JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A Pilot Study on Exploring the Effectiveness of Model of Human Occupation in the Reduction of Stress Among Diabetics

[1]Vinith Dani Jose J. P., [2]Dr. Brajesh Kumar Mishra, [3]Dr. Pramod Kumar Yadav

[1] PHD Scholar, Occupational Therapy Department, Maharaj Vinayak Global University

[2] Professor, Jaipur Occupational Therapy College, Maharaj Vinayak Global University

[3]H.O.D., Jaipur Occupational Therapy College, Maharaj Vinayak Global University

Abstract

Occupational therapy practitioners are knowledgeable about the impact of medical conditions on an individual's day-to-day and long-term functioning, which is critical in a disease requiring self-management 24 hours per day, 7 days per week. The objective of these study is to evaluate the depression, anxiety, and stress levels of both experimental and control groups, to intervene the experimental group with effective model of human occupation modalities and to find out the differences between pre- and post-depression, anxiety and stress levels for both experimental and control groups. The results are showing that post implementing the experiment and control for depression, anxiety, and stress. All these have reduced post implementing the experiment and control.

Keywords: Occupational, Experiment, Control, Depression, Anxiety, Stress, Pilot.

Introduction

Diabetes mellitus is one of the largest healthcare problems worldwide in term of prevalence, cost and physical and psychological burden it places on individual living with the illness. Diabetes is also one of the most challenging of the chronic diseases from a psychosocial and behavioural perspective. There is no cure, diagnosis can occur at any stage of life, and after diagnosis daily treatment is required for the remainder of the lifespan, which may or may not successfully prevent the development of serious long-term complications, such as cardiovascular and kidney diseases. Every person is concerned about health. Many chronic diseases like diabetes, cancer, cardiovascular diseases are affecting the health of the individual. Chronic illness is the main contributors to disability and death. Diabetes mellitus is a serious condition associated with significant morbidity and mortality because of its short and long-term

complications. Diabetes is estimate to cause approximately 41,000 cases of kidney failure, 24,000 cases of blindness and 82,000 amputations yearly. As a chronic condition, diabetes requires lifetime management. This involves a complex daily regimen involving diet, exercise, medication and self-monitoring of blood glucose. It can place considerable psychological and behavioural demands on the individual.

Incidence of Diabetes Mellitus: The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men. The urban population in developing countries is projected to double between 2000 and 2030. The most important demographic change to diabetes prevalence across the world appears to be the increase in the proportion of people >65 years of age.

World Health Organization (WHO) reports show that 32 million people will be diabetes by the year 20002. The International Diabetes Federation (IDF) estimates the total number of diabetic subjects to be around 40.9 million in India and this is further set to rise to 69.9 million by the year 2025. Total prevalence of diabetes, the data from the 2011 National Diabetes Fact Sheet (released Jan. 26, 2011) 25.8 million children and adults in the United States 8.3% of the population have diabetes. Diabetes mellitus is a condition that is extremely serious from both clinical and public health standpoints. Psychological factors can affect the course of medical illnesses. There is some suggestion that the stress or depression itself may lead to hyperglycaemia in diabetics. Anxiety and depression can also affect other conditions including irritable bowel syndrome, headache and skin diseases. Treatment of anxiety and depression may lead to a better medical prognosis and well as a better quality of life. Studies have examined whether stressful events or psychiatric illness might precipitate either Type I (insulin-dependent) or Type II (Non-insulin dependent) diabetes. Unlike other chronic diseases, diabetes mellitus requires from the patient to care for himself. Dietary restrictions, self-administration of hypodermic medication, and urine testing's are part of a ritual that involves the daily participation of the individual as well as his use of good judgment in unusual situations. Since the success or failure of diabetic control rests on the patient's ability to put in practice a multitude of requirements, patients with diabetes

