Effect of Siddha Samadhi Yoga Camps on Health and Nutritional Status of Normal and Diabetic Subjects

Sreedevi K*, Devaki PB and Bhushanam GV

1Nutrition Consultant, Behavioral Science Unit, National Institute of Nutrition, Hyderabad, India
2Faculty of Food Science & Nutrition, Sri Venkateshwara University, Tirupathi, India
3All India Coordinated Research Project on Home Science, Acharya NG Ranga Agricultural University, Hyderabad, India

Abstract

Introduction: Now-a-days a new way of life comprising of yogasana, pranayama, meditation and changed food habits is expected to lead a happy purposeful life with heightened consciousness and perceptiveness. One such yoga camp is Siddha Samadhi Yoga (SSY) camp which is believed to invoke the intellectual, emotional, mental and physical potential in each individual. These yoga camps claim to have the powers of reversing the ill effects of degenerative diseases. In view of the beneficial effects of Yoga, Meditation and changed food habits the effect of Siddha Samadhi Yoga (SSY) camp’s on normal and diabetic subjects was planned.

Materials & methods: Thirty normal and thirty diabetic male subjects free from additional complications belonging to twenty five to forty five years of age were selected from two camps conducted in Mahaboob Nagar and Tirupati. The BMI of all subjects was assessed. Blood samples were analysed for post prandial blood glucose; serum cholesterol; serum iron and haemoglobin levels. Diet Survey was conducted on the basis of food intake record provided by the subjects. The food habits of normal and diabetic subjects before and after the SSY camp of 18 days was also studied.

Results & discussion: There was a significant difference in pre and post prandial blood glucose level of Normal subjects (t = 4.9811 > 2.05) and Diabetics (t = 24.4962 > 2.05). The percent reduction in BMI is 4.2 and 4.1 in normal and diabetic subjects respectively. Serum cholesterol levels among diabetics reduced by 4.1% and by 2.99% in normal subjects. Serum Iron and haemoglobin levels improved in normal subjects by 8.4% and 14.95% respectively in normal subjects while by 5% and 6.9% respectively in diabetics.

Summary & conclusion: The SSY camp has a significant effect in decreasing the post-prandial blood glucose and serum cholesterol levels, intake of calories, carbohydrates, cholesterol, fat and significant increase in the intake of fibre, vitamin C, iron and B-carotene.

Materials & Methods

Thirty normal and thirty diabetic male free from further complications of twenty five to forty five years of age were selected from two camps conducted in Mahaboob Nagar and Tirupati, Andhra Pradesh, India. General information regarding economic status, educational status, occupation, family size etc. was elicited using General information questionnaire.

The BMI of all subjects were calculated based on the heights and weights recorded. Blood samples were analysed for post prandial blood glucose; serum cholesterol; serum iron and haemoglobin levels. Diet Survey was conducted on the basis of food intake record provided by the subjects before and at the end of the SSY camp of 18 days.

The height and weight of all subjects were recorded following the methods of Jellifee [6] BMI was calculated using the formula weight in

ISSN:2155-6156 JDM, an open access journal

J Diabetes Metab 3:195. doi:10.4172/2155-6156.1000195

*Corresponding author: Sreedevi K, Nutrition Consultant, Behavioral Science Unit, National Institute of Nutrition, Hyderabad, India. Tel: 9492059106; E-mail: kareddy_sree@yahoo.co.in

Received April 09, 2012; Accepted May 28, 2012; Published June 04, 2012


Copyright: © 2012 Sreedevi K. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
kg/height in (m²) and compared with standard classification of James et al. (1998). Five ml of the blood was drawn from each subject and divided into three portions, one for estimation of blood glucose by Nelson and Somayagi [7] method, second for the estimation of serum cholesterol by Carr and Drektar [8] Method and the other for serum iron by <c>di-piridyl method [9], and finger prick samples were collected to estimate haemoglobin levels by cyanomethaemoglobin method [10].

WHO expert consultation recommends the acceptability of glycated haemoglobin, or HbA1c, as an additional test to diagnose diabetes. The higher cost in comparison to other diagnostic tools will, for now, will make it harder for developing countries to use. It also remains unreliable in medical conditions with rapid red cell turnover, such as haemolytic or iron deficiency anaemias. So the priority for low-income countries will continue to be ensuring the availability of blood glucose measurement at the primary health care level before widely introducing HbA1c for diagnosing diabetes [11]. Cost has become a major influencing factor in using Nelson Somyogi method as against HbA1c method.

Moreover, HbA1c results can be misleading when red blood cell survival is prolonged or reduced; some health conditions can result in falsely high A1c results (as in cases of anemia) or falsely low (as in cases of hemolysis) and only subjects with a substantially reduced glucose tolerance may be diagnosed by HbA1c determinations [12].

