

**THE EFFECTS OF AFTER-SCHOOL PHYSICAL ACTIVITY
AND ADULT ENCOURAGEMENT ON ADOLESCENTS**

by

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ABSTRACT

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The amount of time spent on physical activity for teenagers has changed drastically in the past 20-40 years. Teenagers used to have greater opportunities for physical activity. The purpose of this paper was to examine the importance of out of school participation in physical activities and the impact it has on adolescence holistic health.

The study analyzed current research that focused on physical, social, mental, and emotional health benefits during the adolescent years of adulthood. It also determined the advantages of daily physical activity as well as any disadvantages.

The study also discussed the importance of after-school physical activity for adolescents and presented information that supports this. It determined the impact adults have on the level of physical activity adolescents choose to or not to engage in and present information that supports this. Conclusions were drawn and recommendations were made to the local community including parents and professionals.

Recommendations included a wellness program for adolescents as well as a program for teachers and adults. Wellness is a combination of a person's physical, social, mental, and emotional health. The program worked with local medical professionals such as physicians, nurses, physical therapists, chiropractors, schools, community organizations, and medical specialists for the heart.

The teachers' role has changed drastically throughout past decades. Teachers do not just teach students, but they must also help counsel, solve problems, resolve conflicts, and boost the self-esteem of these students.

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CHAPTER ONE

Introduction

The amount of time spent on physical activity for teenagers has changed drastically in the past 20-40 years. Teenagers used to have greater opportunities for physical activity. Responsibilities like farming or working with the family business were common. The amount of daily physical activity, as a result of those responsibilities, was much more than what is occurring in our time of advanced technology. The industrial revolution began in the mid- 1700's. The advancements in technology have helped to create machines, which complete work or a physical task more accurately and more efficiently. Farm work and factory work has become easier because machines and new technology has made these and most other jobs less physically demanding.

These advancements in technology have also helped to make daily chores easier. In most jobs this has helped to alleviate the high risk of injury for many physically demanding jobs. However, while technology has increased the safety level of some jobs, it has also taken away much of the physical activity associated with other types of jobs. For example, a person who has a mostly sedentary "desk" job used to have to move around the office to look up information or walk to a meeting. Today, a person who has a sedentary "desk" job can find answers or have a meeting by means of the Internet or video conferencing without having to leave his or her desk. This has dramatically decreased the amount of daily physical activity associated with work.

The decreased amount of physical activity at the job setting has dramatically decreased the motivation for many parents to be active and to teach this to their children. The values and beliefs of parents about physical activity is a primary force that can influence

the adolescent's choices. When farming was the main means for making a living, parents taught their children the responsibilities of the farm. In today's society, business is the main means for making a living. As a result, daily physical activity for many children rarely exists after the parent comes home from work. If the parent does not value or believe physical activity is beneficial and necessary, then it is less likely the child will either.

How has the development in technology affected the physical activity level of adolescents? Newton's law of inertia states, "A body in motion stays in motion. A body at rest stays at rest." When adolescents are dismissed from school, many of them choose to move into a resting state, instead of staying in motion. With advancements in the television video games, the increased selection of television shows, the development of the Internet, and the variety of computer games, adolescents continue to spend their time in a sedentary state. "Children spend an average of 17 hours a week watching TV in addition to the time they spend on video and computer games" (American Heart Association [AHA], 1998, p.1). In addition, many teens are home by themselves after school and lack parental supervision and the possible parental initiation for physical activity. With all of the advancements in technology, adolescents have become overly scheduled with homework and other non-activity-orientated commitments after school. Another factor that has seemed to change in the past 20-40 years is the amount of time teens spend in "play". Teenagers do not get together as often, other than school time, for unstructured games that involve physical activity.

"Children in the U.S. today are less fit than they were a generation ago and showing earlier signs of cardiovascular disease such as weight gain, higher serum cholesterol, and cigarette smoking" (AHA, 1998, p.1). Physical activity through play also has a positive

affect on an adolescent's mental and emotional health as well as his or her physical health.

Physical activity increases the amount of endorphins that are released in the brain.

Endorphins help people increase coping strategies, which helps reduce the amount of negative stress. Adolescents are under an increased amount of stressors in our society. They are expected to perform at a higher academic level, which has placed many demands on their time and increased the amount of homework. Many adolescents spend one to two hours on homework each weeknight. This leaves less time for physical activity. Many adolescents also have a wider variety of personal problems than in years past. Divorce, death of a loved one, an unstable home life, domestic violence, and drug use has increased which can have a direct affect on the physical, mental, and emotional growth of the adolescent.

“When discussing children's health, people use words like heart disease, stress, and obesity. The evidence is there; fitness is not a priority in the lives of many children. As each day passes, more and more children become victims of unmotivated, unhealthy, lifestyles” (Hinson, 1995, p.vi).