Diabetes mellitus in India: The diabetes mellitus and its complications are the major public health problem. World health organization has projected that the maximum number of diabetes will occur in India. By 2025, the estimated prevalence of diabetes will be more than 58 million in India and among non-communicable diseases; the prevalence of type 2 diabetes is steadily increasing in urban areas. The reason is due to lifestyle changes, rising living standards and steady urban migration. In the world, India is leading with 40 million diabetics. It is projected to increase to about 80 million by 2030. The Indian Medical Council revealed that the prevalence of diabetes mellitus was 10.4% in Tamil Nadu, 8.4% in Maharashtra, 5.3% in Jharkhand and 13.6% in Chandigarh in the year 2011. Maharashtra will have 6 million individuals with diabetes and 9.2 million with pre-diabetes. Tamil Nadu will have 4.8 million with diabetes

and 3.9 million with pre-diabetes. Likewise, Jharkhand will have 0.96 million with diabetes and 1.5 million with pre-diabetes and Chandigarh will have 0.12 million with diabetes and 0.13 million with pre-diabetes. Projections for the whole of India would be 62.4 million people with diabetes and 77.2 million people with prediabetes (Anjana et al, 2011; Gupta et al, 2012; Kaveeshwar and Cornwall, 2014). Among Indian diabetics, the poor glycemic control is the main reason for the development of complications like micro and macrovascular changes. A number of challenges may appear in diabetes care in India. While HbA1C is the gold standard test around the world for insulin initiation and intensification, but is not easily available to a large section of Indian population. In the rural area, the diabetic care facilities and diabetes management are less compared with urban areas. The health benefits of diabetes and its screening methods and diabetes medications are not often available for rural Indian's (Mulcahy et al, 2003; Unnikrishnan et al, 2007; Somannavar et al, 2009; Kumar, 2010; Khalil et al, 2012)

Depression, anxiety and stress can also cause large jumps in blood glucose levels. Panic attacks may resemble hypoglycemic episodes and vice-versa. People respond differently to stressful situations. Given the same subjective level of stress, one diabetic may have a different glucose response from another. Because of this, one should monitor blood glucose more frequently during periods of stress. Therapist is able to plan individualized programs in order to maintain good blood glucose control and achieve optimal weight. Effective counseling ensures both / cardio respiratory and musculoskeletal fitness. This helps people with diabetes improve their quality of life (QOL) and contributes to overall control of blood glucose. The use of alternative therapies, such as yoga can contribute to the achievement of optimal cardio-respiratory health. (Sanjay Kalra, Naresh Kumar, 2007). Diabetes is one of the leading causes of mortality throughout the world. Type 2 diabetes is a chronic disease characterized by a lack of insulin or the ineffective use of insulin by the human body, often associated with lifestyle factors such as a lack of physical activity and obesity. The consequences of long-term hyperglycemia include neurological or vascular complications, which may result in amputation, retinopathy, kidney failure, or other severe complications. Effective strategies for glycemic control in patients with type 2 diabetes include strict compliance to medications, a suitable diet, and regular physical activity. Randomized controlled studies have shown that regular physical activity effectively lowers blood sugar levels in people with type 2 diabetes in the short term and lowers glycated hemoglobin A1c (HbA1c) levels in the long term. Among these physical activities, aerobic physical activities and resistance training are more beneficial. Therefore, the World Health Organization and American College of Sports Medicine (ACSM) suggests that type 2 diabetes patients should maintain at least 150 min of moderate intensity exercise or 90 min of vigorous intensity exercise every week as part of glycemic control.

OBJECTIVES OF THE STUDY

1. To evaluate the depression, anxiety and stress levels of both experimental and control groups.

2. To intervene the experimental group with effective model of human occupation modalities.

3. To find out the differences between pre and post-depression, anxiety and stress levels for both experimental and control groups.

METHODOLOGY

The methodology is the" most crucial for some study as it forms a complete outline of the study conducted. The main significance of any study can be derived from the quality and not from the quantity. Hence it is required to focus on

the adhering and designing a complete method of processing covering the whole research, so as to improve the research quality.

Data collection procedure

3.17 Difficulties faced by the researcher

3.18 Plan for data analysis

Analysis of the obtained data in terms of objectives of the research through inferential as well as descriptive statistics

Percentage and frequencies to analyse the demographic data and scoring the knowledge and attitude of students of nursing. Chi-square is used for the baseline comparison of the sample in both the groups.

't' test is applied for estimating the effect of the program structured.

't' test and ANOVA were applied to determine a link in demographic variables selected as well as scores of knowledge and attitude.

The outcomes were presented in tables and graphs.

3.19 Summary

Methodology (Methods & Procedures)

Research Design:

The present study has two groups, control & experimental with Pre & Posttest, Quasi experimental design.

