Megavitamins and Psychotherapy: Effective, Economical and Time-Saving Treatment A Three Year Study

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Abstract

If a standardized program of Megavitamin Therapy (MVT) and/or Lithium Orotate Therapy (LOT) are added to programs of psychotherapy, there should be seen measurable, observable and statistical differences in before and after populations as measured by the Minnesota Multiphasic Personality Inventory (MMPI). Thirty-two subjects, in a matched group design, each were assigned to seven groups (N=224): No Treatment Group, Psychotherapy Only Group, Psychotherapy and Megavitamin Therapy Group, and the Lithium Orotate, Psychotherapy, and Megavitamin Therapy Group. The last three groups had before and after subjects. The No Treatment Group was tested and then abandoned. Each of the specific groups were administered the full MMPI both upon admission to the treatment program and at the point of discharge. These groups were balanced for sex, religion, occupation, educational level, and race. The results were statistically significant. They demonstrated that time in therapy was reduced by seven months, Megavitamin Therapy was 66% more effective than Psychotherapy Only; it was therefore cost-effective. Whereas, MVT and LOT were only 8% more effective.

Introduction/Motivation for the Study

During the past decade the writer has observed the most common diagnosis for his patients to be: 296.23 Major Depression, Single Episode Without Psychotic Features. The average length in therapy was twelve to eighteen months. The author, without formal training in nutrition, placed himself on a megavitamin therapy regime taking two multivitamin/minerial tablets containing 75 mg of each of the B-complexes with 11 chelated minerals daily. He began to exhibit less allergy response, feel less tired and depressed, his hair stopped falling out and his night vision improved. Colleagues and patients began to remark how much younger he was looking. He responded more positively to stress and was far less irritable. Even his craving for sugars diminished.

Statement of the Problem

The writer desired to investigate the problem: If nutritional supplementation (mega -nutrition), diet therapy and Lithium Orotate are added to a standard program of psychotherapy, then there should be observable, measurable, and statistical differences in MMPI profiles in a before and after, matched-group design, study of psychological outpatients as compared with a no treatment group. The importance of this study is several fold: 1) to obtain a better understanding of psychonu-trition; 2) encourage research by psychotherapists in private practice; 3) ascertain whether or not the present researcher/psychotherapist is more successful in his treatment outcome; 4) learn new ways, methods and programs of psychotherapy; 5) and to bring about greater cost-effectiveness for the patient and third party billing interests.

Review of the Literature

While it is true that it appears Orthomolecular Medicine and Psychiatry have a vast amount to offer patients and that many practitioners have case histories of patients who have almost miraculously responded to this treatment modality, the truth of the matter is that Orthomolecular Psychiatry's effectiveness has been under debate for many years. Traditional medicine has taken a strong stance against the field. In 1967, which was not that

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long ago, the Psychiatric News published an editorial attacking megavitamin therapy. The American Psychiatric Association rejected Orthomolecular Psychiatry on the basis that it was unsubstantiated by research in a task force report in 1973 (Lipton, 1973). Kety (1976) concludes that controlled studies have failed to demonstrate significant improvement in schizophrenia through Orthomolecular therapy. This conclusion is debated by Hoffer (1980) and others. However, the controversy will continue until further research makes clear the role of vitamins in Psychopathology and its treatment (Johnston, 1985). The theoretical framework will be briefly viewed from three vantage points: (I)Orthomolecular Psychiatry/Medicine/Psychology with some special Orthomolecular theories presented for consideration; (II) A brief review of vitamins and minerals which are reported to change behavior; and (III) Psychological testing theory.

I. Orthomolecular Psychiatry/ Medicine/Psychology

The late Dr.Carlton Fredericks (1978) believed that when nutritional deficiencies are repaired through diet changes, vitamins and hormones, which "may require heroic amounts of nutrients at first but usually needed in much smaller maintenance quantities, the responses of the patient are found in more sociable, acceptable feelings and thoughts may and often do make the differences between being a dweller within the scene of reality and/or being an outcast on a fringe or a cipher in its mental institutions" or prisons. Thus for many, orthomolecularpsychiatry/medicine/psychol-ogy is a megavitamin, hormone and diet therapy that relieves or cures psychological symptoms by treating their biological causes, and is, in short, biochemical psychiatry or psychology. The term "Orthomolecular" was first used by Dr. Linus Pauling in 1968 to characterize the treatment of disease with nutrients that naturally occur in the human body and means: "right molecules" (Johnston, 1985). While treatment regimes vary, the main focus is on preventive medicine. Most infrequently standard drugs and medications are not used. Generally, the patient is placed on megadoses of vitamins which often demonstrate remarkable changes in the patient's level of depression, acting-out behavior, alcohol-drug ingestion, anger outbursts, - all often within 72 hours after commencing the regime (Pfeiffer, 1974; Hoffer, 1978; and Williams, 1971). Most often the patient is removed from coffee, tea, white flour, sugar, dyes, colorings, and preservatives. The patient's diet becomes a natural, complex carbohydrate diet with often the serving of five smaller meals allowing the patient to sustain his energy. Many believe (Lesser, 1981; Pfeiffer, 1974; Passwater, 1975; Hoffer, 1978; and Donsbach, Pearson and Shaw, 1981) that the results of this approach has demonstrated that 50 to 70% of the psychopathological conditions, especially depression, are alleviated leaving the patient with hope (Johnston, 1985). Attention is then directed to the residual Psychopathology by the psychiatrist/ psychologist utilizing standard psychotherapeutic techniques.

Orthomolecular Theories

Stephen A. Levine (1983, 1984) has demonstrated some amazing insight into the relationship of broad spectrum stress and degenerative diseases with his Unified Stress Theory of disease:

Unified Stress Theory of Disease

Stress as precipitated by emotional factors, environmental chemical toxicity, or infection, cause an increase in free radical production, which can overwhelm the body's various antioxidant defense systems. The immediate consequences are free radical initiated lipid peroxidation of cell membranes, and liberation of inflammatory mediators which then act as immune - suppressors. The release of inflammatory mediators further contributes to oxidant stress. Some secondary consequences may include autoimmune disease, immunologically mediated food, chemical and inhalant allergy, all related to autoantigen formation initiated by free radical activity. Formaldehyde, carbon tetrachloride, caffeine, benzene, various phenols, salicylates,toluene and nicotine are some of the most notorious familiar sensitizing environmental chemicals We can conclude that (at least a good part of) the damaging effects of many environmental chemicals, of emotional stress, and of stress due to infection is due to toxicity induced by free radical overload. An excess of radicals will overwhelm our antioxidant defense ca-

pacities and literally create electrochemical imbalances which lead to inflammatory symptomatology, immune deregulation, and much of what we call degenerative disease.

