Megavitamin Therapy in the Reduction of Anxiety and Depression Among Alcoholics

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There is ample evidence that alcoholics experience high levels of anxiety.[1 2 3] The effects of alcohol on reducing anxiety and fear at both the physiological level, on the nervous system as a whole and in particular on the sympathetic nervous system,[4] and the psychological level are also well established.[5] Although a myriad of fundamental questions remain concerning the etiology of alcoholism, there is sufficient evidence that individuals who experience excessive anxiety are prone to alleviate this condition by consuming alcohol.[6] Dollard and Miller have proposed that alcohol dependent symptoms are learned behaviours in accordance with reinforcement principles.[7] Because the effects of alcohol intake are so immediate, the intake is considered particularly reinforcing.

The medical profession has, in general, treated anxiety among alcoholics with benzodiazepines which affect the central nervous system in much the same way as alcohol; albeit practitioners in the field of alcohol dependency and the AMA[8] have discouraged such practices due to the potential abuse of or dependence on the benzodiazepines. Mega doses of vitamins have proven beneficial as an adjunct therapy in the reduction of anxiety and in the treatment of alcoholism with no potential for abuse or dependence. Improvement with megavitamins, however, has been reported to occur between the third and sixth month of treatment.[9] The purpose of the present study was to examine the short-term effects of a megavitamin regimen as an adjunct therapy in the reduction of anxiety in an alcoholic population. Also of interest was the short-term effects of a megavitamin regimen in the reduction of depression.

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Method

Subjects. Participants in the present investigation were male residents of a 30-day residential treatment program in rural Alabama for individuals whose consumption of alcohol had disrupted their social and/or economic functioning. Subjects consisted of forty-four (44) consecutive voluntary admissions of male patients to the residential program. One subject was excluded from the study because of diabetes. Three subjects from the experimental group and two subjects from the placebo group left the program prior to completion against professional advice. This resulted in 19 subjects in both the experimental and placebo groups with a mean age of 42.4 years (S.D. = 11.8).

Procedure. Subjects" were assigned to either the experimental or placebo group using an ABBA counterbalanced design. Beginning at 1:00 p.m. on the fourth day after admission, but not before the subject had been at least seven (7) days without intake of alcohol, each subject was administered Form R of the Minnesota Multiphasic Personality Inventory (MMPI),[10] the State-Trait Anxiety Inventory Form-Y (STAI)[11] and Zung Self-Rating Depression Scale (SDS).[12]

Beginning the day after testing, subjects assigned to the experimental condition were administered three capsules P.C. Each capsule contained 333 mg vitamin C, 333 mg niacin, 66 mg vitamin B_6, and 66 IUs vitamin E. Each subject, therefore, received a total of 2.997 g of vitamin C and niacin, 594 mg vitamin B_6 and 594 IUs vitamin E per day. Subjects in the placebo condition were administered one Double 0 gelatin capsule P.C. which contained the equivalent to the inert carrier of the megavitamin capsules. Subjects remained on their respective regimen for 21 consecutive days. All subjects otherwise participated in the same residential treatment program consisting

of two group therapy sessions each week day and five nightly A.A. meetings per week. Subjects were not allowed to take antianxiety or antidepression agents while participating in the residential program. At 1:00 p.m. on the day following the 21st day of medication administration each subject was again administered the MMPI, STAI and SDS.

Results

A repeated measures multivariate analysis of variance (MANOVA) was utilized in the present study with the Depression (MMPI-D) and Psychasthenia (MMPI-Pt) scales of the MMPI, the State (STAI-S) and the Trait (STAI-T) Anxiety scales of the STAI and the SDS serving as dependent measures.

The MANOVA resulted in a between-subjects factor main effect of $F(1,36) = .16$, $p > .05$, a within-subjects main effect of $F(1,36) = 17.97$, $p < .001$ and between-subjects X within-subjects interaction of $F(1,36) = 10.19$, $p < .003$. Having established the overall multivariate significance of this model, each dependent measure was submitted to a univariate repeated measures analysis of variance (ANOVA) to determine its individual contribution to the multivariate significance.

