DEVELOPMENT OF A NUTRITIONAL AWARENESS GUIDLINE FOR MENTAL HEALTH COUNSELORS

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DEVELOPMENT OF A NUTRITIONAL AWARENESS GUIDELINE FOR MENTAL HEALTH COUNSELORS

The purpose of this study was to design a guideline indicating the possible benefits a proper nutrition, and supplements, can have on behavioral or mental illnesses. The study was designed for counselors working in the field of mental health. This study will provide a close look at the relationship between nutrition and mental health. In addition this study will show the benefits and adverse reactions nutrition has on the brain. The research was based on a variety of resources ranging from books, articles, magazines, Internet sites, as well as 3 structured interviews pertaining to nutritional and mental health questions.

The demographic included three specialists currently in the field of nutrition. Later referred to as participants, these specialists all live in Arizona and were each interviewed separately on the basis of how nutrition affects mental health.

The various resources, along with the three interviewees provided the basis for this research. The participants also provided an opportunity to cross reference findings from the additional resources. Recommendations were made to promote nutritional supplements in mental health. Shakref also advised nutritional specialists, and nutrition awareness should be stressed in counseling.

Annette M. Smith

has been approved

July 2000

Approved:

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John G. Mansour

Accepted:

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Donald O. Mor

Director of Graduate Studies in Counseling
Abstract

Nutrition awareness gives mental health counselors more avenues in helping their clients achieve the best possible treatment. Discussion of nutrition, along with other themes in counseling can give clients many opportunities in their healing process. Proper nutrition, assessment and implementation can provide many advantages in the field of mental health.

The purpose of this study was to design a guideline indicating the possible benefits a proper nutrition, and supplements, can have on behavioral or mental illnesses. The study was designed for counselors working in the field of mental health. This study will provide a close look at the relationship between nutrition and mental health. In addition this study will show the benefits and adverse reactions nutrition has on the brain. The research was based on a variety of resources ranging from books, articles, magazines, Internet sites, as well as 3 structured interviews pertaining of 8 nutritional and mental health question.

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The various resources, along with the three interviewees provided the basis for this research. The participants also provided an opportunity to cross reference the findings from the additional resources. Recommendations were made to promote Nutritional supplements in mental health, seek referrals of accredited nutritional specialists, and nutrition awareness should be discussed as part of counseling.
Dedication

To Fred Smith, for making this all possible

and to:

Ken and Nancy Smith and Joe Bernard

for their patients and understanding
during this project.
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CHAPTER 1

THE PROBLEM

Introduction

The issues of nutrition are one of the highest priorities for Americans today. Yet so many turn to modern medicine and drugs without even looking at a nutritional aspect of a mental health complaint. In addition, many Americans are not even aware that nutrition or lack thereof can play a part in their overall health. Vitamin or mineral deficiency and or allergies to food can be the cause to an array of complaints seen in today’s medical place. However, so few physicians and psychiatrists will look first at nutrition before prescribing a popular drug. Even counselors and social workers will overlook nutrition as the cause in mental illnesses (Page, 1997).

With this concept, there lies a great need in awareness of the many benefits proper nutrition can provide. Without this awareness, many illnesses are being treated with only the obvious symptoms at hand and not the body as a whole, therefore only masking the real problem and thus a repeated procedure most of time. The general approach to any illness, physical or mental, should be evaluated with a series of questions concerning eating habits, diet, sleeping habits and daily stresses. A blood test should also be drawn to determine any known allergy or deficiency a particular patient might have. Implementing vitamin or mineral supplements should then be discussed prior to medical drugs (Holford, 1999, Marti, 1995).

According to the beliefs of the researcher, nutrition awareness and implementation should play a role in the ever-going search for optimum health. It is hoped through careful research that the findings of this study will show vitamin and
mineral supplements may in fact, alleviate many complaints and illness that are troubling Americans today. This research project will include interviews by 3 individuals with expertise in the field of nutrition along with a guideline on nutrition for those in the counseling business.

**Development of the Problem**

The quest for maintaining health is a lifetime process. It is based on overall wellness, not just treating the illness at hand. Allopathic, also known as modern and traditional medicine, places emphasis on crisis intervention. Allopathic medicine simply means doing battle with an imminent threat or disease to one's life. It is the ongoing battle of treatment, not prevention. In fact, many modern medical techniques have developed during the time of war and were used for its emergency care. Allopathic medicine is the kind of treatment that is of great success for acute disease, accidents, emergencies and wartime life saving (Page, 1997).

Although praised for healing acute disease and emergency patients, allopathic medicine though is less successful at healing or treating the chronic illness that hinder so many Americans today. Chronic illness such as arthritis, high blood pressure, migraine headaches, Alzheimer's, hypoglycemia, and hormone imbalances like depression and anxiety are related to lifestyle and aging. It is in these complaints that modern medicine and emergency care lacks restorative and therapeutic wellness. Drug and laboratory advances, the essence of allopathic medicine, are less effective in treating chronic illnesses. They tend to overdo with prescription drugs, and not allow the body to use its own immune response (Page, 1997).

Illnesses like depression can intensify existing diseases and open the door for
countless complaints like headaches, fatigue, palpitations, and memory loss. Modern medicine and the prescription drugs for depression can often times cause more underlying problems of despair as well as create nutritional deficiencies. Many of these so-called treatments for chronic illnesses are hit or miss trials, frequently ineffective, and ignore the person in favor of the illness and its obvious symptoms. The focus of this research is to look at the chronic illnesses that effect American mentally. Illnesses such as depression, anxiety, attention deficit hyperactivity disorder and schizophrenia are cases in which orthodox medicine can actually conflict with the healing process (Page, 1997; Pat Lazarus, 1995).

People who suffer from alleged psychotic or behavioral disorders are being misdiagnosed and harmed to an astounding degree. Many of these patients do not even have psychiatric problems but exhibit physical symptoms that mimic mental conditions. Therefore, they are misdiagnosed, put on medical drugs, sometimes in severe cases institutionalized and sent into the waiting game for which they may never be truly healed (Inlander, Levin and Weiner, 1988). In other words as William Carpenter, director of the Maryland Psychiatric Research Center, reports, "Making a mistaken diagnosis of schizophrenia - as opposed to taking schizophrenia to be something else - is the more dangerous error" (cited in Inlander, Levin and Weiner, 1988 p. 77). Carpenter continues to say, "Generally, if you miss the diagnosis of schizophrenia, other treatments are not likely to do a patient much harm, however, the reverse is not true. If you make the mistaken assumption of chronic schizophrenia, the patient may never recoup his losses" (Cited in: Inlander, Levin and Weiner, 1988, p. 77).
A new holistic approach, which addresses chronic and mental illnesses in a total mind and body therapy, is known as orthomolecular medicine. Generally considered a new psychiatric field, this science of medicine found its name by the two-time Nobel Prize winner, Dr. Linus Pauling. Ortho, a Greek word meaning straight and molecular referring to molecules, is the concept of providing the best molecular environment particular to each individual. In orthomolecular psychiatry a person is examined by their "...diet, glandular functions, glucose metabolism, and a host of other biochemical factors" (Null, 1999, p. 203). Physicians in this field will look at both the internal and external causes as well as the physical, emotional and nutritional aspects of a patient (Null, 1999, Lazarus, 1995).

The essence of orthomolecular psychiatry is diet and nutritional supplements as therapy for healing. Orthomolecular doctors do not treat just the mind as if it were separate from the body. It is believed that when the physical aspect through an awareness and implementation of diet and nutritional supplements is restored, the mental aspect of the mind will follow (Lazarus, 1995).

The problem is that although the concept of nutrition is relatively old, healing the mind through nutrition awareness and implementation is a very new concept. A large population will be skeptical or unaware that nutrition has the ability to play apart in the overall healing of the mind. However, research reports have concluded that food and nutritional supplements influences behavior (Lazarus, 1995). Although these accounts are not justified from a controlled scientific study, they do provide questions that need an answer. Does nutrition affect behavior? The understanding of this is limited by the unresolved questions about validity of animal research and the inadequacies in present
knowledge of the effects nutrition has on the brain (Bowen, 1988; Lazarus, 1995).

**The Need for the Study**

The need for this study is to examine the benefits of how proper nutrition and supplements can alleviate chronic behavioral complaints. In addition, this study will look at the relationship between nutrition and mental health, in preparation for designing the guideline counselors can use with their clients. Nutrition should be a vital step to overall health. Although, the idea that people can directly affect their moods by what they choose to eat is again a new concept to many, nutrition awareness should be implemented in the practice of counseling. Behavioral change, with a dietary practice is a key element in reducing chronic diseases (Surgeon General’s, 1998; Lazarus, 1995).

Informal, uncontrolled interviews will address these issues of mental health and nutrition. These interviews are expected to show the theory that there is a relationship between nutrition and its affect on behavioral problems. It is also hoped, through these interviews, the answer to whether or not implementation of such theory will have a positive effect on the clients well being.

Although counselors are not licensed to prescribe medicine, they can however, educate their clients about the nutritional value that will perhaps affect their overall physical and mental health. Therefore, it is important to educate counselors with a guideline on nutrition, supplements and the field of alternative health. This study will look at both the benefits and the controversy nutrition can have in the mental health business.

**The Purpose of the Study**

The purpose of this study was to develop a guideline indicating the possible
benefits that proper nutrition and supplements can have on behavioral or mental illnesses. This guideline is intended for counselors to use and share with their clients in an effort to further educate ones awareness in the benefits that a proper diet can effect their mental and physical well being. This study is not a prescription or medical advice, but only a guideline that leads to further references and resources. Furthermore, because nutrition and mental illness are both such vase areas of study, this research project will cover only a few highlighted areas in which are most prevalent and popular. For further resources on these topics discussed, it is suggested to seek the references indicated or a qualified health practitioner in the appropriate fields.

Research Question

What is the content of a set of guidelines on the benefits that proper nutrition and supplements can have on behavioral health?
CHAPTER 2
LITERATURE REVIEW

Introduction

The review of this literature will include issues on the overall basis of nutrition and its effect on Mental Illness. Discussion on food allergies, showing a direct relationship to mental illness will also be presented. In addition, there will be a brief follow up on the importance of vitamins and minerals. However, the basis of this review will focus on Depression, Anxiety/Stress, Attention Deficit Hyperactivity Disorder, and Schizophrenia. Within each category of mental illness, the relationship and its effects with nutritional supplements will be explored. This information will provide the foundation of designing the proper nutrition for mental health awareness guideline for counselors.

Nutrition and Mental Illnesses

Is overall nutrition important for mental illness? The question remains to be answered. The average human is made up roughly 63 percent water, 22 percent protein, 13 percent fat, and 2 percent minerals and vitamins. Moreover, each molecule comes from the food and water consumed by people. Thus eating quality foods with the highest nutritional value can affect the overall health, vitality and immunity of the body.

However, surveys show that even those who have a proper diet and consume relatively healthy foods will still lack the ideal intake of vitamins, minerals, essential fatty acids (EFA), and complex carbohydrates. Therefore it is important to supplement vitamins and minerals to ensure balance in the body (Holford, 1999).

Science has come a long way in providing information that nutrition and
supplements can help prevent or alleviate chronic illness. The basic concept in Orthomolecular psychiatry is that "...the body very often rules the mind; that is the physical problems are very often responsible for mental problems" (Lazarus, 1995, p.89). As early as 1952, Dr. Abraham Hoffer, helped schizophrenic patients seek relief from the nutrition-based medicine of orthomolecular medicine. Discussions of mood disorders, depression and anxiety in Orthomolecular Medicine for Physicians, written by Dr. Hoffer, he estimates "...that twenty to thirty percent of our population will at one time if not all the time, suffer from manifestation of these disorders" (cited in: Null, 1990, p.255).

