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Attention Deficit Disorder, Attention Deficit Hyperactivity, and Depression

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**ATTENTION DEFICIT, ATTENTION DEFICIT
HYPERACTIVITY DISORDER, AND DEPRESSION**

Jeanne Marie Goacher, B.A.

An Abstract Presented to the Faculty of the Graduate School of
Lindenwood University in Partial Fulfillment of the Requirements for the
Degree of Master of Art

2000

Abstract

The purpose of this study was to examine the prevalence of depression that is going untreated in adolescents with an Attention Deficit Disorder (ADD) or an Attention Deficit Hyperactivity Disorder (ADHD) diagnosis. This study included high school age students (grades 9-12) who either had a diagnosis of ADD or ADHD, had never been diagnosed with depression, and who have never been treated for depression and another group who did not have a diagnosis of either ADD/ADHD or depression. After obtaining parental permission, through a questionnaire format, the students were given the Beck Depression Inventory. A Chi-Square was performed to examine if there were significantly larger proportions of adolescents who showed clinical levels of depression among those who had an ADD/ADHD diagnosis compared to those who did not. The study failed to support the hypothesis. However, there were 26.6% of those who were ADD/ADHD that did show clinical levels of depression. A discussion of the limitations of this study and implications for future research are given.

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HYPERACTIVITY, AND DEPRESSION**

Jeanne Marie Goacher, B.A.

A Culminating Project Presented to the Faculty of the Graduate School of
Lindenwood University in Partial Fulfillment of the Requirements for the
Degree of Master of Art

2000

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CHAPTER 1

INTRODUCTION

Depression is “a sometimes overwhelming emotional state characterized by feelings of inadequacy and hopelessness and accompanied by a decrease in physical and psychological activity” (Chiles, 1986, p. 89). Rosen and Amador (1996) state that “clinical depression refers to a constellation of signs and symptoms that significantly affect a person’s functioning and last for a substantial amount of time” (p. 19). The symptoms of depression as given by the American Psychological Association (1996) include: sadness, feelings of worthlessness, change in appetite, recurring thoughts of death or suicide, helplessness, low self-esteem, change in sleep patterns, hopelessness, excessive guilt, loss of interest in activities, loss of energy, fatigue, and inability to concentrate. The Diagnostic and Statistical Manual of Mental Disorders - 4th edition (1994) states that the symptoms must be present during the same 2-week period.

For the first half of the century, many clinicians did not believe that children or adolescents could have depression. “Children were not thought to suffer mental or emotional problems because they were spared the stresses adults must face” (American Psychological Association, 1996, p. 1). It was not until the early 1970’s that a criterion for childhood depression was developed. In 1980, the American Psychiatric Association published the DSM-III, which contained guidelines for the diagnosis of depression and mania of individuals of all ages. The American Psychological Association (1996) states that 3 to 6 million children suffer from clinical depression and studies of children aged 6 to 12 have shown that as many as 1 in 10 suffer from depression.

Child and adolescent depression has not been accepted until about 15 years ago. On the other hand, diagnoses such as Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD) are usually more easily received. Klatell (1995) states that the number of diagnosed cases of ADHD in the United States has reached an all-time high, making it America's number-one childhood psychiatric disorder (p.1). "Attention-deficit disorder affects from three to 10 percent of all children in America. It is thought to be 10 times more common in boys than in girls" (American Psychological Association, 1996, p. 5). A definition of ADD/ADHD according to the DSM-IV (1994) is "a persistent pattern of inattention and/or hyper-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development" (p.78). Some symptoms of ADD/ADHD individuals are that they ignore details, have trouble sustaining attention in work or play, do not seem to listen when directly addressed, fail to finish projects, are unorganized, avoid activities that require a sustained mental effort, are easily distracted, forgetful, fidget or squirm, talk excessively, have trouble waiting their turn, and interrupt others. In order for an ADD/ADHD diagnosis, these symptoms must be present in the individuals in two or more settings, there must be 'clinical significant impairment' at work or school or with other people, and the individual must not suffer from other mental disorders that could explain the symptoms. The fact that ADD/ADHD is the number-one childhood disorder suggests that parents accept this diagnosis more easily than the established criteria. In addition, many parents believe there are medications to quickly treat ADD/ADHD.

There is much evidence that there is some correlation between ADD/ADHD and depression. It has been found by Weinberg, Haper, Emslie, and Brumback (1995) that

fifty-five (55%) percent of hyperactive prepubertal children were only hyperactive when in a state of depression. Brumback and Weinberg (1977) also found in a study that 74% of the hyperactive children manifested childhood depression. Indeed, it is believed that “ADHD may be a presentation of a biological neuropsychiatric behavior and has many relations with other psychiatric disorders, such as depression, anxiety disorders, and conduct disorders” (Buchanan, 1998, p.1).

The problem with the diagnosis of ADD or ADHD, according to Weinberg et al. (1995), is that too often an evaluator takes the short cut of only evaluating part of the person rather than the whole person. Often the evaluation for learning disability will be omitted, affective illness will be excluded, and the label ADHD suggested and a prescription of stimulant medication offered (p.9). The diagnosis of ADD/ADHD is so much more easily accepted in society that it is easier for the examiner to make a quick diagnosis of it. “Many experts are critical of what they describe as use of the drug as a ‘quick fix’ by impatient parents” (Klatell, 1995, p.1). Examiners must make sure they evaluate all areas of the adolescent.

The quick diagnosis of ADD/ADHD and the failure to adequately assess for depression can be very harmful to adolescents, especially if they really do have depression. The quick diagnosis of ADD/ADHD will often result in quick treatment measures. Ritalin and Cylert are often used to treat ADD/ADHD. “They lower the hyperactivity of hypomania. However, these drugs can trigger depression. The mood disturbance (‘rebound’), insomnia, and loss of appetite associated with these two medications are symptomatic of an underlying depression” (Weinburg et al., 1995, p. 12). Klatell (1995) states that prescriptions for Ritalin have increased more than 600% in the past five years

(p. 1). This suggests that the chance for harm to adolescents is greater since they are not being properly examined and diagnosed, indicating that a thorough examination needs to be done. The symptoms of ADD/ADHD and depression are similar. If the examiner does not completely rule out depression before making the diagnosis of ADD/ADHD, the drugs to treat this disorder could trigger the depression. This could cause real problems for the adolescent.

