

MICRONUTRIENTS IN CONTROLLING IMMUNE DEFICIENCY AND AIDS

Summary of a Community Health Program in South Africa

Dr Rath Health Foundation SA / South African National Civic Organization (SANCO)

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SECTION 3 SUPPORTIVE REFERENCES

A. The Results of Micronutrients in AIDS, Jariwalla R.

B. Role of micronutrients in the control of HIV and AIDS, Jariwalla R, Niedzwiecki A, Rath M, 2007, Commonwealth Health Minister Book 2007.

C. The Natural Control of HIV/AIDS Is In Sight, Rath M, Niedzwiecki A, Dr. Rath Research Institute, 2005.

D. Malnutrition: The Leading Cause of Immune Deficiency Diseases Worldwide, Niedzwiecki A, Rath M, Dr. Rath Research Institute, 2005.

E. List of Scientific Publication on the Role of Micronutrients in HIV/AIDS

F. Selected References from the List (E):

- Nutritional Supplementation Can Delay the Progression of AIDS in HIV-infected Patients: Results from a Double-blinded, Clinical Trial at Mengo Hospital, Kampala, Uganda, Namulemia, E. et al, 2007, Journal of Orthomolecular Medicine, 22(3), 129-136.
- Suppression of the Human Immunodeficiency Virus Type 1 Viral Load with Selenium Supplementation, Hurwitz, BE et al, 2007, Arch Intern Med, 167,148-154.
- The Impact of Malnutrition on Survival and the CD4 Count Response in HIV-infected Patients Starting Antiretroviral Therapy, Paton, NI et al, 2006, HIV Medicine, 7: 323-330.
- Micronutrient Supplementation Increases CD4 Count in HIV-infected Individuals on Highly Active Antiretroviral Therapy: A Prospective Double-blinded, Placebo-controlled Trial, Kaiser, JD et al, 2006, J Acquir Immune Defic Syndr, 42: 523-528.
- A Randomised Trial of the Impact of Multiple Micronutrient Supplementation on Mortality Among HIV-infected Individuals Living in Bangkok, Jiamton S. et al, 2003, AIDS, 17, 2461-9.
- Glutathione Deficiency is associated with Impaired Survival in HIV Disease, Herzenberg L. A et al, 1997, Proc Natl Acad Sci USA; 94(5): 1967-1972.

SECTION 1 INTRODUCTION

OUTLINE OF THE COMMUNITY HEALTH PROGRAM

Background: Dr Rath Health Foundation South Africa, a non-profit organization, has donated a micronutrient supplement program to the South African National Civic Organization (SANCO) to support its community-based nutritional health initiative among people affected by AIDS.

SANCO has organized the distribution of this nutritional supplement in various townships in South Africa, including Western Cape and Durban.

Nutritional supplement: The nutritional supplement consisted of a defined combination of vitamins, minerals, trace elements, amino acids, and polyphenols (from green tea) among other nutrients and was supplied in the form of tablets.

This natural program was declared as a Food/Nutritional supplement for distribution and importation in South Africa in terms of the Foodstuffs, Cosmetics and Disinfectant Act, 1972 (act No 54 of 1972) and allowed in South Africa by the Director, Inspectorate and law Enforcement of Medicine Regulatory Affairs.

Evaluation: Participants in this program were selected by community health professionals and included adult HIV positive men and non-pregnant women with advanced AIDS symptoms (CDC stage 2 or 3), none of whom were or had been taking ARV drugs.

At the beginning of the program and after periodic intervals of taking the nutritional supplement, health status of the participants was assessed with the aid of a bi-lingual questionnaire that graded AIDS-defining symptoms for Africa (according to Bengui definition of AIDS) and other physical symptoms on a scale of 0 to 4 (0 = no symptoms, 1 = mild, 2 = medium, 3 = advanced, 4 = severe).

About 748 patients completed all three examinations and questionnaires. The scores from the questionnaires were entered into Excel data sheets and the severity of symptoms after the first three visits (visit 3) was compared to that observed at the first visit (visit 1) which marks the start of nutritional supplement intake by the participants.

Statistical significance of differences in the change of symptom severity between visits 1, visit 2 and visit 3 was determined by the one-tailed paired t test. Statistical significance of the result is indicated by a P-value, where P equal or below 0.05 indicates that the results reached statistical significance. Lower the P-value, the more likely that the result will be achieved in larger population.

Informed consent: All participants gave their informed consent prior to participation in this program.

SECTION 2 HEALTH IMPACT OF A COMMUNITY HEALTH PROGRAM IN PEOPLE WITH AIDS

RESULTS

Khayelitsha: At the beginning of the program and after 3 to 4 week intervals of taking the nutritional supplement, the participants were examined by a physician and answered several questions regarding their health status in provided bi-lingual questionnaire.