Gary Null who has written over 50 books and is an American health and fitness activist states that "...the most common causes of depression and anxiety are nutritional deficiencies. In fact, the first symptom of almost any vitamin deficiency is depression" (Null, 1990, p.255). On the other hand Null also reminds his readers that just as nutrition can benefit a mental illness so can it cause one. Allergies in some foods can cause severe stress as high as one being labeled schizophrenia. In fact there is a topic just on the issue of food allergies that will be discussed in more detail later and is important to examine when reviewing all the factors in nutrition and the mental health (Null, 1990).

Nutrition, a complex idea, yet awareness of the very issue can provide many benefits. Education on the complexity of nutrition is necessary for understanding the process in which makes up valuable nutrients. Proper food like vegetables, fruit, protein, and complex carbohydrates along with regular exercise is the essence of nutrition. Lazarus(1995) reports that being in balance with ones own unique body is the
key and is what makes nutrition so complex. Each person has a unique physical make-up that is completely individualized and separate from others. Also, "...the brains chemistry works in a delicate balance: too much of one chemical can cause a shortage of another" (Lazarus, 1995, p.86). In addition, finding the right balance is the process in which each individual must find and understand for optimum nutritional balance. In other words, not everyone will receive the same Recommended Daily Allowance (RDA) for each vitamin or mineral and thus many will show a number of diseases and chronic illnesses due to the deficiencies. Therefore, it is imperative that proper nutrition should be discussed during any mental illness evaluation (Lazarus, 1995; Marti, 1995; Holford, 1999).

**Allergies with Food**

One in ten people suffer from allergies, according to the Royal College of Physicians. Yet in reality the figure could closely be one in three with food allergies being the most common (Jones 1999). Most people, however, experience food intolerance or sensitivities, rather than actual allergies. It is important for someone to determine whether the negative reaction to a particular food was an allergy case or an intolerance of some sort. Also if there is a suspected food allergy, a food elimination diet can be implemented to find the very source of the allergy. As noted in the Nutrition Advisor section of the Delicious Magazine for Natural Health, Jones (1999) sums it up nicely:

Food intolerance involves an adverse food induced reaction that does not involve the immune system. Instead, intestinal enzyme deficiencies, microbial toxins or infections, or neuralgic and psychological factors may cause it. However, a food allergy occurs when a person's immune system responds to foods that are harmless to the rest of the population. The immune system perceives these
foods as a threat to the body and creates antibodies to them. If the person eats that food again, the immune system releases chemicals and histamines to protect the body, which in turn trigger allergic symptoms that can affect the skin, gastrointestinal tract, respiratory system or cardiovascular system. (p.60)

To further understand this statement, it is helpful to look at the possibilities that can occur. For example if a person, who is allergic to a particular food, histamines are then released. Histamine, which is a small molecule that contains seventy atoms (formula C5H9N3), is closely related to histadine, which is one of the essential amino acids (Pauling, 1986). This small molecule known as histamine is "...stored in granules of the cells in many tissues especially of the skin, lungs, and stomach" (Pauling, 1986, p. 264), and it is released when triggered by a certain stimulus. Together with specific proteins, Hypersensitivity is the product or characteristics of histamine. Too much histamine and the body will begin to metabolize at a faster rate. Thus, high levels of histamine, and a fast metabolism, can create a deficiency in other nutrients like vitamin B6 or even a mineral like zinc. Therefore, if over a period of time this deficiency or lack in a particular nutrient continues, an array of symptoms can occur (Holford, 1999, Pauling, 1986).

As Lucretius in 50B.C. Once said, "One man's food is another man's poison." (Cited in: Holford, 1999, p.16) This is an important statement to bear in mind. For people all have a different biochemistry, and what might be good for one can cause an allergic reaction to another. Again, the problem is that the allergic symptoms do not occur immediately after consumption, but rather creep up slowly over a twenty four-hour period. Therefore it is easy to consume many different varieties of foods without tracing the allergic reactions one has later to a specific food item (Holford, 1999).
In fact there are many chronic complaints that can be the result of a food allergy. Anxiety, asthma, ADHD, chronic fatigue syndrome, depression, dermatitis, diabetes, eczema, headaches, irritable bowel syndrome, learning disorders, and sleep disturbances are just a few of the many complaints that can affect someone who is allergic to a particular food (Null, 1990). In fact "... It has been estimated that over 90 percent of schizophrenics have food and chemical intolerances. More specifically, 64 percent are sensitive to wheat; 51 percent to corn; 51 percent to cow’s milk; 75 percent to tobacco; and 30 percent to petrochemical hydrocarbons" (Null, 1990, p.83).

Despite studies from many correctional centers that indicate direct correlation between diet and behavior, little has been done to change the diets of people with mental illnesses. It is important to understand again, the complexity of each person's own physical make up to rule out any allergies and or deficiencies. Tension fatigue syndrome and mental depression are very common yet so often misunderstood. Few realize that the actual complaint may merely be due to unrecognized food intolerance (Holford, 1999; Null, 1990).

It may come to a surprise that the most popular foods with Americans are also the most common for food allergies. This list includes foods like milk, wheat, corn, potatoes, cheese, eggs, and citrus fruits. A protein known as gluten, which is most commonly found in wheat products, can cause allergic reactions in many. This protein is found also in all sorts of food products ranging from barley, oats, and bran, to cola drinks, mustard, and salad dressing, to even soy sauce, vinegar and soups. Physical symptoms of these food allergies can include abdominal pain, diarrhea, headaches, and weight loss. Also, milk, noted above has a line of products like butter, cottage cheese,
yogurt, ice cream and even milk chocolate. Any one of these can cause an allergic reaction if one is sensitive to milk or is lactose intolerance (Tamborlane, 1997; Null, 1990).

What is important here is to recognize the difference between a food allergy and an actual chronic illness. Sometimes, when the food in question is eliminated from the diet and symptoms may disappear; then the body can regain balance. However, if the complaints are still present after food elimination and allergic testing has been made, then as oddly as it sounds, a nutritional deficiency evaluation could be the next step in therapy. Counselors should also be aware of these food allergies and be familiar with the substitutions. People who are allergic to milk products, for example, can substitute soy or rice milk, and soy cheese. Education on the many alternatives one can replace for a food allergy is important in any field for the mental health (Null, 1990; Jones, 1999).

Vitamins

Vitamins do not produce energy nor do they supply the body as a meal in itself, but nevertheless, vitamins are vital essential nutrients that allow metabolic process to occur. Vitamins, organic molecules, were discovered by the turn of the century when a scientist began to notice that proper nutrients of protein, carbohydrates, and fats were not adequate to sustain life in itself. A biologist, known as Funk, in 1912 named these newfound compounds as vitamins. Named after their class of molecules known as amines, and vita, referring to a Latin name meaning life, vitamins in essence means "life-giving amine" (Calabrese, 1984).

The human body cannot manufacture vitamins, and therefore vitamin supplement
is a critical step in acquiring a proper diet. Vitamins have two major classifications that they are recognized and grouped in accordingly. Fat soluble, which needs bile or fat in the digestive tract for absorption, are vitamins A, D, E and K. These vitamins, because they are stored in fats, are slower in releasing throughout the body. Water-soluble vitamins, which functions are primarily components of essential enzymes, are vitamins, B, and C. The water-soluble vitamins are not stored in fat but rather used up through the metabolism and therefore must be supplied daily. Toxicity is also less frequent with the water-soluble vitamins because of their daily absorption (Tamborlane, 1997; Null, 1990; Calabrese, 1984).

Vitamins are abundant in many different kinds of food. Fruits and vegetables supply the most adequate amount, yet vitamins can be found in any variety of meat, fish, oils, legumes, wheat and milk products and whole grains. Each vitamin plays a different role in the body and many of them function together as a team. The different functions that each vitamin has, can if supplied efficiently, alleviate or decrease many chronic complaints. All too often chronic complaints are a direct result of a deficiency in a particular or all vitamins (Heimlich, 1990; Tamborlane, 1997).

In an effort to stop and prevent malnutrition, President Franklin Roosevelt signed the executive order, which mandates the enrichments of such products like corn, wheat, and rice. Then by the end of World War II, after the mandating expired, 22 states had adopted these regulations and it became a national practice. Finally, in 1941, the Recommended Daily Allowance (RDA) became nutrition's leading guideline for the people of the nations. RDA is a guideline for the use of vitamins and minerals for the general populations awareness and is recognized as the minimum not the optimum.
However, one must remember the "...optimal intake of a nutrient varies considerably for each individual, depending on their age, sex, health, and numerous other factors" (Holford, 1999, p.264). The toxicity for each nutrient also varies considerably (Heimlich, 1990, Holford, 1999). Currently, the RDA committee is looking at a new guideline for prevention of chronic disease and it is geared to providing "upper safe limits" of vitamins (Holford, 1999).

The study at the 1993 Rutgers workshop, theorized the benefits of postponement, enhanced quality of life, and decreased health care cost, are from higher yet safe levels of vitamins (Holford, 1999). The current RDA levels are suggested, through scientific knowledge, to meet the needs of healthy individuals. The goal is to provide adequate nutrition and divert deficiencies. Table 1. is a RDA guideline for children, women and men for each vitamin from the Alternative Health and Medicine Encyclopedia, 1995 (Holford, 1999, Marti, 1995).

<table>
<thead>
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<th>Vitamin</th>
<th>Children</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>600mcg</td>
<td>800mcg</td>
<td>1000mcg</td>
</tr>
<tr>
<td>Vitamin B</td>
<td>0.8mg</td>
<td>1.1mg</td>
<td>1.4mg</td>
</tr>
<tr>
<td>Vitamin B2</td>
<td>1.1mg</td>
<td>1.3mg</td>
<td>1.5mg</td>
</tr>
<tr>
<td>Vitamin B3</td>
<td>12mg</td>
<td>14mg</td>
<td>17mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>1.4mg</td>
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<td>Vitamin B9</td>
<td>75mcg</td>
<td>180mcg</td>
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</tr>
<tr>
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<tr>
<td>Vitamin C</td>
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<td>60mg</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>10mcg</td>
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<td>5mcg</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>7IU</td>
<td>8IU</td>
<td>10IU</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>40ug</td>
<td>100ug</td>
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(Marti, 1995, p.54-68).
Minerals:

Minerals are needed to sustain life. Every living cell is dependent on minerals for structure and functioning. Minerals, found in the earth, are natural occurring elements that are separated by two groups: Bulk minerals are calcium, chloride, magnesium, phosphorous potassium, sodium and sulfur, and the trace minerals of, chromium, cobalt, copper, fluoride, iodine, iron, manganese, magnesium, molybdenum, nickel, selenium, silicon, tin, zinc. For optimum health the bulk minerals are needed in larger amounts, while the trace minerals needed in minute quantities, are still as important to sustain good health. However, large doses of minerals can cause adverse and toxic results in the body. When proper amounts are consumed, these minerals can help bone formation, regulate the osmosis of cellular fluids, support electrical activity in the nervous system, and is part of most metabolic functions in the body. Table two is a RDA guideline for children, women and men for each mineral from the Food and Nutrition Board, National Academy of Science – National Research Council (cited in: Fox, 1996, pp. 68-69).

<table>
<thead>
<tr>
<th>Age</th>
<th>Calcium (mg)</th>
<th>Phosphorus (mg)</th>
<th>Magnesium (mg)</th>
<th>Iron (mg)</th>
<th>Zinc (mg)</th>
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In the following section, the five mental illnesses will be sequentially discussed along with their relationship with vitamin, mineral and nutritional supplements. This portion will attempt to show a direct correlation between the lack of nutrition and mental illnesses. Through this awareness, the information given will provide the foundation of support for implementing a suitable guideline for counselors and their clients. Finally, as stated in chapter one, this study and its theory is not a prescription or medical advice, but only a guideline that leads to further references and resources. Those seeking a change in their diet for mental health reasons, should consult a physician prior to the change (Holford, 1999; Page, 1997)

**Depression**, and other mood disorders reflect disturbances in the brain that is directly related to mood. Normal moods like grief, sadness, anger, happy, and content are a part of everyday life. Thus it can make it difficult to clearly determine if a mood disorder is present. Yet with accurate screening by a medical profession depression can be diagnosed. According to the Diagnostic and Statistical Manual of Mental Disorder (DSM-IV), the presence of five of the following eight symptoms, indicates clinical depression. Also according to the DSM-IV, the symptoms must be present for at least one month to be called depression (Murray & Pizzorin, 1998).