The ANOVA for the MMPI-D resulted in a between-subjects main effect $F(1,36) = .02$, $p > .05$, a within-subjects main effect $F(1,36) = 3.69$, $p < .05$ and a between-subjects X within-subjects interaction of $F(1,36) = 2.23$, $p>.05$.

The ANOVA for the MMPI-Pt resulted in a between-subjects main effect $F(1,36) = .43$, $p > .05$, a within-subjects main effect $F(1,36) = 2.16$, $p > .05$ and a between-subjects X within-subjects interaction $F(1,36) = 4.29$, $p<.05$.

The ANOVA for the STAI-S resulted in a between-subjects main effect $F(1,36) = .03$, $p > .05$, a within-subjects main effect $F(1,36) = 8.12$, $p < .008$ and a between-subjects X within-subjects interaction of $F(1,36) = 7.81$, $p < .009$, which qualified the previous main effect.

The ANOVA for the STAI-T resulted in a between-subjects main effect of $F(1,36) = 2.37$, $p > .05$, a within-subjects main effect of $F(1,36) = 1.85$, $p > .05$ and a between-subjects X within-subjects interaction of
$F(1,36) = 4.11, p<.05$.

The ANOVA for the SDS resulted in a between-subjects main effect of $F(1,36) = .52$, $p > .05$, a within-subjects main effect of $F(1,36) = 22.76$, $p < .0001$ and a between-subjects X within-subjects interaction of $F(1,36) = .97$, $p > .05$.

As can be noted, the three anxiety measures (MMPI-Pt, STAI-S, and STAI-T) each resulted in significant interactions. Interaction effects for the two depression variables failed to reach conventional levels of significance.

Discussion

The purpose of the present study was to examine the short term effects of a megavitamin regimen as an adjunct therapy in a residential treatment program for alcohol abuse in the reduction of anxiety and depression. Both depression measures produced significant within-subject main effects indicating that reductions in depression were found regardless of treatment condition (see Figures 1 and 2). Results of the present study suggest that a treatment period of twenty-one days produced a significant decrease in depression but could not be attributed to the megavitamin therapy as adjunct to the residential treatment program.

As illustrated in Figures 2, 3, and 4, the three anxiety measures produced significant interaction effects, with the megavitamin group showing decreased anxiety as compared to the placebo group. It is also important to note that the megavitamin regimen was used as an adjunct to group therapy and exposure to A.A. and not as an adjunct to Orthomolecular Therapy. There was no attempt, for instance, to regulate the quality or quantity of food consumption during treatment. Subjects were allowed to consume candy, soft drinks, coffee, cigarettes, etc., at their will. Regardless, there is a definite trend among the anxiety measures after a 21 day period which is consistent with the therapeutic effects of megavitamins reported to occur between the third and sixth month of treatment.[9] Results of this study indicate that the present megavitamin therapy regimen may produce clinical improvement in anxiety in as little as three weeks. This short term treatment period is comparable