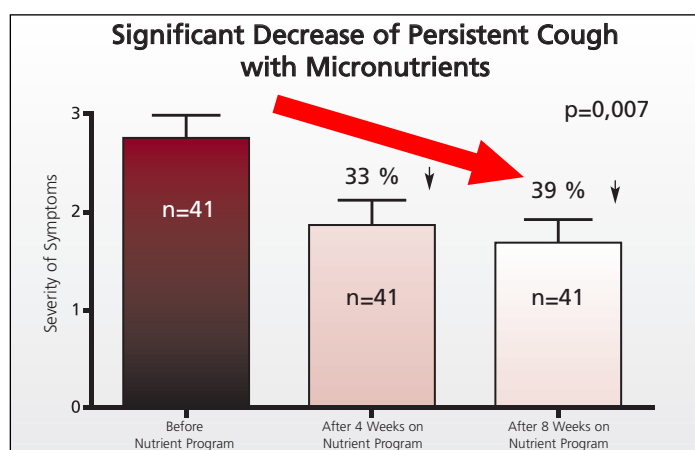
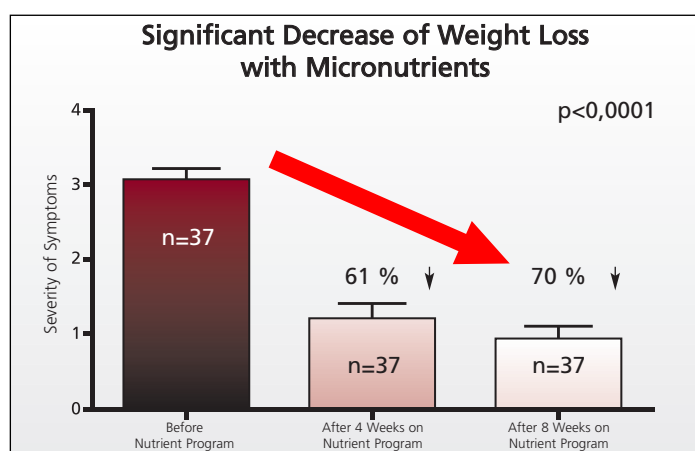
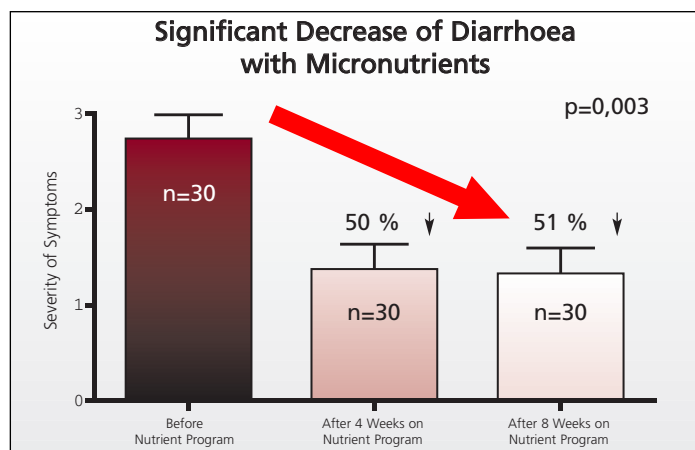
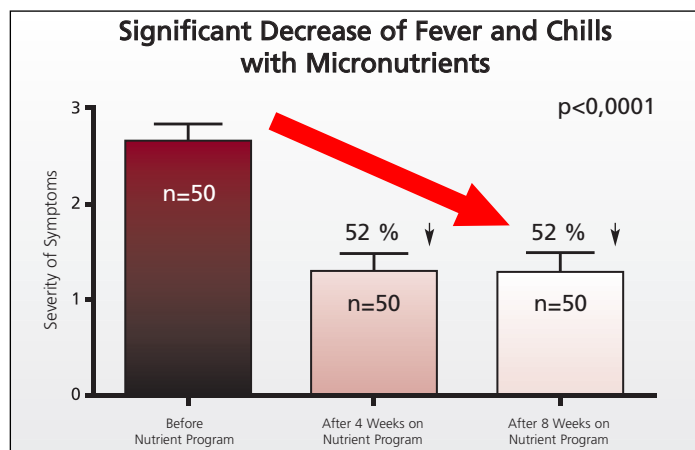
The questionnaire graded AIDS-defining symptoms for Africa and other physical symptoms on a scale of 0 to 4 (0 = no symptoms, 1 = mild, 2 = medium, 3 = advanced, 4 = severe). The evaluation of the micronutrient program included the changes in severity of symptoms seen after 3 visits (10-12 weeks) from the beginning of micronutrient supplementation.

Fifty-six participants completed all three examinations and questionnaires.

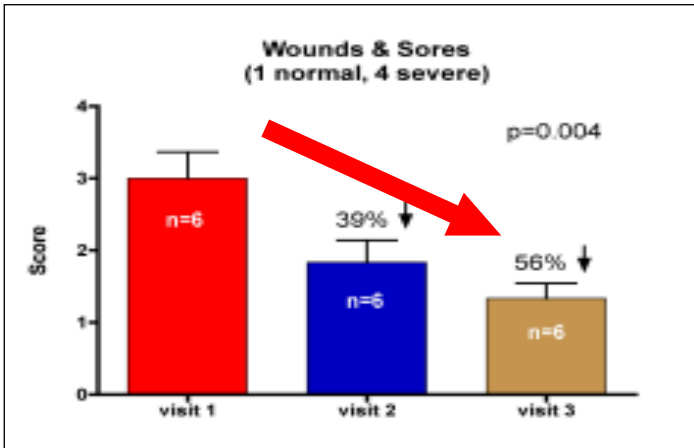
The evaluation of the results showed statistically significant reduction in severity of the following symptoms:

- All AIDS-defining symptoms that include fever, weight loss, diarrhea, cough and severity of tuberculosis (TB)
- Fungal and opportunistic infections
- Other physical symptoms associated with AIDS such as skin sores, skin rashes, swollen glands, colds and flu, fatigue, headache, numbness in extremities and joint pain.

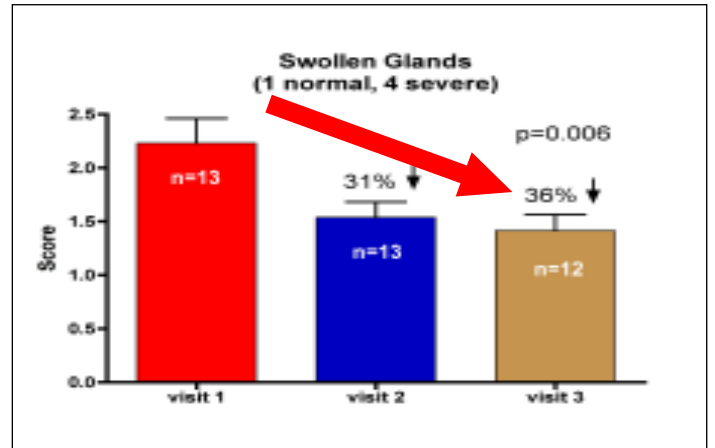
No adverse side effects occurred from intake of the micronutrient supplements.