**Eight Vegetative Signs of Depression** (Murray & Pizzorno, 1998):

1. Poor appetite accompanied by weight loss, or increased appetite accompanied by weight gain
2. Insomnia or excessive sleep habits (hypersomnia)
3. Physical hyperactivity or inactivity
4. Loss of interest or pleasure in usual activities, or decrease in sexual drive
5. Loss of energy; feelings of fatigue
6. Feelings of worthlessness, self-reproach, or inappropriate guilt
7. Diminished ability to think or concentrate
8. Recurrent thoughts of death or suicide

Depression has been known to be one of the most treatable mental disorders, and between 80 and 90% of all depressed people will respond to a proper treatment, according to the National Institute of Mental Health (Marti, 1995).

Since depression affects the brain, nutritional therapies may help some individuals. There are specific chemicals in the brain that effect emotions and mood behavior. Substances called neurotransmitters are released at each nerve ending in the brain, which sends signals out to the rest of the body. Endorphin, a well-known neurotransmitter, is responsible for the relief of pain. Two other neurotransmitters are norepinephrine and serotonin. Each of these are responsible for the control of sleep, pain, involuntary bodily functions and most notably for emotions. The intricate metabolism of these neurotransmitters can cause many deficiencies for several reasons. One reason perhaps, lies in what we eat, and drink and how that is broken down in the body (Null, 1999).

A possible contributing factor in those who suffer from depression is, as stated earlier, food intolerances and food allergies. Depression can be brought on simply because of what one eats on a daily basis. While "brain allergies", and its mechanism is not fully understood, the phenomenon has been carefully researched and is believed that it affects as many as one in four who have a mental health problem. Again, the
most common of food allergies are wheat gluten and dairy products. With a careful
assessment by a physician or a nutritionist, a proper diet can be implemented,
supplements can be added and therapy, given a nutritional boost, may just possibly
eliminate depression.

Unbalanced diets, food sensitivities, nutrient deficiencies, and food allergies
have all been linked to depression. Null (1990) quoted, "In my judgment, the most
common cause of depression and anxiety are nutritional deficiencies" (p.255). It is
important therefore to look at nutritional based possibilities before assessing just any
therapeutic program. Depression in those who also experience low energy, irritability,
and panic attacks or anxiety, according to Dr. Harvey Ross, an orthomolecular
psychiatrist in Los Angeles quoted in the Alternative Medicine, The Definitive Guide,
also have hypoglycemia, or an excess of sugar in their blood. Hypoglycemia may be the
cause of their depression" (cited in: Marti, 1995, p.222).

Perhaps, the depression is caused because of what happens to the biochemical
body. In other words, high sugar levels have been known to destroy the B vitamins,
which is a leading nutrient source for the neurotransmitters in the brain. Therefore,
because of such depletion, depression can set in and continue to worsen. A balance of
blood sugar in the body helps maintain energy, weight and even emotional status. The
brain needs glucose, the simplest form of sugar, which circulates levels in the blood,
which then determines the balance of the mind. Imbalances of this intricate design can
cause irritability, aggression and stress, all known factors that can trigger depression,
anxiety, ADHD, and even schizophrenia (Balch, 1997; Holford, 1999; Marti, 1995).

These "...blood sugar levels can be disrupted by eating too much refined sugar
or using stimulants including tea, coffee, cola drinks, and cigarettes” (Holford, 1999, p.202). In addition, glucose needs a host of nutrients like vitamin B3 and B6, and minerals chromium, manganese, and zinc to function properly. Thus when the body has an excess of blood sugar or too much glucose, it sends out more hormones to combat the glucose out of the blood circulation. Repeated occurrences depletes the body of nutrients, which then can cause hypoglycemia, diabetes, depression and stress. Vitamin B6 and zinc, help insulin to work by producing energy, while vitamin B3 and chromium,”...help turn glucose within cells into energy” (Holford, 1999, p. 159). Moreover, the “…fast-releasing sugars create a state of stress in the body, stimulating the release of cortisol” (Holford, 1999, p.158). Stress hormones like adrenalin and cortisol need certain nutrients for their release. Without a steady supply the body will be under function, which then could increase risks of an imbalance thyroid gland or even depression. Thus prolong periods of stress create a deficiency in nutrients like vitamin B3, B5, B12 and C and minerals of calcium, magnesium, and zinc (Holford, 1999; Marti, 1995).

By consuming foods that raise blood sugar and done so as a regular diet the body will be working overboard trying to distribute the excess sugar. The chart in appendix B shows the foods that will raise blood sugar levels and those that are considered low in raising the levels (Holford, 1999).

Stress, another cause of depression, anxiety and schizophrenia, depletes the body and brain of vital nutrients. The biochemical reaction of stress stimulates the adrenal glands to produce adrenalin. This extra adrenalin gives the body a fight or flight response, which represents how much glucose will be released by breaking down the
glycogen from muscles and the liver. Then the pancreas will release hormones, insulin and glucagons, into the body cells. The excess release of the hormones adrenaline, DHEA and cortisol normal functions begin to change when stressed is prolonged. This change makes both serotonin and DHEA scarce while cortisol will overstay its welcome. Cortisol, as it has been suggested in the past through research, reduces serotonin in the brain, which thus can lead to depression (Holford, 1999; Lippman, 2000).

Owen Wolkowitz, a psychiatrist and pharmacologist at the University of California at San Francisco, finds through his research that the “...physiological root of depression often may be the flood of hormones that is released when you are stressed out” (cited in: Lippman, 2000, p.120) With repeated or daily stress this cycle can take its tool on the body. As Holford, (1999) explains, “...levels of the anti-aging adrenal hormone start to fall, as do those of cortisol, and before long the body simply cannot respond to stress as it used to” (Holford, 1999, p. 156). As a result the body looses energy, the ability to concentrate, and becomes confused. Sleep becomes erratic, headaches set in and before long so will depression. (Holford, 1999; Lippman, 2000)

As discussed previously, people suffering depression tend to have low amounts of norepinephrine and serotonin. These brain chemicals can be treated by use of antidepressant drugs such as Prozac, Paxil and Trofranil. As Dr. Slagle reports that in her many years of using nutritional therapy for depression, "I have never had to discontinue treatment because of side effects. "She adds that the toxic nature of antidepressant drugs ironically leads to some patients overdosing on them to commit suicide (cited in: Lazarus, 1995, p.152). Yet at the same time a more natural approach can be taken. Amino acids, which are the primary production of these brain chemicals,
are used in orthomolecular therapy. Many people who are suffering from depression may have insufficient amounts of these amino acids. For instance, Tyrosine, triptophan and phenylalanine are three amino acids that affect the brain chemicals of norepinephrine, serotonin and dopamine (Lazarus, 1995; Null, 1999).

Tyrosine is the amino acid that affects norepinephrine. This chemical in the brain as Dr. Slagle explains, affects the reward and punishment behavior. It also helps one feel pleasure, gratification and purpose. Norepinephrine and dopamine can be derived from and affected by the amino acid phenylalanine. Dr. Slagle notes that the stimulant drug, Ritalin, and the antidepressant drug Tofranil, can cause an increase in those same neurotransmitters. The amino acid tryptophan affects the neurotransmitter serotonin. A low level of serotonin is common in those with depression. Thus with proper amounts of tryptophan, serotonin can rise and perhaps alleviate the depression (Lazarus, 1998; Null, 1999).

The amino acid, phenylalanine, is also a neurotransmitter, which sends signals to the brain and nerve cells is also turned into. These transmitters, norepinephrine and dopamine promote excitability, alertness, and are the body’s own source of an antidepressant. Phenylalanine, found in protein rich food, can increase the level of mental alertness, improve memory and alleviate signs of depression. Therefore, with proper and sufficient amounts of these amino acids, these neurotransmitters can respond efficiently and perhaps ward off depression (Mindell, 1991; Null, 1999).

Insufficient amounts of essential fatty acids (EFA), known as omega - 3 oils, have also been linked to depression. The impact of these EFA's on the composition of nerve cell membranes may be the reason. The lack of the EFA, omega 3, and an
excess of saturated fats can lead to the formation of cell membranes that are less fluid and thus more sluggish than normal. It is also important not to confuse these fatty oils to the more high cholesterol kind like butter, lard and sunflower oil. Cholesterol is a protein packet known as lipoproteins. The two most common lipoprotein are low density (LDL), also known as “bad cholesterol, and High Density, (HDL), also called “good” cholesterol. EFAs, contain more levels of the good cholesterol lowering HDL, which can prevent arteries from fatty plaques. EFAs can be found in fish and oils like flaxseed and black current oil, a fuller description of EFA, is discussed in the anxiety section below (Marti, 1995; Murray & Pizzorino, 1998). However, Murray & Pizzorino (1998) explains that:

studies have shown that physical properties of brain cell membranes including their fluidity, directly influences neurotransmitter synthesis, signal transmission, uptake of serotonin and other neurotransmitters, neurotransmitters binding, and the activity of monoamine oxidize-the enzyme that breaks down serotonin and other monoamine neurotransmitters such as epinephrine, dopamine, and Norepinephrine (p.388).

As stated earlier, another key factor in the cause of depression is the low levels of vitamin B. Vitamin B is an important water-soluble vitamin that should be closely looked at in the field of chronic illnesses. There are essentially eight B vitamins, which are broken down by category. Each of the eight B vitamins represents essential components of enzymes and coenzymes systems that cover a wide variety of biochemical reactions in cellular energy productions and biosynthesis (Surgeons General, 1988).

Some of the B vitamins also assist the body in the use of amino acids. For instance, "...amino acids are a precursor of vitamin B6 that is needed for the synthesis..."
of the brain chemicals serotonin, norepinephrine, dopamine, phenylethamine, and gamma-amino butyric" (Lazarus 1995, p.155).

Vitamin B1 (thiamin) has been used for treating depression associated with alcoholism. Alcoholics need more vitamin B1, because thiamin "...accelerates metabolism, using extra carbohydrates and calories from alcohol" (Griffith, 1998, p.65). A deficiency of vitamin B2 (riboflavin) and B6 (pyridoxine), on the other hand, has been linked to the use of oral contraceptives, and thus can cause depression. For women using oral contraceptives, it is important to know that these hormone pills, mainly the use of estrogen, which causes a decrease in serotonin levels, depletes the body of vitamin B2, B6 and zinc. Such depletion can cause lack of energy, insomnia, irritability all of which are symptoms of depression. Vitamin B6, in addition, helps in the formation of red blood cells as well as assist in the normal functioning of the brain, thus resulting in the low levels of energy if a deficiency is present (Griffith, 1998; Marti, 1995).

Another important B vitamin and perhaps the most common deficiency in people with psychological disorder are Folic Acid, or vitamin B9. For instance, "...in studies of psychiatric patients, as many as 30% have been shown to be deficient in folic acid, and in another study 67% of geriatric patients admitted to a psychiatric ward were vitamin B9 deficient" (Marti, 1995, p.61).

This B vitamin functions as a part of a co-enzyme in amino acids, which can help reduce stress, a leading cause of depression. It also helps maintain the nervous systems integrity. Therefore, deficiencies in this vitamin can cause weakness, mental confusion and forgetfulness and depression (Marti, 1995; Sizer &Whitney, 1994).

The B3 vitamin known as niacin, has also been linked to depression. A
Deficiency in niacin is called pellagra and its earliest symptoms are anxiety, chronic fatigue and depression (Phillpot & Kalita, 1980). Also as discussed earlier, niacin helps metabolize sugar in the body and reduces cholesterol and tryglycerides from the blood. By controlling blood fat levels and metabolizing the sugar, this vitamin along with other nutrients can ward off depression in those who experiences sugar imbalances. The circulatory system and the prostaglandin balance are also predominantly affected by niacin. A disruption can be linked to nervous system dysfunctions, muscle weakness and dizziness. Moreover a lack of this vitamin can cause fatigue, nausea, and loss of appetite, which is a known precursor and symptom of depression (Braly, 1992; Marti, 1995; Phillpot & Kalita, 1980).