Pretest: A total 24 in which 12 male and 12 female diabetic patients identifies and conveniently allocate into the experimental and control groups. The depression, anxiety and stress levels of both groups evaluate through DASS21.

Control group: The Pre- depression, anxiety and stress levels evaluate through DASS21.

Experimental group: The Pre- depression, anxiety and stress levels evaluate through DASS21.

Post test: A total of 24 in which 12 male and 12 female diabetic patients both experimental and control groups will be administer the depression, anxiety and stress levels evaluate through DASS21. There will be a significance differences between both Pre and Post.

Control group: There will be no intervention given to control group, only post test Dass21 administer.

Experimental group: The experimental group alone undergoes the model of human occupation intervention (Occupational engagement- Diabetes Self management) for a period of six months. The post depression, anxiety and stress levels evaluate through DASS21.

Setting:

The study plan to conduct in Dr.Jeyasekharan Multispeciality Hospital, Nagercoil, Kanyakumari District.

Sample Size:

The sample size consists of 24 patients 12 experimental and 12 control.

Selection Criteria:

Inclusion Criteria

Exclusion Criteria

Method of sample selection :

Using convenience sampling research design, 24 patients with diabetes and separates in to experimental and control (No intervention) each 12 patients.

Variables:

Dependent Variables

Stress, anxiety & Depression

Independent Variables

Model of human Occupation(Occupational engagement)

Instrument (Scale) :

Depression, Anxiety, Stress Scale (Dass-21)

Intervention Procedure:

The investigator describes the purpose and procedure of the research to the client and obtains consent form.

Demographic data will obtain.

Depression, anxiety, stress scale will administer individually- patient will be ask to read each statement and circle a number 0, 1, 2, or 3 which indicates how much the statement applies to you over the past week. There will be no right or wrong answers. Do not spend too much time on any statement. The investigator solves, who will not understand the correct meaning of DASS-21 English Version without bias. (Within limits).

The intervention MOHO - Occupational engagement / Diabetes Self Management will be done on the experimental group as.., Session duration: 45 minutes, Session frequency: 2 days per week, Intervention duration: 6 months.

MOHO methods for facilitating change: The specific interventions are..,

Peer support educational group

Social group education

Occupational self-help groups

Therapeutic strategies such as,

Validating/Identifying

Giving feedback/ Advising

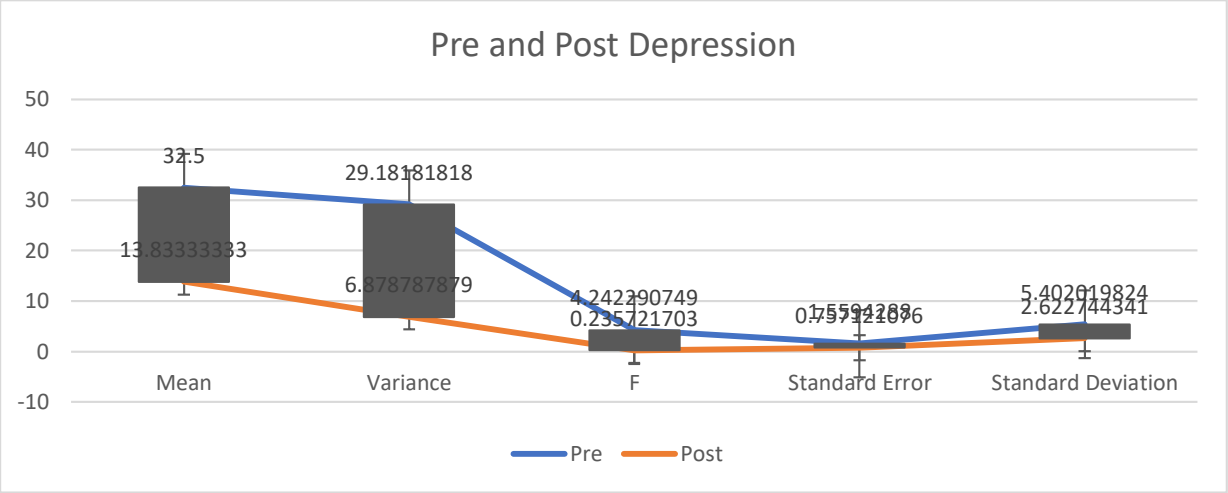
Negotiating / Structuring

Analysis and Interpretation:

Table 1.0 Experimental Pre-Post Depression

Tests	Pre	Post
Mean	32.5	13.83333333
Variance	29.18181818	6.878787879
F	4.242290749	0.235721703
Standard Error	1.5594288	0.757121076
Standard Deviation	5.402019824	2.622744341

Figure 1.0 Experimental Pre-Post Depression

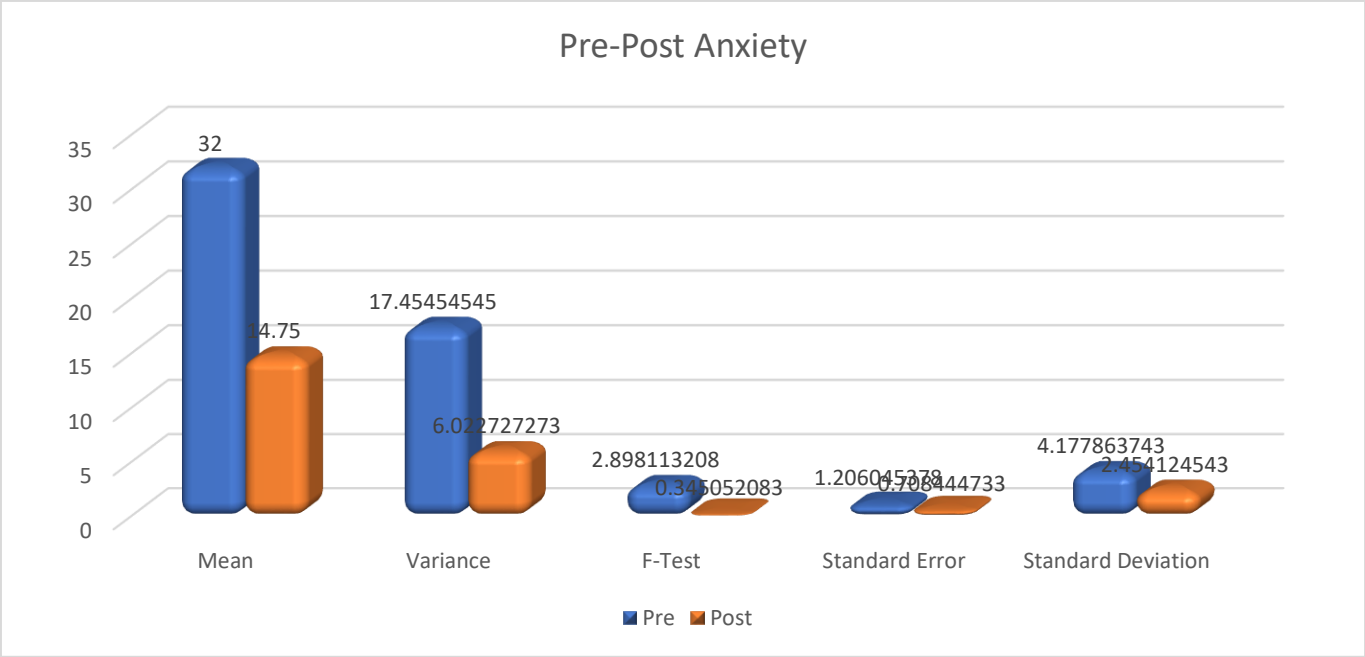


The above table 1.0 and figure 1.0 is showing the experimental pre- and post-depression. It is showing in terms of mean, variance, F, standard error, and standard deviation. The pre experiment the depression is showing more in value, but it has decreased post experiment. It can be seen from the value of mean, variance, F, standard error, and standard deviation. The post experiment the depression has reduced, and it help people in the reduction of depression.