REDUCTION OF SPECIFIC CLINICAL SYMPTOMS IN KHAYELITSHA PATIENTS

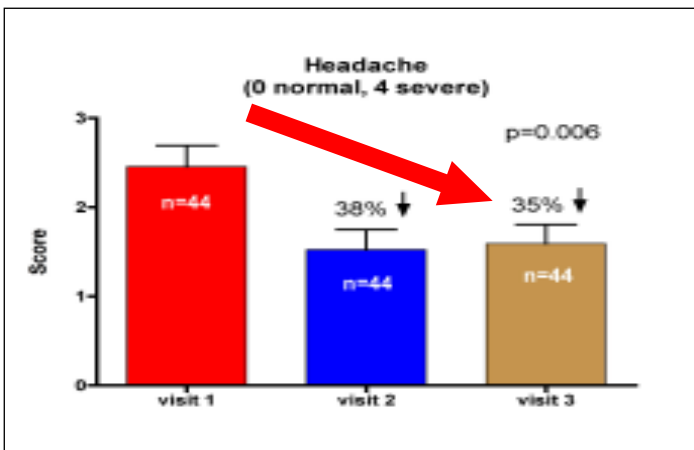


Significant decrease of wounds and sores with micronutrients

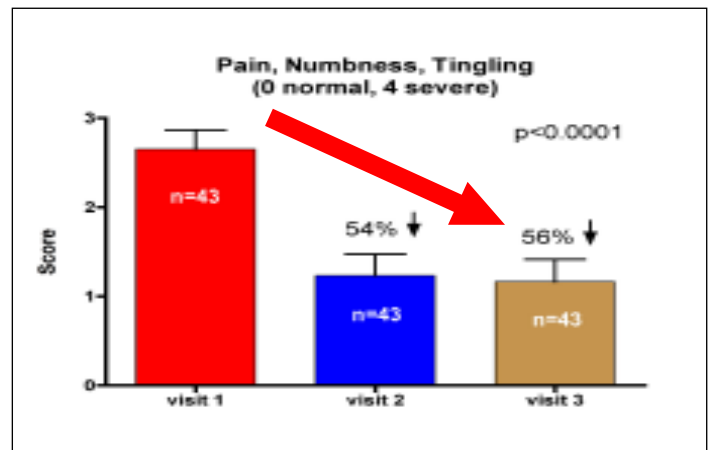


Significant decrease of swollen glands (indication of infection, inflammation) with micronutrients

REDUCTION OF PAIN SYMPTOMS IN KHAYELITSHA PATIENTS

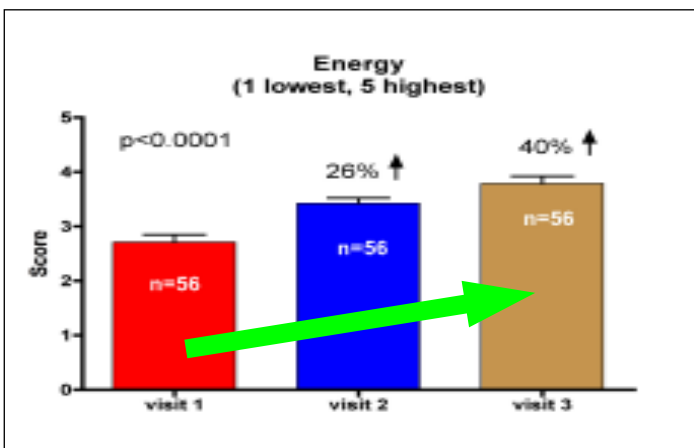


Significant decrease in severity of headaches with micronutrients

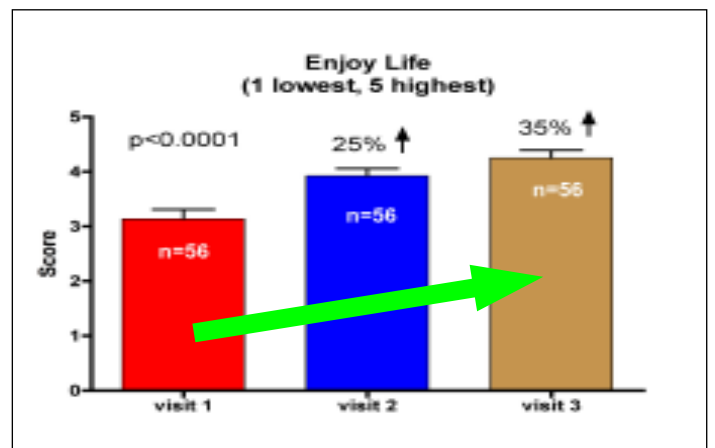


Significant decrease of pain, numbness and tingling sensations with micronutrients

IMPROVEMENT OF PHYSICAL SYMPTOMS IN KHAYELITSHA PATIENTS



Significant improvement in feeling of more energy with micronutrients



Significant improvement in enjoyment of life with micronutrients

KwaZulu-Natal: The micronutrient supplement evaluated in Khayelitsha and Western Cape was also rolled out in KwaZulu-Natal by SANCO.

Similarly to other sites, health status of participants was assessed with the aid of a bi-lingual questionnaire that graded AIDS-defining symptoms for Africa and other physical symptoms on a scale of 0 to 4 (0 = no symptoms, 1 = mild, 2 = medium, 3 = advanced, 4 = severe). The evaluation included the changes in severity of symptoms after 3 visits (14 weeks) from the beginning of micronutrient supplementation.

