

## EFFECT OF PSYCHONEUROBICS & RAJYOGA MEDITATION ON TYPE 2 DIABETES

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### Abstract

**Aims** – To evaluate the efficacy of 3 Dimensional approach by analysing the diet, exercise and meditation parameters of the adults suffering from Type 2 diabetes milletus.

**Methods** – 100 (both men and women), (35 study & 65 control group) attending the online program across PAN India. They were introduced to a complimentary therapy that would work on the reversal of their Type 2 diabetes.

**Results** – Blood reports showed significant changes in the study group and thereby leading to healthy and happy life.

**Conclusions** – The training of psychoneurobics and Rajyoga meditation, listening to Murli vegetarian diet, exercise & pranayam helped the diabetics in overall wellbeing.

**Keywords** –#Healthylifestyle, #Stress, #Bloodglucose, #Psychoneurobics, #RajyogaMeditation, #Mind, #Body.

### 1.Introduction

#### Type 2 Diabetes Milletus

Diabetes mellitus is the most common endocrine metabolic disorder, affecting about 170 million people worldwide. It represents a group of diseases with complex heterogeneous etiology, characterized by chronic hyperglycemia with carbohydrate, fat and protein metabolic abnormalities, which are due to insulin deficiency and/or insulin resistance. These abnormalities result in the impairment of uptake and storage of glucose and reduced glucose utilization for energy purposes. Defects in glucose metabolizing machinery and consistent efforts of the physiological system to correct the imbalance in glucose metabolism place an over-exertion on the endocrine system. Continuing deterioration of endocrine control exacerbates the metabolic disturbances and leads primarily to hyperglycemia, then proceeds to the development of longterm complications, such as microangiopathy; nephropathy, neuropathy and retinopathy. The basis of these complications is a subject of great debate and research. Hyperglycemia and metabolic derangement are accused as the main causes of these long-standing changes in various organs. Hyperglycemia may also lead to increased generation of free radicals and reduced antioxidant defense system.

## **2.Statement of the Problem /Topic**

Epidemiology of diabetes mellitus Diabetes mellitus is a common growing disease, which is considered epidemic by WHO. Its incidence in adults and adolescents have been alarmingly rising in developed countries with estimate for an increase of 60% in the adult population above 30 years of age in 2025, with a higher prevalence in the 45 to 64 years-old adults. These increases are expected because of population ageing and urbanization.

Type 2 diabetes has long been regarded as inevitably progressive, requiring increasing numbers of oral hypoglycemic agents and eventually insulin, but it is now certain that the disease process can be halted with restoration of normal carbohydrate and fat metabolism. It has been long known to progress despite glucose-lowering treatment, with 50% of individuals requiring insulin therapy within 10 years. This seemingly inexorable deterioration in control has been interpreted to mean that the condition is treatable but not curable. Clinical guidelines recognize this deterioration with algorithms of sequential addition of therapies. Insulin resistance and beta cell dysfunction are known to be the major pathophysiologic factors driving type 2 diabetes; however these factors come into play with very different time courses.

In the World Congress on Clinical and Preventive Cardiology 2006 (WCPC) Late Dr.A P J Abdul Kalam referred Health as not just the absence of diseases but the feeling of complete

physical, mental and social well being. A fourth dimension of spiritual well being should also be added apart from the mind, body and social well being. If we analyse the pharmacological treatments for management of reversal of type 2 diabetes, the focus has been on physical health, medications and bariatric surgery or hypocaloric diet, but the treatments do not take into account the emotional and behavioural dimensions of the diabetics (Ref-WCPC) by Late Dr.Kalam says have so much impact on the overall health of any individual.

Type 2 Diabetes is a lifestyle disorder wherein stress and tension plays a very important role in an individual's life. Hence the physical and emotional aspects cannot be separated.

### **3.Rational of the study (Importance and Need for the proposed study)**

Management of diabetes in India faces multiple challenges, such as low levels of awareness, paucity of trained medical and paramedical staff and unaffordability of medications and services. Non-adherence/ Non-compliance one of the major challenge in diabetes management. Major causes of non adherence to medication is common in patients of type 2 diabetes mellitus., hence making glycaemic control difficult to achieve. Indian studies have shown that more than 70% of the diabetics discontinue the treatment in between. As a result, at least 55% of diabetics do not reach glycaemic goals. Adherence to diet and exercise are equally important in management of diabetes.

