

Exercise and its Effects on Depression in Young Adults


by

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ABSTRACT

Depression is a common issue for young adults. Fast-paced lifestyle, demands of work and school, traumatic events, loss, and loneliness are just some factors that may contribute the increase in number of diagnosed depression symptoms in teens. In addition to medical assessment and diagnosis by professionals, some doctors are including physical activity as part of the treatment plan to help with improving mood.

Exercise such as yoga, bowling, walking, gardening, swimming and tai chi may be helpful for those battling mild depression. Identifying the effects that exercise may have on young people with depression learning the various types of exercise that may aid in the reduction of depressive symptoms is the purpose of the literature review.

For many years depression has been the number-one diagnosed disorder, which has a strong correlation with obesity. With depression and obesity becoming such an issue in this country, it is crucial to take notice and be open to alternative ways of fighting depression. With childhood obesity on the rise, it is a concern that depression may start at an earlier age than first thought. Males and females experience the symptoms of depression differently.

In recent years, depression has finally been taken seriously for the younger populations, whereas previously it was thought as typical mood swings and teenage hormones that caused sadness. Research supports adding exercise to the treatment plan under medical supervision to reap its positive effects on improved mood in mild depression while addressing the obesity epidemic in this country.

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## Chapter I: Introduction

“Lack of activity destroys the good condition of every human being, while movement and methodical physical exercise save it and preserve it” (Plato). Among young adults, depression is one of the most commonly reported conditions, and therefore it is one of the most researched topics by mental health practitioners. Depression as described by Pinette (2003) is caused by a combination of factors such as hormones, sleep habits, heredity, and chemical imbalances within the brain. Those who are depressed may lose interest in activities they usually enjoy, changes in sleep cycles, appetite, and feelings of worthlessness (Pinette, 2003).

Barbara Kantrowitz and Pat Wingert (2008) noted that today’s teens are richer, more educated, and healthier than ever before and yet there seems to be an overwhelming rise of serious emotional problems in this population. The immense pressure and responsibility brought on by juggling work, extracurricular activities, homework, social life, and other events going on in the home such as a divorce of parents, abuse or neglect can only increase the likelihood of attracting some form of emotional impairment (Kantrowitz & Wingert, 2008).

According to The Harvard Mental Health Letter (2002), boys and girls are equally susceptible to become depressed. It is not until puberty that girls will start to show signs of depression, more so than boys. By the time they become young adults, girls tend to have depressive symptoms, on average, 2:1 compared to boys.

Depression, no matter what age the individual, tends to be a recurrent mood disorder, and those who are in treatment stand a good chance of relapse. For individuals diagnosed with mild depression, establishing a routine of consistent physical exercise may increase the likelihood for improvement in the individuals’ depressive symptoms. Exercise may increase the body

temperature and improve circulation, adjust the brain-chemistry by improving mind-set and creating a calming effect on an individual with mildly depressive symptoms.

Along with other treatments for depression, physical exercise may prove to be the most cost-effective for the individual (Tkachuk & Martin, 1999). Although there has been research on the positive effects that exercise has on mood, the benefits that exercise may have on symptoms of depression is something that has come about in recent years.

According to Tkachuk and Martin (1999), there are three different theories that explain the positive affects exercise has on depression that include thermogenic, endorphin, and the monoamine neurotransmitter theory. The thermogenic theory stated that “the tension reduction associated with exercise is thought to be produced by the elevation of body temperature” (Tkachuk & Martin 1999, p. 276). The second theory, called the endorphin theory, believed that chemicals are released in the brain that reduces pain while at the same time it enhances the euphoric state of exercise. Lastly, the monoamine neurotransmitter theory suggested that depressive symptoms are alleviated by exercise where there is a reconfiguration of the neurotransmitters in the brain (Tkachuk & Martin, 1999).

Tkachuk and Martin (1999) further stated that there was not conclusive evidence supporting whether aerobic or anaerobic exercise was more effective. As long as there was some form of physical exertion, the individual was able to notice positive changes in his/her mood. Exercise on a regular basis, even less strenuous exercise such as walking, has proven to be an effective treatment mild depression according to Tkachuk and Martin (1999).