In essence, because of their function to release energy to every cell in the body and help the body to use amino acids, a lack of any or all of the B vitamins can be the cause of depression. The B vitamins are not particularly felt when they are abundant in the body, however as soon as there is a deficiency, a magnitude of symptoms will exist, including perhaps depression (Sizer & Whitney 1994).

Another factor that could cause depression is histamine. As stated in chapter one a chemical involved in both functions of the brain and immune system, excess histamine, is produced in a proportion of those with depression and schizophrenia. Dr. Carl Pfeiffer, and his colleagues reported that "...producing too much histamine results in a fast metabolism, excessive thoughts, and a tendency to compulsive and obsessive behavior and deep depression" (cited in; Hofrod, 1999, p. 198). In other words, those who exhibit high histamine levels, will have a faster metabolism, and thus become deficient in nutrients such as the B vitamins, that help balance the brain and nerve cells
Biochemical imbalances characterized by amino acid and other nutrient deficiencies, (Page, 1997, p. 284) can be another origin of depression. Among the circles of scientist, “...there is little doubt that biochemical imbalances, often linked to genetic differences, are involved in many forms of mental illnesses” (Holford, 1999, p. 198). Because of the effects histamine has, a depressed person who is susceptible to not only food allergies, but also seasonal allergies, depletion of many vitamins and minerals may be paramount. A thorough examination with a proper physician can check for signs of allergies and any known biochemical imbalances. Through a process of elimination, with added supplementation, the severity of depression can be reduced if not eradicated (Holfrod, 1999).

Anxiety and stress can happen to anyone anywhere. People are in stressful situations all the time and have learned to develop strategies for combating the stress. However, there are some that cannot control the stress they experience. This out of control stress develops into anxiety, which can turn into a disorder known as generalized anxiety disorder (GAD). GAD can take on many different faces and each one has their own set of characteristics. From agoraphobia; fear of entrapment in crowded places, to social phobia; fear of attention and recognition, and other anxiety provoking disorders like obsessive compulsive disorder (OCD), and posttraumatic stress disorder (PTS), all however carry some familiar characteristics. The following symptoms are common in all anxiety disorders.

- Excessive unrealistic worries. Typically these worries are widespread, not just focused on one or two issues, and may persist for months.
- Physical tensions, which manifest as twitching or trembling, restlessness, or
fatigue: The body shows signs of the “fight or flight” reaction: clammy hands; racing heartbeat or palpitations; shortness of breath or a sense of being smothered; dizziness or light headedness; stomach troubles such as nausea or diarrhea; hot flashes or chills; trouble swallowing.

- Edginess, over-vigilance, as though dreading something that is about to happen; easily irritated; trouble sleeping (Marti, 1995, p.218).

Anxiety, which is a state of apprehension and psychic tension is common in many mental disorders. However, like physical pain, anxiety often is a warning sign that precedes some physical or mental action. Also what sets anxiety problems apart from the ordinary everyday worries are their intensity and persistence (Marti, 1995).

Physical factors such as anemia, diabetes, menopause, premenstrual syndrome, counteract tend to fail (Gittleman, 1999, p.15). If there is too much stress, an over thyroid disorders, low blood sugars (hypoglycemia), pulmonary disease, endocrine abundance in copper or low zinc intake this intricate balance is off and its effects can tumors, and various heart problems are all common for those who suffer GAD. Other be seen in many ways. Also, because, zinc is an anti-anxiety mineral, and copper factors like drugs such as cocaine, amphetamines, diet pills, and caffeine can also contribute to anxiety or the intensity of such disorder (Marti, 1995).

Treating GAD, can be a complex and challenging goal. Yet there are successful therapies that can work, provided the patients willingness. Nutrition deficiencies can also play an important part in these anxieties. Correcting the nutritional aspect first can help the treatment process run smoother. For instance, removing caffeine and cutting out the simple carbohydrates that lead to high amounts of sugar, can help calm the nerves and reduce anxiety (Barney, 1998).

A glucose tolerance test can be assessed to determine if sugar is being metabolized properly. For anxiety attacks can often happen when the blood sugar level are low, as in the case of hypoglycemia. An adrenaline rush from hypoglycemia raising blood sugar levels as a rebounded effect can emit anxiety. The main function in the
mineral Chromium, is utilizing the glucose and regulating it through the blood. For those who consume high amounts of alcohol and refined sugars, a deficiency in the mineral Chromium can be present. When there is a Deficiency in this mineral it can produce fatigue, shakiness, nervousness and other symptoms of anxiety (Blanch, 1997; Fox, 1996; Null, 1999).

Other minerals can also play a role in anxiety. The minerals Copper and Zinc work in a balancing scale effect. In other words if one is high, presumably the other will be low. When “...one of these minerals rises in the blood and tissues, the levels of its counterpart tend to fall” (Gittleman, 1999, p.15). If there is too much stress, an over abundance in copper or a low zinc intake this intricate balance is off and its effects can be seen in many ways. Also, because, zinc is an anti-anxiety mineral, and copper stimulates neurotransmitting substances like dopamine and serotonin, which heightens the nervous systems activity, an imbalance can cause anxiety symptoms. The inability to stop thoughts racing in the mind, insomnia, irritability, memory impairment and panic attacks can all be brought on from a low zinc, high copper ratio in the body (Fox, 1996; Gittleman, 1999).

Vitamins to stimulate energy and produce a feeling well being. However, Many contributing factors can result in this low zinc, high copper ratio. For instance; oral contraceptives can increase copper levels because of the high level of estrogen causes a rise in copper as well. Among other things that can cause this imbalance and rise in high copper levels are; stress, the copper contents in water, dental fillings made of silver amalgams and gold alloys, pesticides, household cleaners and automobile exhaust. Zinc levels can also be lowered from among other factors such as: diaheria, diabetes, high fiber intake and perspiration. Knowing this small yet
key factor may guide a counselor in understanding the many dynamics that stem from
anxiety (Balch, 1997; Gittleman, 1999).

Other key minerals that seem to have an impact on anxiety are Calcium, Magnesium
and Manganese. The two minerals, not to be confused by their similarity in
name, magnesium and manganese have a powerful connection with the central nervous
system. Magnesium main functions are involved in supporting the bone structure, and
proper functioning of the nerves and muscle. According to Marti (1995), magnesium
deficiency has been linked to many different forms of mental illnesses. Mark Brickin
reported that doctors from the Albert Einstein College of Medicine found that; those
patients who had symptoms of depression, agitation’s, and hallucinations, were also

The trace element, manganese supports the kidneys, liver, pancreas and bones.
This mineral also helps metabolize protein and fat. In addition, however, this trace
mineral helps the body enzymes to produce energy, thus making it a key factor for those
who suffer with anxiety. Manganese also helps to nourish the nerves and brain working
along side the B vitamins to stimulate energy and produce a feeling well-being.
However, it must be noted that too much of this mineral can cause adverse reactions
which can ironically mimic anxiety. These reactions are hallucinations, delusions,
insomnia and even depression if a high dose of manganese is prolonged (Barney 1998,

Calcium, the most prevalent mineral, helps regulate the balance between
excitatory and inhibitory parts in the brain. In 1986, ... “Derek Bryce-Smith, pointed out
in The International Journal of Biosocial Research (vol. 8, No. z, p. 136) that early
symptoms of low blood calcium "are identical with those of anxiety neurosis" (cited in: Lazarus, 1995, p. 137) Derek Bryce-Smith continues to explain:

that when availability of calcium in the blood is artificially lowered (by injection of sodium lactate), "serious symptoms of anxiety neurosis arise) in persons prone to that condition." Dr. Bryce-Smith also states that these symptoms can be prevented by supplying extra calcium. (cited in: Lazarus, 1995, p. 137)

According to Lazarus, (1995)..."a published research linking high blood lactate levels with anxiety goes back at least to 1950. Lactate acid binds the calcium, which imprisons it causing a calcium deficiency. Calcium supplements also may lower blood pressure and reduce hypertension, which is a common side affect in anxiety. Also calcium may help prevent other factors in anxiety such as: muscle cramps, delusions, depression, cognitive impairment and depression" (Fox, 1996; Lazarus, 1995; Marti, 1995).

Another important nutrient for those who suffer from anxiety is again the B vitamins. It is believed that "...vitamins B1, B3, and B6 help decrease anxiety by increasing the body's ratio of pyruvate to lactate" (Lazarus, 1995, p. 138). Abram Hoffer, M.D., Ph.D., says that recently it has been shown that the natural vitamin B3 receptors in the brain also attract the Benzodiazepines drugs commonly used to treat anxiety disorders (cited in: Lazarus, 1995, p. 138).

In fact a study conducted in 1982 by Laraine C. Abbey, R.N., M.S., indicates vitamin B deficiencies in schizophrenia (cited in: Lazarus, 1995, p. 138). This study indicates that of the schizophrenia patients with agoraphobia, seven were deficient in vitamin B1, six in B6, three in B3, three in B12, two in folic acid, and one in B2. Abbey continues to explain that:
these 12 people plus 11 others with agoraphobia were given broad-spectrum nutritional supplementation and additional megavitamin supplementation for deficiencies found by means of laboratory testing. After three months, 19 of the 23 showed vast improvement, with seven totally recovered; and 11 who had suffered panic attacks were completely free of them. None of the 23 fell into the “no improvement” category (cited in: Lazarus, 1995, p. 138).

Many believe a deficiency of alpha-linolenic acid, better known as omega-3 can cause a rise in anxiety. As Murray, (1999) explains “…a relative deficiency of essential fatty acids in cellular membranes makes it virtually imposable for the cell membrane to perform its vital function” (Murray, 1999, p. 1). Without a healthy membrane, as the naturopathic physician, Dr. Michael Murray continues, “…cells lose their ability to hold water, vital nutrients, and electrolytes” (Murray, 1999, p. 1). Again, as stated in the depression section, these essential fatty acids play an important role in essentially “lubricating” the brain with its nutrients (Murray, 1999; Murray & Prozzorno, 1998).

Linolenic acid, the primary member of the omega-3 family of fatty acids, can be made in the body from linolenic acid to some extent, or can be derived from some foods, especially fatty fish. Omega-3 fatty oils can be found in fish like salmon, mackerel, cod and tuna, as well as in oils like black current and flaxseed oil. These fatty oils “…make up a large proportion of the communicating membranes of the brain, and they are needed for normal brain development” (Sizer & Whitney, 1994; p.151). Some common symptoms of an essential fatty acids deficiency include; forgetfulness, lack of motivation, high blood pressure, fatigue, dry skin and hair, and depression. Although these findings are fairly new, it does suggest promising results (Murray, 1999; Murray & Prozzorno, 1998; Sizer & Whintey, 1994).
Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD) have both become popular diagnostic labels. At one time this disorder was thought to be only that of school-age children. Yet as more research is developed, it is clear that this disorder can affect anyone at any age (Zimmerman, 1999). The definition is unclear and vague which can cause many to be misdiagnosed. According to Fauman (1994), the description for ADD and ADHD from the DSM-IV contains two groups of disorders characterized by irritating, impulsive, disruptive, defiant, or antisocial behaviors. Below is the full description of both ADD and ADHD (Fauman, 1994; Zimmerman, 1999).

Attention-Deficit/Hyperactivity Disorder is a composite disorder that includes two major syndromes, inattention and hyperactivity-impulsively. The two syndromes may occur independently or together. The symptoms begin before the age of 7 years and cause some impairment in two or more settings. The criteria for the diagnosis include:

A. Either (1) or (2):
   (l) inattention: six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:
      (a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
      (b) often has difficulty sustaining attention in tasks or play activities
      (c) often does not seem to listen when spoken to directly
      (d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
      (e) often has difficulty organizing tasks and activities
      (f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
      (g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
      (h) is often easily distracted by extraneous stimuli
      (i) is often forgetful in daily activities
known as ADD or ADHD. Only a proper diagnosis from a doctor warrants treatment.