Purpose of the Study

The purpose of this study was to: review, analyze, critique, and draw implications from current literature on the relationship between out of school participation in physical activities and an adolescents holistic health. The study also determined the impact adults have on the level of physical activity of adolescents.

Definition of Terms

There are terms in this paper that need to be defined in order for the reader to fully understand the information. They will be listed in alphabetical order and not in the order in which they appear in the paper.

1. Adolescent- a male or female between the ages of 11 and 18
2. Physical Activity- movement involving the entire body for ten minutes or longer at a moderate to high intensity level
3. Stressor- A demand, situation, or circumstance that initiates the stress response.

Assumptions

The study assumes that adolescents do need physical activity and that adults are role models for these adolescents.

CHAPTER TWO

Literature Review

From current research there is a strong indication that adolescents are moving into a high-risk group for obesity and heart disease. “Even though heart attack and stroke are rare in children, evidence suggests that process leading to those conditions begins in childhood” (AHA, 1998, p.1).

This chapter discusses the importance of after-school physical activity for adolescents and present information that supports this. This chapter discusses the impact adults have on the level of physical activity adolescents choose to or not to engage in and present information that supports this.

Affects of the Aging Process

In order to fully understand the impact physical activity can have on an adolescent, a person must understand the affects of the aging process. As a person ages there are a variety of physical changes that can have an impact on the aging process. Many of the following affects are common among adults and elderly and all of the affects can be minimized with preventative measures that are discussed later in the chapter.

Structural Strength and Bone Density

As people age, structural strength decreases. Studies show that lean muscle mass can decrease up to ten percent per decade after age 30. “After age 30, humans start losing muscle mass and after age 40, bone mass declines. Tendons, which connect muscles to bone, and ligaments, which hold joints together, become less elastic and are easier to tear” (Medical College of Wisconsin, 2000, p.1). As people age, daily chores tend to become more difficult. “Muscle fibers shrink in number and in size as you grow older. They also become less

responsive to messages from the central nervous system. Together, these factors contribute to decreases in strength, balance and coordination” (Mayo Clinic, 2001, p.1).

Elderly people have high incidences of falls, which usually results in fractures in bones. These fractures are due in part because the joint does not have the structural strength to sustain the body positions and movements and also in part because of the decreased ability to maintain their balance. Strength training can help to alleviate the problems for loss of strength as a person ages. “A University of Alabama at Birmingham study found that older women who lifted weights regularly during the study were able to carry bags of groceries with 36 percent less effort and to get up from their chairs with 40 percent less stress on their leg muscles than prior to the training. The 14 women in the study ranged in age from 60-77 and worked out for an hour, three times a week, for 16 weeks” (Mayo Clinic, 2001, p.2).

Doctors have found that daily physical activity can help to reduce, or in some cases, reverse the changes that occur during the aging process. Adults and elderly who participate in weight training help to burn excess calories and to increase strength in the muscles and around the joints so as to improve the level of ability to complete daily movements.

Improved daily movements consist of carrying groceries, cleaning the house, raking the yard, vacuuming, building projects, driving, and the list goes on.

Strength training for adolescents can be extremely beneficial to increase muscular strength and muscular endurance, to prevent injuries during activity, to burn excess calories, and to improve performance in daily activities. Strength training can be safe for adolescents if it is instructed with a proper warm-up, technique, and cool-down. Strength training can also help to stimulate and strengthen bones so as to help in the prevention of osteoporosis. Adults and elderly can experience osteoporosis through the process of aging.

Osteoporosis is a slow loss of the bones ability to take in minerals, which keep the inner bone structure solid. Without the minerals, a weak porous center results in the bone and makes a person susceptible to fractures. Physicians understand the process of osteoporosis and are looking for preventative measures because of the high rate of falls resulting in fractures and hospitalizations. “The risks of falling increases with each decade of life, and falls are the sixth leading cause of death in people over age 65. The hospitalization costs for fallen related injuries totals \$10 billion each year “ (Mayo Clinic, 2001, p.3). Osteoporosis affects aging males and females but is most prevalent in post-menopausal women.

Physicians are looking at the preadolescent and adolescent age group, specifically females, for reducing the affects of osteoporosis later in life. In a report conducted by the American Academy of Pediatrics, physicians analyzed the level of calcium intake as one means of prevention. “The majority of research in children about calcium requirements has been directed toward 9- to 18-year-olds. The efficiency of calcium absorption is increased during puberty, and the majority of bone formation occurs during this period. Data from balance studies suggest that for most healthy children in this age range, the maximal net calcium balance (plateau) is achieved with intakes between 1200 and 1500 mg/d.” “At intakes below that level, the skeleton may not receive as much calcium as it can use, and peak bone mass may not be achieved” (American Academy of Pediatrics, 2001, p.4). Unfortunately, the current dietary intake of calcium by children and adolescence is well below the recommended optimal levels. A preoccupation with being thin, high fat and high sugar choices, along with a lack of valuing a well balanced diet contributes to a low intake level of calcium.

