Effect of asanas on anxiety in non-insulin dependent diabetes mellitus (NIDDM) patients

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Abstract
Effect of asanas on anxiety in non-insulin dependent diabetic patients was examined. Forty male diabetic patients from Coimbatore aged between 45 to 55 years were selected as subjects randomly. The subjects were equally divided into control group and experimental group. Asanas was assigned for twelve weeks to the experimental group. The control group was not allowed to participate in the programme. To all the subjects a pre-test and a post-test data were collected through the administration of four point scale by Beck Anxiety Inventory. The data collected from the subjects through inventory were statistically analyzed with ‘t’ ratio to find out the significant difference among experimental and control group on anxiety. The analysis reveals that the asanas practice significantly reduced the anxiety level of non-insulin dependent diabetic patients (NIDDM).

Keywords: Anxiety, Non-Insulin, Dependent Diabetes Mellitus.

Introduction
According to a survey, India will be the world’s diabetes capital. In Indian diabetic account the type 1 diabetes accounts for 5-10% and most common Type II accounts for 90-95%. The ratio between NIDDM and IDDM is 3:1. During pregnancy, 2-5% of women develop gestational diabetes, which disappears after their babies are born. In our country 50% of NIDDM patients remain undetected and they are presented with most complications. The number of diabetics which was 19 million in 1995 would go up to 57 million by 2025, a rise of nearly 300%. (McCarty and Zimmet, 1995) [4]
The World Health Organization estimates that mortality from diabetes and heart disease cost India about $210 billion every year and is expected to increase to $335 billion in the next ten years. Various studies have shown that the high incidence of diabetes in India is mainly because of sedentary lifestyle, lack of physical activity, obesity, stress and consumption of diets rich in fat, sugar and calories.

Anxiety is one of the greatest problems of modern society. Cultural conflicts, economics and industrialization add to the problem of man, thus increasing the anxiety level. Anxiety refers to that emotional state of mind where a fear of danger or loss of suffering is a prominent feature. It generally arises as a result of fear for something unknown which creates tension and disturbance (Morgen, 1985) [3]
The aim of asanas is to produce physiological balance in the different systems working in the human body. So that it can possess the best organic vigour. The other aim is training the spinal cord and the digestive system can work elastic. Asanas are simple actions for keeping the internal and external body in good health. Asanas give sufficient exercise to the internal organs of the body. Consequently, an individual can maintain good health and longevity of life. (Kuvalayananda, 1933) [1].

Yogasanas are not only to develop muscles and the body but mainly to regulate the proper activities of all the internal organs and glands to affect the nervous system which in turn controls the over well being of muscles to a greater degree than we actually suppose. (Devi, 1969) [2]

Kosuri and Sridhar (2009) [5] reported that participation of subjects with type 2 diabetes mellitus in yoga practice for 40 days resulted in reduced BMI, improved well-being and reduced anxiety.
Hence it was proposed to find out the effect of 12 weeks asanas on anxiety in non insulin dependent diabetes mellitus patients. It was hypothesized that 12 weeks of asanas practice significantly reduce anxiety in non insulin dependent diabetes mellitus (NIDDM) patients.

Methodology
This study is designed to determine the effects of 12 weeks of asanas on anxiety in non insulin dependent diabetes mellitus patients. The subjects of the study were 40 diabetic patients. These subjects were randomly assigned to two groups that is an experimental group and a control group. Each group consists of 20 subjects. The experimental group had undergone asanas practice in alternate days for a period of 12 weeks. Ardha Chakrasana, Padhahastasana, Paschimottanasana, Ustrasana, Gomukhasana, Bhujangasana, Salabhasana, Navasana, Sarvangasana and savasana were presented in the training schedule. Intensity of the asanas was escalating after every two weeks by increasing the duration of asanas. The control group did not involve in any activity. Before and after the training anxiety level was assessed through the administration of Beck Anxiety Inventory which has consists of 21 common symptoms of anxiety. This inventory consists of 4 point scale such as not at all, mildly, moderately and severely. The points for the above responses are 0, 1, 2 and 3 respectively. The collected data were statistically analyzed by ‘t’ ratio. 0.05 level of confidence was fixed to test the level of significance.

Analysis of Data and Interpretation of Results
The data was collected before and after the training period for both control and experimental groups on anxiety. The data was statistically analyzed by ‘t’ ratio. The level of significance was fixed at 0.05 level of confidence.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pre – test mean</th>
<th>Post – test mean</th>
<th>Mean Difference</th>
<th>Standard Error</th>
<th>‘t’ ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>31.65</td>
<td>29.40</td>
<td>2.25</td>
<td>0.289</td>
<td>7.78*</td>
</tr>
<tr>
<td>Control Group</td>
<td>32.60</td>
<td>32.25</td>
<td>0.35</td>
<td>0.449</td>
<td>0.78</td>
</tr>
</tbody>
</table>

* Significant at 0.05 level for the degrees of freedom 1 and 19, 2.09

Table shows that the ‘t’ ratio on anxiety of experimental group was 7.78. Since the value was higher than the required table value of 2.09, it was found to be statistically significant at 0.05 level of confidence for degrees of freedom 1 and 19. And the obtained ‘t’ ratio between pre and post test of control group 0.78 was lesser than the required table value of 2.09, found to be not statistically significant. This significant improvement may be due to the effect of 12 weeks of training on experimental group. The results of this study indicate that there was a significant reduction in anxiety of the non insulin dependent diabetes mellitus patients (experimental group) after 12 weeks of asanas practice. So the hypothesis is accepted. The results of this study indicate that there was a significant reduction of anxiety in NIDDM patients (experimental group) after twelve weeks of asanas practice. The above finding of the present study is in agreement with the studies conducted by Lavey, et al. (2005) [9], Gupta, et al. (2006) [6], Rahimi and Bavajar (2010) [7] and Javnbakht et al. (2009) [8]. Results of the study indicate that asanas practice significantly reduce the anxiety of non-insulin dependent diabetes mellitus (NIDDM) patients.

Conclusion
With the limitation of the study, the following conclusion is drawn.

Reference
5. Kosuri Madhu, Sridhar Gumpeny R. Yoga Practice in Diabetes Improves Physical and Psychological Outcomes, Published in Metabolic Syndrome and Related Disorders, 2009, 7(6).