

Can a Natural Nutritional Supplement assist in the behavior modification of autistic children and parents?

Abstract

One of the areas that remain unexplored in psychology is the effect of nutritional supplements and nutrition on autistic children in a behavioral modification setting. Research has shown that nutritional assistance can greatly help autistic children to increase on-task behavior and decrease dysfunctional tendencies for children ages 5 and above (Rimland, 2005).

Sixty autistic children (29 males, 31 females) participated in the study. All of the children were pretested in on-task behaviors before instruction began. Children were then randomly assigned to either a behavior medication group or a nutrition group. Both groups received behavior modification instruction by certified instructors. The instruction took place in the homes. Parents also received instruction from the therapists on how to teach their autistic child. Every parent had only one autistic children and the number of mainstream children varied according to the family. For the purposes of the study, two areas were empirically reviewed with the children and a questionnaire was given to the parents. Parents and children in the behavior modification group received behavior modification training only. Parents and children in the nutrition group received behavior modification plus a nutritional supplement called *Coral Calcium* from the company *Coral LLC*.

Can Nutritional Supplements Help Autistic Children

Best Practices and The University of Montevallo conducted a study to determine if using *Coral Calcium* is better than behavior modification without a supplement. The University of Montevallo received no payment for their participation to ensure the validity of the findings. The participants in this study were sixty children diagnosed with autism ages from five to ten years

old. Thirty children received instruction from Behavioral Therapists in their homes from the psychological group *Best Practices* (License Number PE1807) in the southern California area over a two month period. The additional thirty children received similar treatment plus a daily recommended dose of *Coral Calcium*. Parents from both groups received parental training on how to best teach their child on a daily basis using behavior modification. Parents in the nutrition group also agreed to take a daily dose of *Coral Calcium* and listen to nutritional advice. This

product contains 73 trace minerals from the sea as well as vitamins. According to the AMA, most Americans are malnourished especially when it comes to minerals. In a study presented at the Autism Conference of San Diego (2002), it was found that autistic children have a difficult time digesting certain foods including gluten and casein and malnourishment is a result. Furthermore, autistic children greatly benefit from nutritional advice and proper supplements.

Training

Sign language was the main behavior taught and measured for the autistic children. The reason for this is that all children had no knowledge of this skill before training began. Starting from ground zero, this allowed the behaviorists to measure how much the children would improve in both groups. Furthermore, sign language has to be shown to be quite beneficial for all children especially those of special needs. Drs. Linda Acredolo and Susan Goodwyn conducted a longitudinal study with the National Institutes of Child Health and Human Development that got educators attention throughout the world. The results included that signing children understood more words, had larger vocabularies and engaged in more sophisticated play than non-signing

children. Autistic children struggle with self-stims and a lack of an ability to communicate. Adding another communication skill benefits this population greatly.

Methodology

The setting was homes of autistic children who teach children five to ten years of age. Sixty children (29 males, 31 females) participated in the study. Children were randomly assigned to a behavioral group or nutrition group. The average age for the infants in the behavioral group was 7.9 years and the average age for the nutritional group was 7.8 years. Children in both groups were pretested on sign language knowledge before instruction began by a certified instructor in showing the children had no knowledge of signs at the beginning of the experiment. Both groups received 16 hours of behavioral instruction and parents received parent training over a two month period.

The children were then rated with the following scale:

Zero – if child did not attempt a sign.

1 – if child attempted a sign but was not partially correct

2 – if child got the sign partially correct

3 – if child got the sign fully correct

Instructors and parents were asked to rate the children's scores (reliability measures were taken).

Results

The results indicate that there was a significant difference in favor of the nutrition group. Also, parents filled out a questionnaire about their experiences between the two groups.

An unpaired t-test was run and reliability measures were taken.

P value and statistical significance:

The two-tailed P value equals 0.0481

By conventional criteria, this difference is considered to be statistically significant.

Confidence interval:

The mean of Group One minus Group Two equals -1.87
 95% confidence interval of this difference: From -3.72 to -0.02

Intermediate values used in calculations:

t = 2.0195
 df = 58
 standard error of difference = 0.924

Group	Group One – Traditional Lecture	Group Two – DVD Instruction
Mean	18.87	20.73
SD	3.48	3.68
SEM	0.64	0.67
N	30	30

The following questionnaire results indicate the percentage of parental responses.

Behavior Group	Nutritional Group
Highly Satisfied Parents - 76%	Highly Satisfied Parents - 87%
Saw improvement in child - 78%	Saw improvement in child - 89%
Got better sleep - 24%	Got better sleep - 52%
Child was more focused - 67%	Child was more focused - 82%
Child had less self-stims - 48%	Child had less self-stims - 64%

Discussion

This study strongly indicates that *Coral Calcium* or other nutritional supplements like them can greatly benefit both autistic children and their parents. The nutrition group had significantly higher correct responses than the group with no supplements. Also, parents reported better rest and satisfaction in the nutritional group. It is important to note that the parents also took *Coral Calcium*. More research is needed on how these ingredients directly affect the brain. For instance, *Coral Calcium* **contains calcium** which has been show to aid in sleep. Also, this supplement contains lithium which has greatly helped bipolar individuals. People who suffer from bipolar disorder have strong mood swings similar to autistic children tantrums. Perhaps this mineral helps balance the brain of this population as well. Other studies have shown that calcium plus vitamin D can help the general population in a variety of ways and even prevent cancer (Tang, 2011). More studies are needed on the benefits of such supplements and their effect on physiology and neurology of special needs children and the general population.

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