(2) hyperactivity-impulsively: six (or more) of the following symptoms of hyperactivity-impassivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity
(a) often fidgets with hands or feet or squirms in seat
(b) often leaves seat in classroom or in other situations in which remaining seated is expected
(c) often runs about or climbs excessively in situations where it is inappropiate (in adolescents or adults, may be limited to subjective feelings of restlessness)
(d) often has difficulty playing or engaging in leisure activities quietly
(e) is often “on the go” or often acts as if “driven by a motor”
(f) often talks excessively

(Fauman, 1994, p. 26)

The frequency of this disorder has been reported to be anywhere from four to twenty four percent of school-age children. However, due to a more improved diagnostic criteria, the conservative figure is somewhere around three to five percent for children.

Although this term known as ADD or ADHD evolved primarily to describe those children who could not stay on task, it does still apply to adults as well. Since ADD and ADHD was not a recognized disorder prior to the 1980s, in comparison, adults patterns of behavior are similar yet different in application. Adults who consistently have trouble with relationships, job instability, poor self-esteem, mental fatigue, forgetfulness and physical or emotional pain may want to look further and explore other behaviors. These behaviors can include: sleep disorders, isolation, impulsiveness, procrastination, nervousness, poor short-term memory, excess energy depression and a tendency to over estimate ability to complete a task (Zimmerman, 1999).

It is important to know that these behaviors can and will be present in anyone. However, it is the constant and persistent aspects that make these behaviors a disorder
known as ADD or ADHD. Only a proper diagnosis from a doctor warrants credibility (Zimmerman, 1999).

For those who have ADD or ADHD, many are put on drugs known as Ritalin, Prozac, or other medical specified drug. Many however, are unaware that nutrition can and does play a vital role in treating this disorder. In the mid 1970s, a San Francisco pediatrician, Benjamin Feingold, advocated that a dietary basis for hyperactivity could help reduce the disorder. According to Feingold, many hyperactive children – perhaps forty to fifty percent – are sensitive to artificial food colorings, flavors, and preservatives (cited in: Murray and Pizzorno, 1998, p. 274).

Other researchers have since challenged his findings. Researchers, after many disputes from the food industry, have since then validated a great deal of Feingolds theories. The investigators, who adamantly say that diet does not affect ADD behavior, admit that some children respond to the elimination of certain foods and dyes from their diet. According to Zimmerman, (1999), there are several well conducted trials that have found similar results when all additives and a few foods have been eliminated for a child’s diet (Zimmerman, 1999).

Much of the concern with proper diets for those affected with ADD or ADHD is based on food allergies and sensitivities. There are consistent results from double-blind studies that show the relationship between behavior and allergies to food and food additives. However, Murray and Pizzorno make a clear distinction about these studies.

This study also suggest that, since food allergies or sensitivities can cause psychological symptoms, elimination of just food additives from the diet is inadequate. In other words, if a child has an allergy to milk, it is necessary to eliminate not only
sources of food additives from the diet, but also milk (Murray and Pizzorno, 1998, p. 277).

The common food allergies that are found in hyperactive children include:

<table>
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<th>Rating %</th>
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<td>Cow's milk</td>
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<td>Chocolate</td>
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<td>Grapes</td>
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<td>Oranges</td>
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<tr>
<td>Peanuts</td>
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<tr>
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<tr>
<td>Tomatoes</td>
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<tr>
<td>Egg</td>
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<tr>
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<tr>
<td>Apple</td>
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<tr>
<td>Red Dye</td>
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<tr>
<td>Blue Dye</td>
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</tr>
</tbody>
</table>

**Table 3**

Common Food Allergies

Murray and Pizzorno, 1998, p. 277

Dr. Doris Rapp, a physician in the treatment of children with behavioral and emotional problems explains that “...most emotional and learning disorders can be caused by allergies in both children and adults” (cited in; Null, 1999, p. 257). Those who do suffer from allergies, according to Dr Rapp, will show similar characteristics. Bright red cheeks and earlobes, dark circles under the eye and a constant fidgeting behavior is evident when they are reacting. Dr Rapp also contends that if one child has asthma in the family and another has behavioral problems, perhaps it is the dust, chemicals, milk or food additives, which are causing the asthma in one child, may as well be causing the behavioral problems in the other child. Therefore allergies of any kinds
A deficiency of any nutrient can also raise concern for those susceptible to ADD or ADHD. For instance, iron deficiency is associated with decreased attentiveness, narrower attention span and decreased persistence. It is suggested that even a subtle nutritional deficiency exert a substantial influence on learning and behavior (Murray and Pizzorno, 1998).

Those with ADD or ADHD will often suffer from low levels of magnesium and calcium. Low levels of these minerals can cause symptoms of sleep difficulties, headaches, stomachaches, and muscle pains, along with a short attention span and trouble relaxing. High levels of adrenaline and stress induced activities can cause low levels of both calcium and magnesium, thus depleting the body of vital nutrients. When stress is prevalent magnesium will be one of the first mineral to leave the body. Therefore it is imperative to supplement this mineral during stressful situations of all kinds, i.e.; mental, physical, emotional, good stress, and bad stress, each will attribute low levels of this mineral (Galland, 1999; Null, 1999).

Leo Galland, a medical doctor and director of the Foundation for Integrated Medicine in New York, claims that he has treated hundreds of children with ADHD over a twenty-year span and he quotes “almost all have improved without the need for Ritalin” (Galland, 1999, p. 40). His treatment includes a variety of question based on nutritional factors such as food sensitivities, overall diet, the need for nutritional supplements and learning difficulties enhanced through vitamin B and Zinc supplements. The B vitamins can help restore energy, while zinc balances the copper
level, which can reduce the anxiety level that is usually seen. Dr Galland stresses the importance of nutrition for ADHD patients in his writings (Galland, 1999).


Nutritional supplements that are important to proper brain and nervous system function include the B vitamins, iron, magnesium, manganese, potassium, and zinc. It is important to remember that “…a deficiency in any of these essential nutrients will result in impaired brain and nervous system function” (Murray and Pizzorno, 1998, p. 279). For instance; Iron, is a part of the hemoglobin molecule, which is found in the red blood cells of the body. Hemoglobin binds to the fresh oxygen, which is then released through the red blood cells. Such oxygen and blood flow is necessary and because of this, when iron levels are low, it can dramatically impact the brain and circulatory system. Deficiencies in iron can cause mental skills to deteriorate, decreased attentiveness, along with fatigue, dizziness and irritability. Also it is important to keep in mind that adolescent, through lack of proper diets or red meat and women during menstruation will tend to exhibit low levels of iron (Balch, 1997; Fox, 1996; Griffith, 1998; Murray and Pizzorno, 1998).

Another mineral that may help ease the excitability in ADD/ADHD is potassium. Along with two other minerals sodium and chloride this mineral helps keep body fluids in balance and evenly distributed. Potassium also plays in the part of keeping the muscles contracting and relaxing as well as sending nerve impulses throughout the
nervous system and regulating blood pressure. In addition, Griffith, (1998), adds that potassium is a “...possible allergy cure” (Griffith, 1998, p.105). It is no wonder that ADD/ADHD is so directly correlated with the functions that potassium plays in the body. As one description explains “...ADHD is a disorder of certain mechanisms in the central nervous system” (Balch, 1997, p.330). However, with such connection, there has been little research except as an included part of many minerals and the B vitamins working together to support the brain and nervous systems functions (Balch, 1997; Fox, 1996; Griffith, 1998; Murray and Pizzorno, 1998).

However, on the contrary, some minerals and heavy metals can have a negative relationship in the body resulting in perhaps learning disabilities. As noted in Murray and Pizzorno, (1998), learning disabilities are characterized by a pattern of high levels of mercury, cadmium, lead, copper, and even manganese in the body. Poor nutrition and an elevation of the heavy metals usually go hand in hand due to a decrease in food consumption. As mentioned earlier, copper depletes the mineral zinc, which can cause irritability, and mind racing, and high levels of manganese can cause delusions, nerve disorders and insomnia. Moreover, when nutrition is poor or inadequate, in those susceptible to ADD/ADHD, an elevation of heavy metals, due to a decrease in food consumptions, can cause symptoms of ADD/ADHDA, i.e.; inattentiveness, fidgeting, and other learning disabilities. A balance of proper nutrition is the key to preventing many characteristics of ADD/ADHD (Fox, 1996; Griffith, 1998; Murray and Pizzorno, 1998).

In summery, when dealing with ADD or ADHD counselors must be aware of food allergies and know the vitamins and minerals that are crucial for proper brain function. Identifying this in those with this disorder, one must look at food sensitivities or...
allergies. As stated above in the allergy section, if there is a suspected food allergy, a food elimination diet can be implemented to find the very source of the allergy (Jones, 1999). After such elimination, a proper nutritional supplementation of vitamins and minerals should be implemented throughout one’s life, most importantly early in life, during the physical, mental, and social development stages. A proper treatment plan “...would include elimination of any known food sensitivity or allergy, any heavy-metal toxicity, and establishing a high potency of a multiple-vitamin-and–mineral formula” (Murray and Pizzorno, 1998, p. 281). Counseling is also a benefit for those affected by ADD or ADHD and therefore should be a part of any treatment plan (Jones, 1999; Murray and Pizzorno, 1998; Zimmerman, 1999).

**Schizophrenia**, is a psychiatric disorder that has many connotations and many misconceptions. Being psychotic means “…to be out of touch with reality, or unable to separate real from unreal experiences” (Marti, 1995, p.227). Like other psychotic disorders, the core concept is “…a significant desertion in the perception of reality; an impairment in the capacity to reason, speak, and behave rationally or spontaneously” (Fauman, 1998, p. 139). Schizophrenia has several different sub-types yet each shares certain common features: The common characteristics are delusions, hallucinations, disorganized speech (e.g., frequent derailment or incoherence), catatonic behavior and negative symptoms. Listed below are just a few types of this disorder (Fauman, 1998; Lazarus, 1995; Marti, 1995).

Disorganized schizophrenia usually occurring at puberty includes characteristics of laughter and silliness. Elaborate conversations to oneself and often bizarre and obscene behavior are present in this type. The person “...will hear, see and smell
things that are not there” (Lazarus, 1995, p. 172). Delusions of religious, paranoid or even sexual nature may be present as well (Lazarus, 1998).

Paranoid schizophrenia, also known as mild schizophrenia “…is marked by preoccupation with obscured and sometimes changeable delusions, usually of persecution or jealousy” (Lazarus, 1995, p. 172). Also present are “…delusions or auditory hallucinations and does not have flat or inappropriate affect, catatonic behavior, and disorganized speech and behavior” (Fauman, 1998, p. 144). People with this type usually are not institutionalized because the psychotic episodes are infrequent and in the absence, they can live relatively normal lives (Fauman, 1998; Lazarus, 1995; Marti, 1995).

Schizoaffective disorder, or chronic schizophrenia, is marked by a major depressive, manic or mixed episode for a substantial time during the illness. However, when in the absence of the mood symptoms, the patient will experience delusions or hallucinations at least two weeks prior. Those in this type usually cannot live normal lives and are institutionalized, and thus, treatment is long term (Fauman, 1998; Marti, 1995).

When dealing with the mind and body in any given person and especially in those with a disorder like schizophrenia, that severely affects both mind and body, nutrition must be a part of the total makeup. Some nutritional factors behind schizophrenia can include intolerance of various foods, nutritional deficiencies and/or dependencies, or abnormal carbohydrate metabolism. Each of these will affect one's mind if there are sensitivities and predispositions (Lazarus, 1995; Fauman, 1998).
Even the father of psychoanalysis, Sigmund Freud, admitted that psychoanalysis could not help schizophrenia, predicting that one day the world would find it to be a problem of disordered biochemistry (cited in; Lazarus, 1995, p. 170). Orthomolecular psychiatry has developed ways of restoring that biochemistry with a nutritional aspect. Treating schizophrenia, drugs are not absent in orthomolecular medicine but merely an addition to the nutritional therapy (Lazarus, 1995).