A different study by Joiner and Tickle (1998) showed that there was a gender difference in how exercise increased or lowered depressive symptoms between males and females. It was found that females who participated in high levels of exercise did in fact have decreased

depressive symptoms. Males who reported higher levels of exercise actually showed an increase in depressive symptoms. There were no concrete reasons as to why males and females had different experiences, but it was noted that the sample size of men was significantly lower than that of females. Joiner and Tickle (1998) also commented that “while speculative, it is possible that high exercise levels among depression-prone males may represent a compensatory attempt to ward off depressive symptoms and restore self-esteem” (p. 197).

Over the past 50-60 years, depression has most often been treated by psychotropic medications such as imipramine (a tricyclic), iproniazid (monoamine oxidase inhibitor), and selective serotonin reuptake inhibitors (SSRI), to name but a few (Brosse, Sheets, Lett, & Blumenthal, 2002). As more research on depression surfaced numerous treatments started gaining popularity. The different treatments took the form of electroconvulsive therapy (ECT), light therapy, and St. John’s wort (an herbal remedy). ECT involved electrical currents to the skull to induce a mild seizure (Brosse et al., 2002). Light therapy is very specific in nature. It is most often used in the treatment of winter depressive symptoms, and is done by exposure to artificial light. St. John’s wort is an herbal supplement that is commonly used to treat mild depressive symptoms.

In recent years the use of exercise as a treatment for depression has gained tremendous popularity. Brosse et al. (2002) stated that “exercise training has often been shown to improve depressive symptoms in healthy, non-depressed samples” (p. 745). Although healthy individuals have less need for the relief of depressive symptoms, the research on those who do have moderate to severe depression needs to be more comprehensive (Brosse et al., 2002).

A study was conducted on individuals who were diagnosed with mild depression, and they were divided into one of three groups. The groups consisted of 1) a running group, 2) time-

limited psychotherapy, and 3) time-unlimited psychotherapy (Brosse et al., 2002). The outcomes from this study determined that all the individuals involved showed signs of decreased depressive symptoms, and no group seemed more effective than the other.

### *Statement of the Problem*

There is an epidemic of obesity in America along with an increasing population of individuals with diagnosed depression. According to an article in Time (2007), over two-thirds of Americans are obese, when defined as those who have a body-mass-index of over 30%. When psychotropic medications are not available either due to financial reasons or accessibility, physical exercise may be a viable, cost-effective alternative. Exercise may also improve an individual's self-image, which is especially important to self-conscious teens. Also, exercise may take many forms including aerobic exercise (walking, jogging, or basketball), and anaerobic exercise (weight-lifting, yoga, and karate).

As many young people may not know what depression is or if they have symptoms of the disorder, education can be very beneficial to those who may need it. The problem therefore becomes, for teenagers who are struggling with mild depression, are there cost-effective ways to reduce the symptoms and improve mood that work along with the medical treatment plan for teenage depression?

### *Purpose of the Study*

The purpose of this study is to review the literature to determine the potential benefits exercise may have on teens who are diagnosed with mild depression or who have initial stages of depressive symptoms. Exercise should not replace medication, and a doctor should always be consulted before starting any exercise plan.



### *Research Questions*

Analysis of the literature will be provided later to answer the following research questions:

1. What are major causes of depression in teens?
2. How might physical exercise help alleviate depressive symptoms?
3. What exercises are best for the individual who would like to improve mood, stimulate circulation and reduce depressive symptoms?

### *Definition of Terms*

The following are definition of terms that appear throughout the study to help clarify meaning for the reader.

*Aerobic Exercise* – according to the American College of Sports Medicine (2007), aerobic exercise is “any activity that uses large muscle groups, can be maintained continuously, and is rhythmic in nature” (Georgia State University, 1998, n.p.).

*Anaerobic Exercise* – a short-term, high intensity activity such as weight lifting.

*Tai Chi Chuan* – a physical and mental exercise that is accomplished through a series of slow and graceful movements (Cal, 2000).

*Depression* – a dysphoric mood state, a syndrome comprised of a cluster of symptoms, or a clinical disorder (Brosse et al., 2002).

*Depressive Symptoms* – sadness, fatigue, and disturbed sleep (Brosse et al., 2002).

*Psychosocial Stress* - mental strain that is brought on by unreachable expectations, peer pressure, and/or burn-out, which is experienced in the home, school or in the workplace (Lauber et al., 2003).

### *Assumptions and Limitations of the Study*

One assumption of the study is that physical exercise is beneficial for the alleviation of mildly depressive symptoms in teens. Another assumption is that the findings may or may not be generalized to all, including males, females, all races and ethnicities. Also, it may be assumed that physical exercise is only beneficial to those who have been diagnosed with mild depression in minimizing or alleviating some symptoms. It is also assumed that exercise should be recommended and monitored by a medical physician as an extension of the treatment options.