The multiple threshold theorem best explains induction of effective illness. Weinberg et al. (1995) states that for those with a high genetic load of depression, no environmental stresses are needed to trigger depression. However, those that have a low genetic load, environmental factors or external factors are important in triggering depression. Some external factors are head trauma, viral encephalitis, medical illness, and various drugs and medications (p. 10). Ritalin is one such drug that can trigger depression.

Statement of the Problem

The purpose of this study was to examine the prevalence of depression in adolescents with an ADD/ADHD diagnosis, with a focus on depression that is going undiagnosed and untreated. This study included 2 groups of high school aged students (grades 9-11). One group had a diagnosis of ADD or ADHD and met the criteria as stated in the DSM-IV. The subjects also had never been diagnosed with depression or have never been treated for depression. The second group had never been diagnosed with ADD/ADHD or depression. They were all given the Beck Depression Inventory to see if they had a significant level of symptoms of depression. The hypothesis being examined is that there will be a significantly higher proportion of adolescents with ADD/ADHD

diagnosis reporting clinical levels of depression than adolescents who do not have an ADD/ADHD diagnosis.

CHAPTER II

LITERATURE REVIEW

“Depression has been considered to be the major psychiatric disease of the 20th Century, affecting approximately eight million people in North America” (Blackman, 1995, p. 1). According to American Psychological Association (1996), 3 to 6 million children suffer from clinical depression, which makes them at-risk for suicide (pg. 1). Blackman (1995) found that the suicide rate for adolescents has increased more than 200% over the last decade and that it is now responsible for more deaths in youths aged 15 to 19 (pg. 1).

Depression is an illness that has been considered an adult illness only. “For the first half of the twentieth century, most clinicians did not accept the concept that primary depression occurred in children and adolescents” (Weinberg et al., 1995). It wasn't until the 1960's that research started to acknowledge that children do in fact suffer from depression. Ten years later a criterion for childhood depression was developed. However, in the Diagnostic and Statistical Manual of Mental Disorders, DSM IV, there is not a separate guideline for the diagnosis of depression for adults and children.

Symptoms of Depression

Those who may be suffering from depression will experience some changes in their mood, emotional changes, changes in the way their body functions, loss of energy, and difficulty concentrating. The most classic symptoms of depression are the following: depressed mood for most of the day, disturbed appetite or change in weight, disturbed sleep, psychomotor retardation or agitation, loss of interest in previously pleasurable

activities, fatigue or loss of energy, feelings of worthlessness, difficulty concentrating or thinking clearly, and morbid suicidal thoughts or actions (Go Health, 1998, p. 1).

An alteration in mood is usually the “red flag” that alerts a doctor that depression should be considered. Some examples of alterations in mood are feelings of sadness or despair. The person begins to no longer be interested in things that they normally enjoyed. They lose their ability to feel pleasure. According to the DSM IV (1994), children and adolescents show an irritable mood (pg. 327).

Some of the emotional changes that may occur for those who may be depressed are inappropriate feelings of worthlessness or guilt. They may experience a marked lack of confidence, possibly to the point of avoiding situations for fear of failure. The sense of worthlessness or guilt may be delusional. They may blame themselves for things they have no control over (Go Health, 1998, p. 1).

Depression can also affect the way the body functions. Someone who is depressed may experience some physical symptoms. The most typical change is in weight. There will be a decrease in appetite or even excessive appetite. It becomes a concern when there is significant loss or gain in weight. Adolescents may experience depression when they fail to make expected weight gains (DSM IV, 1994, p. 321). Depressed individuals will also experience decreased energy, fatigue, or tiredness. The reason they feel this is because their sleep patterns may change. Some have difficulty falling asleep, some wake up in the middle of the night, and some may wake up in the early morning hours without being able to return to sleep.

Many who suffer from depression find that they have difficulty concentrating. They have difficulty studying or completing their work because they are easily distracted.

They also have difficulty making decisions or remembering things. The DSM IV (1994) states that in children, a precipitous drop in grades may reflect poor concentration (p. 322).

Diagnostic Evaluation of Depression

To consider a diagnosis for depression, a doctor will look for the nine classic symptoms mentioned earlier. In order for a diagnosis of depression to be made, five of the nine symptoms must be present during the same two-week period. "At least one of the five symptoms must be either a depressed mood or loss of interest or pleasure" (Go Health, 1998, p.1). According to the DSM IV (1994), the symptoms must not meet the criteria for a Mixed Episode. The symptoms must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. The symptoms must not be due to the direct physiological effects of substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism). Lastly, the symptoms are not better accounted for by bereavement, persist longer than 2 months, or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation (p. 327).

In order to make a diagnosis for depression a doctor should first conduct a physical examination to rule out medical illnesses. Often times a physician will focus only on the physical aspects of depression, and may prescribe medication without referring the patient for a psychological evaluation. Franklin, 1999, states that a person should never take an antidepressant medication alone, without also beginning psychotherapy, or at least seeing a psychologist for an evaluation. "A thorough neurological exam is also key to

making the diagnosis of depression. Slowing of speech, poor concentration, sluggishness, and restlessness are often related to the depression itself, but they may also have medical causes as well” (Go Health, 1998, p.3). It is very important for the doctor to rule out all medical possibilities because medical conditions share some of the symptoms of depression. “A good psychological diagnostic evaluation will include a complete history of symptoms, i.e., when they started, how long they have lasted, how severe they are, whether the patient has had them before and, if so, whether it was treated and what treatment was received” (Franklin, 1999). The psychologist should also ask about drug and alcohol use, and if there has been thoughts of death or suicide. They should also find out if other family members have had depression and what treatments they may have received and which were effective. The psychological diagnostic evaluation should also include a mental status examination to assess the full range of psychological symptoms and problems (Franklin, 1999). This process will help identify any other psychological problems that might be present, and will help determine the most appropriate treatment. The diagnostic assessment for depression should include not only a physician but also a psychologist. This will insure a full and accurate diagnosis.