President of the Canadian Schizophrenia Foundation, Dr Abraham Hoffer, has been successful in treating schizophrenic patients with megavitamins. In his 1993 writings of the Journal of Orthomolecular Medicine, he explains that vitamin B3, can double the rate of recovery in those with acute schizophrenia (Marti, 1995). In 1952, Hoffer and his college, Humphry Osmond, did a study in which they, “...administered niacin (B3), to half a dozen schizophrenia patients, with good results” (Pauling, 1986, p.260).

A chapter, in the Orthomolecular Psychiatry Treatment of Schizophrenia (1973), describes three vitamins (C, B3, and B6) and their results. These vitamins, were giving by mouth to acute schizophrenia patients and a control group and then measure the amounts excreted in the urine. This study showed that 94 percent of schizophrenia patients were low in one or more of the vitamins from excretion, while only 62 percent of the control group (Pauling, 1986). When there is a low excretion of a vitamin it could indicate a special need for such vitamin. Therefore, the authors “...concluded that deficiency in any one of these three vitamins could increase the probability of an attack of schizophrenia” (Pauling, 1986, p. 262).
What is the biochemical relation of vitamin B3 and C and schizophrenia patients? Lazarus (1995), explains that there is an abnormal chemical, known as the adrenochrome theory, that when produced in the body, can lead to schizophrenia. In the earlier stages of this theory, Hoffer and Osmond concluded that aged adrenaline turned pink. Thus when dispensed to patients, a reactions of sensory distortion and thinking occurred.

Drs. Hoffer and Osmond proposed that adrenaline produced in the body of people with schizophrenia was metabolized abnormally into the pink adrenaline, the active ingredient of which is adrenochrome. Drs. Hoffer and Osmond studied the chemical reactions that convert the helpful adrenaline to the abnormal adrenochrome, and found that large doses of vitamin B3 and C would slow down the conversion and that the small amount of adrenochrome produced would be neutralized. (Lazarus, 1995, p. 178)

Another factor that can contribute to schizophrenia is food allergies. What bothers orthodox medicine is the frustrating belief that “...the relationship of food to mental illness must be near the top of the list” (Schilhab, 1996, p. 4). Both physicians and nutritionists feel that patients contribute to their own health or lack thereof by eating the various foods in their culture. It is hard to believe however, that foods known to be “good for you” can also be a culprit in many mental diseases. Medical literature has provided countless evidence of such statements. As stated in the above section on food allergies, tests have shown that “...over 90 percent of schizophrenics have food and chemical intolerances. More specifically, 64 percent are sensitive to wheat; 51 percent to corn; 51 percent to cow’s milk; 75 percent to tobacco; and 30 percent to petrochemical hydrocarbons” (Null, 1990, p.83).

The idea that milk and wheat products may worsen the symptoms of schizophrenia is a concern. Studies indicate that “…a protein called gluten in wheat,
along with casein proteins found in dairy products, may be significant factors in the exacerbation or genesis of schizophrenia" (Schilhab, 1996, p. 4). In fact studies done by anthropologists comparing wheat consuming and non-wheat consuming countries show interesting correlations.

In the past countries like the South Pacific inhabitations of New Guinea and Micronesia were relatively wheat and gluten free and thus also showed an extremely low incident of schizophrenia, almost non-existence. Researchers who gathered this information on 65,000 subjects discovered only two cases of overt schizophrenia. Yet, what stands out the most perhaps is that in the mid-20th century the influence and globalization of missionary and trade activity altered the diets of New Guinea and Micronesia to a wheat and high grain standard, much like that of western countries.

Greg Schilhab continues to explain that:

the introduction of cereal grains to the diets of these people increased the incidence of schizophrenia to European levels, an equivalent incidence of 130 schizophrenic persons in a given population of 65,000.3 It would seem that these historical and cultural correlations would support the view that gluten has some kind of pathological effect on certain individuals with schizophrenia. (Schilhab, 1996, p. 4)

The correlation, perhaps, lies in the chemical process. As Dr. W. Domschke reported that people with schizophrenia have high levels of endorphins, nearly ten times more than that of normal. Endorphin, a substance, which is naturally produced, creates similar effects to those of morphine. Recently, studies have found, that there has been a morphenlike activity in casein (milk), and gluten (wheat), which could double the endorphin levels of schizophrenia people who already have more than they need (Lazarus, 1995).
Again, the same issues apply with schizophrenia when speaking on the levels of histamine, copper and zinc ratio and stress affecting the balance in the body. By carefully understanding the many faces of schizophrenia and knowing how these nutritional aspects can significantly reduce characteristics from occurring, a treatment plan and referrals can be assessed as needed (Balch, 1997).

**Summary**

What must be learned from this is that there is no “magic bullet”, such as one vitamin B group or eliminations of a food allergy. Vitamins, minerals and other nutritional supplements can clearly benefit anyone and may be especially useful for those seeking alternative treatment from drugs alone in mental illness. Any one of these may help reduce symptoms and restore balance in the body. However, “…a careful assessment of a person’s biochemical status and a tailor-made diet, plus supplements” (Holford, 1999, p. 197) will benefit someone further, in the long process of therapy. A proper treatment, from this careful assessment can then be implemented. Check ups and status of treatment should be closely monitored and ceased only when health is resumed to normal or so determined by the health practitioner that therapy is no longer needed (Holford, 1999).
CHAPTER 3

METHODOLOGY

Introduction

The purpose of this study was to develop a guideline indicating the possible benefits that proper nutrition and supplements can have on behavioral or mental illnesses. This guideline is intended for counselors to use and share with their clients in an effort to further educate one’s awareness in the benefits that a proper diet can effect their mental and physical well being. The research question answered through this study was what is content of the nutritional awareness guideline for counselors.

Research Design

This study was conducted through a descriptive research design using interviews. A descriptive design simply draws attention to the level at which two events or situations are related (Merriam & Simpson, 1995). The researcher believes that a descriptive design gave the advantage in allowing variables, events and human life situations to play an important role in the overall interviews that will be conducted. A wide range of literature from articles, books, and magazines on such topics all produced data that contributed to the guideline. A descriptive design will allow for exploration and discovery as well as producing data that are accurate and representative (Merriam & Simpson, 1995). These characteristics in the descriptive method will give the researcher a tool to evaluate the relevancy of nutritional supplements through interviews and collected data.

The disadvantage will be editing the answers from those interviewed. Another
disadvantage is that there may be bias and no control group in evaluation (Ottawa University Research Class, 1999). Still yet another disadvantage is that it cannot predict or generalize the outcome (Merriam & Simpson, 1995).

**Source of the Data**

The three participants who were interviewed for this study were specialists in the field of health and included a naturopathic health practitioner, health food store owner and a nutritionist. The data was collected and audio taped. Each interview was allotted thirty minutes to complete. For the purpose of anonymity, the participants were given an alphabetical letter to distinguish the results.

**Instrumentation**

The 8 interview questions were developed by the researcher and covered a range of topics from advice for counselors to appropriate supplements for mental illnesses. The questions were open-ended. The interview questions, which were approved by the faculty at Ottawa University, are listed below with the responses described in chapter 4.

Question 1. As a nutritional advocate, would you please explain the relevancy of nutritional supplements for a healing therapy of mental illnesses?

Question 2. What advice could be given to a counselor whose clients have chronic complaints like depression or ADHD?

Question 3. Are there any tests that can show if someone has a vitamin or mineral deficiency?

Question 4. What vitamin or nutritional supplements would benefit someone with a chronic complaint for: Depression, Anxiety/Stress, ADD/ADHD, and Schizophrenia?
Question 5. How long should these supplements be used for a specific chronic complaint?

Question 6. Are additional supplements like 5-HTP, DHEA, CoQ10, Omega 3/Essential Fatty Acids useful for someone with a chronic complaint or mental illness?

Question 7. Are there any precautions or warnings advisable for a counselor to know when discussing nutrition, vitamin and mineral supplements to their clients?

Question 8. Is there any additional comment that should be addressed?

Each question was designed to further understanding of the importance, precautions and relevance’s that nutrition and the alternative fields have for optimum health. The same questions were asked for each interview in order to cross-reference and validate such findings.

Assumptions and Limitations

It is assumed that everyone who participated in the interviews responded to the questions with honesty and accuracy. However, as stated in Merriam and Simpson (1995), the descriptive design lacks predictability and cannot generalize. It is also assumed the respondents took the interview and its subject matter of nutrition and mental illnesses seriously (Merriam and Simpson, 1995).

The researchers belief and her experience that nutrition has been effective in her own health and therefore feels it is an important issue not to be overlooked in any medical condition. These experiences were so effective for her that there became a great need and desire to educate further awareness in these fields to others. The researcher believed that with this awareness others could begin the healing process of many chronic complaints.
Procedure

The researcher chose 3 participants who specialize in the fields of health and nutrition. Each participant was asked to volunteer thirty minutes of their time to answer questions concerning chronic illnesses in relation to proper nutrition and diet. Each of the 3 agreed to be interviewed at specific dates and time determined by the researcher. The researcher then announced to each volunteer that the interview would be conducted in person along with a tape recording for proper clarification. The importance of anonymity was discussed and assured them their identity would be confidential.

The interviews, scheduled over a two-month period, took place in the spring of 2000. Each appointed interviewee completed the approved seven questions. The questions, recorded through audiotape, was then reviewed, analyzed and organized accordingly. The results of the interviews are presented in chapter 4.

To assure anonymity, each participant was given an alphabetical letter from A-C, which represented his or her title. Each interview, which recorded by audiotape, and checked for accuracy from notes taken, was the format in which the information was received. The analysis shows the comparison and similarity of each participant’s comments and reactions to the questions.
CHAPTER 4
PRESENTATION AND ANALYSIS OF THE DATA

Demographics

The study included 3 experts from Arizona working in the field of nutrition and health. Each respondent was given 8 questions pertaining to the relationship of nutrition and mental illness.

Respondent A: With a Master’s degree in Nutrition she has had expertise in the field for over 25 years and currently operates a nutrition and wellness center.

Respondent B: With a doctorial degree specializing in naturopathic medicine for over 9 years, and 12 years as a healer, she has been in the field of alternative medicine for over 21 years.

Person C: Graduated from Cerritos University in California with a degree in nutrition and has been actively involved in nutrition since 1987. Also currently operates a nutrition health store.

Findings and Results

Below are the results of the interviews a summary of the findings and a direct statement from each participant.

1. As a nutritional advocate, would you please explain the relevancy of nutritional supplements for a healing therapy of mental illness.

   All participants agreed that nutrition plays a significant role in mental illness and that each case is unique and separate.
Respondent A. It depends on each individual and weather or not there is a sugar imbalance, biochemical imbalance, diet or if allergies are present. Nutrition has very much to do with mental health.

Respondent B. Nutrition is used only as a modality. Nutrition is not the only cause however. Biochemical imbalances may be a facto, just as well as an emotional imbalance. The goal is to harmonize the body as a whole according to each individual.

Respondent C. If the organs are not functioning properly, then the biochemical isn’t working properly, then perhaps there is a potentiality of nutritional deficiency. Use nutrition as the most conservative approach in healing.

2. What advice could be given to a counselor whose clients have a chronic complaint like depression and ADHD?

Each interviewee suggested examining the individuals lifestyle, diet and background history. The participants all suggested that education and knowledge about nutrition would be helpful.

Respondent A. Check out the obvious and be educated on the various topics like blood sugar, diet. Refer out when needed to a nutritional specialist.