This study is limited to literature pertaining to physical exercise as a strategy to assist teens in coping with mild depression. While it is understood that depression is a medical condition, this literature review is not a medical perspective on the diagnosis and treatment of depression, but a perspective of the benefits of adding a physical exercise regime to help teens who may have been diagnosed with mild depression. Another limitation to this study is the information provided is pertaining to school-age teens, and the majority of the research that has already been conducted applies to older adults.

Some research that has been documented does not address the issue of gender, diversity or disability, and if there are any differences or similarities on the effects exercise has on mild depression may limit the scope of the literature review. A final limitation is the amount of literature available and the limited time and resources of the researcher that some articles may have been overlooked. The literature was reviewed spring 2009.

## Chapter II: Literature Review

### *Introduction*

In Chapter II the reader will discover that there are five sections pertaining to depression. In the first section: prevalence of depression, age discrepancies, gender differences, and race will be presented. Second, the causes of depression and the various factors that may contribute to the disorder will be viewed. Third, the reader will examine the numerous types of exercise that are available to reduce the symptoms of depression. Fourth, a perspective will be presented which includes a brief description of alternative views on exercise and its effects on depression. Finally, in the last section, the reader will be provided with a synopsis of the research that currently exists on the topic.

### *Statistics on Depression*

Among young adults, depression is the most commonly reported disorder, and therefore it is one of the most researched topics by mental health practitioners (Knopf, Park, & Mulye, 2008). To help teens understand depression and its symptoms, a questionnaire was given to the participants asking: “have you ever felt so sad or hopeless almost every day, for two weeks in a row, that you can’t do some of your usual activities?” (p. 5). Over 30% of the female participants declared they have felt this way, and over 20% of the male participants reported they had experienced this type of extreme sadness at some point. With the results of the survey, the researchers were able to project that nearly one in four adolescents are affected by mild depression (Knopf, Park, & Mulye, 2008).

According to Bower (2003), “around 34 million individuals in the United States had at some time suffered from major depression, and roughly 13.5 million people suffered bouts of severe depression” (p. 29). These numbers indicate that about 23% of the United States

population suffers from depression. Even though those numbers appear high, it does not include those who experienced mild to moderate depression, or the many individuals who went undiagnosed as they didn't recognize the signs of depression. It is important to inform school personnel about the prevalence of depression in young adults, in part due to the higher probability of suicide associated with untreated depression.

Studies have shown that in adolescent males, roughly 11.4 per 100,000 die from suicide, and their method is more likely by the use of a firearm (Beall, 2000). Even though the number of male suicides is greater than that of females, the number of attempted suicides and diagnosed depression was higher for females. Beall (2000) went on to say that the number of deaths increased in the less populated regions of the country, such as the intermountain west. This may have been in part due to the isolation, seclusion, and inclement weather individuals in that region may have experienced.

Beall also determined there was a 20-30% chance that people with depression were likely to develop bipolar disorder, as well as other psychiatric disorders. It was commonly found that children who have parents who struggle with major depression may have a 50% chance of having depression themselves. Another factor of depression found in identical twins was if one had depression, it was likely the other would have depression as well (Beall, 2000).

There are many individuals in this country diagnosed with major depression. According to Ponterotto, Pace, and Kavan (1998), there are approximately 80 million people who have sought some form of counseling for depressive symptoms. The researchers indicated that depression is the most prevalent mental health disorder, and by far is the most diagnosed by medical practitioners.

### *Causes of Depression*

According to Lauber et al. (2003), there are some major causes of depression that may include psychosocial stress, serious or prolonged illness, major life-style change, or experience of a traumatic event. Lauber defined psychosocial stress as mental strain that is brought on by unreachable expectations, peer pressure, and/or burn-out, which is experienced in the home, school or in the workplace (Lauber et al., 2003) Lauber went on to say that those involved in the study explained that a traumatic event was the cause of depression in their lives.

A traumatic event could include combat service during a war, hurricane or tornado trauma, assault or rape, and sometimes relocation due to homelessness or loss of job. The researcher concluded the majority of the participants in their study had obtained depressive symptoms that stemmed from an illness or disease that could have included multiple unsuccessful surgeries, unknown illness or even cancer. Though many causes of depression were listed throughout the study, the researchers further discovered that there was no correlation between demographics and depression and the findings were generalized to various populations (Lauber et al., 2003).