We understand that any type of stress occurs when the outside pressure exceeds the individual's inner coping ability. Type 2 diabetics should be trained and educated to increase coping ability through exercise, pranayama and meditation.

To integrate these parameters a research comprising 100 adults (both men and women) enrolled for the complimentary therapy program. The program focussed on the inner values and stress management by adopting healthy lifestyle of exercise, diet and meditation. It would help in managing negative feelings like anger, insecurities, worries and fear. Therefore the need to formulate a Holistic approach would cater to the three dimensions of health namely, physical, mental and spiritual well being thereby empowering the diabetics to dilute stress and keep themselves in peace and happiness and make life diabetes free.

### **4.Brief Review Of The Literature**

A brief review of earlier studies is a vital step in any research which forms the foundation to develop a structure and provide insight into the methodology that helps in working out a basic interpretation for the findings. This literature review aims to examine the area of the

research, which has been explained in the study. The aim of the study is also to find out the gap that exists between the knowledge of the researcher's subject area and their curiosity. (Boswell & Cannon\_2009:132).

Jennifer Purdie (2020) updated the experimental evidence on stress and diabetes. The data provides additional evidence of how can different types of stress affect one's diabetes. When a person with type 2 diabetes is under stress, he experiences an increase in his blood glucose levels. Physical stress can also increase the blood sugar level and at the same time blood sugar levels can also increase when a person is sick or injured. Sometimes the symptoms of stress are subtle and a person may not notice them. Stress can take a toll on our mental and emotional well being and it can also have an impact on physical health. Recognizing the symptoms can help to identify the stress and take steps to manage it. It is also common for people who are stressed to engage in behaviour that may be out of character which includes :

- Withdrawing from friends and family
- Eating too much or too little
- Acting out in anger
- Alcohol consumption in excess
- Chewing tobacco

Mental stress can be reduced by meditating which helps to remove negative thoughts and allow's mind to relax.

Cathy Llyod, Julie Smith, Katie Weinger (2005) has provided the experimental evidence and consider ways in which stress might affect diabetes, both through physiological mechanisms and via behaviour. They also discuss the implications of this for clinical practice and care. In recent years, the complexities of the relationship between stress and diabetes have become well known but have been less well researched. Some studies have suggested that stressful experiences might have affect the onset and/or the metabolic control of diabetes, but findings often been inconclusive. In their article they have discussed the implications for clinical practice and care. In a large population based survey of glucose intolerance it was demonstrated that an association between stressful experiences and the diagnosis of type 2 diabetes. Although the cross-sectional study, the authors investigated stress levels in people with previously undetected diabetes in order to rule out the possibility that the disease itself influenced reports of stressful experiences. They also took other factors into account, such as alcohol consumption, physical activity level and education.

Bjorntop (2005) attempted to explain the physiological links between stressful experiences and the onset of diabetes. He argues that the psychological reaction to stressors of defeatism or helplessness leads to the activation of hypothalamo-pituitary-adrenal (HPA) axis, leading in turn to various endocrine abnormalities, such as high cortisol and low sex steroid levels, that antagonize the actions of insulin. At the same time, an increase in visceral adiposity (increased girth) is seen, which plays an important role in diabetes by contributing to insulin resistance.

A number of laboratory studies have been conducted to demonstrate the effects of specific stressful situations (for example, arithmetic problem solving, unpleasant interviews) on blood glucose levels, atleast for four hours at a time. However, a major criticism of this approach is that it does not mirror the real world in which individuals with diabetes live.

Other studies have focussed on that real world and have attempted to measure naturally occurring stress. These later studies are not without problems, however, such as, the myriad possibilities for measurement and/or observation, which makes cross-study comparisons difficult. Stress may take the form of day to day hassles, and it may be the major life events (death of a close relative, losing a job) are and added layer of complexity, along with long term chronic difficulties (e.g., providing long-term care for a relative or long-term unemployment).

### **5.Objectives/Research Questions**

- To study the effects of 3 Dimensional healthy lifestyle on the overall sense of well being on the adults suffering from Type 2 diabetes.
- To study the effectiveness of the practice of psychoneurobic spa and Rajyoga meditation in the elimination of stress, anger and anxiety.