Treatment of Depression

There are two main avenues of treatment for adolescents who suffer from depression: psychotherapy and medication. Some individuals require both forms of treatment. Blackman (1995) states that the majority of teenagers with mild depression respond to supportive psychotherapy with active listening, advice and encouragement (p. 3). Franklin (1999) states that the length of treatment will vary, according to the severity of the depression, and the number and kinds of problems that need to be addressed. He

says that most people will begin to feel relief with 6 to 10 sessions, and approximately 70-80% of those treated notice significant improvement within 20-30 sessions (p. 1).

Some of the psychotherapy approaches include cognitive-behavioral therapy, supportive counseling, and problem solving therapy. Supportive counseling helps ease the pain the pain of depression, and addresses the feelings of hopelessness. Franklin (1999) states that cognitive therapy changes the pessimistic ideas, unrealistic expectations, and overly critical self-evaluations that create depression. It helps the depressed person recognize which life problems are critical, which are minor and also helps him/her develop positive life goals, and a more positive self-assessment (p. 1). The third type, problem-solving therapy, changes the areas of the person's life that are creating the stress and contributing to the depression. This may require changes in problem solving skills, stress management, communication skills, and life management skills.

The second type of treatment that is used is medication. "Psychotherapeutic medications do not cure the depression, they just relieves the symptoms" (Franklin, 1999). This type of treatment is essential for more serious and persistent depression, although it can be helpful for some milder depression. "60 to 70% of depressed patients who are given an antidepressant recover from their depression in three to six weeks" (Go Health, 1998, p.8). The goal of treatment is complete relief of depressive symptoms, not just partial relief. Franklin (1999) states that antidepressants, although they are not "uppers" or stimulants, take away or reduce the symptoms of depression and help the depressed person feel the way he did before he became depressed.

The dosages of antidepressants will vary, depending on the type of drug, the person's body chemistry, age, and body weight. Dosages are generally started low and

raised gradually over time until the desired effect is reached without the appearance of troublesome side effects.

There are a number of different types of antidepressant medications. The most effective type of medication used to treat depression in adolescents is selective serotonin reuptake inhibitors (SSRIs). Some examples of this type of drug are Zoloft, Prozac, Paxil, and Luvox. "SSRIs are well tolerated by teenagers because of their fairly rapid action and low tendency to cause side effects" (Blackman, 1995, p. 3). According to Franklin (1999) all the SSRI antidepressant effects are due to their action on one specific neurotransmitter, serotonin. It is important that an adequate time period be given to allow medication to work (four to six weeks) and that adequate doses are used.

ADD/ADHD

Depression seems to be a major problem among adolescents in this country. However, as mentioned earlier, ADHD is America's number-one childhood psychiatric disorder (Klatell, 1995, p. 1). This disorder affects approximately three to ten percent of all children in America.

ADD is a neurobiological disability. Researchers believe that ADD is due to altered brain biochemistry and these differences are considered to be the cause of poor regulation of attention, impulsivity, and motor activity (C.H.A.D.D., 1995, p. 1). There was also a landmark study that was published in the New England Journal of Medicine by researchers at the National Institute for Mental Health, which documented the neurobiological underpinning of ADD through brain imaging. It was found that the rate at which the brain uses glucose, its main energy source, was shown to be lower in persons

with ADD, especially in the part of the brain that is responsible for attention, handwriting, motor control, and inhibition responses (C.H.A.D.D., 1995, p. 2).

Diagnostic Criteria for ADD/ADHD

There are three primary symptoms of ADD: inattention, impulsivity, and hyperactivity. Some of the symptoms of inattention are: ignores details, makes careless mistakes, trouble sustaining attention in work or play, does not seem to listen when directly addressed, does not follow through on instructions, fails to finish, difficulty with organization, avoids activities that require a sustained mental effort, loses things, easily distracted, and forgetful in daily activities. The symptoms of hyperactivity are fidgeting, getting out of his seat, running or climbing when he shouldn't, having difficulty with quiet leisure activities, always being "on the go", and talking excessively. The symptoms of impulsivity are blurting out answers even before questions have been completed, and interrupting others. These are the common symptoms of ADD or ADHD.

Many people experience many of these symptoms, but it doesn't mean they have ADD or ADHD. To be diagnosed with ADD, predominantly inattentive type, the person must exhibit at least six of the symptoms of inattention, for at least 6 months. In order to be diagnosed with ADD, predominantly hyperactivity-impulsive type, they must exhibit at least 6 of the symptoms of hyperactivity-impulsivity, for at least 6 months. A person may be diagnosed with ADD/ADHD, combined type, in which they exhibit 6 (or more) symptoms of inattention and six (or more) symptoms of hyperactivity-impulsivity for at least 6 months. Just having six or more of the above symptoms is not enough to be diagnosed with ADD or ADHD. According to the DSM IV (1994), the symptoms that cause the impairment must have been present before age 7 years. The symptoms must be

present in two or more settings. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning. Lastly, the symptoms must not be the result of other mental disorders (p. 84-85).

The diagnosis of ADD or ADHD should be a multi-faceted process. "A comprehensive assessment of a child or adolescent suspected of having ADD should include an evaluation of medical, psychological, educational, and behavioral functioning" (CH.A.D.D., 1995, p. 2). This process requires the physician to gain information about the child's health to rule out any medical problems. A psychologist will often evaluate the child's educational and behavioral functioning. Much of the information is obtained through behavior-rating scales, which are usually completed by school personnel, parents or guardians, and others who may have frequent contact with the child. According to Mental Health LVHHN (2000) an evaluation for ADD/ADHD should involve a health care professional who is knowledgeable and experienced at working with people with ADHD. It also states that a comprehensive evaluation should involve a thorough medical and developmental history, behavior-rating system to indicate type and severity of symptoms, screening for learning problems or emotional problems, and screening for co-morbid conditions, such as depression, anxiety disorders, substance abuse, or learning problems (p. 1).