Allergy And Addiction/ Tension-Fatigue Syndrome

Major contributions in this area have been made by Randolph (1950,1947),Mandel and Philpott (1984). The relationship between addiction and allergy/tension-fatigue syndrome and their behavioral consequences have been discussed by Levine (1984):

Many people who suffer from allergic fatigue also suffer from allergy-induced tension. Frequently, these two symptoms alternate in what is known as the tension-fatigue syndrome. The fatigue is not like any normal fatigue, but is similar to that exhaustion which would result from illness. Many of these people find it difficult to carry on sustained activity of any kind, and they require unusual amounts of sleep and rest. The only noticeable symptom, in many cases, may be chronic exhaustion. This condition is frequently misunderstood and labeled as "neurosis."

Allergy Always Accompanies Addiction

Still further, Levine (1984) comments on how allergy always accompanies addiction:

Addicted individuals, are concomitantly allergic to the very substances which they crave. In fact it is probably easier, when talking about addiction, to include allergy. The phrase Allergy-Addiction Syndrome has been used to describe this phenomenon. The relationship between addiction and allergy has been missed, only because, most often, the allergic side of addiction (the allergy symptoms) are frequently masked or delayed.

Candida Albicans

Lastly, Levine (1984) reports on the relationship between yeast infections and food allergies. In support of the immune system:

Selenium deficiency selectively predisposes to Candida albicans infections. Supplying selenium along with Nystatin aids the patient's ability to recover their ability to deal with the yeast, rather than just suppressing the yeast growth with antifungal drugs. Current treatment for candidiasis includes immune support and stimulation by antioxidant nutrients, a specific yeast and refined carbohydrate free diet, a potent acidophilus, and the antifungal medication Nystatin.

Stages of Subclinical Malnutrition

Traditionally, physicians and nutritionists have presumed that if a person shows no clinical signs of classical deficiency disease — scurvy, rickets, pellagre, beriberi — then that person is adequately nourished. "Marginal deficiency" and/or "subclinical malnutrition" is now defined as a state of gradual vitamin depletion in which there is evidence of personal lack of well-being associated with impairment of certain biochemical reactions (Brin, 1978). The reactions impaired are those that depend on the presence of sufficient amounts of vitamins. This condition may be affected by drugs, hormones, disease, surgery, stress, and emotional and behavior factors (McCann, 1979). Vitamin deficiency is not something that occurs abruptly or acutely. Body stores of micronutrients are gradually depleted during a preliminary stage. The depletion of these stores marks the beginning of a second stage called the biochemical stage. Various enzymes need vitamins in order for essential biochemical reactions to take place. When there is not enough vitamin to saturate the enzymes that need it, the body's biochemistry is impaired. The third stage of depletion is called the physiological stage. When enzyme activity has been sufficiently impaired, behavioral and personality changes begin to appear (loss of appetite, depression, irritability, anxiety, insomnia). These three stages comprise a continuum gradual vitamin deficiency which is called subclinical malnutrition. If the deficiency continues, signs and symptoms of the classical deficiency disease will appear. This is called the clinical stage. Left untreated, it is followed by the anatomical stage in which death will ensue without nutritional intervention (Brin, 1964).

II. Vitamins and Minerals

Next consider some definitions and those vitamins and minerals which are purported to change, modify, or create new behavior: The B-Complex Family, Vitamin C and the Bioflavinoids, the Fat soluble Vitamins: A,D,E and K;and some selected minerals.

Definitions

A vitamin is an organic food substance

which occurs naturally only in living organisms. Vitamins are present in foods only in minute quantities. Fifteen vitamins have been recognized and analyzed. Vitamins are of two types: fat soluble and water soluble. Fat-soluble vitamins dissolve in alcohol and are more easily stored in the body. The fat-soluble vitamins dissolve in water, they are much more easily lost by the body through the normal eliminative processes (Lesser, 1981).

The B-Complex Vitamin Family

Do various nutritional deficiencies — or combinations of deficiencies—commonly cause mental disease? That the answer to this question is yes is made very probable by the evidence to which we shall now turn.

Passwater (1975) adheres to the following regarding the nature of the B-Complex Vitamins:

The B vitamins appear together in nature as a family and have similar chemical properties. They are water-soluble and act as catalysts. The B-complex family, with the exception of choline, all function as coenzymes.

A coenzyme is a part of an enzyme, a large molecule that is a body-chemistry catalyst. Without enzymes, the chemical reactions that occur in the body would proceed too slowly to sustain life; enzymes speed these reactions and control their rate. Enzymes have two major portions, the coenzyme and the apoenzyme: the apoenzyme is the protein portion and the coenzyme is the nonprotein portion. The B-complex vitamins form major portions of many coenzymes.

Space does not permit this writer to comment other than briefly on the individual vitamins and minerals and their effect on mental health. Lesser (1981), Albanese (1959), Woolley (1962), Williams (1971), Passwater (1975) and Pfeiffer (1974) have done an excellent job documenting the need for vitamins and minerals in prevention as well as treatment of Psychopathology.