Diet survey was conducted to note down the food items consumed over a period of three days (2 working days + 1 holiday) before and at the end of the SSY camp using standard cup to measure the food they consumed. Based on the food intake record food consumed per day in pre and post mean and SD Differ-
t' value normal and diabetic subjects was analyzed statistically. The percent reduction of blood glucose was 1.6 ± 7.9 in Normal and 15.15 ± 7.9 in Diabetic subjects.

Statistically there is a significant difference in pre and post prandial blood glucose level of Normal subjects (t = 4.9811 > 2.05) and Diabetics (t = 24.4962 > 2.05). The 't' value is greater than 't' critical value at 5 percent level. The percent reduction of serum cholesterol level in Group I was 2.901 ± 5.26 and 4.069 ± 3.249 in group II. Generally among normal subjects before breakfast blood usually contains about 80 mg/dl glucose. After a meal the concentration rises because, the glucose absorbed from the gut passes through the liver in to general circulation, it may reach 132 mg or even more, but rarely exceeds 177 mg at which point glucose usually into the urine and in diabetics the mean fasting blood glucose level is very high, 120 mg/dl and the post prandial level is higher180 mg/dl. It is observed that half of the subjects have above the normal range of post-prandial blood glucose level and in NIDDM subjects were having above the limits.

The effect of yoga camp of normal and diabetic subjects on the pre and post serum iron is presented in Table 2.

The difference in pre and post serum iron levels was 12.01 ug/dl in group I and 145.73 ug/dl in group II. There was percent decrease in serum iron levels (8.35 ± 5.1) in group I against a percent increase of 5.0 ± 3.43 in group II.

Table 2: Serum iron levels before and after SSY camp.

Table 3: Blood Haemoglobin levels of male subjects before and after SSY camp.

There is a significant between pre and post serum iron levels of Male subjects before and after SSY camp.

The difference between pre and post blood glucose level of Normal and NIDDM subjects was 2.38 mg/dl and 35.38 mg/dl re-

dicted in the results. The percent reduction of serum cholesterol level in Group I was 2.901 ± 5.26 and 4.069 ± 3.249 in group II. Generally among normal subjects before breakfast blood usually contains about 80 mg/dl glucose. After a meal the concentration rises because, the glucose absorbed from the gut passes through the liver in to general circulation, it may reach 132 mg or even more, but rarely exceeds 177 mg at which point glucose usually into the urine and in diabetics the mean fasting blood glucose level is very high, 120 mg/dl and the post prandial level is higher180 mg/dl. It is observed that half of the subjects have above the normal range of post-prandial blood glucose level and in NIDDM subjects were having above the limits.

The effect of yoga camp of normal and diabetic subjects on the pre and post serum iron is presented in Table 2.

The difference in pre and post serum iron levels was 12.01 ug/dl in group I and 145.73 ug/dl in group II. There was percent decrease in serum iron levels (8.35 ± 5.1) in group I against a percent increase of 5.0 ± 3.43 in group II.

Table 3: Blood Haemoglobin levels of male subjects before and after SSY camp.

There is a significant between pre and post serum iron levels of Male subjects before and after SSY camp.

The difference in pre and post serum iron levels was 12.01 ug/dl in group I and 145.73 ug/dl in group II. There was percent decrease in serum iron levels (8.35 ± 5.1) in group I against a percent increase of 5.0 ± 3.43 in group II.

Table 3: Blood Haemoglobin levels of male subjects before and after SSY camp.

There is a significant between pre and post serum iron levels of Male subjects before and after SSY camp.
In diabetics as the concentration of glucose in blood rises, more of it gets attached to haemoglobin and the combined molecule chemically estimated as glycosylated haemoglobin. In normal population the glycosylated haemoglobin concentration varies from 4 to 7%, while in diabetics it ranges from 8 to 18% of the total haemoglobin depending on the blood sugar level.

The effect of yoga camp of normal and diabetic subjects on the pre and post levels of dietary pattern is presented in Table 3. 4.638 percent reduction of calories was observed in Group I and 11.74 in group II. Percent reduction in carbohydrate; Protein; Fat; dietary cholesterol was observed in group I & II. Percent increase in intake of Fibre and Iron was observed in group I and II. Percent increase of intake of Fibre and Iron was observed in group I and II. Percent increase of intake of Fibre and Iron was observed in group I and II.

Summary & Conclusion
The SSY camp has a significant effect in decreasing the post-prandial blood glucose and serum cholesterol levels, intake of calories, carbohydrates, cholesterol, fat and significant increase in the intake of fibre, vitamin C, iron and B-carotene. The correlations obtained between the health parameters, haematological parameters and the energy and nutrient intakes are very obvious and significant. Therefore efforts should be made to practice the food habits, regular exercise, yoga and meditation for continued beneficial effect.

References