Treatment of ADD/ADHD

Treatment for this disorder can include the use of medication, special education programs, and psychotherapy. The number one treatment used is medication. Ritalin is the drug that is most commonly prescribed to treat the symptoms of ADD. As mentioned previously, Klatell (1995) found that prescriptions for Ritalin have increased more than

600% in the past five years. Ritalin and Dexedrine are the two types of medications that have been used the longest. They help the child with impulse control, attention, and behavior. The Center for Attention Deficit and Behavior Disorders (2000) states that the side effects of these two drugs are appetite suppression, stomach-ache, delay of sleep onset, mild suppression of weight gain, increased hyperactivity as the drug wears off, and involuntary twitches and tics (p. 2). These drugs are usually used two times per day depending on the child's responsiveness. Cylert is another medication that is used to treat ADD/ADHD. It works in the same way as Ritalin and Dexedrine. "Its advantage is that it only needs to be given once per day" (The Center for Attention Deficit and Behavior Disorders, 2000, p. 3). Another type of medication used is antidepressants, such as Tofranil and Norpamin. The Center for Attention Deficit and Behavior Disorders (2000) states that this type of treatment has been used with older children and adolescents. "Some children experience dry mouth, indigestion, rapid heart beat and fatigue as side effects" (The Center for Attention Deficit and Behavior Disorders, 2000). Gross (2000) found that some advantages of taking antidepressants over stimulants are that they are 80% effective, one-a-day dosing, effective for 24 hours, no 'letdown' or 'crash', does not cause tics, and helps children fall asleep easily at night. Choosing the best type of drug treatment is important for the child. Between 70 to 80 percent of children with ADD respond to medications when they are properly used (American Psychological Association, 1996, p.5).

Other options are available to treat ADD. Roberts (1999) states that one positive effective treatment is behavior modification for training in social skills, study and organizational skills, and problem-solving skills. This can help with the remediation of

educational, learning, and social deficits. Psychotherapy is commonly used in combination with medications. It can provide support for the child with the disorder by teaching techniques to deal with the disorder. Counseling can also be effective for the family to deal with the disorder. According to The ADD Center (2000), counseling can be highly effective in a number of ways. One way is that the therapist can provide a place for the child to feel safe in trying new ways of behaving, and will allow him to re-evaluate past and current experiences and feelings with new information. They can help with building the child's self-esteem by pointing out his strengths. The second thing that counseling can help with is helping the child learn about and understand ADD/ADHD. Another way counseling helps is helping the child develop strategies for improving attention, organizational skills, homework assignments, resolving conflicts, dealing with parents and teachers, and in social situations. The last thing a counselor can do is act as an advocate to help the child communicate with teachers or with parents (p. 4).

As mentioned earlier, ADD and ADHD is the number-one childhood disorder in the United States. Also mentioned earlier, suicide rates for adolescents have increased more than 200% over the last decade. One would have to wonder why depression is not the number-one childhood disorder in America. Are there many adolescents who have depression but are not diagnosed and being treated? Are they being diagnosed with some other disorder?

ADD/ADHD and Depression

Research has been done to see if there is a relationship between depression and ADD/ADHD. Previous research did find a relationship between these two disorders. A study by Brumback and Weinberg in 1977 examined if there was a relationship between

hyperactivity and depression. They evaluated 223 school-age children through questionnaires completed by parents and teachers and clinical assessments by a physician. They were divided up into five groups based upon the presence or absence of hyperactivity and depression. Out of the 117 hyperactive children, eighty-six were depressed and out of the 106 children without hyperactivity, fifty were depressed. They also reported in this study that hyperactivity beginning after age two years was most often symptomatic of an underlying depression. They also found that fifty-five percent of hyperactive children were only hyperactive when in a state of depression. Another study by Thompson, Riggs, Mikulich, and Crowley (1996) found more comorbid depression and anxiety in youths with conduct disorder (CD) and ADHD. Buchanan (1998) states that ADHD is a presentation of a biological neuropsychiatric behavior and has many relations with other psychiatric disorders; some would be depression, anxiety disorders, and conduct disorders, language and learning disorders (p.1).

When people characterize an adolescent with ADD/ADHD, they use terms such as disruptive, defiant, uncooperative, and easily discouraged. "These terms are typically described in childhood depression" (Brumback & Weinberg, 1977, p.249). In this same study Brumback and Weinberg went as far as to say that hyperactivity is only a symptom of various behavior disorders, including childhood depression (p. 249). The following descriptions for mania or depression by Cogan (1996): moodiness, irritability, difficulty sleeping, impulsivity, hyperactivity, decreased concentration, short attention span, low frustration tolerance, and declining academic performance, are all very similar to the symptoms of ADD/ADHD (p. 1). Mesquita and Gilliam (1994) studied the similarities between depression and ADHD. They state that an examination of diagnostic criteria

reveals the symptoms overlap between childhood depression and ADHD. They found that both disorders can result in difficulty concentrating, psychomotor agitation, possible engagement of self-endangering behaviors, social withdrawal, guilt, weeping, and dysphoria. Biederman, Mick, & Faraone (1998) have found that some children meet the criteria for both ADHD and depression. Ollendick and King (as cited in Biederman et al., 1998) also state that the combination of comorbid depression and ADHD may lead to high morbidity and disability and a poor long-term prognosis.

As seen by the research done, there is a fine line between the symptoms of depression and ADD/ADHD. It can be very difficult for physicians to give the correct diagnosis. Blackman (1995) found that depression in the age group 15 to 19 is greatly under-diagnosed, leading to serious difficulties in school, work, and personal adjustments, which often continue into adulthood (p. 1). Yet Dr. Peter S. Jensen, Chief of the Child and Adolescent Disorders Research Branch of the National Institute of Mental Health, says that he fears that ADHD is suffering from the "Odisease of the month' syndrome."

Milberger, Biederman, Faraone, Murphy, and Tsuang (1995) did a study to find out if ADHD was an artifact of symptoms shared with other psychiatric disorders and if the comorbid condition was an artifact of overlapping ADHD symptoms. They found that when the overlapping symptom of depression were subtracted, 90% of the subjects still maintained their diagnosis of ADHD. They also found that when overlapping ADHD symptoms were subtracted, 79% maintained their diagnosis of major depression. This study shows that there is significant comorbidity between ADHD and depression.

A study by Biederman et al., (1998) tried to find if depression in ADHD children was "true" depression or demoralization. Their four year study of 76 depressed

ADHD children found that ADHD and depression had independent and distinct courses. This showed that ADHD children did not show depression just because they felt demoralized, however they had “true” depression.