Extensive studies on the effects of thiamine (B_1) depletion in man have corollated biochemical changes with behavioral effects (Brin,1978;1958). Depression and irritability have been found common symptoms in B_1 deficiency (Brozek, 1957). Cavney (1982) suggests that B_2 deficiency may be strongly associated with depression. Williams (1971), Passwater (1975), and Pfeiffer (1975) report the necessity of B_2 (Riboflavin) in the oxidative deficiencies and improved mental health. While the agreed function of B_3 (Niacin) is related to protein and carbohydrate metabolism, Lesser (1981) believes the first noticeable symptoms of B_3 deficiency are entirely psychological. Williams (1971), the discoverer of B_5 (Pantothenic Acid), sees B_5 as essential to brain functioning to prevent profound mental depression. Beisel (1982) suggests that B_5 deficiency depresses humoral antibody responses to various antigens. Passwater (1975) reports B_6 (Pyridoxine) is involved in protein, fat, and sugar metabolism and is ultimately concerned with the metabolism of nutrients which effect the central nervous system. Dr. Carl Pfeiffer (1974), Director and Chief Neuropharma-cologist at the Brain Bio Center in Princeton, New Jersey, theorizes that susceptibility to allergies may be due to a lack of adequate supply of vitamin B_6 and zinc in the diet. Additionally, low blood sugar, Pfeiffer (1974) points up, is common in B_6 deficiency, causing headaches, dizziness, irritability, the inability to concentrate, and extreme weakness. B_6 deficiency has been associated with a reduction in the number and function of both T and B lymphocytes (Levy, 1982). Donsbach, Pearson, and Shaw (1981) writing on alcoholism withdrawal point up a high incidence of depression. Vitamins C and B_6 depressed or destroyed by the acetaldehyde produced in the liver from the alcohol, are absolutely necessary in order for the brain to make special chemicals called neurotransmitters — especially norepinephrine (NE), which allow the brain cells to send messages to each other. These same authors report on the use of B_{l2} in the healing of mental illness.

Mental changes resulting from B_{12} deficiency are among the least publicized aspects of this vitamin. Clinically, the patient is often confused, inattentive, and drowsy. Other signs of deficiency are mental slowness, difficulty in concentration and remembering.

Lesser (1981) states this about B_{15} (Pangamic Acid):

The Russians have studied B_{15} most intensively and report it useful in treating alcoholism and other drug addictions, autism, schizophrenia, minimal brain damage, senility, aging, heart disease, diabetes, hypertension, liver disease, poisoning, and skin disease — in

short, just about anything.

Other Important Members of the B-Complex Family

Consider next five other important members of the B-Complex family: biotin, inositol, folic acid, PABA, and choline. Biotin deficiency (Williams, 1971) is rare. Biotin is essential to cellular metabolism, as it plays an important role in the metabolism of fats, carbohydrates, proteins (Lesser, 1981), and lowers blood glucose levels (Coggshall, 1985). Biotin loss many cause depression (Levenson, 1983).

Regarding inositol's role in mental health, Lesser (1981) suggests Inositol has a mild anti-anxiety effect, similar to the effect of mild tranquilizers such as Valium or Equanil.

Inositol, when given simultaneously with niacin and in equal doses, also helps suppress the flush caused by megadoses of niacin.

Alcoholics are very likely to be deficient in folic acid because of the intestinal malabsorption caused by drinking. Depletion often leads to depression and possibly psychosis (Abou -Saleh and Coppen, 1986). Epileptics on anticonvulsant medication such as Dilantin and Myselin may experience folic acid deficiency because these drugs destroy folic acid. These medications cause apathy and slowing of mental processes (Lesser,1981). Lesser (1981) reports PABA is unique in that it is a vitamin within a vitamin, forming a component of folic acid. Problem schizophrenics have been given 2 gm of PABA a day with reported good results. Passwater (1975) points up that by definition, choline is not a vitamin. It is nutritionally important in protecting our livers, kidneys, and arteries. Lesser (1981) shares the following:

Contortions in the patient (tardive dyskinesia) were the unfortunate effects of these phenothiazine tranquilizers. The condition is permanent with no known cure. Recently, however, it was discovered that 10 to 60mg daily of choline improved 50 to 75% of tardive dyskinesia cases. Large doses of choline may worsen epilepsy.

Vitamin C

Pfeiffer (1974) calls vitamin C "The Sleep Vitamin"; believes it to have an antianxiety or sedative effect and reports vitamin C to be effective on low back pain, stress and wound healing.

Kallner (1983) has demonstrated the relationship between vitamin C and the production of stress hormones: Vitamin C has long been considered one of the key stress vitamins with a prominent role in the metabolism of both adrenaline and Cortisol. Donsbach, Pearson and Shaw (1981) write regarding this important vitamin which is not often thought of as a "mental" vitamin:

The production of norepinephrine (the learning and memory chemical in the brain) is inhibited in the vitamin C deficient subjects.

Lesser (1981) has found megadoses of vitamin C helpful for schizophrenia and drug addiction.

Fat-Soluble Vitamins: A, D & E

Lesser (1981) has pointed up that vitamin A levels decrease under stress and is needed in the manufacturing of the"antistress" adrenal hormones. Beta-carotene is markedly elevated in the bloodstream of anorexia nervosa patients causing lack of appetite. Fetherolf (1984) reports on the role of vitamin D:

Best known for its role in maintaining the growth and health of bones and teeth, vitamin D is needed for maintaining a healthy nervous system, a strong heart and proper blood clotting.

Lesser (1981) reports on vitamin E and the mind: Vitamin E helps relieve the symptoms of menopause, nervousness, fatigue, and restless sleep and insomnia are reduced.

Minerals

The body can tolerate a deficiency of vitamins for a longer period of time than it can tolerate a deficiency of minerals (Lesser, 1981). A slight change in the blood concentration of important minerals may rapidly endanger life. Fetherolf (1984) reports the importance of the mineral iodine:

Kelp is iodine with trace minerals. An under supply of this mineral can result in slow mental reaction, weight gain and lack of energy. The higher the altitude the more iodine the body requires.

Lesser(1981) believes that lack of calcium is related to anxiety, panic attacks and allergies; perhaps because calcium lowers histamine and excessive histamine causes the allergic reaction. He believes that potassium has a direct effect on blood sugar. These

findings may indicate weakened adrenal function, the adrenals becoming exhausted from the frequent need to secrete adrenalin to maintain an adequate blood sugar. Donsbach (1981) asserts that the signs of potassium deficiency are:mental apathy, nervousness, .irritability, and mental disorientation.

Fetherolf (1984) describes iron and magnesium usage: The blood could not hold the valuable oxygen. Iron is essential for life and necessary for the production of hemoglobin (red blood corpuscies), myoglobin (red pigment in muscles) and various enzymes. The deficiency symptoms of magnesium in our bodies: nervousness, muscular excitability, tremors, bed wetting, and aching muscles. Lesser (1981), too, reports: "Because of its calming effect on the nervous system, I commonly employ magnesium in treating anxiety, depression, insomnia, and hyperactivity in children. Total body magnesium is low in psychiatric depression.