### **6. Hypotheses of the Study**

- **Null Hypothesis** : There is no correlation between psychoneurobic spa and reversal of type 2 diabetes.
- **Alternate Hypothesis** : There is a significant relation between psychoneurobic spa and reversal of type 2 diabetes.
- **Null Hypothesis** : There is no relation between Rajyoga meditation and reversal of type 2 diabetes

- **Alternate Hypothesis** : There is a significant relation between Rajyoga meditation and reversal of type 2 diabetes.

## **7.Design of the Study**

Experimental study with control group and study group

### **7.1. Methodology-**

**Step 1**–The proposal was submitted to Ethical committee approval. It was approved by Yoga Samskrutham University & Sigfa Solutions.

**Step 2** – Due to COVID situation complete lockdown was declared, especially Mumbai was following strict rules. Therefore, it was decided to conduct the workshop via online. The process of orientation was started via zoom meetings.

**Step 3** – Those willing/un-willing to undertake the program was divided into study and control group taking care of inclusion and exclusion criteria.

**Step 4** – The 3 Dimensional Program was delivered in 2 batches using all tools/aids of communication.

**Step 5** – 3 months later Rajyoga meditation was introduced followed by Murliclasses everyday & guided meditation in the morning & night

**Step 6** – Every Sunday guest speakers from various fields were introduced thereby motivating the participants to continue with their 3 Dimensional Healthy Lifestyle

**Step 7**- Daily diabetes tracker was given to them for quantification

**Step 8** – Medical and behavioural parameters were recorded

**Step 9** – Results were tabulated and analysed.

## **8. Holistic Approach**

There were Six Modules which was covered :

- a) Healthy lifestyle
- b) Exercise, yoga, pranayama & diet
- c) Stress Management and positive thinking
- d) Practice of psychoneurobic spa
- e) The art of Rajyoga Meditation

- f) Listening to Godly message (Murli) everyday and implementation of the message during the whole day

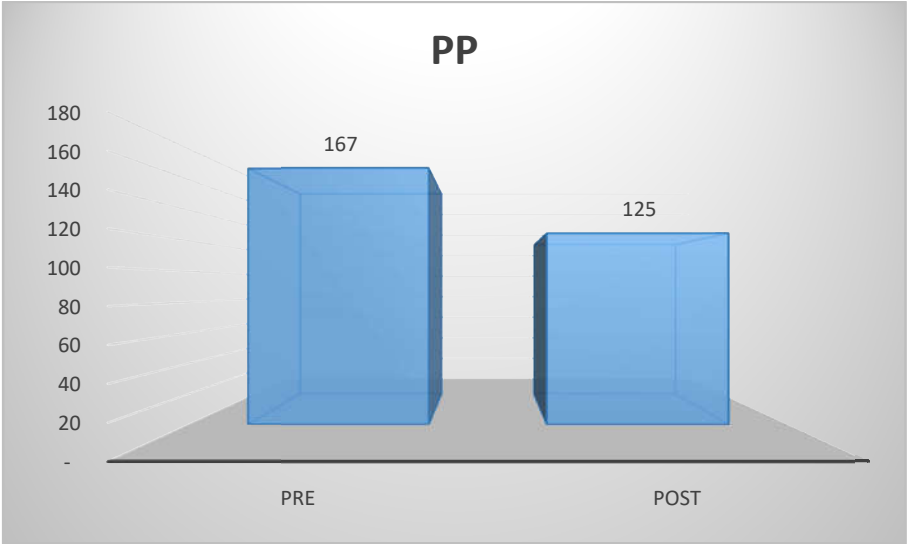
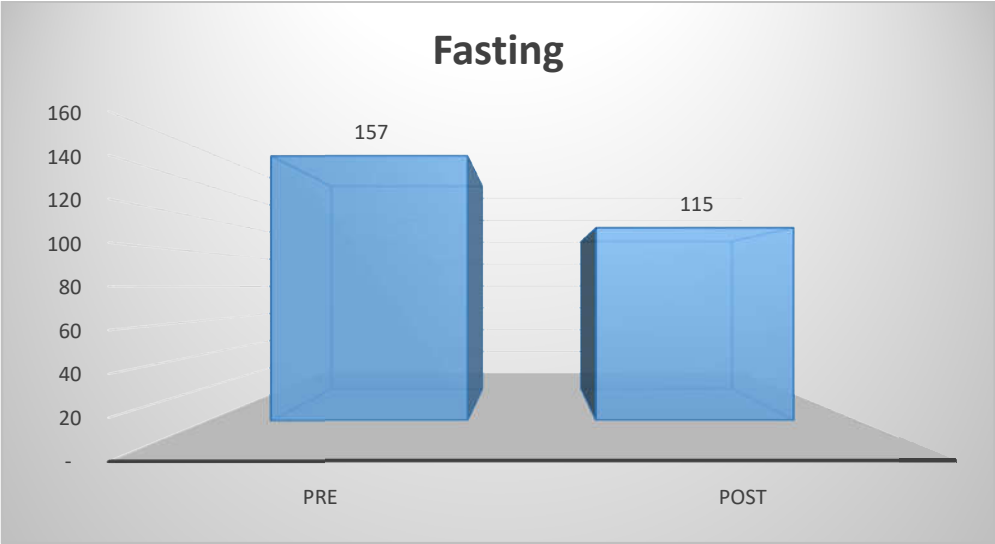
### 9.Database and Instruments for Data Collection