Why is ADD/ADHD so over-diagnosed while depression is under-diagnosed? Part of the reason is that depression has been an illness that is not as easily accepted in society, while ADD/ADHD has been readily accepted. Another reason is that physicians do not take the time to evaluate the individual completely. “It is important to undertake a complete systematic evaluation to establish correct diagnosis” (Weinberg et al., 1995, p. 9). They also state that “too often an evaluator takes the short-cut of only evaluating part of the young person rather than the whole person” (p. 9).

Consequences of Misdiagnosis

What happens if there is a misdiagnosis? Just like any untreated disorder, there can be severe consequences if it is not properly diagnosed and treated. Depression that goes undiagnosed and untreated can have long-term effects on the individual and can go as far as killing them. One study by Weiss & Hechtman (1986) (as cited in Seay, 1999) found that almost 10% of ADHD individuals have attempted suicide within the past 3 years and about 5% will die from either suicide or accidental injury. Elias (1998) states that new studies show that youngsters who develop depression are three to four times more likely than peers to have drug or alcohol abuse problems by their mid-20's (p. 2). Those who go undiagnosed or improperly treated for depression may get to the point of committing suicide. The American Psychological Association (1996) states that suicide is the third leading cause of death among youth and every hour 57 children and teenagers try to kill themselves, with 18 succeeding everyday (p. 1).

A problem with misdiagnosing depression for another disorder can lead to the above consequences. Weinberg et al.(1995) state that depression is a chemical disorder of the brain that can occur spontaneously or be promoted or induced by other medical illnesses, drugs and medications, and environmental events (p. 10). The part of this finding that is very interesting is that some medications can induce the depression. Weinberg et al. (1995) found that the two types of medication used to treat ADD/ADHD, Ritalin and Cylert, could actually promote depression (p. 12). Ritalin and Cylert can be very helpful in lowering the hyperactivity and increase concentration for those who have ADD/ADHD, if that is their only disorder. Often times parents go to their child's physician looking for a "quick-fix" for their child and, after a very brief examination, Ritalin is prescribed. The physician fails to rule out other causes of the child's symptoms. What could result is that the child is misdiagnosed and mistreated, which could result in harmful consequences for the child.

If the numbers for ADD/ADHD, drug abuse, and suicide among adolescents continue to rise, but the diagnosis for depression decreases, one must wonder if the procedure for diagnosing adolescents for ADD/ADHD is adequate. Unfortunately many parents are looking for the quickest way to treat their child and not considering all the possibilities that may be causing the problems. It may be the responsibility of the physician to consider all the possibilities. They may need to take more time in the evaluation process to ensure an appropriate diagnosis.

The purpose of this study was to examine the prevalence of symptoms of depression in adolescents with an ADD/ADHD diagnosis that are going untreated. If there is a significant proportion of ADD/ADHD subjects who score a clinical level of

depression compared to those without an ADD/ADHD diagnosis, then the study will show a need for a better evaluation of ADD/ADHD and depression. The hypothesis being examined is that there will be a significantly higher proportion of adolescents with ADD/ADHD diagnosis reporting clinical levels of depression than adolescents who do not have an ADD/ADHD diagnosis.

CHAPTER III

METHOD

Participants:

Subjects for this study were selected from the special education population of high school (grades 9-11) students from a southern Illinois high school serving a predominately middle-class, residential area. The sample for this study contained 55 students in special education. Thirty were in one group and 25 were in another group. Special education students were chosen for this study because they were easier to access.

Of the 55 students used for this study, 33 (60.0%) were male and 22 (40.0%) were female. The race distribution was 10 (18.2%) African-American and 45 (81.8%) Caucasian participants. The distribution in socioeconomic status was 21 (38.2%) of the students were on free or reduced lunches and 34 (61.8%) were in the middle to high socioeconomic class. The ages of the students ranged from 14 to 19 with the mean age of 16. Forty-three (78.2%) were identified as learning disabled; 11 (20.0%) were behavior disordered; and one (1.8%) was other health impaired. Of the 55 total participants, 30 (54.5%) said that they had a diagnosis of Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD). The other 25 (45.5%) did not have ADD or ADHD. Of the 30 ADD/ADHD students, 14 (46.7%) reported that they were on medication for their ADD/ADHD.

Lists of all special education students, grades 9-11, were obtained from the special education coordinator of the high school. Based on the information completed by the parents of the adolescents, all adolescents were placed in one of two groups. One group

had a diagnosis of ADD or ADHD (n=30), and had never been diagnosed with depression. The other group (n=25) had never been diagnosed with ADD/ADHD or depression.

Instruments:

The Beck Depression Inventory (BDI) is a short, simple, self-report questionnaire. Most subjects can complete this questionnaire in about 10 minutes. The BDI is used to see if an individual shows signs of depression. The questionnaires consist of 21 questions. Each question has four possible responses. An example of the question format is as follows:

Check the statement from this group that you feel is most true about you:

- 0 I do not feel sad.
- 1 I feel sad.
- 2 I am sad all the time and can't snap out of it.
- 3 I am so sad or unhappy that I can't stand it.

The responses are used to indicate relevant treatment areas that cover: mood, pessimism, and sense of failure, guilt, punishment, self-dislike, change, work difficulty, insomnia, and loss of appetite.

Summing the responses for each of the 21 questions scores the BDI. Each question is rated 0-3. A higher total score indicates a higher level of depression. The interpretation of the scores is as follows: 1-10, indicates ups and downs considered normal; 11-16, indicates mild mood disturbance; 17-20 indicates borderline clinical depression; 21-30, indicates moderate depression; 31-40, indicates severe depression; 40 and above, indicates extreme depression. The manual has a variety of normative results available, with BDI data for samples of patients with major depression, dysthymia,

alcoholism, and mixed problems. These norms will be helpful in this study because the population will have one or more problems.

The administration of this questionnaire is very simple. There is no training needed to administer or to score it. The internal consistency of the scale ranges from .73 to .95 with a mean of .86 in nine psychiatric populations. The test-retest reliability is lower, with a range of .60 to .83. The reason this is lower is because a person's depression can change from day to day or week to week. The validity of this questionnaire has been tested significantly. The correlation, with clinical ratings and scales of depression, range from .60 to .76. The differences between sexes are minimal, although there may be a slight difference in the expression of depression between men and women. This instrument has been widely used and had been tested extensively for validity. The only problem with this instrument is that it is a self-report and a person could hide or exaggerate their depression. However, this instrument is very accurate for those who respond honestly.