Maintaining adequate calcium intake during preadolescence and adolescence is necessary for developing maximal bone mass in order to reduce the risk of osteoporosis later in life. Just as important as calcium intake for the reduction of osteoporosis is the amount of physical activity an adolescent girl engages in. “The amount of exercise a teenage girl gets between the ages of 12 and 18 is an important determinant in the density and strength of the proximal femur, and thus a crucial factor in the prevention of hip fractures due to osteoporosis in postmenopausal women” (Medical College of Wisconsin, 2000, p.1). Many people believe it is too late to begin physical activity once these changes begin to occur or once they have done some damage. This is far from the truth.

Adults and the elderly who engage in regular weight bearing activities, aerobic exercise, stretching exercises, and balance activities experience an increased ease in movements, decreased lower back pain, a decrease in dizziness and loss of breath, a decrease in mineral loss in the bones, and less incidences of falls. Muscle mass and osteoporosis is having an impact on adult and elderly health but not as great as cardiovascular diseases and obesity. Physical activity helps to prevent and or to decrease cardiovascular disease, obesity, poor circulation, some cancers, coronary artery disease, high blood pressure, stroke, diabetes, and depression.

Cardiovascular Disease

Cardiovascular diseases affect about seven million Americans each year with more than 500,000 Americans dying each year. Many adults are affected by congestive heart disease, which is when the heart is weakened and does not circulate enough blood to meet the needs of the body. Congestive heart disease affects mainly older adults and is usually the end result of many years of having coronary artery disease. The most common heart disease

that promotes congestive heart disease is coronary artery disease, also known as atherosclerosis. Atherosclerosis is a narrowing of the arteries by a buildup of primarily fat deposits and bad cholesterol. This hardened substance is also referred to as plaque. When the arteries are narrowed it is more difficult for the heart to pump the blood to the body and so other cardiovascular problems such as high blood pressure can occur.

High blood pressure can result because the heart has to pump harder to get the blood out to the body. Hence the chain reaction continues with an enlargement of the heart and a thickening of the heart walls. Eventually the heart loses its ability to perform to meet the demands of the body and will either quit working or work minimally. Blood clots are also a result of atherosclerosis because blood can pool in the hardened crevices of the plaque. If a blood clot forms in the heart, it can stop the blood flow to the heart, which is also known as a heart attack. If a blood clot breaks away from the plaque, travels to the brain, and stops blood flow in the brain an aneurysm or burst aneurysm (stroke) can result.

To add to the problem of cardiovascular disease, a person's aerobic capacity or ability to utilize oxygen peaks at age 20 and decreases about 1% with every year of aging. By the time a person is age 80 his or her aerobic capacity is about half of what it was at age 20. "Reduced aerobic capacity may manifest as less "go power" to perform activity, including activities of daily living" (Mayo Clinic, 2001, p.2). Physical activity can significantly diminish the reduction of aerobic capacity as a person ages.

Cardiovascular endurance activities can help to increase a person's aerobic capacity. Cardiovascular endurance is the heart's ability to pump oxygen rich blood to the body without fatigue. Cardiovascular endurance exercises consist of continuous movement of the large muscles for 20-30 minutes which can be broken up into three ten minute sessions,

raising the heart rate to a level of 50 to 80 percent of a person's maximal heart rate, and the activity should be three to five times per week.

Examples of cardiovascular activities would include biking, swimming, aerobic dance, fast walking, tennis, stair climbing, soccer, racquetball, and basketball when performed regularly. When a person engages in cardiovascular exercise the heart increases the cardiac output (amount of blood pumped per beat) while decreasing the number of beats per minute. In other words, the heart becomes more efficient at getting the blood to the body. With physical activity the heart muscle is strengthened to increase the heart's efficiency.

Research on adolescent cardiovascular disease is not as readily available as other information on adolescent physical health. Two reports found specifically on the physiological results from studies completed on adolescent cadavers reported atherosclerotic streaks within the arterial walls of 14-16 year olds. Physicians and scientists know that arteriosclerosis begins during preadolescent and adolescent years but not a lot of research has been completed specifically looking at the proof of their beliefs. The primary reason is because the leading causes of health problems and premature death for adolescents has been the use of alcohol and other drugs; homicides; suicides; injuries; HIV and AIDS; STD's; and pregnancies. The emergence of obesity and its related health problems will encourage health professionals to research this topic on a more in depth basis.