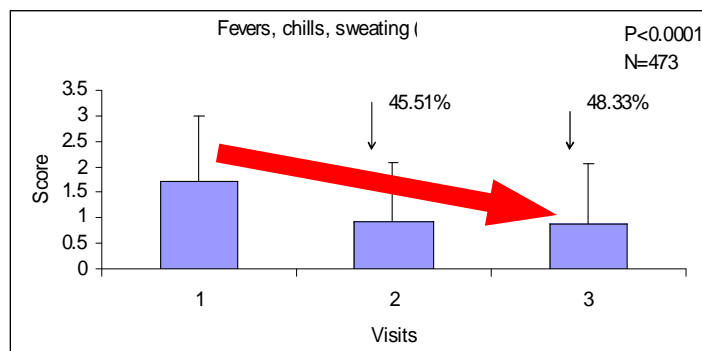
Five hundred and sixty seven participants completed all three examinations and questionnaires.

Results showed that daily micronutrient supplementation was associated with statistically significant reduction in severity of all symptoms, which included:

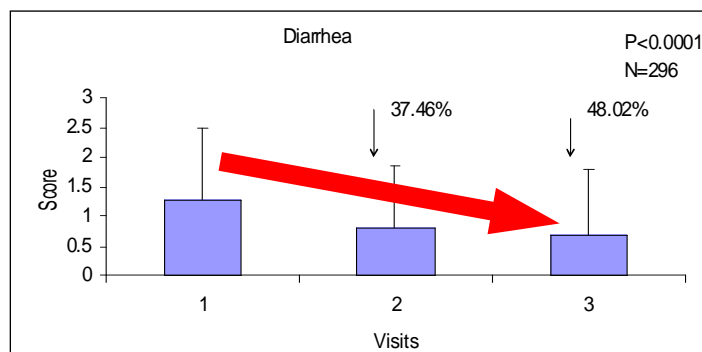
- AIDS-defining symptoms including fever, chills and sweats, diarrhea, and cough
- Specific clinical symptoms such as colds and flues, muscle cramps, unusual thirst, vomiting and nausea
- Other physical symptoms including blurred vision, swelling, skin bruises, irregular heartbeat and gum bleeding
- Pain symptoms such as numbness of extremities, pain in mouth, lip and gums, joint pain, and headaches

No adverse side effects occurred from intake of the micronutrient supplements.