In addition to the causes of depression, previously discussed, there are other numerous explanations and theories. A list of potential causes for mild depression were identified in The Harvard News Letter (2002), including depression resulting from death or divorce of a parent, an inability to live up to the high expectations of a parent(s), not being able to conform to unattainable morals or ideals, lack of emotional bonds due to rejection or neglect, receiving too much criticism and/or punishment, and sexual or physical abuse, causing the adolescents to have an inability to regulate stress levels. Teenagers and young adults may also have trouble with creating a self-identity, as during puberty many still hang onto their childhood tendencies. This

is a difficult time in a young person's life due to the emotional, intellectual, and physical transitions that are occurring so rapidly. Also, a young person's hormones change so rapidly creating sexual tension, that often they are unable to cope with the impulses they experience (Harvard News Letter, 2002).

An overwhelming majority of the research pertaining to causes of mild depression relates to genetics and hereditary disposition, as one of the most accepted explanations for depression. Adolescents and young adults have comparable rates of depression to that of adults, which was estimated between 6% - 9% in the United States (The Harvard News Letter, 2002). "The genetic contribution to mood disorders is especially high when the symptoms first appear in childhood or adolescents" (The Harvard News Letter, 2002). It was also stated in the newsletter that more than 50% of children with a parent who had a history of major depression have an episode of depression themselves. Within this research, genetics was presented in the form of environmental factors contributing to depression as adopted children were sometimes found to be more depressed due to biological background rather than the environment. If an individual had a family history of alcoholism or personality disorders, the chances of depression increased exponentially (The Harvard News Letter, 2002).

Although genetics are a major factor, it is just one cause of depression researchers have found. An individual's environment (friends, family, partners, and lifestyle) are also potential contributors to the likelihood of becoming depressed (Zeman, 1996). If a teen lives in a depressing environment surrounded by others who struggle with mood disorders, they may pick up on the sadness and make it a part of their lifestyle too. Having healthy role models who can cope with life's challenges may help teenagers combat symptoms of mild depression. Choosing activities with friends that may include video games with a lot of violence may increase the

chance for depression as they need to develop social skills and have outdoor time balanced with stress-inducing video games or movies. Teens need to make good lifestyle choices for healthy perspectives on the world in order to internalize the values and norms associated with healthy moods.

Income becomes a factor for depression when the individual struggles to support himself/herself, and if there are dependents it makes it even more difficult. Living in an environment where street violence is an everyday occurrence may increase the chances a teen could become fearful and develop anxiety or depression. Loss of job and income may also contribute to depression within the family if they are homeless and hungry. Without medical insurance, other families may recognize signs of depression, but may not know where to turn for financial help or medical advice. The majority of the time many young adults may not have the resources necessary to cope with the stress that poverty may bring, and depression can be a likely outcome.

The Harvard News Letter (2002) also discussed how young adults who are homosexual are at a significantly higher risk of becoming depressed because of hardships they face such as isolation and social stigma, with friends, family, and community members who display insensitivity. At such a crucial time in life, it is especially arduous and confusing for someone who is homosexual to live in a culture where it is seen as taboo or indecent. Teens who are questioning their sexual identity may find it helpful to talk to trusted adults about the issue to learn about community resource agencies and support groups to help them with their feelings.

Barbara Kantrowitz and Pat Wingert (2008) noted that while today's teens are richer, more educated, and healthier than ever before there seems to be an overwhelming rise of serious emotional problems in this population. Kids who are bullied or harassed at school and taunted or

teased by others may create an environment that creates sadness and helplessness. Modern technology that offers pornography, cyber-bullying, and inappropriately used social networks that spread rumors and lies may further contribute to the overwhelming sadness of young adults today. The immense pressure and responsibility brought on by juggling work, extracurricular activities, homework, and a demanding social life may further complicate the lives of teenagers. Events experienced at home that may include a divorce or separation of parents, living half a week at one home and the other part of the week at the other parent's home while juggling schedule demands of work and school can only increase the likelihood of attracting some form of emotional impairment (Kantrowitz & Wingert, 2008).