Obesity

Obesity in the United States affects one in four adults. "Recent results of the National Health and Nutrition Examination Survey [NHANES] 1999 indicate that an estimated 61 percent of U.S. adults are either overweight or obese, defined as having a body mass index (BMI) of 25 or higher" (Center for Disease Control, 2001, p.1). The body mass index is a

chart which takes into account a person's height, weight, and sex and has set a calculated number for the mass of the person's body based on the information.

Obesity is a risk factor for coronary artery disease, diabetes, and cancer because fat around a person's middle alters the way the body uses the fat. Fat in a person's abdomen is more likely to break down sooner and enter a person's blood where it can deposit in the artery wall for the contribution to atherosclerosis. Fat should not be eliminated from a person's daily diet. The use of fat is important in a person's diet because it is used for storing energy, insulating the body, and cushioning organs among other functions. The human body has 30-40 billion fat cells and each cell can expand to hold more fat for the body's uses. The human body used this adaptation to help early civilization survive in between famines or times when little food was available. Today's civilization does not have a need for this adaptation but yet many Americans eat many more high fat calories than their bodies will need in one day.

As a person progresses in years, many adults have a tendency to gain weight. Even gaining ten to twenty pounds over twenty years can put a person at an increased risk for premature death from cardiovascular diseases and cancers. The number of risk factors a person has is a strong indicator if he or she is prone to obesity. Risk factors for obesity include the following.

1. Diet – Eating a diet high in fat and high in refined sugars.
2. Physical Inactivity- Less activity burns fewer calories, which increases the amount of “fat” stored in the fat cells.
3. Psychological Coping- Overeating is used to help deal with problems or difficult emotions.

4. Genetics- If one or both parents are obese, chances increase by 25- 30 percent.
Genetics can affect where a person stores fat and the amount of fat that is stored.
5. Gender- Women have less muscle mass so they burn less calories. Men expend up to 20 percent more calories than women even at rest.
6. Age- As a person ages the amount of muscle mass decreases and the percentage of fat on the body tends to increase. A person's metabolism also decreases with age, which results in fewer calories burned.

Unfortunately, many adolescents have more than one of the above risk factors. Childhood obesity is on the rise in this country. "In the last two decades, the incidence of obesity among adults and children has risen nearly 50 percent. As defined by federal standards, approximately 30 percent of adults and 25 percent of children are considered obese today" (Medical College of Wisconsin, 1999, p.1). Many people try to accept childhood obesity as "genetics" and believe that this is how the child is meant to be. Genetics has a lot to do with the condition of that child, but it does not mean the condition must be accepted. Pate and Hohn refer to the level of involvement in physical activity in the following question. "Does lack of physical activity produce obesity, or are obese children particularly inactive because it is so hard for them to move around?" (Pate and Hohn, 1994, p.33). This question is as complex as, "What came first the chicken or the egg?" There are many factors involved that make it difficult to produce a specific answer. With our society becoming more automated every second, with dietary choices less nutritionally beneficial, and with the acceptance of a sedentary lifestyle, it makes it easier for children to become obese. Whether they are genetically inclined to or not. Research has shown that physical activity does not have to be intense to draw benefits for the overall health of the child.

When children have free time the activity does not have to be a high intensity exercise to gain physical benefits. Activities which are considered to be beneficial for adolescents and adults overall health consist of vacuuming, raking leaves, walking, jogging, swimming, aerobics, farm chores, lifting weights, yoga, and the list can continue.

The condition of obesity in adult and adolescent populations is contributing to the rise of type 2, non-insulin dependent diabetes. Diabetes is a disease, in which the body does not produce or use the hormone insulin. Insulin is a hormone used to help glucose into cells for energy. Type 2- diabetes is primarily associated with adults. Type 2- diabetes used to be known as “adult onset diabetes” because it affected primarily adults who were obese. “Since 1990, fewer than four percent of adolescent diabetes cases were type 2. In the year 2000 that number has risen to approximately 20 percent with 85 percent of them being obese” (American Academy of Pediatrics, 2000, p.1). “Most children are diagnosed with type 2 diabetes during middle-to-late puberty. Physicians fear that as the childhood population becomes increasingly overweight and less active, more type 2 diabetes may occur in younger pre-pubescent children” (American Academy of Pediatrics, 2000, p.2).

Diabetes is not the only health related problem for adolescents from obesity. Obese adolescents can have difficulty with high blood pressure, high cholesterol levels, muscle and joint problems, sleep apnea, as well as self-esteem problems and social interaction difficulties.