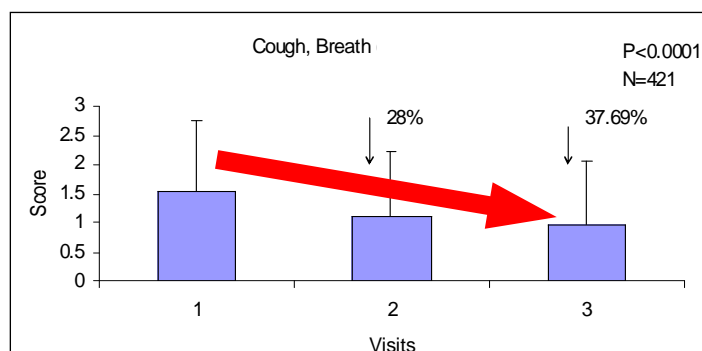
REDUCTION OF AIDS-DEFINING SYMPTOMS IN KWAZULU-NATAL PATIENTS



Significant decrease of fevers chills and sweating

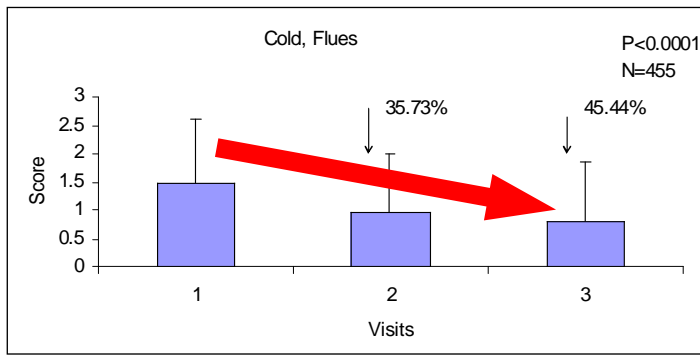


Significant decrease of diarrhea

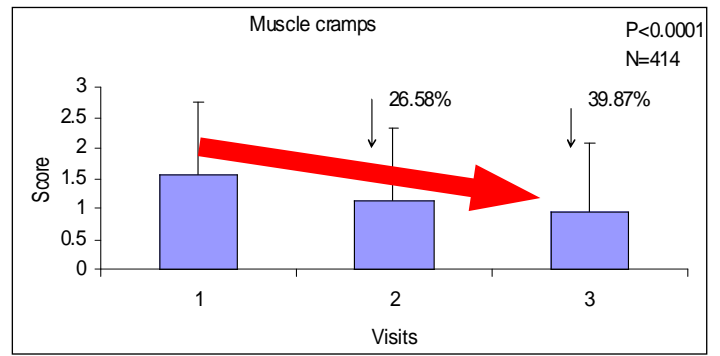


Significant decrease of Cough & Trouble Breathing

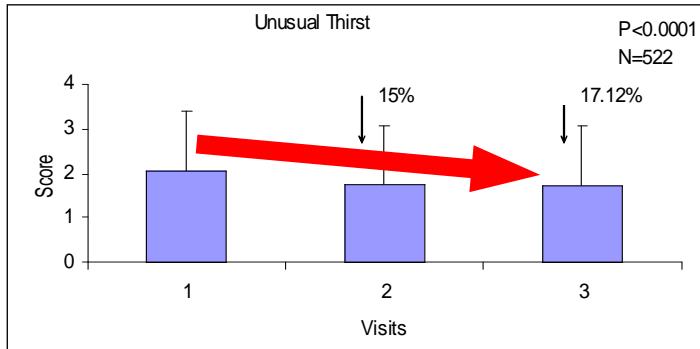
REDUCTION OF SPECIFIC CLINICAL SYMPTOMS IN KWAZULU-NATAL PATIENTS



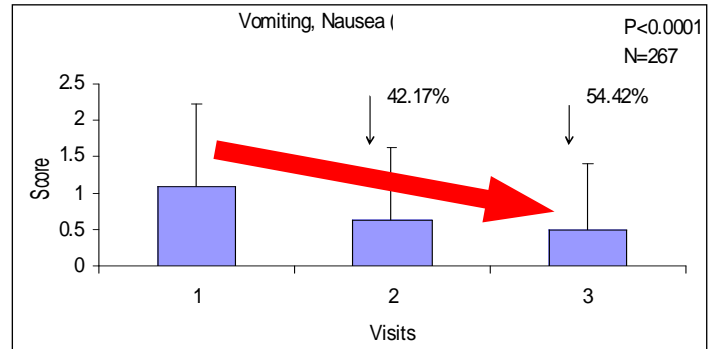
Significant decrease of colds and flu



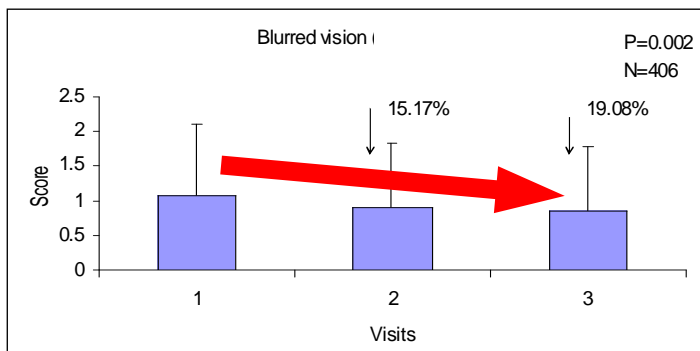
Significant decrease of muscle cramps



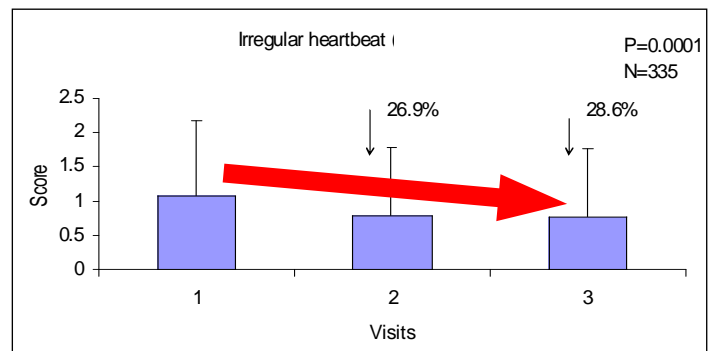
Significant decrease in symptoms of unusual thirst



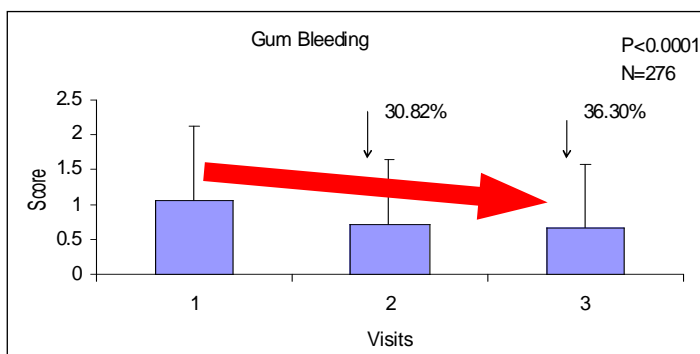
Significant decrease in symptoms of nausea and vomiting



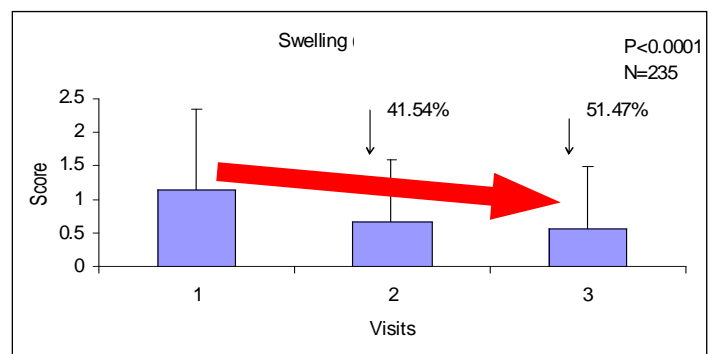
Significant decrease of blurred vision



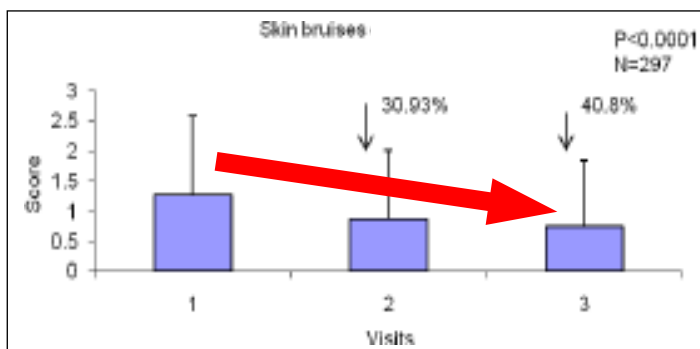
Significant decrease of irregular heartbeat