Manganese (Fetherolf, 1984) is needed more by females. It is important in the formation of thyroxin, the principle hormone of the thyroid gland, and also necessary for the proper digestion and utilization of food. Lesser (1981) writes: "I use manganese along with zinc to remove overabundant copper from the body." Lesser (1981) expounds on zinc deficiency: Zinc deficiency may cause sexual difficulties. Diabetics and hypoglycemics often experience the cold hands and feet associated with poor circulation, which may indicate a need for zinc. A disturbed sense of taste or smell may mean zinc shortage. Zinc deficiency is common in alcoholics and increases their tolerance for booze. When the body contains adequate zinc, it reacts strongly to alcohol (Sherlock, 1984).

Featherolf (1984) points up that chromium stimulates enzymes in metabolism of energy and synthesis of fatty acids, cholesterol and protein and increases effectiveness of insulin. Pfeiffer (1974) views chromium as the glucose tolerance factor:

GTF works with the hormone insulin to maintain the delicate balance between hypoglycemic (low blood sugar) and hyperglycemic (high blood sugar) conditions.

Fetherolf (1984) states vitamin E and selenium are synergistic and both are antioxidants, slowing down the aging process and the hardening of tissues. Males appear to have a greater need for selenium.

III. The Use of the Minnesota Multiphasic Personality Inventory in American and Soviet Nutritional Research

Of those American physicians and psychiatrists in the 1960s treating emotional and mental problems with megavitamin therapy many had files bulging with thousands of individual case histories; large scale double-blind studies however were not plentiful. This was not so of the Soviets. Soviet researchers regarded conditioned reflex activity as the sole Soviet researchers regard conditioned reflex activity as the sole adequate criterion for an objective evaluation of the effects of dietary deficiency on the higher functions of the central nervous system. They have reported that conditioned responses were disturbed by deficiencies of thiamine, riboflavin, niacin, Pyridoxine, protein and certain amino acids (Albanese, 1959 and Woolley, 1962). Brozek (1959,1973),Professor and Chairman of the Department of Psychology at Lehigh University, published a review of Soviet Studies (374 references) on nutrition and the higher nervous system activity which included references to the use of the MMPI. He notes many diet deficiencies leading to psychological disorders. Semistarvation was demonstrated to increase "psychoneurotic scales on the MMPI" (6 references) and that "thiamine deficiency alone caused agitation, confusion, depression, and anxiety" (58 references).

The Russians were not alone in their endeavor to employ and document the use of megavitamin therapy and how it brought about changes on the MMPI. Watson and Currier reported a single-blind test (the patients did not know what medicines they were getting, but the physicians did) in the *Journal of Psychology* (1960): 30 patients given inert placebos were observed and rated on the MMPI. Of the 30 patients, 17 remained the same, 7 improved and 6 became worse. When megavitamin therapy was substituted for placebos over an equal period of time, 22 improved. When the megavitamin therapy was continued even longer, 24 improved, 5 remained unchanged, and only one was worse. Using the MMPI many others have demonstrated that adverse behavioral changes precede specific clinical findings in deficiencies

of vitamin C, thiamine and riboflavin (Brozek, J., 1973; Hodges, R. E., Baker, E. M., Hood, J., Sauberlich, H. E. and March, S. C, 1969; and Sterner, R. T. and Price, W. R., 1973). These deficiencies were induced in human subjects under carefully controlled laboratory conditions and then the subjects were given the MMPI test. Adverse scores including hypochondrial, depression, hysteria and in some cases hypomania and psychopathic deviency were described by the investigators as occurring before any specific signs of vitamin deficiency were observed.

The MMPI Validity/Reliability

The very heart of this researcher's thesis depends on an instrument being valid and reliable. The MMPI has a long and well-established history - over 50 years - with some near 6,000 statistical studies performed on it. Without question, the MMPI has been found to be both reliable and valid. Clinical and validity scale development has been well established (Graham, 1983; Anastasi, 1968; Garrett, 1958).

MMPI Scale Limits/Boundaries for This Study

Emphasis will be placed on the "high-reading" (T=70+) of each scale, that is — those scales which demonstrate abnormality at or above the T-score of 70 or above. This decision is not to suggest that there is not found "abnormality" present when the T-score is 30 or below, but given the psychiatric population which make up this the subjects of this study, it is doubtful that those scores — at T=30 or less — will be useful to the study. Therefore, the writer is concentrating on only those scales which have generated a T-Score of 70+ or at the two standard deviation from the mean level.

Names/Brief Description: MMPI Scales Employed in This Study

Seventeen different scales from the MMPI were employed in this study. The MMPI provides for 4 Validity Scales: Cannot Say Scale (which is not employed in this research study), Lie Scale, Fake Scale, and the K (Correction) Scale. Following these are 10 Clinical Scales: 1) Hypochondriasis (H = excessive bodily concern), 2) Depression (D = unhappy/ guilt), 3) Hysteria (Hy = reacts to stress/ avoids responsibility), 4) Psychopathic Deviate (Pd = asocial/amoral type personality), Masculinity-Femininity (Mf = conflicts of sexual identity/rejection of traditional female roles), 6) Paranoia (Pa = persecution/ideas of reference), 7) Psychasthenia (Pt= obsessive-complusive/turmoil), 8) Schizophrenia (Sc = schizophrenic/psychotic behavior), 9) Hypo-mania (Ma = manic/depressive), and 10) Social Introversion (Si = withdrawal from social contact). Finally, there are scales which are frequently scored research scales. Only 3 of these scales are of interest to our present research: Anxiety (A = anxious/uncomfortable), Ego-Strength (Es = stable/resourceful), and Dependency Scale (Dy = strong dependency needs/lacks self-confidence).

