also national and presidential benchmarks for actions such as sit-ups, push-ups, and the timed mile run tests that students can challenge themselves to meet. For example, a 13-year-old girl is recommended to do approximately 52 sit-ups in a minute to be considered at the national level, and approximately 56 to be considered at the presidential level. However, if that 13-year-old girl was obese, her tally of sit-ups may be reduced because of involuntary muscle movements that hinder her from achieving her goal. This goes for many additional physical activity test, as well.

In regards to classroom management, instruction, and assessment, I have seen very useful techniques in my classroom experience hours at the 7-8 Adrian Middle School building. There are multiple girls that would be considered obese in one class that I have observed, and the teacher handles their disability splendidly. In regards to improving physical fitness and maintaining this improvement for an overall healthier lifestyle, she frequently checks in on their diets and helps them to participate more in physical activity during class, despite potential embarrassment. Also, when timing their mile, their goal is not to get a specific time. Instead, their goal is to just complete it. While this may set them apart from their other more

fit classmates, it gives them all a common goal to reach that is not so drastic as to lower their self-esteem when it is not reached, like a specific time would. Out of respect for themselves, and determination not to stand out from their peers, they put in their best effort to finish at the best time possible for their disability. I would use the same classroom management, instruction, and assessment techniques in my classroom because they have proven effective and have had positive effects on the participation of the girls in the class.

As far as raising an obese child is concerned, the ways to take action against an unhealthy lifestyle are quite similar. However, some parents are not properly educated in reversing the effects of childhood obesity in a healthy way. To remedy this, educators can send nutritional and exercise plans home with the parents at parent/teacher conferences, and/or send the forms home with the students for a grade, as well as for their well-being. A proper nutritional and exercise plan is not only up to the student to achieve; it is a team effort, and both physical and health educators, as well as parents, should be involved in its implementation.

Final Thoughts/Philosophy

Parenting. My philosophy on parenting is that it is the most important role in the proper development of a child or adolescent. As I have displayed in my research, poor lifestyle development stems directly from the early years of child care. If children are taught bad choices from the beginning, they are more likely to continue them throughout the remainder of their lives. So, if good nutritional and physical activity values are not instilled in the individual from an early age, the individual will not apply these values to later life, which will ultimately be detrimental to their health and prosperity. I believe it is the parents' job to, not only teach the child right from wrong, but also to teach them what is safe and dangerous. Obesity, in this case, would be a dangerous effect of neglectful parenting that should be

addressed at an early age so that it can be more easily prevented. For example, my parents were not dictatorial about my eating habits, but also encouraged me to get involved in sports and to eat healthy and take good care of my body. As a result, I am a healthy, fit adolescent today, and have developed an overall admiration of how my parents raised me, and hope to instill the same values in my children so that they can help to lower the obesity rates of our young ones, as well.

Teaching. My philosophy on teaching is that the job of the teacher is to pick up where the parent lacks or left off. Some parents, at least in our generation, were not properly educated in the area of physical activity and health. As a result of this, it is a teacher's job to pick up the slack of these accidentally ignorant parents for the benefit of their child, and their children in the future. For example, some of my peers back in high school were never given "the talk" by their parents. As a result, when the sexual education portion of our freshman health class came along, they were virtually clueless as to the content involved. My health teacher guided them through the aspects of the material they did not understand by being patient and understanding of their shortcomings. This is the type of teaching that I have been exposed to, and it has proven to be effective. Therefore, it has formed my philosophy of teaching to be one to clean up the mess that some parents may make or neglect to form.

Conclusion

In conclusion, childhood and adolescent obesity is a growing problem in society. However, with the proper teaching techniques and education from parents and educators, our generation can put a stop to its progression to ultimately benefit further generations. Research has shown that different forms of psychotherapy, motivational steps, and clinical trials can benefit the reverse of obesity. Also, physical, cognitive, and social and personality development

are directly affected by early childhood and adolescent obesity, mostly in negative ways. If we as a nation can come to a unified educational conclusion on how to halt obesity in its tracks, there may be hope for future generations of students, after all.

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