Table2.0 Experimental Pre-Post Anxiety

	Pre	*Post*
Mean	**32**	**14.75**
Variance	**17.45455**	**6.022727**
F-Test	**2.898113**	**0.345052**
Standard Error	**1.206045**	**0.708445**
Standard Deviation	**4.177864**	**2.454125**

Figure2.0 Experimental Pre-Post Anxiety

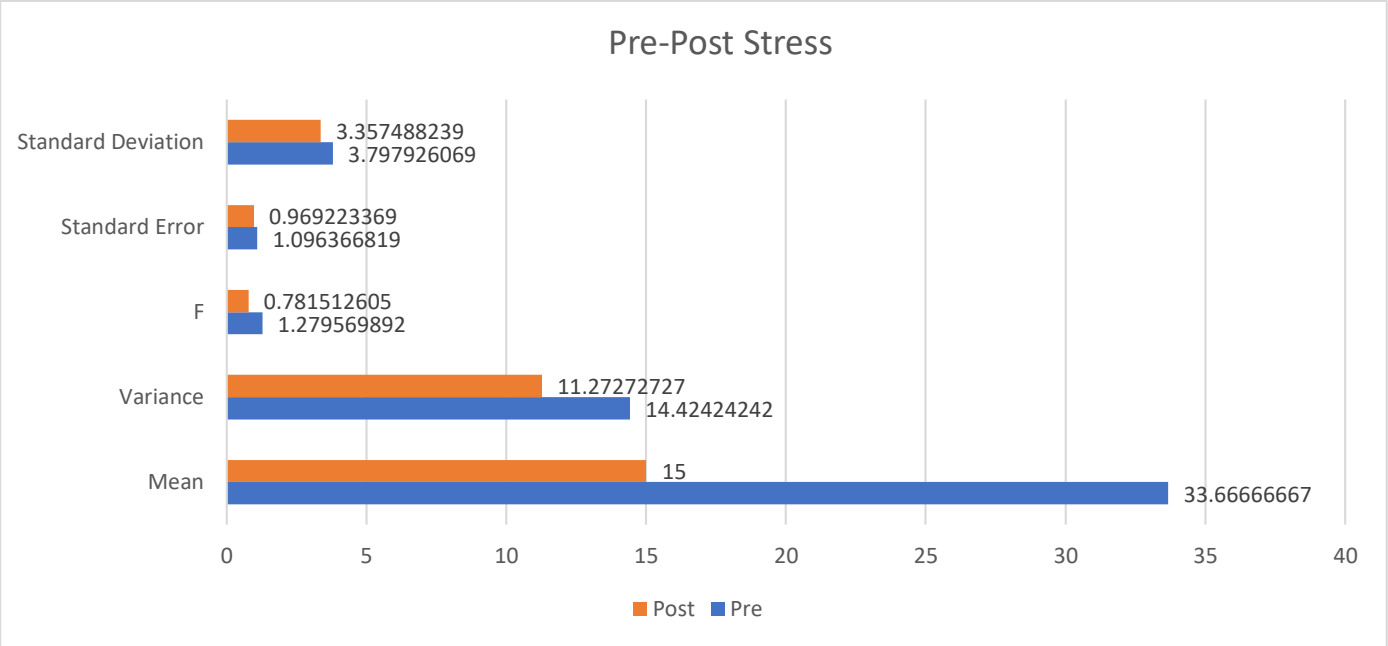


The above table 2.0 and figure 2.0 is showing the pre-post anxiety with the help of the values mean, variance, F, standard error, and standard deviation. The anxiety pre-experiment was high but when the experiment implemented it has seen in that the anxiety has drastically reduced. The post experiment helped the anxiety patient to fight it and recover from it.

Table 3.0 Experimental Pre-Post Stress

	Pre	*Post*
Mean	**33.66667**	**15**
Variance	**14.42424**	**11.27273**
F	**1.27957**	**0.781513**
Standard Error	**1.096367**	**0.969223**
Standard Deviation	**3.797926**	**3.357488**