Significant decrease of gum bleeding

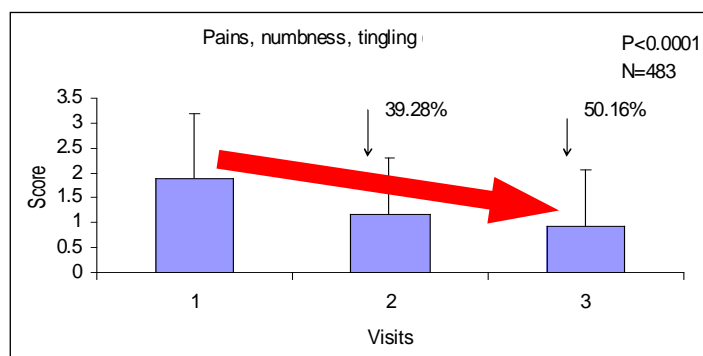


Significant decrease of swelling

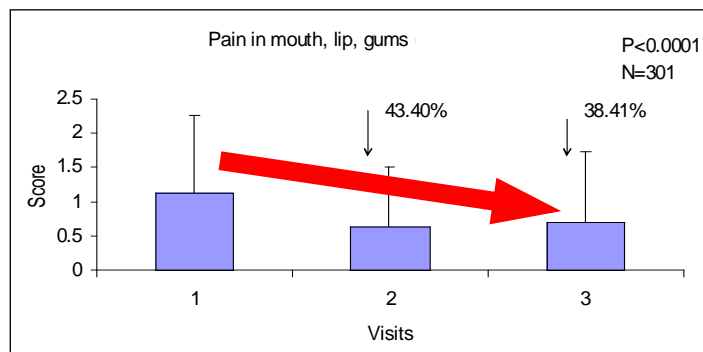


Significant decrease of skin bruises

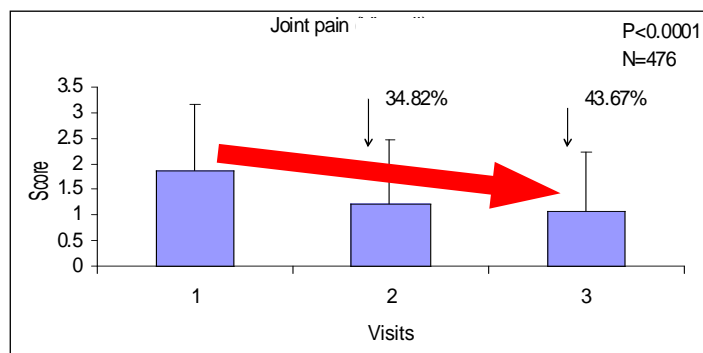
REDUCTION OF PAIN SYMPTOMS IN KWAZULU-NATAL PATIENTS



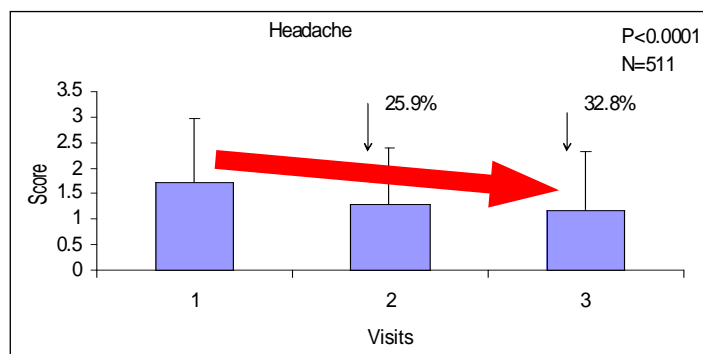
Significant decrease of pain, numbness and tingling



Significant decrease of pain in mouth, lips and gum



Significant decrease in joint pain



Significant decrease in headache pain

Western Cape: The micronutrient supplement evaluated in Khayelitsha was subsequently rolled out in Western Cape by SANCO.

Similarly to other sites, health status of participants was assessed with the aid of a bi-lingual questionnaire that graded AIDS-defining symptoms for Africa and other physical symptoms on a scale of 0 to 4 (0 = no symptoms, 1 = mild, 2 = medium, 3 = advanced, 4 = severe). The evaluation included the changes in severity of symptoms after 3 visits (8 weeks) from the beginning of micronutrient supplementation.

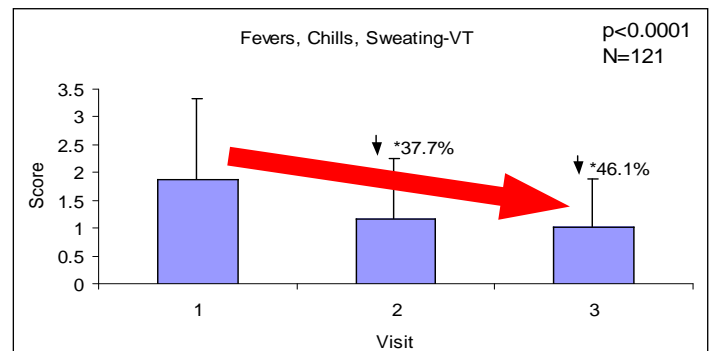
One hundred and twenty four participants completed all three examinations and questionnaires.

Results showed that daily micronutrient supplementation was associated with statistically significant reduction in severity of all symptoms, which included:

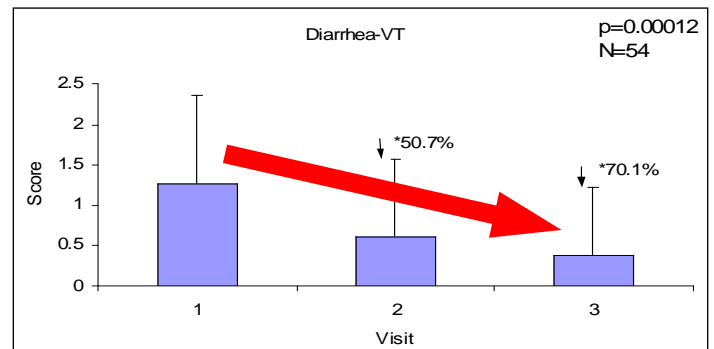
- AIDS-defining symptoms including fever, chills and sweats, diarrhea, and cough
- Specific clinical symptoms such as colds and flues, muscle cramps, and unusual thirst
- Other physical symptoms including vomiting and nausea, blurred vision, irregular heartbeat, gum bleeding and swelling
- Pain symptoms such as numbness of extremities, pain in mouth, lip and gums, joint pain, and headaches

No adverse side effects occurred from intake of the micronutrient supplements.