The Kantrowitz and Wingert (2008) went into greater detail on the topic of divorce and its negative affects on the children that are involved, finding when parents do decide to divorce the chances of the child spending more time alone increases significantly. Even though teenagers may say they want to be left alone, and seem to dread spending time with their parents, they still crave attention and affection from their parents. "Loneliness creates an emotional vacuum that is filled by an intense peer culture, a critical buffer against kids' fear of isolation," (pg. 4). Some reliance on peers for support and acceptance is perfectly normal, but if parents abandon their duties of providing structure and boundaries, teens may tend to form their own set of rules. When teenagers experience excessive isolation by their parents, they are more susceptible to serious emotional problems (Kantrowitz & Wingert, 2008).

### *Types of Exercise*

In a study that examined the effects of certain exercises on anxiety and depression in college students, the researchers found that there were no immediate results, however, after an eight week test period, they found that there were positive affective (mood) changes in the



students because of the implementation of exercise (Cal, 2000). “There are a variety of physical exercises such as jogging, swimming, and yoga that have a certain effect of improving mood-states such as depression and anxiety” (Cal, 2000, p. 71).

College students are one of the highest populations that exhibit anxiety and/or depression, and this may be due to the rigorous lifestyle many lead. Because going to class, taking tests, doing homework, holding a job and having an inconsistent sleep schedule, many college students may have high levels of anxiety and depression. One exercise that was discussed in the study was tai chi chuan, which is a physical and mental exercise that was accomplished through a series of slow and graceful movements. Tai chi chuan was designed to exercise the body through the release of tension by relaxation and having a clear mind to reduce stress levels and mild depression. This type of exercise was designed as mental regulation, which is why tai chi chuan would provide positive results in the reduction of depressive symptoms (Cal, 2000).

It is imperative that alternative modes of therapy are provided to individuals who suffer from depression. According to Craft and Landers (1998), those with depression spent one-and-a-half times more a year on health care than individuals who did not experience depressive symptoms. They also spent three times more on antidepressant medication than those who did not need to utilize outpatient pharmaceutical services. Exercise may provide a workable, inexpensive supplement to medical treatment for mild depression.

Since the early 1900’s there have been positive correlations documented between exercise and depression. In the Craft and Landers (1998) study, numerous physical exercises that could be administered to help alleviate depressive symptoms were discussed. Two groups of individuals with diagnosed depression were divided into a moderate and high intensity group. Some of the people showed improved mood and others were fatigued. It was determined that

moderately active exercises such as walking and bowling proved to be most effective in enhancing positive emotions. Exercise not only helped with improving an individual's mood, but there were many other benefits of physical exercise as well.

Studies have shown that exercise has decreased the likelihood of heart disease, diabetes, and obesity; all of which may positively influence depression in some individuals. Craft and Landers (1998) concluded that the implementation of physical exercise along with any medication prescribed by medical professionals may help individuals with mild depression who struggle to pay for the highly priced psychotropic medications alone.

Bodin and Martinsen (2004) explained that individuals who participated in their study were able to gain more self-efficacy, a belief in oneself to obtain a certain goal, which in turn acted as an antidepressant agent. This was accomplished through two types of exercises that were assigned to two different groups. One group was asked to participate in a series of twelve sessions on a stationary bike, and the participants' moods were then documented. The same exercise was altered for the second group, but instead of riding a stationary bike they were asked to engage in a martial arts class for the same number of sessions.

The findings determined that those who rode the stationary bike showed immediate positive change in mood, while those who participated in the martial arts class struggled initially with the new activity. Once the second group became comfortable and more experienced with martial arts, Bodin and Martinsen (2004) found that the participants' sense of self-efficacy had risen and they also had reported having a more positive mood. In comparison, those on the stationary bike had a lower sense of self-efficacy by the end of the twelve session trial. Bodin and Martinsen (2004) stated that soon after the participants ended their sessions, their state of

depression went back to pre-experimental levels. It is imperative to note that these exercise regimes must be continuous in order to reap the benefits of an antidepressant strategy.

The article *Depression and Exercise* (2005) proclaimed that if an individual exercises for 30 minutes daily, their over-all mood will improve dramatically. Any form of exercise would suffice, as long as it was done consistently. A jog around the park, or something even less strenuous, such as gardening seemed to help individuals lower their depressive symptoms. “Again, the results from formal trials are mixed, but there’s fairly good evidence that exercise is beneficial for mild to moderate depression” (Depression and Exercise, 2005, n.d.).