Figure 3.0 Experimental Pre-Post Stress

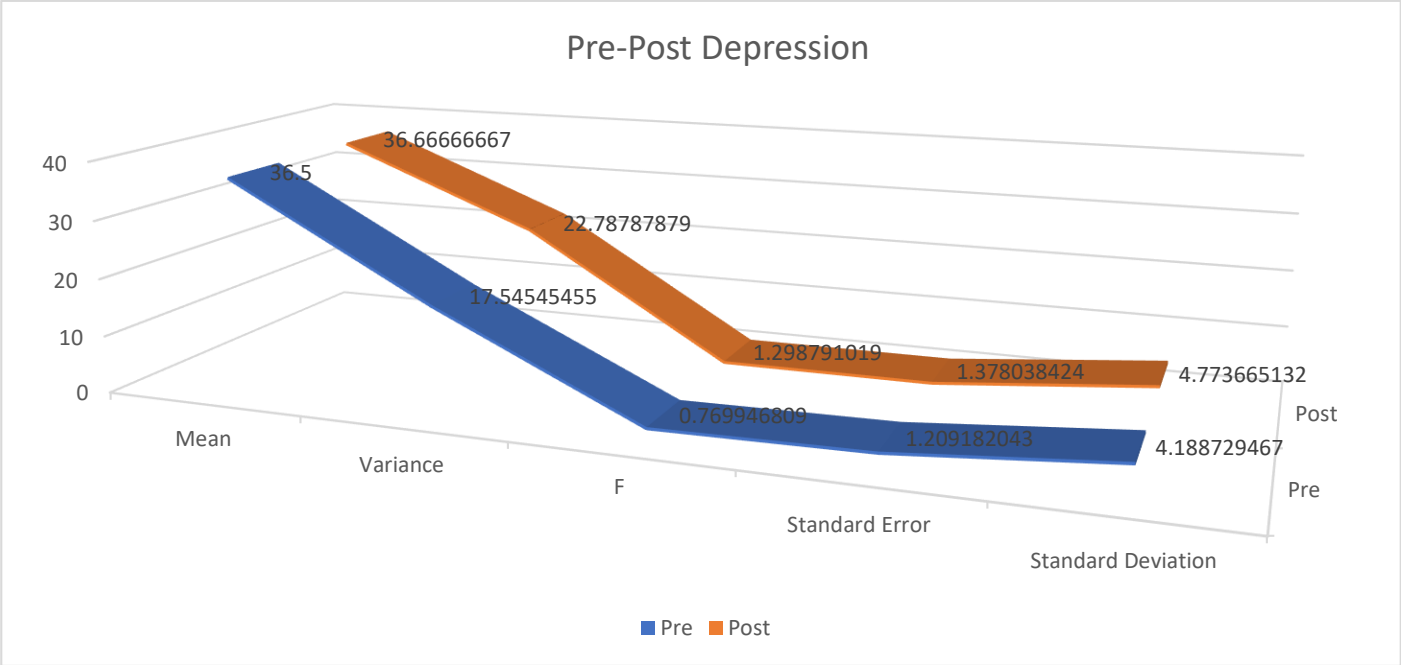


The above table 3.0 and figure 3.0 are showing the effect of pre-post analysis of stress with experiment. The pre-experiment level the stress were high but when implemented the experiment which in results helped to reduced the stress. The post experiment stress has found low according to the values are shown in the above table and figure.

Table 4.0 Control Pre-Post Depression

	Pre	Post
Mean	**36.5**	**36.66666667**
Variance	**17.54545455**	**22.78787879**
F	**0.769946809**	**1.298791019**
Standard Error	**1.209182043**	**1.378038424**
Standard Deviation	**4.188729467**	**4.773665132**