Figure 1

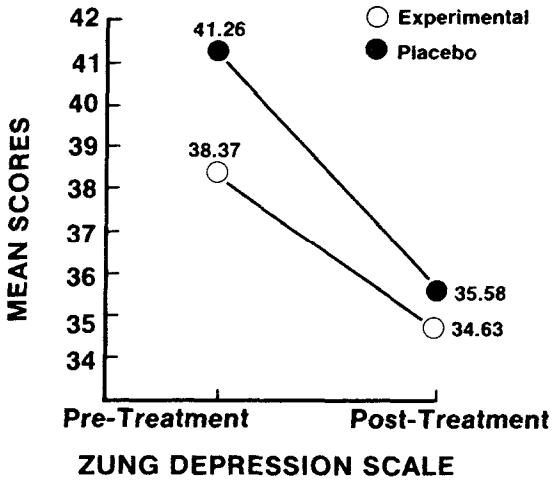


Figure 2

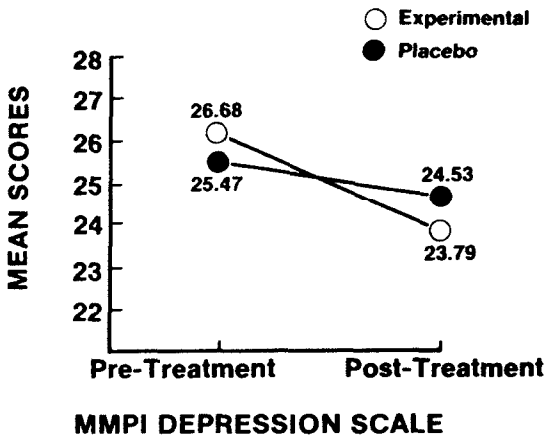


Figure 3

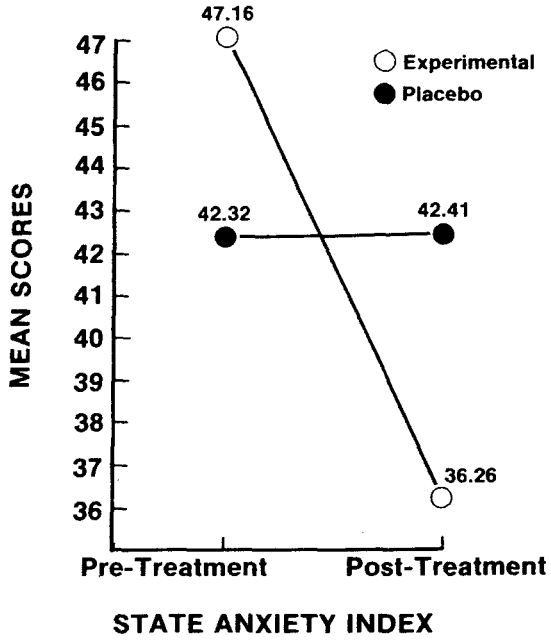


Figure 4

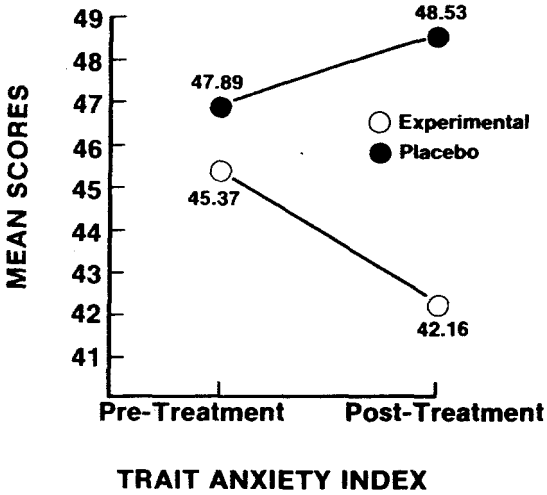
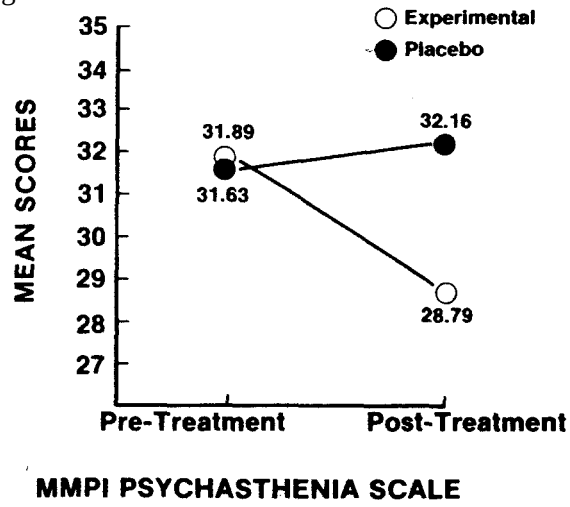


Figure 5



to the treatment period required to obtain clinical improvement for the benzodiazepines which has been reported to occur between the second and third week by Hollister[13] and between the fourth and sixth week by Rickels.[14]

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