Method

Introduction/Hypothesis

It is the author's desire to test the theories of many of the authors heretofore named in this study (Dosbach, 1981; Hawkins and Pauling, 1972; LeVine, 1984; Rogers, 1956; Pfeiffer, 1974 to name a few). The writer wishes to ascertain whether or not the application of Megavitamin Therapy,Diet Therapy, and/or Lithium Orotate Therapy given to patients as an adjunct to their psychotherapy program would greatly enhance or change certain groups of patient's behavior. The writer therefore tested the hypothesis: If Megavitamin Therapy, Diet Therapy and Lithium Orotate Therapy are added to a standard program of psychotherapy, there should be observable, measurable, and statistical differences in the MMPI profiles, in a before and after matched-group design, of psychologically depressed outpatients as compared with a no treatment group.

Design of the Study

Thirty-two subjects were in each of 7 groups (N=224): No Treatment (n=32); Psychotherapy Only (Before and After, n=64); Megavitamin Therapy and Psychotherapy (Before and After n=64); and Psychotherapy, Megavitamin Therapy, and Lithium Orotate Therapy (Before and After, n=64) were placed in a matched group design and were administrated the MMPI upon admission to one of the aforenamed treatment programs by this researcher. The MMPI was then sent to Inter-

pretative Scoring systems of Minneapolis, MN. for scoring and generating an MMPI profile.

Due to ethical reasons members of the No Treatment (NT) group did later receive treatment, but were never tested again nor were they ever mingled with any of the other six groups. The Psychotherapy Only (PO) group received one-on-one, psychotherapy by this investigator. The Megavitamin Therapy (MVT) group received one-on-one psychotherapy by this writer, plus a standardize megavitamin therapy program. Whereas, the Lithium Orotate (MVT/LO) group received one-on-one psychotherapy by the author, a standardized megavitamin program, plus Lithium Orotate 5 mg, t.i.d. ordered by their physician.

Levels of Significance

Unless otherwise stated, all levels of statistical significance are at the .05 level of confidence.

Variables

The Independent Variables for the present investigator's study are the four (4) population treatment groups or the seven (7) subgroups of: No Treatment (NT), Psychotherapy Only (PO), Megavitamin Therapy (MVT),and Lithium Orotate Therapy (MVT/LO) with the last three populations having a before and after group.

The Dependent Variables are a score on a questionnaire (McGuigan, 1968; Selltiz, Johoda, Deutsch, and Cook, 1958) which is presumably both valid and reliable (Myers, 1966) and which in the case of the present author's research is a score on each of the 17 MMPI Scales.

Data Analysis and Statistical Tests

The present author needs to determine whether the groups under discussion differ significantly from one another. He shall compare groups by comparing differences among their means, that is, he seeks to test for significant differences among the seven population subgroups, or means, or more precisely, among the means of the seven groups or subpopula-tions. The writer wishes to minimize the extent to which he enters the various controversies and to this end shall say that he is interested in doing the following: 1) in mak-ing comparisons only between pairs of individual groups, that is, he is not interested in combining two or more groups to test those combined groups against some other group or combination of groups, and 2) in making comparisons between all possible combinations of the separated groups taken two at a time (Adler and Roessler, 1968). After prolonged investigation of the numerous statistical procedures available to him, it was this investigator's opinion that the Analysis of Varience (ANOVA) is most appropriate to the writer's present study and groups. The Analysis of Varience (ANOVA), seems to the writer, considerably more appropriate for the following reasons: 1) it allows this researcher to make all possible comparisons between pairs of his groups, 2) is less work than running an F-test and/or a large number of t-tests, and 3) provides a more reasonable level of significance than all possible t-tests, considered jointly.

Subjects/Groups:
Demographic Data:
N = 224 No Treatment Group (NT)

The No Treatment group was comprised of 32 subjects, consisting of 13 Males and 19 Females. All were White save one Male Hispanic. Their mean age level was 37 years of age. Depression was their common diagnosis. Thirty-two subjects were diagnosed by their physician with a 5 hour Glucose Tolerance Test as being Hypoglycemic and were placed on a Hypoglycemic Diet which will be more fully described in another section of this writer's thesis. Twenty-two of the subjects were presently married. Three were in the Trades or Skilled Labor professions, with the other 29 subjects being in Management or the Professions. They had an average of 15 years of education. These 32 subjects were administered the MMPI and then due to ethical reasons were admitted to another treatment program. The subjects within this group were never again tested or employed as part of the other groups which will be described. No subjects in this group were on Megavitamin Therapy, Lithium Orotate Therapy, or any medication. No subject took a daily vitamin for one year prior to this study. Additionally, there was no psychotherapy administered to any member of this group during the Before Phase.

There was not an After No Treatment Group.

Psychotherapy Only Group (PO)

Thirty-two subjects made up the Psychotherapy Only, consisting of 19 Males and 13 Females. Of these subjects 31 were White with 1 Male being Hispanic. Their mean age level was 33 years old. Depression was their common Diagnosis. All subjects were diagnosed as being Hypoglycemic by their Physician following a five hour Glucose Tolerance Test and were placed on Hypoglycemic Diet which will later be defined. Twenty of the subjects were presently married. Five subjects were in the Trades or Skilled Labor professions with the remaining 27 subjects being in Management or the Professions. This group had an average of 14 years of formal education with five subjects having attended Trade School. No subject in this group received Megavitamin Therapy or Lithium Orotate Therapy or any other medication. No subject admitted to taking a daily multivitamin one year prior to this study. All subjects in this Phase had been administered a Psychotherapy program by this author with the range in months being 4 to 12 months with the mean number of treatment months being 8.5.

Megavitamin Therapy Group (MVT)

The Megavitamin Therapy group numbered 32 subjects and consisted of 19 Males and 13 Females with the ethnic makeup being 31 Whites and 1 Hispanic and the mean age being 35 years old with 15 average years of Education. Four of these subjects were found in the Trade/Skilled Labor as their occupations with 28 being in Management or the Professions. Their common Diagnosis was Depression. Thirty-two were later diagnosed as being Hypoglycemic and were placed on a Hypoglycemic Diet as described elsewhere in this study. Seventeen were married. All subjects in this subgroup were taking a standardized megavitamin therapy program which will be described elsewhere in this study. No subject in this group was on Lithium Orotate Therapy or any medication. No subject took a daily vitamin prior to this study. The average time in Psychotherapy for the members of the group ranged from 4 to 14 months with the mean being 8 months in Psychotherapy.