The study was performed on 23 adults in the age group of 55-70 years. The blood glucose test was conducted before the beginning of psychoneurobics practice. Three parameters were taken into consideration, that is, fasting, post prandial and HBA1C count. The first group of psychoneurobics practice was started on 20<sup>th</sup> May and the 2<sup>nd</sup> group was started on 14<sup>th</sup> June. The respondents practiced psychoneurobic spa both morning and evening for 25 minutes. Along with the practice they were also introduced to pure vegetarian low carbohydrate, satwik diet and 15 minutes pranayam in the morning and 50 minutes rigorous workout in the evening. Both the group people sticked to this 3 Dimensional healthy life style for non – stop 2 months. In the third month, they were introduced to Rajyoga meditation and they started listening to Murli (Godly messages). Rajyoga meditaion was also incorporated both in the morning as well as night for 10 minutes each. Murli class was held in the morning. Based on these parameters the respondents were evaluated after 3 months. Result was found out on the basis of Questionnaires, blood test reports, feedback forms, charts, personal interaction with them

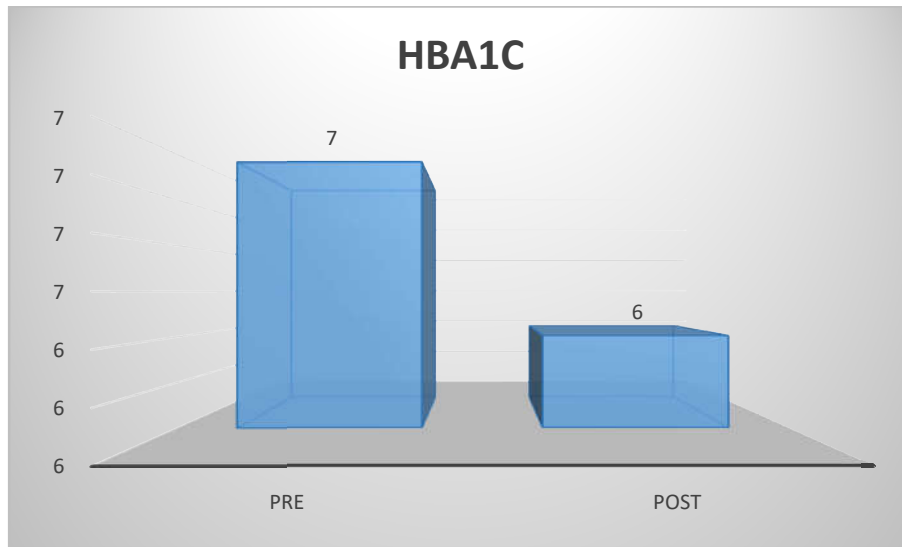
### 10.Observations& Results

**FIGURE 1 :DISTRIBUTION OF DATA BASED ON BLOOD REPORTS**

Tests	Average Report		
	Pre Program	Post Program	Decrease
PP	167	125	43
Fasting	157	115	43
HBA1C	7	6	1







Above figures represent the data collected based on the participants blood reports before and after 3 months of practicing the 3 Dimensional approach.