Figure 4.0 Control Pre-Post Depression

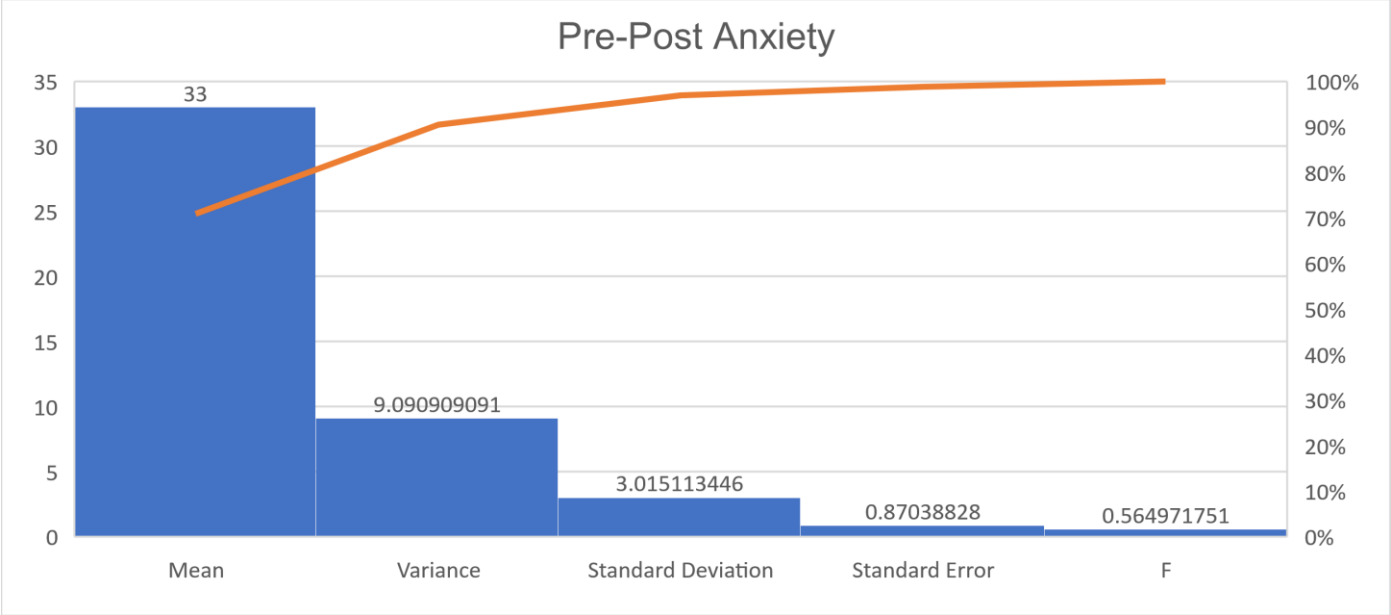


The above table 4.0 and figure 4.0 is showing the control pre- and post-depression. It is showing in terms of mean, variance, F, standard error, and standard deviation. The pre control the depression is showing more in value, but it has decreased post experiment. It can be seen from the value of mean, variance, F, standard error, and standard deviation. The post control the depression has reduced, and it help people in the reduction of depression.

Table 5.0 Control Pre-Post Anxiety

	Pre	Post
Mean	**33**	**36.5**
Variance	**9.090909**	**16.09091**
F	**0.564972**	**1.77**
Standard Error	**0.870388**	**1.157976**
Standard Deviation	**3.015113**	**4.011348**

Figure 5.0 Control Pre-Post Anxiety

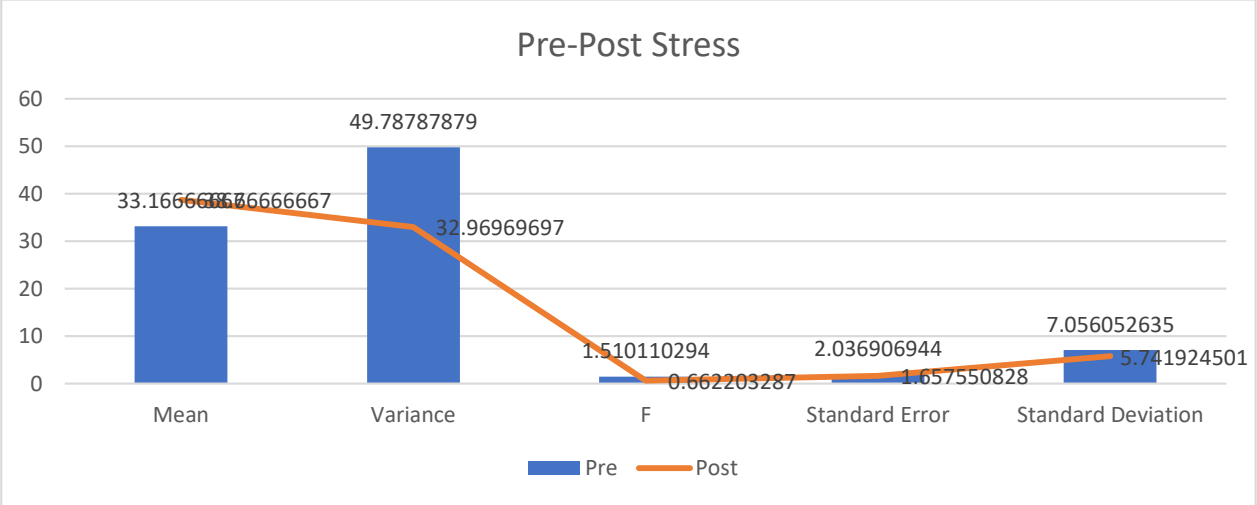


The above table 5.0 and figure 5.0 is showing the pre-post anxiety with the help of the values mean, variance, F, standard error, and standard deviation. The anxiety pre-control was high but when the control implemented it has seen in that the anxiety has drastically reduced. The post control helped the anxiety patient to fight it and recover from it.