When individuals exercised, endorphins were released throughout the body, which are tiny chemicals that act as pain killers, and would then put the person into a euphoric state (Depression and Exercise: How the Body Fights Depression Naturally, n.d.). With regular exercise, depressive symptoms lessened in large part due to sleeping better, sustaining more energy throughout the day, and having a better sense of self esteem after working out. Incorporating exercise into one’s daily routine could also have other health benefits such as wanting to eat healthier and stop smoking, which in turn created a healthier lifestyle altogether (Depression and Exercise: How the Body Fights Depression Naturally, n.d.).

The article *Teen Depression* (n.d.) stated that teens and young adults who suffer from depression may wish to seek a helpful type of therapy, whether it is individual, group, family, or any other form therapy, to help battle depression. Involving the whole family in therapy can create a better understanding of the condition and improve the communication, understanding and compassion among members. Participation in therapy could help the individual recognize and change negative thoughts, determine positive ways to problem-solve, and acquire appropriate social and interpersonal skills (Teen Depression, n.d.).

In the article, *Youth: A Different Way of Healing* (2007) the authors described how diagnosing teenagers with depression is a very difficult task. Teens tend to display behaviors that may coincide with those who have depressive symptomology such as being impatient, insecure, and overly emotional. In the past there have been common beliefs that when teens do show signs of depression, it is looked at as being typical behavior or a stage he/she is going through. Some have referred to this as typical teenage hormones or moodiness.

In a study conducted for over a decade on approximately 400 teenagers diagnosed with depression, teens were divided into four groups and given different treatment regimens. The first group was given Prozac, the second was treated with Cognitive Behavioral Therapy (CBT), the third had a combination of Prozac and CBT, and the fourth group was treated with a placebo. Cognitive Behavior Therapy is one of the most effective treatments for depression in adults, but this study revealed that this was not always true for teenagers. The most successful treatment was the combination of Prozac with the CBT. It was recommended that CBT be the first line of defense before other forms of treatment are tested. Also, it was stated that every individual is unique and may respond differently to treatment (*Youth: A Different Way of Healing*, 2007).

#### *Exercise and Teens*

It has been widely accepted that exercise makes people feel better. Also, people in the United States are, as a whole, fairly inactive (Backhouse et al., 2007). It is puzzling that it is such a well-known belief that exercise can make one feel better, but two-thirds of adult Americans do not participate in regular exercise. If exercise is not a priority in many people's lives, in what activities are they engaging?

There are many other more pleasurable activities such as eating when hungry, sleeping, and engaging in sexual relationships. According to Backhouse et al. (2007), individuals make

many of their decisions based on their mood or how they are feeling at that particular point in time. Fifty-percent of individuals who no longer participate in regular exercise tend to drop out of their routine, even though the majority of those individuals once enjoyed and appreciated the way exercise enhanced their positive mood (Backhouse, et. al., 2007).

Even though exercise can make many individuals feel better, there are other negative side effects that exercise has as well. After strenuous workouts individuals can feel pain, stiffness and soreness. Others experience a form of obsession with exercise that can become unhealthy too. Over-exercising to the point of creating injury, eating disorders or fitness addiction appears to increase depression related symptoms. Exercising too much is not a good thing when it becomes obsessive.

As stated previously, exercise can be a cost-effective solution to depression; however, quick-fix solutions can also be very expensive. Every day there seems to be a new contraption that guarantees six-pack abs, or a miracle shake that helps shed the pounds in a matter of weeks, all of which can lead to a false sense of hope, and empty pocketbooks (Backhouse et al., 2007). Although there are many positive benefits to regular exercise, there are some ineffective programs that should be avoided in order to see long-lasting results.

Exercise to cope with mild depression is effective for many teens who are seeking options other than or in partnership with medication. Teens should consult a physician before starting an exercise program and should continue to follow doctor's orders regarding any medication. Starting gradually and charting small successes may help teens have yet another strategy to work through early stages of mild depression symptoms.

### Chapter III: Summary

#### *Introduction*

In the third and final chapter of this paper, a summary of the findings of the literature pertaining to exercise and depression are discussed. The chapter will conclude with recommendations for further research on the topic of exercise and its effects on depression in young adults.

#### *Summary*

Depression is one of the leading mental disorders that impacts individuals across the nation; for this reason, the topic of exercise and its effects on depression in young adults was selected. The statistics on depression revealed some startling numbers on how many young people battle with depression in the United States. Knopf (2008) had stated that nearly one-quarter of the nation's young adults are afflicted with depression. It is important that teens be screened for depression as a part of the regular medical check-up. Females did outnumber males slightly in reported depression. Due to the high rate of attempted suicide in teens it is important that they get medical assessment and treatment related to symptoms of depression.