Procedures:

This study was a descriptive research design. This study attempted to examine if adolescents with a diagnosis of ADD or ADHD may also have symptoms of depression that are going untreated.

A questionnaire was sent to 280 parents of special education students from a southern Illinois high school. A cover letter accompanied the questionnaire containing the following: the reasons for the study, the assurance that confidentiality would be maintained, that the results of the depression inventory would be used for research purposes only and not for diagnosing depression, and that the results would be made

available to them. This was based from the *Ethical Standards for School Counselors*. The letter to the parents covered such ethical standards as “keeping information confidential unless disclosure is required to prevent clear and imminent danger to the counselee or others” and “will not misuse the results and interpretations and take reasonable steps to prevent others from misusing the information.” The questionnaire asked if their child had a diagnosis of ADD or ADHD. It also asked if their child had ever been diagnosed with depression or had ever been treated for depression. The questionnaire then asked the parents if they would give permission for their child to be given a depression inventory. The other ethical code that was followed to ensure the safety of the subject was one that states, “the counselor will make referrals when necessary or appropriate to outside resources.”

Based on the questionnaires returned, two groups were set up for the study. One group consisted of those who had been diagnosed with ADD or ADHD and had never been diagnosed or treated for depression. The second group consisted of those who had never been diagnosed with ADD, ADHD, or depression. Those whose parents gave permission to take the Beck Depression Inventory were taken out of their study hall period to take the BDI. This allowed the students to take their time with each item and not feel pressured into hurrying through it. The rater of the test kept a safe distance from each student while he or she was taking the test to reduce anxiety and to give the student privacy. Before giving the BDI to each student, the rater explained that the results would be confidential. However, the results would be shared with his or her parent if the rater felt that there was danger to the students. The inventory was scored after the student left, according to the procedures of the BDI.

A score of 17 and higher on the BDI indicated a significant degree of symptoms of depression. Chi-square analysis was used to examine if there was a significantly larger proportion of ADD/ADHD individuals who showed clinical level of depression compared to those who did not have an ADD/ADHD diagnosis.

Data analysis:

All depression inventories were hand-scored by the researcher and were entered into a computer. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) 6.1 for Students (SPSS, 1994). For purposes of testing the hypotheses, Chi-Square analyses with a set alpha of 0.05, was used.

CHAPTER IV

RESULTS

Of the 280 surveys mailed, there was a total of 101 (36 %) replies and 179 (64 %) no responses. Of the 101 replies, 36 (36 %) were refusals to participate, and 10 (10 %) were unusable due to incomplete or missing parts. Of the 101 who replied, 55 (55 %) were usable.

The distribution of depression levels for this sample were as follows: 31 reported normal ups and downs, 14 reported mild mood disturbance, 1 reported borderline clinical depression, 9 reported moderate depression, and no one fell in the severe and extreme depression levels. Of the 9 who reported moderate depression, 7 (78%) had an ADD/ADHD diagnosis.

A t-test was run to test for significant differences in depression scores between those who had an ADD/ADHD diagnosis and those who did not. The results are shown in Table 1.

Table 1: T-test results for the comparison of depression scores between ADD/ADHD individuals and non -ADD/ADHD individuals.

T- Scores					
<u>ADD Status</u>	<u>N</u>	<u>Mean</u>	<u>Std. Deviation</u>	<u>T</u>	<u>P</u>
Yes	30	12.7667	8.5	1.979	0.053
No	25	8.6800	6.4		

While those who had ADD/ADHD scored higher on depression than those who did not, the differences barely missed being significant ($t=1.979$, $p=0.053$). It will also be

noted that mean depression for the ADD group fell within the mild mood disturbance category.

The 55 students taking the Beck Depression Inventory were divided into two categories based on the ADD/ADHD diagnosis. There were 30 who had ADD/ADHD diagnosis and 25 who did not. In addition, each group was subdivided into 2 groups: (i) those who scored less than 16, indicating normal to mild depression and (ii) those who scored 16 or higher, which showed they had borderline to extreme depression.

To test if any relationship exists between a student's ADD status and level of depression, a chi-square was performed on the crosstabulation of ADD status and depression level. The results are presented in Table 2.

Table 2

Chi-Square Distribution

<u>ADD Status</u>	<u>Levels of Depression</u>				<u>Total</u>
	<u>Mild/Normal</u>		<u>Clinical</u>		
	<u>f</u>	<u>p</u>	<u>f</u>	<u>p</u>	
Non ADD	23	92%	2	8%	25
ADD	22	73.4%	8	26.6%	30

The Chi-square was not significant ($p = 0.053$). However, there were proportionately more ADD/ADHD students who reported a clinical degree of depression (26.6%) than students who did not have ADD/ADHD (8%).

CHAPTER V

DISCUSSION

Summary of Findings

The results of this study did not support the hypothesis, that students with ADD/ADHD exhibited higher levels of depression, than those without ADD/ADHD, as the results barely missed being significant ($p = 0.053$). This may be due to the small size of the sample.

In the chi-square analysis, it should be noted that one cell of the chi-square distribution had an expected frequency of less than five, which meant that the cell counts did not pass the requirements for the chi-square test. However, the proportion of ADD students with clinical depression levels was higher than the non-ADD/ADHD group. Of the 25 non-ADD/ADHD participants, only two (8%) exhibited clinical level of depression, whereas eight (26.6%) of the 30 adolescents with ADD/ADHD showed a clinical level of depression. It is probable that the chi-square did not reach significant levels due to the small sample size. The sample size was restricted by the inability to get parental approval for a depression inventory to be administered to their child. A larger sample size may have demonstrated that the ADD/ADHD group would have reported significantly higher levels of depression.

Although the study failed to support the original hypothesis, there is a need to consider the limited sample size and how this would have impacted findings. In Brumback and Weinberg's (1977) study they found that out of 223 children, 63% were depressed and hyperactive. In a similar study done in 1973 by Weinberg, Rutman, Sullivan, Penick, and Dietz (cited in Brumback & Weinberg, 1977) they found that 48% of the depressed

children were also hyperactive. Weinberg et al. (1989) found in their study that 44% of the student population fulfilled the criteria for hyperactivity; of which 29% were both hyperactive and depressed. Other research (Anderson, William, McGee, & Sullinvan, 1987; Biederman et al., 1993; Bird et al., 1988; Plizka, 1989; as cited in Thomas et al., 1996) found high rates of antisocial, major depressive, and anxiety disorders among ADHD adolescents. These findings suggest that there is an association with ADD/ADHD and depression.