Table 6.0 Control Pre-Post Stress

	Pre	Post
Mean	**33.16667**	**38.66667**
Variance	**49.78788**	**32.9697**
F	**1.51011**	**0.662203**
Standard Error	**2.036907**	**1.657551**
Standard Deviation	**7.056053**	**5.741925**

Figure 6.0 Control Pre-Post Stress



The above table 6.0 and figure 6.0 are showing the effect of pre-post analysis of stress with experiment. The pre-experiment level the stress was high but when implemented the experiment which in results helped to reduce the stress. The post experiment stress has found low according to the values are shown in the above table and figure.

Conclusion

People can live long and healthy lives if diabetes is well managed and type 2 diabetes can be prevented with lifestyle changes to diet and exercise to control blood sugar levels (WHO 2016). Within healthcare these is currently managed through medication, health education and follow up, with a focus on the biomedical approach. The purpose of this study was to understand the experience of diabetes self-management and to explore the potential role for occupational therapy. Within this the MOHO was considered as a way of conceptualizing and understanding the complexity of the occupation of DSM with its seven interrelated occupational forms. This has highlighted the complexity of an individual managing DSM in the context of their own lives and the multiple and complex systems that this entails, which goes beyond the biomedical approach. This increases the knowledge base with specific reference to DSM and occupation. This approach could strengthen an occupation based occupational therapy intervention which is different to yet complements current medical practice in DSM. This study, embedded in the experiences of those with diabetes, suggests that there is a role for occupational therapy in DSM, and that occupational therapy has a distinct role through seeing this self-management as an occupation.

References

Global Report on Diabetes, Geneva: World Health Organization 2016; 21-31

Shea L, Owens-Gary M. Diabetes and depression in older women - Double the risk, double the burden. Diab Voice 2009;54: 8–11

Cathy Lloyd. The effects of diabetes on depression: Diab voice 2008; 53(1)23-26

Sanjay Kalra, Bharti Kalra, Naresh Kumar. Prevention and management of diabetes: Diab Voice 2007; 52 (3)

Debra A. Occupational Therapy role with Diabetes Self-management: AOTA Fact sheet 2011.

Youngson, Annabel. Understanding diabetes self-management using the Model of human Occupation. Br J Occup Ther 2019; 82:296-305.American Association of Diabetes Educators. (n.d.) AADE7™Self-care-behaviors. 2010; (4)

Gary Kielhofner G. Model of Human Occupation: Theory and Application 4th Ed. Lippincott Williams and Wilkins 2008.p.51-57.

Renee. R. Taylor, Kielhofner's Model of Human occupation: Theory and Application 5th Ed. Wolters Kluwer 2017.p.199-208.

Thompson M. Occupations habits and routines: perspectives from persons with diabetes. Scand J Occup Ther 2014 (21) 153-160.

John. B, Arden, Lloyd.et.al, Brain Based therapy with adult evidence-based treatment for everyday practice. Wiley; 2008; 69-75.

Shea L, Owens-Gary M, Diabetes and depression on older women-Double the risk double the burden: Diab Voice 2009;54.8-14.

Lee SW, Kielhofner G, Morley M, et.al: Impact of using the Model of Human Occupation: A survey of occupational therapy mental health practitioner's perceptions. Scand J Occup Therp 2012;19(5):450-56

Anne Cronin Mosey- "Psychosocial components of occupational therapy".

Annelid Sepia, Johny Ludvigson., "Psychological stress and risk of diabetes related auto-immunity", Journal of Neuro Immuno modulation, Feb, 2006, Vol-13, Page 5-6.

Cathy Lloyd, "The effects of diabetes on depression", Diabetes voice, March 2008, Vol, 53 (1).