To help alleviate the problems associated with obesity a physician will assist an adult or adolescent with a weight loss program that will consist of a change in diet and activity level. A person dealing with obesity will need to adjust his or her diet. He or she will need

to consume fewer calories, eat more fruits and vegetables, reduce portion sizes, and decrease the amount of fat and refined sugars consumed.

Physical activity will also be a part of a weight reduction plan for obese adults and children. Many people shy away from an exercise plan because they may believe they must exercise at a high intensity level in order to reap the benefits. Research and views on this has changed to show that a less intense increase in the amount of physical activity can prove beneficial because it aids in caloric expenditure. A person can lose weight if the amount of calories consumed is less than the amount of calories burned. This is why an effective weight loss program for overweight or obese individuals will include both dietary intake and physical activity.

Physical Activity and the Adolescent

There are many activities an adolescent can choose to do after school, but unfortunately many of these activities encourage a more sedentary lifestyle. The variety of television shows available, video games, and the Internet have presented more sedentary choices available for free time. Other factors such as, one or both parents having to work late hours, parents not interested in a healthy lifestyle, not living close to friends, not having transportation to school supported athletics, and a lack of financial support for recreational centers combines the ingredients for a recipe of a sedentary lifestyle. Whether a child has one or all of these ingredients creates a strong influence for not choosing to be physically active after school. This is a scary thought since research has shown that physical activity declines with age. “At least three studies using objectives heart rate monitors to estimate physical activity have shown its substantial decline from age six years to eighteen years” (Pate and Hohn, 1994, p.34).

Adolescent Health and Physical Activity

Areas of adolescent health include mental, social and emotional health. One of the most important aspects of emotional health is a person's image and value of oneself, otherwise known as self-esteem. Self-esteem is a learned feeling that is shaped from the experiences in a person's environment. Many adolescents tend to struggle with having a positive self-esteem and being content with oneself.

“Self-esteem is recognized as a critical component in the adoption of positive health behaviors.” (Goodwin,1999, p.1). One of the most inclusive ways to help improve an adolescent's self-esteem is through physical activity. An adolescent can learn to improve his or her physical activity level through properly planned physical education classes. The physical educator can have a tremendous influence on his or her students' development of self-reputation that can assist with a higher quality of social interaction. Goodwin, presents methods a physical educator can assist in the helping a student's self-esteem:

1. Learn the students' names.
2. Provide opportunities for competition but do not emphasize the importance of winning.
3. Provide challenges that are appropriate for abilities.
4. Use sport skills to learn health benefits and to have fun.
5. Correct technique when necessary and give praise when it is earned.
6. Create a healthy and friendly, yet structured and disciplined environment.
7. Individualize instruction as much as possible.
8. Make students earn their grade.

If a student can learn to have a positive self-image through physical education classes he or she can learn to value physical activity that can continue to reinforce an adolescent's self-esteem. Physical education classes can also help an adolescent to benefit from the numerous social opportunities physical activity has to offer.

Social health can be described as the quality of a person's relationships. The level of development of social skills can affect an adolescent's quality of relationships with peers, family, and adults. Social skills that can be learned through physical activity are communication, acceptance of others, friendship, and conflict resolution. Adolescents who lack these skills tend to be aggressive or passively withdrawn in social settings. Various studies have shown that (a) unsociable children suffer higher levels of peer neglect; (b) active isolated incur higher levels of peer rejection; and, (c) sad-depressed children become both neglected and rejected by classmates. "Friendships and the quality of children's friendship's were found to be important predictors of children's emotional- well-being" (Parker and Asher, 1993 as cited in Ladd, 1999, p.9). When a child's peers pick on him or her it can initiate feelings of anxiety, loneliness, depression, and school avoidance that can negatively affect an adolescent's self-esteem. The level of a child's self-esteem has a direct affect on his or her self-perceptions, perceived competence, and self-efficacy. Peer neglect and rejection has a negative impact on an adolescent's self-esteem, which in turn can greatly affect an adolescent's future accomplishments. Adolescents who are physically active with peers can experience a variety of benefits that can assist them in having a positive self-esteem and having positive interactions with others.

Physical activity can teach an adolescent how to set goals within a group and how to work with others to achieve the goal(s). Physical activity also allows adolescents to learn

how to handle emotions of frustrations and how to work out conflicts in a positive way that may arise with peers or coaches. These skills are highly valued by employers when trying to create a positive work environment. Physical activity also provides an opportunity for adolescents to share ideas when preparing an activity or in strategic planning. When adolescents are physically active with peers it presents opportunity for a sense of belongingness. This sense of belongingness can help to manifest friendships and a positive self-esteem.