Brumback and Weinberg (1977) found in their study that hyperactivity and depression can occur independently but are frequently associated. This study found 26% ADD/ADHD students who showed symptoms of depression who had never been diagnosed with depression or treated for it. These adolescents are only being treated for their ADD or ADHD, yet they are showing symptoms of depression. The research is still unclear as to whether these adolescents just have depression and not ADD/ADHD or if they do have both disorders. It is difficult to determine because the two disorders have very similar symptoms and characteristics. Brumback and Weinberg (1977) also reported in their studies that hyperactive children were only hyperactive when in a state of depression. This may suggest that the depression is the primary disorder with ADD/ADHD as the secondary disorder or not the problem at all.

Milberger et al., (1995) found a significant comorbidity between ADHD and depression. Their study found that when overlapping symptoms of depression were subtracted, 90% of the subjects still maintained an ADHD diagnosis. They also found that when ADHD symptoms were subtracted, 79% maintained their major depression diagnosis. Another study by Biederman et al., (1998) found that ADHD children did not

show depression just because they felt demoralization. They, in fact, did have “true” depression. The above studies are examples of different research attempting to discover the link between ADD/ADHD and depression.

Several recommendations come from the above findings. One such that warrants further research is whether medication prescribed for ADHD may impact an individual’s depression level. Later studies by Weinberg et al. (1995) suggest “the so-called ‘rebound’ side effects and vegetative symptoms (loss of appetite, insomnia) attributed to stimulant medications used to treat hyperactive children were actually the result of an underlying depression” (p. 8). They are suggesting that the medications used to treat ADD/ADHD are actually promoting depression. In this study it was found that 6 of the 9 who showed moderate degrees of symptoms of depression were taking medication for their ADD/ADHD. Does this suggest that the medication these adolescents are taking to treat their ADD/ADHD is what is triggering their depression? It can’t be proven in this study; however, it does suggest that further research should be done on the effects that drugs used to treat ADD/ADHD could have on individuals who could also be depressed.

Who are the ones who typically prescribe the medication to treat ADD/ADHD? A child’s physician is the ones who diagnose ADD/ADHD and also prescribe the medications to help treat the disorder.

However, psychiatrists are the ones who diagnose and treat depression in adolescents. The problem lies with the fact that parents will go to their child’s physician and want a “quick-fix” for their child and the physician sends out a few behavior rating scales, diagnose the child with ADD/ADHD, then prescribes Ritalin to help solve the problem. What doesn’t happen in this process is that the physician do not find out if the

symptoms are due to any other mental disorder, like depression. Are physicians taking the proper steps to make effective diagnosis for their patients?

The National Institutes of Health (1998) feel that, "there is no consistency in treatment, diagnosis or follow up for children with ADHD." They also feel that although the diagnosis for ADHD remains elusive and controversial, it continues to be a commonly diagnosed behavior disorder of children. They state that the inconsistencies often begin with the family practitioner, who are the ones who typically diagnosis and prescribe medication for the children with ADHD. They feel that pediatricians spend more time with their patients than do family practitioners, yet they diagnose fewer patients. This may suggest that pediatricians are taking the proper steps in diagnosing and not just looking for the "quick-fix". Because of the short time the primary care physician spends with the patients, "comorbid symptoms of ADHD also are less frequently diagnosed by primary care physicians" (National Institutes of Health, 1998). The findings in this study may suggest that further research may need to be done on medications used to treat ADD/ADHD and also on the practices of physicians who diagnose ADD/ADHD.

Another area of interest that was found in this study was that all 9 subjects who showed moderate degrees of depression were female. The question is whether females who have ADD/ADHD will show symptoms of depression more than males who have ADD/ADHD. "Research published in the Journal of Attention Disorders in November of 1998 points out that girls with ADHD may have a greater prevalence of comorbid internalizing (depression, etc) and learning problems, while boys tend to show a greater prevalence of disruptive behavior disorder (cited in Seay, 1999). Seay (1999) also states that depression could actually be a female expression of ADHD. The pattern of ADD in

girls is usually quite different than that of boys: ADD girls often manifest cognitive impairments, depression, and low self-esteem, and less of the overt disruptive behavior typically co-occurring for ADD boys (Biederman et al., 1991, Brown, Madan-Swain, & Baldwin, 1991; as cited in Loeber and Keenan, 1994). Seay (1999) questions whether too many females are being misdiagnosed as having depression when they actually should be treated as being ADHD. One must ask the other question, are females being misdiagnosed with ADD when they actually are depressed? Regardless of which question is correct, it illustrates again that the practices used to diagnose adolescents need to improve to ensure that misdiagnoses does not happen.

Another question is if males who take self-reporting depression scales will typically score lower than females who take the same test. According to Page and Bennesch, 1993, males responded to the Beck Depression Inventory in a less “depressed” way. They found that males showed less signs of depression when the material was presented explicitly as a test of depression, but would show more signs of depression when the items were presented in a context not portrayed as measuring depression. It is difficult to know if adolescent boys are answering less honestly than adolescent girls on depression scales or if they really do not have depression. The American Psychological Association (1998) found that by age 18, females have twice the rate of depression as males. This suggests that females are more likely to show signs of depression than males. Future studies in the area of gender biases in self-rating depression scales may need to be explored.

If proper diagnosis is done and an adolescent does have ADD/ADHD and depression, what should be done to help? Brumback and Weinberg, 1977, state that “it is possible to consider therapy to lift the depression and thereby possibly alter the long-term

guarded prognosis for a significant subgroup of ‘hyperactive children’” (p. 250). Seay (1999) agrees with this approach of getting the depression under control first, then treating the ADD/ADHD. As mentioned earlier, if the ADD/ADHD is treated with medications such as Ritalin, there is a chance that depression may be triggered if the depression was unknown to the patient. If the adolescent does have a diagnosis of both ADD/ADHD and depression, there are some medications used to treat them both. There are limited studies on the combinations of the drugs to treat both disorders. Medications should not be the only treatment used. The medication should be in conjunction with therapy. There are various therapy techniques used for these disorders. What would have to be decided is what disorder would be the primary focus. Psychotherapy would be ideal for treating the depression. Behavior management, cognitive therapy, and social-skills training are techniques to use for treatment of ADD/ADHD. Alternative school settings may be very helpful for those with more severe depression and ADD/ADHD.