Lithium Oratate Therapy Group (MVT/LO)

Thirty-two subjects made up this group including 20 Males and 12 Females. All subjects were White except one oriental female. There was 15 average years of education. Five were found in the Trades or Skilled Labor Professions with 27 being in Management or the Professions. Their common Diagnosis was Depression. Thirty-two were diagnosed as having Hypoglycemia by their physician and were later put on a Hypoglycemic Diet described elsewhere. Sixteen of these subjects were presently married. All subjects in this group received Psychotherapy, Megavitamin Therapy and Lithium Orotate Therapy during this phase. All three treatments are described more fully elsewhere. No subject had even taken a daily multivitamin for 1 year prior to this study. No subject was on any medication. The average time in Psychotherapy for this group ranged from 3 to 12 months with the mean being 7 months in psychotherapy.

The Treatment Program

Next, consider the treatment program. The writer will discuss the following areas: Psychotherapy, Megavitamin Therapy, Lithium Orotate Therapy, Diet Therapy, and the Diagnosis process employed in this study.

Psychotherapy

For the purposes of this study Psychotherapy, as practiced by this Clinician/Researcher, is of the "here and now" type, one-on-one, face-to-face, reality-oriented style which includes: goal-setting, value clarification, ego strength building, reinforcement-extinction, bibliotherapy, spiritual-religious suggestions/teachings, being a friend, re-parenting, and always includes megavitamin therapy (except in those groups in this study which have been debarred from MVT for the purposes of this study. These have been heretofore described.), a referral to an Orthomolecular Physician for a physical, blood work up, thyroid studies, and a 5-hour glucose tolerance test followed by, and if needed, Diet Therapy and/or Lithium Orotate Therapy prescribed by the attending physician. Psychotherapy for this practitioner/ researcher is always: 1) supportive in encouraging development of maximal optimal use of the patient's assets; 2) reeducative aimed at giving the patient insight into his/her more conscious conflicts, with goal modification

and utilization of existing potentials; and 3) reconstructive methods which aim at giving insight into unconscious conflicts and extensive alteration of his character structure (Wolberg, 1954).

Megavitamin Therapy Program

The following multivitamin/multimineral provides the foundation of the writer's megavitamin therapy program. It must be remembered that "Megavitamin Therapy" is not a product as some believe, but rather is a highly organized, delicately structured biochemical process (Nutrient Pharmacology) taking into account the individual biochemistry of the individual patient, lifestyle, and his presenting symptomatology. All vitamins used in this study were manufactured by one vitamin house. The patients were instructed to purchase certain vitamins and to buy this one brand of vitamins only. The author then personally checked the vitamins to ascertain the patient had in fact purchased and was using only this certain brand of vitamins.

Below is the Megavitamin Program and the administrated doses for the patients employed in this study:

B-Complex Vitamins (2 Tablets Daily)

Each tablet contained vitamin A (Fish Liver Oil) 25,000 IU, vitamin D (Fish Liver Oil) 1,000 IU, vitamin E (d'Alpha tocophenol acetate) 100 LU., with 100 mg of each of the following B-vitamins: B_1 (Thiamine HCL),B_2 (Riboflavin), B_6 (Pyridoxine HCL), B_{12} (Cabalamin Concentrate), Nincinamide (B_5), Paro-Aminobenzoic Acid, Choline, Inositol, d-Biotin, with Folic Acid (Folacin) 400 mcg. vitamin C (Ascorbic Acid with Rosehips) 100 mg, Citrus Bioflavonoids Complex 25 mg, Hesperidin Complex 5 mg, Rutin 25 mg, and with 9 minerals ranging from .20 mcg to 75 mg. This formulation was in a base of eight essential free form amino acids and sea vegetable complex rich in all essential trace elements. All B-vitamins are rice bran fortified, contain no yeast, wheat, milk, salt, sugar, starch, preservatives, or artificial color. It was thought most important, by this Clinician, that a product line be yeast, etc. free, due to the fact that yeast is a major contributor to depression, which was the common diagnosis of the subjects in this study. Many companies's products are reported to be "yeast-free" and contain no yeast but are in fact grown on yeast beds which is believed by many authorities to contaminate the product and in some cases might be devastating to the patient.

Other Vitamins/Minerals Amino Acids: Daily Doses in Parenthesis

Pantothemic Acid (B_5)	l000 mg T.R. (1)
Vitamin C	1000 mg T.R. (3)
L-Glutamine	500 mg (2) *
Phenylalaine	500 mg (2) *
(B6) Pyridoxine HC1	500 mg T.R. (1)
(B3) Niacinamide	1000 mg T.R. (1)
Calcium/Magnesium/	
Zinc	1000/500/50 mg (3)
Zyme-Aid (Digestive	
Enzyme)	(2 after each meal)
Vitamin E (Mixed)	400 LU.
B_{12} 500 mcg w/Folic	Acid (800 mcgs)
(sublingual) (2)	
* patients were kept on single amino acids	
for only 90 days.	

Lithium Oratate Therapy

The reader is reminded of the difference between Lithium Carbonate and Lithium Orotate. The former is synthetic, given in large doses of 900 - 1500 mg per day, and is toxic requiring monthly blood lithium studies to maintain the "therapeutic dose" between .50-1.5 mg It has many side-effects: excessive thirst, increased urination, may damage the kidneys' ability to conserve sodium, kidneys may store lithium and therefore should never be taken with diuretics. Lithium Carbonate may depress thyroid function. Whereas, Lithium Orotate is given in 5 mg doses 3 - 6 times daily (usually 3 times a day), to control depression, migraine headaches, and alcoholism. The subjects in this study received 5 mg of natural, chelated, elemental, Lithium Orotate 3 times daily under the direction of their physicians.

Diet Therapy

The Diet Therapy for the subjects of this research project was a complexed carbohydrate diet. The author, along with the physicians, developed not so much a formal diet but taught the patient/subjects diet concepts. These concepts included: a 6-meal plan with 3 meals a day low in red meats, high in fish, with snacks at 10 a.m. and 3 p.m. and another

snack near bedtime. The snacks consisted of fruit and/or protein. The patients were instructed to use only fresh fruits and vegetables. While ideally coffee and tea should have been totally avoided, practically coffee and tea were reduced to one cup daily. The diet balance was kept near 60% carbohydrate, 30% protein and 10% fat.