The literature indicated many causes of depression including genetics, environment, lifestyle, prolonged illness, and stressful events. In the Lauber et al. (2003) article, a statement was made that many individuals who struggle with depression had at some point in their life experienced a traumatic event; whether it was from the loss of a loved one, witnessed something horrific, or a diagnosis of an illness. Also, genetics and hereditary disposition played a significant role in individuals being diagnosed with depression. If a teen has a parent with depression, it increases the likelihood that they too may develop signs of depression. The research indicated genetics or hereditary disposition were the most prevalent among all causes of

depression. According to The Harvard News Letter (2002), if illnesses such as alcoholism or personality disorders run in the family, the chances of depression increase significantly.

Teenage isolation was also found to be a major contributing condition that may lead to mild depression. Some teens are isolated at school through exclusion by peer groups. Others feel excluded or isolated when they struggle with sexual orientation as they often feel different or alone in their feelings.

Another type of isolation teens experience is from their parents, as some spend much time alone due to a divorce or separation of parents or having parents who work multiple jobs and leave the teens alone with unsupervised time on their hands. Isolation may have a negative effect on individuals who long for validation, attention and companionship thus creating sadness, loneliness or depression. When teenagers are detached from their parents they may resort to creating their own rules and boundaries, and rely more upon their peers for support. Though peer relationships are crucial to a teens' development, parents still need to be involved in their lives.

Types of exercise provided opportunity to get a fresh perspective on life, increase blood flow throughout the body and release brain chemicals that have a calming effect on the body. There were an array of activities suggested that individuals can participate in to help alleviate the symptoms of mild depression. The consensus of the research indicated that any type of regular physical exertion could be beneficial to most individuals. Tai chi chuan, swimming, fishing, bowling, walking, gardening, and biking were a few activities that were mentioned.

Bodin and Martinsen (2004) mentioned that when individuals are engaged in a regular exercise routine that is somewhat challenging, the participant will gain more self-efficacy, which in turn may enhance the participant's mood. Endorphins are released throughout the body when

the individual participates in physical activities which in turn improves mood (Depression and Exercise, n.d.).

Quick-fix programs could potentially be an expensive activity. Buying unnecessary equipment, joining membership-required fitness centers, special fad-diets or specialized targeted exercise gimmicks may not be as beneficial as regular exercise programs. Individuals who feel that they need to buy the newest weight machines or the latest weight-loss shakes may be disappointed with the results and with the money spent on these products. Over-exercising to the point of creating injury, eating disorders or fitness addiction was not recommended by the literature to reduce stress, rather it appears to increase depression related symptoms.

While exercise may be a viable option for improving mood, treatment for depression should fall under the supervision of the medical professional who assessed, diagnosed and treated the condition. It is hoped that exercise along with options to enhance mood will be considered. Many do believe that exercise will help alleviate the symptoms of depression, but agree that it should be in congruence with other treatment such as therapy or medication.

#### *Recommendations for Further Research*

Further research specific to teenage depression is recommended. While the literature had many valid points for adult depression, it is worthwhile to study the impact of depression on the lives of the young adults. Some researchers indicated that depression is occurring at an earlier age than ever before and maybe research could be conducted on elementary-age children too.

In addition to age studies, cohorts could be examined, to determine gender differences, and racial differences with depression. Scientific facts on whether or not exercise actually can be a substitute for the treatment of depression should be proven in future research. It is also agreed upon that physical activity makes people feel better, but the research on biological influences are



lacking. This study examined the impact of exercise on mild depression, but for those experiencing severe depression, further research may indicate that it could be beneficial for them as well.

The topic of exercise and its affects on depression in young adults has limited research on this specific age group in part because of the number of cases of mild depression in young adults, the number of undiagnosed or unreported cases, and the concern over what is considered normal hormone balance and age development. Most of the research that has been reviewed seems to agree that exercise can have a beneficial affect on depression as long as a regular routine of exercise is incorporated into one's daily life, depressive symptoms may be minimized or be alleviated.

Education and additional research is very important to shedding light on this serious and often misunderstood topic. The more understanding that comes as a result of research, the more comfortable people may become talking about depression and related issues. If depression is affecting individuals at younger and younger ages, and it is crucial to do further studies to recognize, understand and offer options to treat this disorder.

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