The bottom line is that proper diagnosis needs to be done to make sure that proper treatments are used. This study has shown, along with previous studies, that a proportion of children with ADD/ADHD have symptoms of depression that are going untreated. We are still unclear as to whether these adolescents are misdiagnosed or if they have a “dual-diagnosis”. Regardless of the answer, it is obvious that physicians must make sure that they conduct a thorough evaluation on each patient.

Appendix A



**LINDENWOOD
UNIVERSITY**

September 11, 1999

Dear Parents:

My name is Jeanne Goacher and I teach Individualized Education at Belleville West High School. This fall I will be completing my Masters Degree at Lindenwood University. Part of my course work requires that I complete a research study for my thesis. The focus of my study is on Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD), and depression. I am concentrating on adolescents in grades 9 through 12. Dr. Silsby is aware of this project and has given my permission to send this survey/permission slip to you. The responses to the survey and the results of the depression inventory are confidential and will only be used for this project. **This research is for my thesis only and will not be used for school records.**

I ask that you complete the enclosed survey and send it back in the pre-stamped enveloped by September 22, 1999.

If you have any questions please feel free to contact me at 233-5070 ext. 9532. Thank you in advance for your help.

Sincerely,

Jeanne Goacher

Jeanne Goacher
Belleville West Teacher

Appendix B

SURVEY

Student's Name _____

Student's ID Number _____

1. My child is diagnosed with: (check one)
 Attention Deficit Disorder (ADD)
 Attention Deficit Hyperactivity Disorder (ADHD)
 My child is **NOT** diagnosed with either ADD or ADHD

2. My child: (check one)
 takes medication for his/her ADD or ADHD
 does not take medication for ADD or ADHD

3. My child has: (check one)
 been diagnosed with depression
 NEVER been diagnosed with depression

4. My child has: (check one)
 been treated for depression
 NEVER been treated for depression

PERMISSION SLIP

- ◆ If your child **DOES** have a diagnosis of ADD or ADHD, has **NEVER** been diagnosed with depression, and has **NEVER** been treated for depression, please indicate below if you **GIVE** or **DO NOT** give permission for your child to take the Beck Depression Inventory.

* Please check one and sign below:

I **GIVE** my child permission to take the Beck Depression Inventory

I **DO NOT** give my child permission to take the Beck Depression
Inventory

(Parent Signature)

(Date)

**** Please send back the survey even if your child will not be taking the depression inventory.**

Appendix C

Demographic Information

Student ID number: _____

Age _____

Ethnic background: African-American Caucasian (white) Hispanic Other
(circle one)

Gender: Male Female

Socioeconomic Status: Free/Reduced Lunches High/Middle

Type of Disability: Learning Disability Behavior Disorder Other Health Impaired

Attention Deficit Disorder (ADD): Yes No

Attention Deficit Hyperactivity Disorder (ADHD): Yes No

Medication for ADD or ADHD: Yes No

BECK INVENTORY

1. 0 I do not feel sad.
1 I feel sad.
2 I am sad all the time and I can't snap out of it.
3 I am so sad or unhappy that I can't stand it.
2. 0 I am not particularly discouraged about the future.
1 I feel discouraged about the future.
2 I feel I have nothing to look forward to.
3 I feel that the future is hopeless and that things cannot improve.
3. 0 I do not feel like a failure.
1 I feel I have failed more than the average person.
2 As I look back on my life, all I can see is a lot of failures.
3 I feel I am a complete failure as a person.
4. 0 I get as much satisfaction out of things as I used to.
1 I don't enjoy things the way I used to.
2 I don't get real satisfaction out of anything anymore.
3 I am dissatisfied or bored with everything.
5. 0 I don't feel particularly guilty.
1 I feel guilty a good part of the time.
2 I feel quite guilty most of the time.
3 I feel guilty all of the time.
6. 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.
7. 0 I don't feel disappointed in myself.
1 I am disappointed in myself.
2 I am disgusted with myself.
3 I hate myself.
8. 0 I don't feel I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my faults.
3 I blame myself for everything bad that happens.
9. 0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.
10. 0 I don't cry anymore than usual.
1 I cry more now than I used to.
2 I cry all the time now.
3 I used to be able to cry but now I can't cry even though I want to.
11. 0 I am no more irritated now than I ever was.
1 I get annoyed or irritated more easily than I used to.
2 I feel annoyed or irritated most of the time.
3 I feel irritated all the time now.

12. 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all of my interest in other people.
13. 0 I make decisions about as well as I ever could.
1 I put off making decisions more than I used to.
2 I have greater difficulty in making decisions than before.
3 I can't make decisions at all anymore.
14. 0 I don't feel I look any worse than I used to.
1 I am worried that I am looking old or unattractive.
2 I feel that there are permanent changes in my appearance that make me look unattractive.
3 I believe that I look ugly.
15. 0 I can work about as well as before.
1 It takes an extra effort to get started at doing something.
2 I have to push myself very hard to do anything.
3 I can't do any work at all.
16. 0 I can sleep as well as usual.
1 I don't sleep as well as I used to.
2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. 0 I don't get more tired than usual.
1 I get tired more easily than I used to.
2 I get tired from doing most anything.
3 I am too tired to do anything.
18. 0 My appetite is no worse than usual.
1 My appetite is not as good as it used to be.
2 My appetite is much worse now.
3 I have no appetite at all anymore.
19. 0 I haven't lost much weight, if any, lately.
1 I have lost more than five pounds.
2 I have lost more than ten pounds.
3 I have lost more than fifteen pounds.
20. 0 I am no more worried about my health than usual.
1 I am worried about physical problems such as aches and pains, an upset stomach, or constipation.
2 I am very worried about physical problems and its hard to think of much else.
3 I am so worried about my physical problems that I cannot think about anything else.
21. 0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

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