Diagnosis Process

The criterion for the depression diagnosis was as follows: an elevated D-Scale score on the MMPI usually at the two S.D. (T=70) level or above; the patient/family member description of himself as depressed;and the patient exhibited marked symptoms usually associated with depression — insomnia, weight loss or gain, loss of energy, withdrawal, etc.

Results

The data under the Results section will be presented in the following manner: I) Special data regarding the 4 Before Treatment Groups: Months in therapy, sex of the subjects, and age of the subjects. II) The Before 10 MMPI Clinical Scales and 3 Experimental Scales.
III) A Summary of all the combined group means, both Pre and Post Treatment/Testing.
IV) And lastly the writer will present the differences in means: Before and After Treatment for 3 groups: Psychotherapy Only (PO), Megavitamin Therapy (MVT), and the Vitamin and Lithium Orotate (MVT/LO). Because of space the writer will present only those differences in means which are thought to be important and which will be discussed in the Discussion section more fully.

I. The Before Treatment Groups Special Statistics

Consider the results of some special statistics, namely: Time/months in therapy; sex of the subjects; and age of the subject:

A) Time: Months in Therapy/Before				
Source of Variation	**Sum of Squares**	**DF**	**Mean Square**	**Sign of F.**
Main Effects	15.75	3	5.25	.731
B) Sex of the Subjects/Before				
Source of Variation	**Sum of Squares**	**DF**	**Mean Square**	**Sign of F.**
Main Effects	149.53	3	49.84	.698
C) Age of the Subjects				
Source of Variation	**Sum of Squares**	**DF**	**Mean Square**	**Sign of F.**
Main Effects	149.53	3	49.84	.698
Note: No significance noted				

II. The Validity/Clinical and Experimental Scales: Before Groups

Consider each of the MMPI individual scales for the Before groups; noting first the results of the Validity Scales, followed by the results for the 10 Clinical Scales. Consider next the 3 Experimental Scales. Lastly, our attention will be directed to the results in the Difference in the Combined Means: Before/After Treatment.

The Validity Scales*

Scale	Sum of Squares	DF	Mean Square	Sign of F.
L-Scale	45.78	3	15.26	.077
F-Scale	215.53	3	71.84	.127
K-Scale	444.53	3	148.17	.113

The Ten Clinical Scales

Scale	Sum of Squares	DF	Mean Square	Sign of F.
Hs-Scale	510.96	3	170.32	.280
D-Scale	320.43	3	106.81	.728
Hy-Scale	260.58	3	86.86	.441
Pd-Scale	460.71	3	153.57	.326
Mf-Scale	1146.28	3	382.09	.186
Pa-Scale	130.68	3	43.56	.650
Pt-Scale	329.83	3	109.94	.538
Sc-Scale	463.52	3	154.50	.372
Ma-Scale	171.09	3	57.03	.649
Si-Scale	200.31	3	66.77	.643

The Experimental Scales

Scale	Sum of Squares	DF	Mean Square	Sign of F.
A-Scale	286.40	3	95.46	.452
Es-Scale	130.65	3	43.55	.730
Dy-Scale	297.58	3	99.13	.364

Note: No significance noted

* Special appreciation goes to Robert Karman, Ph.D., Professor emeritus of Psychology at Biola University for his help with the statistics.

III) Summary of All Combined Means of the Before/After Groups

No Treatment
Psychotherapy Only
Megavitamin Therapy
Lithium Orotate Therapy

Scale	**Pre**	**Post**	F.(P.D.l)
L	49.00	48.20	.705
F	56.47	53.94	.003*
K	54.14	57.41	.033*
Hs	55.40	53.60	.985
D	61.81	55.37	.125
Hy	61.67	57.67	.417
Pd	67.67	62.05	.011*
Mf	58.62	55.94	.089
Pa	58.05	55.05	.135
Pt	62.21	56.42	.257
Sc	62.21	57.66	.015*
Ma	57.92	54.75	.092
Si	55.98	52.74	.068 (T)
A	52.11	46.38	.003*
Es	52.57	57.13	.061 (T)
Dy	55.19	47.50	.000*

* Significant at the .05 level/T = Trend

IV) Differences in Means: Before/After Treatment

Negative (-) NumbersUnlessStated/Indicate Improvement
(Only Those Scales Thought Significant Are Cited)

	Psy.		Vit.		Vit./Li.	
Scale	B/A	Dif.	B / A	Dif.	B/A	Dif.
F	56.71/54.65	2.06	54.87/51.56	3.31	57.84/55.62	2.22
K	51.62/57.59	+5.97	55.96/61.00	+5.04	54.84/53.65	1.19
D	64.34/56.75	7.59	60.78/50.65	10.10	60.31/58.71	1.60
Hy	61.62/58.21	3.41	61.21/55.81	5.40	62.18/59.00	3.18
Pd	65.50/62.81	2.69	66.96/58.24	8.71	70.56/65.09	5.40
Pa	57.81/53.09	4.72	58.00/55.00	3.00	58.34/57.71	.63
Pt	61.25/58.65	2.60	60.87/53.93	6.94	64.53/56.68	7.85
Sc	61.75/59.65	2.10	60.06/53.78	6.28	64.84/59.56	5.28
Ma	59.59/55.21	4.38	56.78/52.03	4.75	57.40/57.00	.40
A	53.60/47.04	6.56	48.87/41.75	4.12	53.18/50.50	2.68
Es	53.64/56.36	+2.74	53.12/66.56	+7.44	51.18/54.31	+3.13
Dy	55.33/48.64	6.71	51.88/44.53	7.35	69.00/55.83	13.17

Discussion

In this section the author will consider the following: I) The Before Treatment groups, II) The After Treatment Groups, III) The difference in Means: Before/After Treatment, and IV) some conclusions.

I) The Before Treatment Groups

Remember, these are before treatment groups which simply means nothing was done with them from the standpoint of treatment. Nothing about the time in therapy, sex of the subject, or age was found to be significant. The MMPI scales one would expect to find elevated for depressed outpatient groups — D, Hy, Pd, and Sc — were elevated. The 10 Clinical Scales and 3 Experimental Scales were not significant. This finding suggests that the 4 subpopulations for the before groups were, in fact, all one population; whatever name had been assigned to them. They were all one psychiatric population of patients equally in need of treatment.