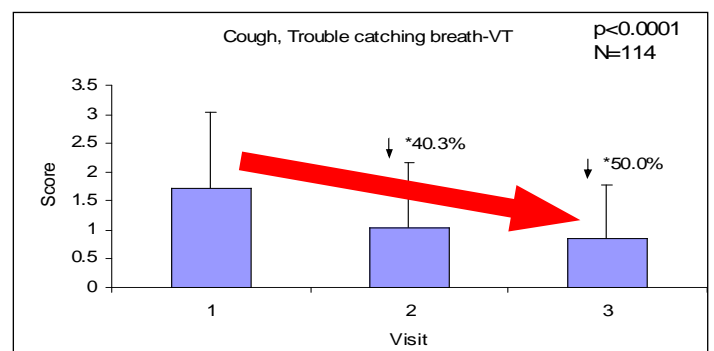
REDUCTION OF AIDS-DEFINING SYMPTOMS IN WESTERN CAPE PATIENTS



Significant decrease of fevers chills and sweating

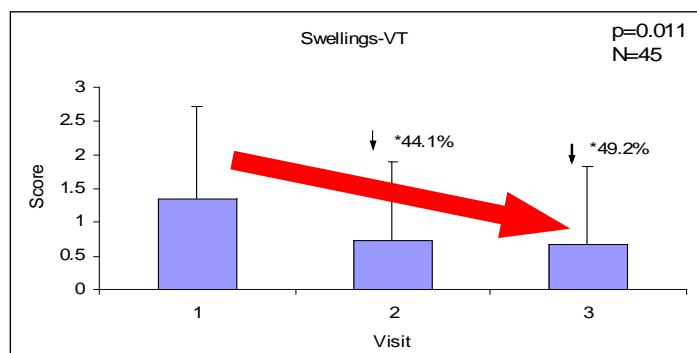
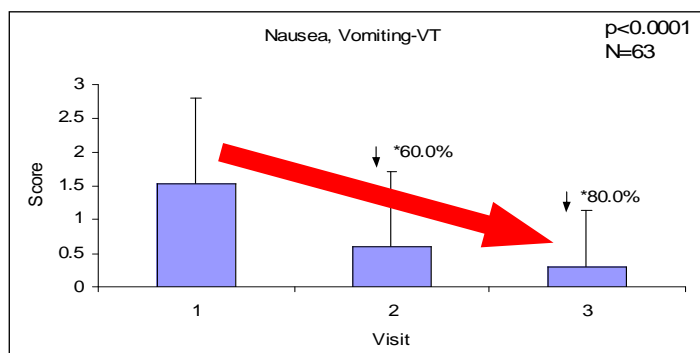
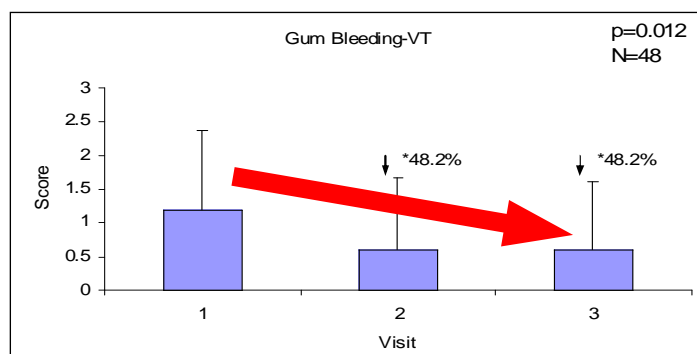
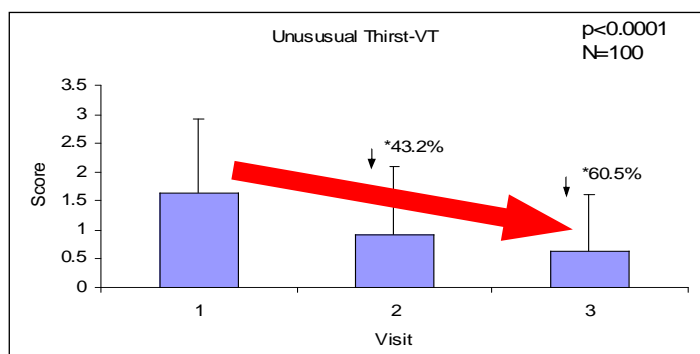
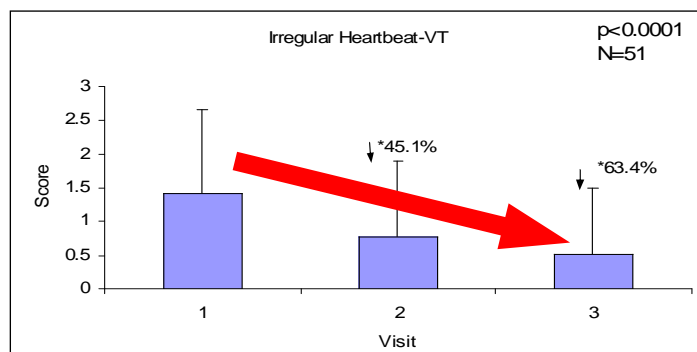
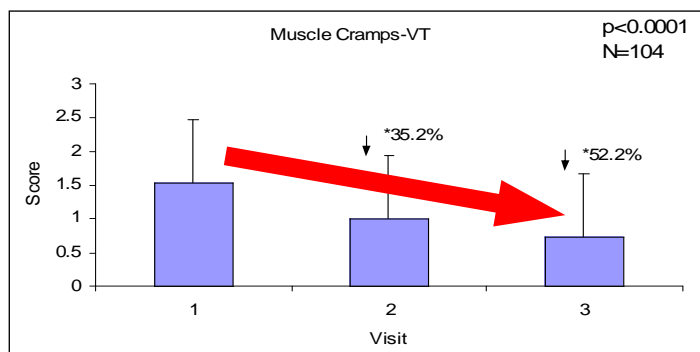
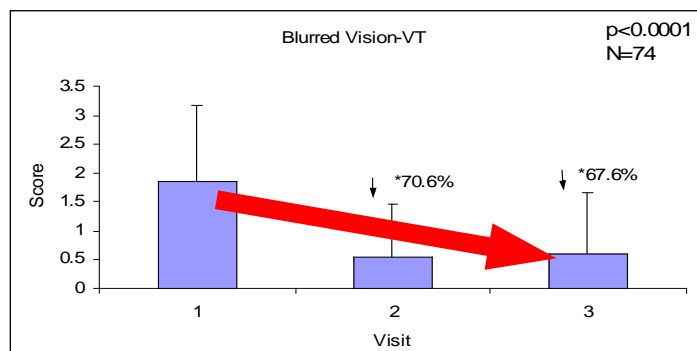
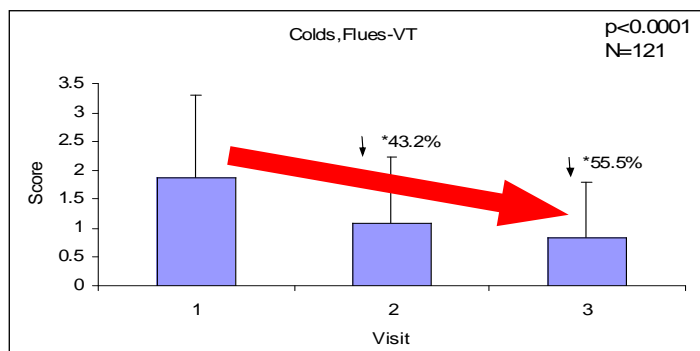