Physical activity, whether it is with others or by oneself, helps to enhance a person's self-acceptance, self-esteem, and to heighten a person's sense of internal control. One area an adolescent tends not to feel control of is the amount of negative stressors in his or her life. Today's adolescents experience a great deal of stressors. Adolescent stressors may consist of the following:

1. Divorce of parents
2. Excessive amounts of homework
3. Problems with friends
4. Demands of athletics
5. Acceptance from peers
6. Lack of money
7. Poor grades and or maintaining a specific grade point average
8. An uncertainty for the future

Because of the multitude of physical changes the adolescent experiences during these years combined with adolescent stressors, the adolescent many times has a tough time

coping. “The body is changing in size, shape, and hormonal structure” (Phipper, 1994, p.54). Phipper further states, “The emotional system is immature in early adolescents.

Emotions are extreme and changeable. Small events can trigger enormous reactions. A negative comment about appearance or a bad mark on a test can hurl a teenager into despair.” (Phipper, 1994, p.57) This can be especially true for female adolescents. With the increase of eating disorders in adolescent girls, it is even more important for them to learn that physical activity can help to cope with problems. Some females and males who have tendencies for eating disorders may take exercise to harmful extremes. Hopefully, they would have someone to influence him or her not to allow excessive exercise to add to their pre-existing obsessive emotional condition. Physical activity can help a person deal with stressors. “Stress triggers increased levels of adrenaline and other hormones, and those levels need to be reduced, if not by fight or flight then by some other means” (Curtis & Detert, 1981, pg.19). Physical activity helps the body to keep hormones in balance from the stressors a person may experience. Physiologically, physical activity helps adolescents to control stress in a variety of ways:

1. Release muscle tension through burning off stress-induced adrenaline stored in the muscles
2. Produces beta-endorphins which help to provide a state of euphoria
3. Lowers tension level

Exercise also helps adolescents to deal with negative stressors by helping to release pent-up emotions and to create a “time away” to help an adolescent deal with the stressors with a more rational thought process. Numerous research findings suggest that people who exercise regularly have lower rates of anxiety and depression than sedentary people.

Many adolescents experience depression because of the various stressors.

Depression is common among teenagers. Fortunately, most of them only experience a state of depression for a day or two. Unfortunately, some experience depression that lasts for more than two weeks. When this happens it can be termed as clinical depression.

“According to the National Institute of Mental Health [NIHM], about 18 million Americans or more are depressed. Anywhere between 112,000 and 2,324,000 of them are teens.”

(Cobain, 1998, p.3). “Depression affects more young people today than ever before.”

(Cobain, 1998, p.3).

Teens who are either temporarily depressed or clinically depressed need physical activity. When a person is depressed, there are chemicals in their brain, which are not present. The three main chemicals connected to depression are norepinephrine, dopamine, and serotonin. When these chemicals are not present in the quantities needed to transmit messages in the brain across the synaptic gap from neuron to neuron, messages are not properly sent. This can lead to depression. “Depression is associated with low levels of norepinephrine and regular exercise increased this neurotransmitter. It has been established that depression can be overcome through the sense of mastery and self-control gained through exercise. Enhanced body image and feelings of self-worth are also byproduct gains of exercise that might counteract depression” (Sheridan and Radmacher (1992) as cited in Akande, Van Wyk, & Osagie, 2000, p.5).

Endorphins are other chemicals in the brain, which can help a person feel better.

“Exercise helps to release chemicals called endorphins, giving you a natural high” “Even mild exercise, starting with a few minutes each day, can increase your endorphins.” (Cobain,

1998, p.20) Researchers have found that a simple fifteen-minute walk can help the body to relax more than a standard dose of a mild tranquilizer.

Impact of Adult Encouragement

The people in a child's life who influence his or her decision whether to be primarily active or sedentary are numerous. Most children interact, encounter or are exposed to a variety of adults on a regular basis. These adults can consist of parents, grandparents, teachers, coaches, clergy, youth group leaders, aunts, uncles, professional sports stars, Big Brothers Big Sisters, Boy and Girl Scouts, YMCA's and YWCA's, and an array of other working professionals. Many of these adults may not realize the degree of impact they have on a child's future level of physical activity.

Recent studies have shown many adults have begun to improve their level of valuing physical activity. "Evidence is mounting that in several respects people in the world are becoming healthier. For example, fewer smokers, more eat low-fat diets, and some engage in a special type of physical activity in which they exert their bodies for the sake of fitness, health or body development." (Akande, Van Wyk, & Osagie, 2000, p.1). This is encouraging news but the reality is that there are still many more adults who are not becoming healthier. Many jobs do not require a lot of physical activity and many people, especially parents, have demands after work. Demands may consist of children's clubs and events, committee meetings, or household responsibilities. Many parents believe they "run out of time" in the day for exercise. What they do not realize is the influence they are having on their child's choice to be physically active. Many parents see their active child and believe he or she will continue this level of activity as he or she grows and matures.