Respondent B. Check out the food allergies, and look at sensitivities in the person. An overdose of sugar can drain the vitamins. Also look at the lifestyle and what are they depleting in their bodies.

Respondent C. Look at the aspect of lifestyle, diet, modify diet and do a stool and blood analysis.
3. Are there any tests that can show if someone has a vitamin or mineral deficiency?

All the participants explained that there are several different tests, which can check for some vitamin and mineral deficiencies, as well as tests for metabolic and biochemical imbalances. However, many of these tests are expensive and may produce inconclusive results.

Respondent A. Yes, there is a mineral content which test for toxic metals, and tissue analysis for vitamins. Yet is hard to determine a specific deficiency. It can be more of just being a detective and listening to each individual's symptoms.

Respondent B. There is a metabolic test, a urine test, hair analysis, as well as a more costly blood test that can look at vitamins.

Respondent C. Yes, Hair analysis for toxic minerals in addition there are blood and stool test that can tell if there is a positive or negative source in the body.

4. What vitamin or nutritional supplement would benefit someone with a chronic complaint for: Depression, Anxiety, ADD/ADHD, and Schizophrenia?

The participants had different answers for each complaint, however all mentioned that the B vitamins would be beneficial to each complaint.

Respondent A. Check the blood sugar levels on both depression and schizophrenia, for there may be a need for adrenal support and thus supplements like the B vitamins and chromium is useful. For ADD/ADHD, check their diet and food additives or sensitivities to dyes, foods coloring or food in itself. When addressing anxiety, it is useful to check their blood type and supplement the B vitamins, calcium and magnesium.
Respondent B. For depression and ADD, supplement with a B vitamin, along with phenylalanine and glutamine and take out the sugar from the diet. For anxiety a B-complex and counseling is helpful. In schizophrenia, a test to find out what is going on inside.

Respondent C. Use a supplementation hierarchy of a multi-vitamin-mineral first and then perhaps add in additional supplements like phenylalanine, fatty acids like DHA and the B-vitamin complex.

5. **How long should these supplements be used for a specific complaint?**

   The time frame that each participant gave was different and their reasons varied as well.

   **Respondent A.** It can vary anywhere from 8 months to two years depending on each clients needs. Beginning with mega doses and then leveling down as healing progresses. However, clients should be kept on program even after the symptoms subside.

   **Respondent B.** 3 to 6 months – assess the doses as treatment progresses, level off, and wean them down from the high doses.

   **Respondent C.** Six months treatment and then reassess if needed.

6. **Are additional supplements like DHA, and Omega 3/ fatty acids useful for someone with a chronic complaint?**

   This question seemed to produce short and brief answers for these additional supplements. Only participants B and C found them to be useful.

   **Respondent A.** These are not a major source for treatment, don’t overwhelm and keep it simple.
Respondent B. Yes, they work with the brain.

Respondent C. If the client's problem were a nutritional, then yes it would be useful.

7. Are there any precautions or warnings advisable for a counselor to know when discussing nutrition, vitamin, or mineral supplements to their clients?

The warnings that were given were similar and respondents stated that all individuals need to take responsibility in bettering one's health.

Respondent A. Nutrition is work and clients need to take responsibility. Also see if they really do want to get well. Ask yourself, do they break eye contact when asked if they are willing to get well.

Respondent B. Don't overdo it. Look for change with in the first week for improvement.

Respondent C. Yes, follow the guidelines, warnings and directions that the manufacturer places on each item. Plus, clients need to be aware that other medication might interact and could have an adverse reaction with vitamin, minerals or any part of nutrition. Clients medical doctors should be informed as well as a naturopath or nutritionist on all the medication a particular client is taking.

8. Is there any additional comment that should be addressed?

This question gave the participants an opportunity to address any additional information related to nutrition and mental health.

Respondent A. Do the majors first, regulate the blood sugar through a proper diet implementation and be a detective in the whole process.
Respondent B. Nothing that isn’t already covered.

Respondent C. Clients need to take responsibility in getting well.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to develop a guideline indicating the possible benefits that proper nutrition and supplements can have on behavioral or mental illnesses.

A review of literature found the importance of implementing and recognizing nutrition as a treatment or partial treatment of mental illness. Nutrition can alleviate many symptoms characterized by depression, anxiety, ADD/ADHD, and schizophrenia. Nutrition may also prevent a break down that can lead to a mental illness. In addition, deficiencies in any one area can lead to other problems, which then can lead to a mental illness.

The 3 experts, who work in the nutrition and health field, agreed to participate in this study. The participants were interviewed April 2000. There were 8 questions with related topics in nutrition and mental health. The results indicated their overall thoughts on what constitutes effective treatment. All participants agreed that: (1) Vitamins and minerals are essential and the B vitamins are crucial for mental health; (2) Sugar deficiencies be the cause or part of the symptoms. Overlapping and duplications are seen and is common in mental illness. Depression can be a part of schizophrenia and anxiety can be seen in those with ADD/ADHD; (3) Other nutritional supplements like amino acids and EFAs should also be considered as part of therapy when needed; (4) Overall diet affects a person mental health and careful implementation of a proper diet should be assessed; (5) Biochemistry is unique to each individual and thus assessment and treatment should be also done so accordingly; (6) Treatment should be closely monitored and leveled down in quantity when appropriate.
appropriate; (7) Individuals must want treatment and also must take reasonability in the healing process for therapy to be successful.

This study found that proper amounts implemented are crucial. Too little and it is not effective to produce any significance, however, too much can lead to other complications. It also found that each treatment must be assessed properly through a certified health practitioner. Therefore, treatment plan is contingent upon the individual's own biochemical system.

Conclusion

The guideline developed from the findings of this study also shows these concerns above. The guideline, broken down by: possible cause, nutritional deficiencies, reactions and symptoms of nutritional deficiencies, recommendations, and specialists, is a useful guide for counselors. Many of the symptoms or possible causes may appear in several of the four areas: depression, anxiety, ADD/ADHD, schizophrenia. For example schizophrenia may be caused by allergies and likewise depression cause by allergies and birth control pills. In addition the former may also be in conjunction with the later ant that not only one but many nutritional reactions or deficiencies be the cause or part of the symptoms. Overlapping and duplications are seen and is common in mental illness. Depression can be a part of schizophrenia and anxiety can be seen in those with ADD/ADHD.

The complexity in nutrition and mental health requires additional resources than this guideline can offer. Moreover this guideline is simply just that, a guideline for counselors to use with their clients to further their knowledge and awareness. Any additional advisement should be done so through a specialist in the appropriate fields.
listed in the guideline. Proper implementation of nutrition along with counseling or other means of support was the ideal goal.

**Recommendations**

Nutrition is a vital step in the healing process of mental health. Each nutritional based product such as vitamins, mineral, or amino acids, should be carefully assessed with each individual's biochemical system. In addition, a licensed health practitioner should only assess this practice. Within each mental health concern, nutrition, diet, and allergies should be discussed and evaluated, along with the emotional, physical and biochemical status of each individual. A proper treatment, from a careful assessment of all areas can then be implemented. Check-ups and status of treatment should be closely monitored and ceased only when health is resumed to normal or so determined by the health practitioner that therapy is no longer needed. It is recommended that counselors use this guideline only as reference or basic information of the pertaining issues involved. Referral or consultation with the appropriate specialist is then advised for further treatment.
REFERENCE LIST