1. Fasting blood sugar reading
2. Post Prandial
3. HBA1C

**11. Test of Significance**

Chi Square Test was done to test the significance of hypothesis. Test of significance is a formal procedure for comparing observed data with a claim (also called as hypothesis), the truth which is being assessed.

**FIG. 2 CHI SQUARE TEST RESULT SHOWING CORELATION BETWEEN**

- 1. PSYCHONEUROBICS AND REDUCTION IN BLOOD GLUCOSE LEVEL**
- 2. RAJYOGA AND REDUCTION IN BLOOD GLUCOSE LEVEL**

Criteria	A- Best results achieved by subjects who performed PNE & Rajyoga sincerely	B	C- Little to no change in their diabetic reports due to non continuation of PNE & Rajyoga	Total
Attendance PNE (0-10)	10		4	2
				16

Attendance	10	2	0
Rajyoga Meditation (0-10)			12
Total	19	6	2
			28

### **CORRELATION BETWEEN PSYCHONEUROBICS & REDUCTION IN DIABETES**

For Category A, the correlation is 5.61 & for C category the correlation is 1.14. This means that those who performed PNP with full sincerity (A Category) have seen best results ie their Diabetes count reduced significantly. But those who barely completed PNE did not see any results (Cat C)

### **CORRELATION BETWEEN RAJYOGA & REDUCTION IN DIABETES**

For Category A the correlation is 4.04 & for C category the correlation is 0.0072. This means that those who performed Rajyoga with full sincerity (A Category) have seen best results ie their Diabetes count reduced significantly. But those who barely completed Rajyoga did not see any results (Category C).

## **12. RESULT**

This clearly indicates that the null hypotheses is rejected and the alternate hypotheses is accepted.

## **13. Conclusion**

The study findings suggests that it is possible to manage and reverse Type 2 Diabetes by the practice of psychoneurobics exercise. The 3 Dimensional Holistic approach to health appears to be safe and leads to an improved outcome. This mechanism decreases the complications like neuropathy, nephropathy & retinopathy. One of the enrolled participant had the risk of retinopathy as his blood glucose level exceeded 350. He had to get his cataract surgery done, but doctor suggested not to go for surgery as it would lead to many more complications and the chances of losing eye sight was more. It was observed that within 1 month's sincere efforts put on the 3 Dimensional approach, the participant's blood sugar level came to normal and the cataract surgery was successful. It

is possible to manage stress through Psychoneurobics and Rajyoga Meditation Invisible doctor can turn the sadness inside and into happiness forever. In 1970s there were only 3 medicines for diabetes. But now there are 100s of medicines which still is not able to manage the condition. Hence this complimentary therapy with the 3 Dimensional approach would help people to manage and reverse diabetes as well.

#### **14. Limitations of the Study**

1. Indepth study of comorbidities and complications of diabetes could not be considered due to time constraint.

2. Behavioural changes study could be done further to prevent or delay the development of Type 2 Diabetes Milletus for people with high risk

#### **15. Conclusion**

The study finding suggests that Type 2 Diabetes can be managed and even reversed through the 3 Dimensional Approach. Positive lifestyle management may contribute to decreased risk of diabetes and its complications. The enrolled participants showed a lot of interest and enthusiasm in practicing psychoneurobics, Rajyoga meditation, exercise and followed satwik diet. There was an overall sense of well being. Participants expressed their feelings by expressing themselves like anger has come down. They feel more calm and happy. The behaviour changes could not be quantified. But there was an overall sense of well being. Listening to Murli daily and revising it on regular basis also helped to calm their anxiety. And of course regular workout was a great way to throw out the pent up emotions, Participants who followed all the modules could make out the difference. The difference was seen in the blood report and as well as in their behaviour.

Therefore based on this study we may conclude that nutritional management, exercise, psychoneurobics, Rajyoga meditation can contribute to decreased risk of type 2 diabetes milletus. This study provide index for future research complications of diabetes.

#### **16. Acknowledgements**

We are grateful to all the participants who participated in the study inspite of many challenges in their personal front. We also would like to acknowledge Sigfa Solutions, Faridabad and Yoga Samskrutham University, Florida (USA) for the constant encouragement and motivation to pursue this research.

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