Significant decrease of diarrhea

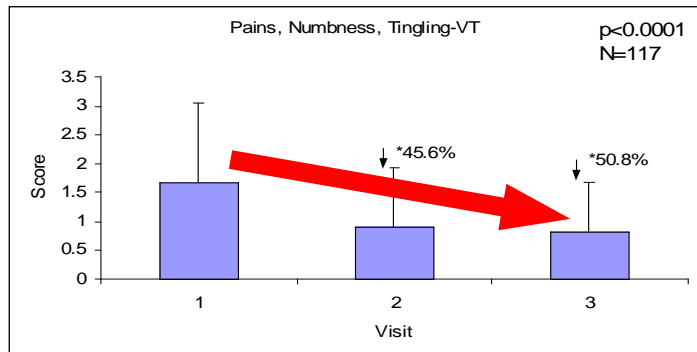


Significant decrease of Cough & Trouble Breathing

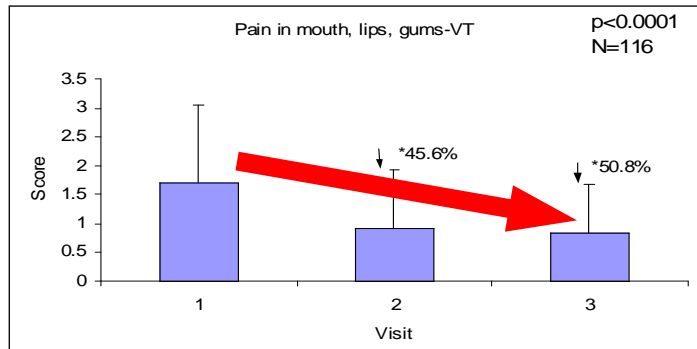
REDUCTION OF SPECIFIC CLINICAL SYMPTOMS IN WESTERN CAPE PATIENTS



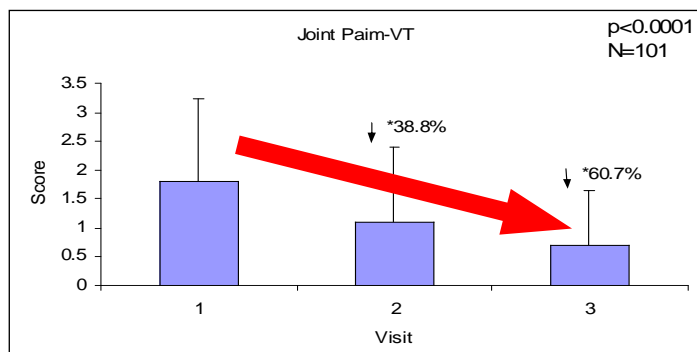
REDUCTION OF PAIN SYMPTOMS IN WESTERN CAPE PATIENTS



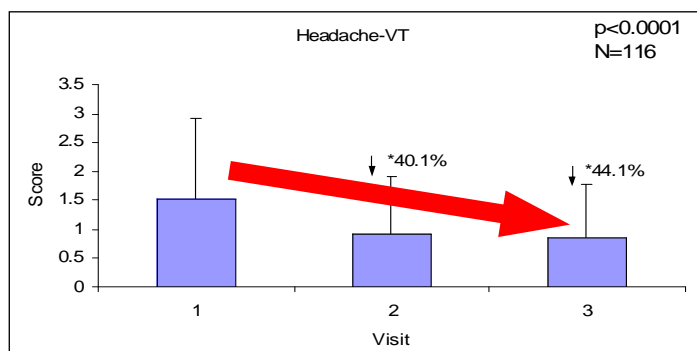
Significant decrease of pain, numbness and tingling



Significant decrease of pain in mouth, lips and gum



Significant decrease in joint pain



Significant decrease in headache pain

SECTION 2

CONCLUSIONS

The evaluation of the effects of a micronutrient program on AIDS-defining symptoms and other symptoms associated with AIDS in different populations of patients living in different regions of South Africa, which included Western Cape and KwaZulu-Natal province, concludes that:

- Daily supplementation with a nutritional program containing a defined complex of vitamins, minerals, trace elements, selected amino acids, polyphenols and other essential nutrients by the AIDS patients not taking anti-retroviral drugs (ARVs) caused significant reduction in all AIDS-defining and other physical symptoms associated with the progression of AIDS.
- These observed health improvements in AIDS patients were consistent independently of the township location and region of the country.

This evaluation suggests that science based effective, safe and affordable micronutrient supplementation together with other measures of improving nutritional status and living conditions can become a basis of public health strategy to fight immune deficiency diseases including AIDS.

**Implementation of these findings
by national governments and their
organizations would save millions of lives
and represent a successful, cost-effective
and sustainable strategy to control AIDS
until a cure is found.**