II) All Combined Means (Before/After) Treatment Groups

There were 7 significant scales found in this summary: The F-Scale (Fake), K-Scale (Correction), Pd-Scale (Psychopathic Deviance), Sc-Scale (Schizophrenia), A-Scale (Anxiety, Es-Scale (Ego Strength), and the Dy-Scale (Dependency). Remembering that these are combined Means for all Before/After Treatment Groups for all subjects again the question is asked: Why did these subjects in these subgroups — with the exception of the K-Scale, significantly move down (Range: T=-2.52 to -7.69) and average of 6.00 points? The answer: These subjects responded to one or all of the types of therapies being investigated. In short, they were all getting better! Why did the scores of the subjects on the K-Scale move up +3.27 points? Graham (1983) reports that in interpreting the K-Scale, it is essential that a person's education and social status be considered. Persons with college or university training, with a K-Score in the range of T=50-70 should be considered normal. Most of the present investigator's population were college trained and most were considered middle class. Thus, the K-Scale movement from the lower pre-testing position (T=54.14) upwards toward the higher end (T=57.41) of the scale, a plus 3.27 points, is in keeping with these subjects maintaining a healthy balance between positive self-evaluation and self-criticism with a tendency towards self-reliance, and independency. This concept is clearly demonstrated by a review of their A, Es, and Dy Scales. Their Anxiety (A-Scale) is down from T=57.11 to T=46.38 (decreased - 5.73 points); the Ego-Strength (Es-scale) is increased from T=52.57 up to T=57.13 (increased + 4.56 points); and the Dependency (Dy-Scale) is down from T=55.19 to T=47.50 (decreased - 7.69 points). All these point to a healthier, more motivated, happier, and better functioning adult who is able to deal better with the problems of daily living. Again, these subjects were getting better!

III) The Mean Differences Before/After Treatment

Next consider the mean differences in the Before/After Treatment Groups. The objective being to better understand how successful each of these three treatment modalities have been.

Psychotherapy Only

Observing first the differences between the means, it is noted that nearly all scales decreased with the average decrease being T= -3.57. Psychotherapy was therefore deemed effective. This statement does not hold true for two scales: K-Scale (T= + 5.97) and the Es-Scale (T= + 2.72) which increased as would be expected if psychotherapy is being effective. It would be expected that patients move more towards independence and begin to experience improved ego-strength. While this modality of treatment was effective, it was the second most effective method of those three methods tested. It was nearly 66% less effective over adding Megavitamin Therapy to a program of psychotherapy and 6% less effective than adding Megavitamin/Lithium Orotate Therapy to a treatment program of psychotherapy.

Megavitamin Therapy Added to Psychotherapy

Our attention is next turned to the Before and After differences for the Megavitamin Therapy and Psychotherapy Group and we note again that all scales, except Scale K (T= + 5.04) and Es (T= + 7.44) decreased (T= -

5.42). This is a substantial and significant decrease over Psychotherapy Only. It was nearly 62% more effective than Megavitamin/ Lithium Orotate Therapy added to a program of psychotherapy and nearly 66% more effective over Psychotherapy Only.

Megavitamin/Lithium Orotate Added to Psychotherapy

Lastly, consider adding Megavitamin Therapy and Lithium Orotate Therapy to a program of Psychotherapy. This group had the poorest response of the three modalities tested, yet, was still effective. Perhaps this was true due to the fact this group tended to be a little more "sicker" — at least this was true in their behavior as demonstrated by their Pd and Dy Scales. Again, all scales decreased (T= - 3.36) with the exception of the Es Scale (T= + 3.13) Scale K also decreased (T= -1.19). While this method was effective, it was nearly 62% less effective than the Megavitamin Therapy when added to psychotherapy. It was 6% more effective than just Psychotherapy Only.

IV) Conclusions

This investigator found it interesting to observe the elevated Pd scales on the subjects of this BEFORE GROUPS with a mean standard score for the four groups being T=67.38. This FACT is noteworthy in light of the FACT these subjects perceived themselves to be "Christians." Yet, their Pd scales—their Psychopathic Devience, or their conscience if you will—was, at least prior to treatment, nearly two standard deviations form the mean. This is a decrease after treatment from *1=61.61* to T=62.05, or - 5.62 points, indicating they were "getting better." They were, without question, depressed patients, yet functioning and fairly stable. None were known to the criminal justice system. Additionally, they were not experiencing much anxiety and their ego-strength seemed to be adequate. Perhaps their religious belief and/or faith or value system kept them from acting out socially unacceptable behaviors?

V) Conclusions

For the most part, the investigator's hypothesis tested positively; demonstrating that Megavitamin Therapy when added to a program of psychotherapy, among depressed out-patients, was more effective than no therapy, was more effective than psychotherapy only, and was more effective than Psychotherapy, Megavitamin, and Lithium Orotate Therapy. One major discovery was the reduction in time spent in therapy. Prior to this research patients typically spent 12-14 months in therapy. However, with the use of Megavitamin Therapy added to a program of Psychotherapy this period was reduced to 7-8 months and has produced a success rate of 93% for this author's patients.

The data does seem to suggest that, in deed, Megavitamin Therapy does, in fact, shorten time spent in psychotherapy as indicated by the decrease time spent in psychotherapy from 12-14 months to 7-8 months or about a 38% savings in time alone. This is an important factor in third-party billing and with more and more out-crys being heard for more and more accountability. The method does appear therefore to cut costs of psychotherapy making it far more cost-effective, and further does appear to fairly quickly change depression most effectively.

VI) Recommendations for Further Research

Should this research be duplicated, it might be good to have several additional groups allowing for a better design and better control. The design then would be less confounded and more pure. The several groups might be as given below:

No Treatment
Psychotherapy Only
Megavitamin Therapy Only
Lithium Orotate Only
Lithium Orotate and Psychotherapy Only
Megavitamin Therapy and Psychotherapy Only
Combination Group (P.O., M.V.T., L.O.T.)

The writer believes this would produce some interesting results and perhaps allow for some more broad spectrum generalizations to other psychiatric populations. It might also be good to employ different therapists with this design who employ different therapy techniques as well as study a non-patient population.

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