APPENDIX A

NUTRITIONAL GUIDELINE FOR COUNSELORS
<table>
<thead>
<tr>
<th>Depression</th>
<th>Possible Causes</th>
<th>Nutritional Deficiencies</th>
<th>Reactions &amp; Symptoms of Nutritional Deficiency</th>
<th>Recommendations</th>
<th>Specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food &amp; Chemical Allergies</td>
<td>Vitamin: B-Complex Mineral: Manganese, Potassium, Zinc</td>
<td>Fatigue, Weakness, Insomnia, Irritability, Memory impairment, Migraines, Mental Sluggishness, Puffiness Around Eyes, Weight Loss, Lowered Fertility, Fragile Bones</td>
<td>Diet: Avoid Any Known Allergic Foods, dairy, wheat, etc., &amp; Ones Containing Artificial Color &amp; Other Additives Supplements: Multi-vitamin/mineral, Extra Vitamin C, B-3, B-6, Calcium, Iron, Magnesium, &amp; Potassium</td>
<td>Allergist, Clinical Ecologist, Nutrionist</td>
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<td>---------------------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Birth Control Pills</td>
<td>A, B-6, B-9, B-12, C, E, &amp; Mineral: Zinc</td>
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</tr>
<tr>
<td>Low Blood Sugar &amp; Other Sugar Imbalances</td>
<td>Vitamin: B-Complex, &amp; Mineral: Chromium, Magnesium, Zinc &amp; Amino Acids: Cystine, Glutamine</td>
<td>Hypoglycemia, Irritability, Dizziness, Shaking &amp; Trembling, Hunger Pains, Lethargic, or Hyperactive, Nausea, Migraines, Confusion, Memory Impairment, Skin &amp; Hair Problems, Infertility, Malnutrition</td>
<td>Diet: Avoid Alcohol, Junk Foods, Simple Carbohydrates; white bread, cookies, Candy, cupcakes, rice, pasta. Increase Fiber Intake, &amp; Potassium-Rich Foods Like; Bananas, Fish &amp; Whole Grains Supplements: EFAs, Multi-vitamin/mineral, B-Complex, Add More B-5, C, &amp; Chromium</td>
<td>Clinical Ecologist, Naturopathic, Nutritionist, Orthomolecular</td>
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</tr>
<tr>
<td>High Copper Levels</td>
<td>Mineral: Zinc</td>
<td>Acne, Eczema, Diarrhea, Impotence &amp; Male Infertility, Irritability, Increased Infections, Memory Impairment, Anxiety, Depression, Deterioration of Vision, Racing Thoughts</td>
<td>Diet: Increase Fifer, Whole Wheat Products, Check Overconsumptions of Copper, &amp; Avoid High Sugar Diets. Supplements: Multi-vitamin/mineral Check for Percentage of Copper In Multi Sup. Add Extra Zinc</td>
<td>Clinical Ecologist, Nutritionist, Orthomolecular</td>
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<td></td>
</tr>
<tr>
<td>High Histamine Levels</td>
<td>Vitamin: B-Complex, C, Mineral: Potassium, Selenium, &amp; Amino Acids: Tyrosine, Tryptophan, EFAs</td>
<td>Abnormal Metabolism, Learning Difficulties, Rashes, Chronic Respiratory Problems, Lethargic, Migrains, Mental Sluggishness, Poor Adrenal Function, Depression, Excessive Thoughts</td>
<td>Diet: Avoid High Protein and Simple Sugars and Increase in Complex Carbohydrates <strong>Supplements:</strong> Avoid &amp; Caution Multi-vitamins that have B-9 &amp; B-12, For They May Raise Histamine Levels, Increase Vitamin C, Potassium, Calcium, &amp; EFAs</td>
<td>Allergist, Clinical Ecologist, Natuopathic</td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>Possible Causes</td>
<td>Nutritional Deficiencies</td>
<td>Reactions &amp; Symptoms of Nutritional Deficiency</td>
<td>Recommendations</td>
<td>Specialist</td>
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</tr>
<tr>
<td>Low Blood Sugar &amp; Other Sugar Imbalances</td>
<td>Vitamin: B-Complex, &amp; Mineral: Calcium, Chromium, Magnesium, &amp; Amino Acids: Cystine, Glutamine</td>
<td>Hypoglycemia, Irritability, Dizziness, Shaking &amp; Trembling, Hunger Pains, Lethargic, or Hyperactive, Nausea, Migraines, Confusion, Memory Impairment, Skin &amp; Hair Problems, Infertility, Malnutrition</td>
<td><strong>Diet:</strong> Avoid Alcohol, Junk Foods, Simple Carbohydrates; white bread, cookies, Candy, cupcakes, rice, pasta. Increase Fiber Intake, &amp; Potassium-Rich Foods Like, Bananas, Fish &amp; Whole Grains <strong>Supplements:</strong> EFAs, Multi-vitamin/mineral, B-Complex, Add More B-5, C, &amp; Chromium</td>
<td>Clinical Ecologist, Naturopathic, Nutritionist, Orthomolecular</td>
<td></td>
</tr>
<tr>
<td>High Copper Levels</td>
<td>Zinc</td>
<td>Acne, Eczema, Diarrhea, Impotence &amp; Male Infertility, Irritability, Increased Infections, Memory Impairment, Anxiety, Depression, Deteriation of Vision, Racing Thoughts</td>
<td><strong>Diet:</strong> Increase Fiber, Whole Wheat Products, Check Overconsumptions of Copper, &amp; Avoid High Sugar Diets. <strong>Supplements:</strong> Multi-vitamin/mineral Check for Percentage of Copper In Multi Sup. Add Extra Zinc</td>
<td>Clinical Ecologist, Nutritionist, Orthomolecular</td>
<td></td>
</tr>
</tbody>
</table>
**Supplements:** Multivitamin/mineral, Extra B-Complex, & C, Also Add More Calcium, Magnesium & Zinc, Vitamins & Dry Skin | Naturopathic, Nutritionist, Physician/Osteopath, Orthomolecular |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pyroluria                                   | Vitamin: B-6, B-9 & Mineral: Zinc                                                                          | Excessive Thoughts, Anxiety, Confusion, Depression, Disturbed Thinking, Anxiety, Upper Abdominal Pain, Breath & Body Order, Nausea, White Spots on Nails                                                                                               | Diet: Increase Fiber & Whole Wheat & Grain Products  
**Supplements:** A Multi-vitamin Without B-9 & B-12, Add Additional B-6, Zinc & Manganese                                                                                                                   | Allergist, Clinical Ecologist, Naturopathic, Nutritionist |
**Supplements:** Multivitamin/mineral, Extra B-Complex, & C, Also Add More Calcium, Iron, Magnesium & Zinc, Amino Acid Complex                                                                                                           | Naturopathic, Dietician/Nutritionist |
<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Nutritional Deficiencies</th>
<th>Nutritional Symptoms of Deficiency</th>
<th>Recommendations</th>
<th>Specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food &amp; Chemical Allergies</td>
<td>Vitamin: B-6, Mineral: Magnesium</td>
<td>Fatigue, Weakness, Insomnia, Irritability, Memory impairment, Migraines, Mental Sluggishness, Puffiness Around Eyes, Weight Loss, Lowered Fertility, Fragile Bones</td>
<td>Diet: Avoid Any Known Allergic Foods, dairy, wheat, etc., &amp; Ones Containing Artificial Color &amp; Other Additives. Supplements: Multi-vitamin/mineral, Extra Vitamin C, B-5, Calcium, Magnesium, &amp; Potassium</td>
<td>Allergist, Clinical Ecologist, Nutrionist</td>
</tr>
<tr>
<td>Poor Eating Habits</td>
<td>EFAs, Mineral: Magnesium, Iron, Potassium, Iron &amp; Zinc</td>
<td>Listlessness, Pale Appearance, Decreased Mental Capacity, Concentration &amp; Learning Difficulties, Confusion, Fatigue, Hypertension, Irritability, Nervousness, Rashes, Restlessness,</td>
<td>Diet: Avoid Process Foods, Artificial Sweeteners, Caffeine, Alcohol &amp; Tobacco Increase; Protein, Fish, Fiber, Fruit &amp; Vegetables</td>
<td>Naturopathic, Dietician/Nutritionist, Orthomolecular</td>
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<tr>
<td>Low Blood Sugar &amp; Other Sugar Imbalances</td>
<td>Vitamin: B-Complex, &amp; Mineral: Chromium, Magnesium, Zinc &amp; Amino Acids: Cystine, Glutamine</td>
<td>Irritability, Dizziness, Shaking &amp; Trembling, Hunger Pains, Lethargic, or Hyperactive, Nausea, Migraines, Confusion, Memory Impairment, Inability to Concentrate, Poor Coordination, Learning Impairment, Skin &amp; Hair Problems, Infertility, Malnutrition</td>
<td>Diet: Avoid Alcohol, Junk Foods, Simple Carbohydrates; white bread, cookies, Candy, cupcakes, rice, pasta. Increase Fiber Intake, &amp; Potassium-Rich Foods Like; Bananas, Fish &amp; Whole Grains</td>
<td>Supplements: EFAs, Multi-vitamin/mineral, B-Complex, Add More B-5, C, &amp; Chromium</td>
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<td>----------------------------------------</td>
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<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Metal Toxicity/High Copper/Manganese</td>
<td>Mineral: Iron, Zinc</td>
<td>Acne, Eczema, Diarrhea, Irritability, Increased Infections, Memory Impairment, Anxiety, Depression, Deteriation of Vision, Racing Thoughts, Confusion, Concentration Difficulties, Delusions, Insomnia, Depression, Muscle &amp; Joint Pain</td>
<td>Diet: Increase Fiber, Whole Wheat Products, Check Over Consumption of Copper, &amp; Other Metals In Water, Food, &amp; Additives, Also Avoid High Sugar Diets. Supplements: Multi-vitamin/mineral Check for Percentage of Copper in Multi Sup. Add Extra Zinc</td>
<td>Clinical Ecologist, Nutritionist, Orthomolecular</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>Possible Causes</td>
<td>Nutritional Deficiencies</td>
<td>Reactions &amp; Symptoms of Nutritional Deficiency</td>
<td>Recommendations</td>
</tr>
<tr>
<td>--------------</td>
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<td>-----------------</td>
</tr>
<tr>
<td>Low Blood Sugar &amp; Other Sugar Imbalances</td>
<td>Vitamin: B-Complex, &amp; Mineral: Chromium, Magnesium, &amp; Amino Acids: Cystine, Glutamine</td>
<td>Irritability, Dizziness, Shaking &amp; Trembling, Hunger Pains, Lethargic, or Hyperactive, Nausea, Migraines, Confusion, Memory Impairment, Inability to Concentrate, Poor Coordination, Delusions, Hallucinations, Skin &amp; Hair Problems, Infertility, Malnutrition</td>
<td>Diet: Avid Alcohol, Junk Foods, Simple Carbohydrates; white bread, cookies, Candy, cupcakes, rice, pasta. Increase Fiber Intake, &amp; Potassium-Rich Foods Like; Bananas, Fish &amp; Whole Grains <strong>Supplements:</strong> EFAs, Multi-vitamin/mineral, B-Complex, Add More B-5, C, &amp; Chromium</td>
<td>Clinical Ecologist, Naturopathic, Dietician/Nutritionist, Orthomolecular</td>
</tr>
<tr>
<td>Metal Toxicity/High Copper/Manganese</td>
<td>Mineral: Iron, Zinc</td>
<td>Acne, Eczema, Diarrhea, Irritability, Increased Infections, Memory Impairment, Anxiety, Depression, Deteriation of Vision, Racing Thoughts, Anorexia, Confusion, Concentration Difficulties, Delusions, Insomnia, Depression, Muscle &amp; Joint Pain</td>
<td>Diet: Increase Fiber, Whole Wheat Products, Check Over Consumption of Copper, &amp; Other Metals In Water, Food, &amp; Additives, Also Avoid High Sugar Diets. <strong>Supplements:</strong> Multi-vitamin/mineral Check for Percentage of Copper In Multi Sup. Add Extra Zinc</td>
<td>Clinical Ecologist, Nutritionist, Orthomolecular</td>
</tr>
<tr>
<td>High Histamine Levels</td>
<td>Vitamin: B-Complex, C, Mineral: Potassium &amp; Amino Acids: Methylamine, Tyrosine, Tryptophan</td>
<td>Acne, Abnormal Metabolism, Learning Difficulties, Rashes, Chronic Respiratory Problems, Lethargic, Migraines, Mental Sluggishness, Nausea, Depression, Excessive Thoughts &amp; Compulsive Behavior</td>
<td>Diet: Avoid High Protein and Simple Sugars and Increase in Complex Carbohydrates. <strong>Supplements</strong>: Avoid &amp; Caution Multi-vitamins that have B-9 &amp; B-12, For They May Raise Histamine Levels, Increase Vitamin B-5, C &amp; Calcium, Potassium</td>
<td>Allergist, Clinical Ecologist, Naturopathic</td>
</tr>
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<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Food &amp; Chemical Allergies</td>
<td>Vitamin: B-3, B-6, Mineral: Magnesium</td>
<td>Pellagra, Dermatitis, Diarrhea, Dementia, Dizziness, Forgetfulness, Headaches, Irregular Heartbeat, Poor Coordination, Mental Sluggishness, Irritability, Fatigue</td>
<td>Diet: Avoid Any Known Allergic Foods, dairy, wheat, etc., &amp; Ones Containing Artificial Color &amp; Other Additives. <strong>Supplements</strong>: Multi-vitamin/mineral, Extra Vitamin C, B-3, B-6, Calcium, Magnesium, &amp; Potassium</td>
<td>Allergist, Clinical Ecologist, Nutritionist</td>
</tr>
</tbody>
</table>
APPENDIX B

SUGAR/GLUCOSE INDEX TABLE
The effects certain foods have on the blood sugar levels in the body. The foods with the greatest effect on blood sugar have the highest score. Scores above 55 are considered high. Scores ranging from 0 to 54 are considered low.

<table>
<thead>
<tr>
<th>Sugars</th>
<th>HIGH (55+)</th>
<th>LOW (0—54)</th>
<th>Cereals</th>
<th>HIGH (55+)</th>
<th>LOW (0—54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>100</td>
<td></td>
<td>Cornflakes</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Maltose</td>
<td>100</td>
<td></td>
<td>Weetabix</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Lucozade</td>
<td>95</td>
<td></td>
<td>Shredded wheat</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Honey</td>
<td>87</td>
<td></td>
<td>Muesli</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Mars bar</td>
<td></td>
<td>68</td>
<td>Kellogg’s All-Bran</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>Sucrose (ordinary household sugar)</td>
<td>59</td>
<td></td>
<td>Porridge Oats</td>
<td></td>
<td>49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fruit</th>
<th></th>
<th></th>
<th>Grain Products</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Raisins</td>
<td></td>
<td></td>
<td>White Rice</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Bananas</td>
<td></td>
<td>64</td>
<td>White Bread</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Oranges</td>
<td></td>
<td>40</td>
<td>French baguette</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td></td>
<td>39</td>
<td>Wholemeal bread</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Grapefruit</td>
<td></td>
<td>25</td>
<td>Brown rice</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td>Pastry</td>
<td>59</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Digestive biscuits</td>
<td>59</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Sweetcorn</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Basmati rice</td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

| Legumes                      |            |            | Oatmeal biscuits         |            | 54         |
|------------------------------|------------|------------|White spaghetti           |            | 50         |
| Baked beans                  |            |            | Wholemeal spaghetti      |            | 42         |
| (no sugar)                   |            | 40         | Whole-grain rye bread    |            | 41         |
| Butter beans                 |            | 36         |                          |            |            |
| Chick peas                   |            | 36         |                          |            |            |
| Blackeye beans               |            | 33         |                          |            |            |
| Haricot beans                |            | 31         |                          |            |            |
| Kidney beans                 |            | 29         |                          |            |            |
| Lentils                      |            | 29         |                          |            |            |
| Soybeans                     |            | 15         |                          |            |            |

| Dairy products               |            |            | Vegetables               |            |            |
|------------------------------|------------|------------|Cooked parsnips           | 97         |            |
| Ice cream                    | 50         |            | Baked potatoes           | 85         |            |
| Yogurt                       | 36         |            | Instant potatoes         | 80         |            |
| Whole milk                   | 34         |            | New potatoes             | 70         |            |
| Skimmed milk                 | 32         |            | Cooked beet              | 64         |            |
|                              |            |            | Peas                     |            | 51         |
|                              |            |            | Carrots                  |            | 49         |

(Holford, 1999, p. 56)