Children and toddlers are our most active population. It is natural for them to be involved in exploration and trying to understand their world through movement. Sadly though, a high percentage of these highly active children do not continue to be active as they age. “American teenagers work up a sweat far less often than their peers in many other countries” (Henry, 2000, p.1). Part of the reason for this is America’s emphasis on more elaborate classes in math, science, foreign language, and business. Colleges, universities, and technical schools have increased the amount of requirements for admittance. This leaves less time available for students to participate in structured physical education classes and or unstructured recess time. At the primary level when children’s energy level and motivation for physical activity is high, they typically have physical education three times per week for thirty minutes and a twenty to thirty minute recess time daily. This accumulates to four hours of physical activity time per week in the school setting. Compare this to time that students spend on learning English, mathematics, science, social studies, and history in the classroom. This accumulates to an average time of twenty-two to twenty-four hours per week. To say primary students are sedentary in their classrooms is not realistic. Many teachers try to incorporate more movement into their lessons simply because of the short attention span and high level of energy.

At the secondary level seventh and eighth graders usually have an average range of time for physical education classes for one and a half to two and a half hours per week. Ninth through twelfth grade students are difficult to assess the usual length of time for physical education or physical activity during school time because not all students participate in a regular physical education class every week.

With so little time being devoted to physical education and physical activity the influence adults have on adolescent physical activity is great. In most cases the parents can be the most influential. In many cases it is not solely parents but rather other role models such as teachers, administrators, and professional sport stars who can influence an adolescent's choice to be physically active. A study that set out to find the impact of adult encouragement in adolescent physical activity, summarized the findings as...“frequency and intensity of adult encouragement was a significant predictor of children's self-reported strenuous physical activity, as well as their intentions to be active” (Biddle & Goudas, 1996, p.5). Encouragement from other adults is needed to help resist the emergence of a sedentary lifestyle within our society of continuing technological advances.

Encouragement from adults may be given through community programs. The amount of availability of programs may be dependent on the community's size, industry, economy, and interests. The most common programs available are listed below.

1. School Athletics and Intramurals. Most school districts have after school athletic programs and intramural programs available to males and females. For males, the most common programs available are football, cross-country, tennis, golf, basketball, swimming, wrestling, baseball, soccer, and track and field. For females, the most common programs available are volleyball, tennis, basketball, swimming, cross-country, golf, gymnastics, softball, soccer, and track and field. Intramural programs may consist of volleyball, basketball, and table tennis.
2. Church Youth Groups. Many youth groups provide a variety of opportunities for outdoor adventure trips. Trips may consist of skiing, rock climbing, canoeing, rope courses, bike trips, and etc.

3. YMCA and YWCA. These organizations provide a variety of physical activities for children. Swimming lessons, karate, gymnastics, baseball, softball, basketball, racquetball, tennis, aerobics, weight lifting, dance, table-tennis, soccer, wrestling, and boxing to list some available activities.
4. Big Brothers/Big Sisters; Boy and Girl Scouts. These organizations have opportunities for recreational outings that many times involve parents and people of the community.
5. Community Recreational Opportunities. City parks and recreation programs as well as private and community clubs provide a variety of activities. Examples may consist of karate, hockey, soccer, ballet, dance, basketball, baseball, volleyball, gymnastics, wrestling, golf, skiing, bowling, and etc.

Adult encouragement can be most influential for physical activity when it comes from someone whom an adolescent respects. Teachers, administrators, and professional sport stars many times fill these criteria. When adolescents see these role models participating in exercise it can provide a long lasting statement for the importance of physical activity throughout a person's life. Some professional sport stars could have a harmful affect on some children by exhibiting an attitude of elitism. This attitude can send a message to the many children who are not natural or exceptional athletes indicating, "You have to be the best to participate." For many children who dream of being a professional sport star, the time of realization of their limited athletic ability can compel these children away from the "want" to participate.

Many sport stars are not aware of this reality. The media and most adults are also unaware of the impact this attitude of elitism can have on children who know they are

naturally less physically inclined. These children need a positive role model to help them to understand and value physical activity in their daily life. The importance of positive and healthy adult encouragement for daily physical activity is critical in helping a child to believe in and participate in physical activity. A report completed by the Center for Disease Control for school and community to help promote lifelong physical activity for young people states several factors that influence physical activity. “Individual factors positively associated with physical activity among young people include confidence in one’s ability to engage in exercise, perceptions of physical or sport competence, having positive attitudes toward physical education, and enjoying physical activity. Perceiving benefits from engaging in physical activity or being involved in sports benefits include excitement and having fun; learning and improving skills; staying in shape; improving appearance; and increasing strength, endurance and flexibility.” (Center for Disease Control,1997, p.3)

The lifestyle habit a child forms when he or she is young continues into their adulthood years. Most sedentary adults do not change their lifestyles until they have a life threatening disease and a doctor gives them a choice to either start exercising or to die early. Fortunately, most choose to exercise, but it is unfortunate that many have to be given an ultimatum before they will.

Technology has helped our society to become one of the most advanced countries in the world. Technology has also helped us to become more efficient with our time and our human energies. These developments are positive advancements in our society but they mean little if a person is not functioning at a level of health that he or she can utilize them. A person’s mental, emotional, social, and physical well -being is the basis for our future accomplishments.

Infants, toddlers, primary age children, adolescents, and adults need physical activity to maintain a high level of health. With technology and the fast pace of today's society it is important to remember: Moderation is important. Too much of anything can be detrimental to a person's health and too little physical activity can be deadly.

Chapter Three

Summary, Conclusions, Recommendations

Introduction

This chapter reviews the purpose of the study and summarizes the information found in the Review of Literature chapter. A critique of the findings and a conclusion is drawn also based on the results found in the Review of Literature chapter. The researcher concludes with recommendations to adults and professionals interested in this topic with the hope to change the development of adolescent health problems in regards to lack of physical activity.

Summary

The purpose of this study was to: review, analyze, critique, and draw implications from current literature on the relationship between out of school participation in physical activities and an adolescents holistic health. The study also determined the impact adults have on the level of physical activity of adolescents.

Conclusion

The advantages of daily physical activity outweigh any disadvantages. Children need daily physical activity to instill beneficial habits that can reduce their risk of musculoskeletal degenerative problems, cardiovascular diseases, obesity, diabetes, and some cancers. Premature death and other health problems caused by external forces are events that people cannot prevent. But the incidences of musculoskeletal problems, cardiovascular disease, obesity, diabetes, and some cancers can be greatly reduced with daily physical activity.

Research has shown that physical activity does not have to be a strenuous regimen for it to be beneficial. Activities such as raking leaves, vacuuming, taking the stairs instead of the elevator, going for a walk, shooting baskets, chopping wood, or even cleaning the garage can

be considered physical activity if the person involves the entire body during the activity. True, the most beneficial physical activity is aerobic exercise, three to five times per week for 20-30 minutes continuous movement, along with a strength training and flexibility program. If adolescents or adults have a genetic predisposition for cardiovascular disease, obesity, diabetes, and some cancers they can reduce the likelihood of them occurring. They must combine a well-balanced nutritious diet with regular physical activity to ensure the reduction of the risk for these health problems. Children are our future but they will not be able to provide for our society at an optimal level if their mental, emotional, and or physical health is at a low level.

Recommendations

The first recommendation would be a wellness program for adolescents. Wellness is a combination of a person's physical, social, mental, and emotional health. This program would work with local medical professionals such as physicians, nurses, physical therapists, chiropractors, schools, community organizations, and medical specialists for the heart. The program would last for six months. The program would consist of an informational letter stating the purpose of the program, an informational meeting for the parents that would allow the parents to understand the importance of preventative cares for their child, and to allow them the right not to participate.

After the informational meeting, the students and their parents would complete a health and habits questionnaire that would help physicians and medical specialists to assess the student and family health status. The assessment would allow a student and his or her family to be assigned a specific program according to their needs. Students and their families would be given access to community facilities for exercise at a reduced rate for the first two

months of the program and provided with a physical activity chart to record type, time, and intensity level of the physical activity. The program would also work with school health and physical education teachers to help promote and encourage continuation of the program through incorporation of the benefits of physical activity into their lessons on a regular basis.

The program would require bi-monthly meetings the first two months to allow for assessments and to address any health concerns or individual changes needed and the last four months would require monthly meetings to help track progress. The program would be free to participants but the cost for the program could be paid for through grants.

The second recommendation would be a wellness program for teachers and adults. The teachers' role has changed drastically throughout past decades. Teachers do not just teach students, but they must also help counsel, solve problems, resolve conflicts, and boost the self-esteem of these students. Adults and teachers also have personal stressors that can have a negative impact on the quality of their working environment. Personal stressors can consist of busy schedules, family illness, personal illness, and relationship problems either at home or on the job with other co-workers.

To help minimize the distractions personal problems can cause, a wellness program could be beneficial. Too often we expect adults to know and understand the benefits of wellness. The program would increase the level of knowledge for physical activity. A wellness program would also assist to improve a person's job effectiveness by reducing a lot of mental, emotional, social, and physical stress. A wellness program could also help to educate the teachers and staff on a variety of wellness related issues, and encourage daily physical activity that would help to decrease the health risks associated with a sedentary lifestyle.

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