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Effectiveness of Mindfulness on Depression, Anxiety and Stress among Patients withType 2 Diabetes

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ABSTRACT:

Aims and objectives: The study aimed to assess the effectiveness of Mindfulness on depression, anxiety and stress among patients with type 2 diabetes. **Approach and design:** A quantitative approach and randomized control trial design was used. **Samples and Sampling Criteria:** The convenient sampling technique was used to find out eligible sample and then the lottery method of simple random sampling used to classify the samples into experimental & control group. The final samples participated in the intervention were 49 in the experimental group and 49 in the control group. Thus, finally the total samples for the study were 98. The tool was (DASS-42) Depression, Anxiety Stress Scale to assess depression, anxiety and stress in patients with type 2 diabetes. The investigator conducted a client centered and group centered Mindfulness sessions among experimental group. **Results:** Descriptive and inferential statistics were used to find out the effectiveness of Mindfulness among experimental and control group. The comparison of outcome of Mindfulness on depression, anxiety and stress among patients with type 2 diabetes in experimental group which was tested by using paired t test. The Comparison of outcome of Mindfulness on depression, anxiety and stress among patients with type 2 diabetes in experimental group and a wait-list controlled group which was tested by using unpaired t test. According to depression among patients with type 2 diabetes in experimental group mean score was 12.37±3.34 and in a wait-list control group was 15.18±2.61 with mean difference of 2.81 with calculated value t=4.645, df=96, p=0.001 was highly significant. With regard to anxiety among patients with type 2 diabetes in experimental group mean score was 13.47±2.99 and in a wait-list control group was 17.53±2.93 with mean difference of 4.06 with calculated value t=6.778, df=96, p=0.001 was highly significant. Regarding stress among patients with type 2 diabetes in experimental group mean score was 16.0±3.50 and in a wait-list control group was 18.98±2.43 with mean difference of 2.98 with calculated value t=4.891, df=96, p=0.001 was highly significant. **Conclusion**: Significant decrease in anxiety, depression, and stress in the experimental group in the post test was found. However, there were no significant changes in any of the aforesaid measures in the wait list control group.

KEYWORDS: MINDFULNESS, DEPRESSION, ANXIETY, STRESS, PATIENTS WITHTYPE 2 DIABETES

INTRODUCTION:

Diabetes can strike anyone, from any walk of life. Diabetes is now the most prevalent and debilitating disease. It is one of the major causes of disease morbidity and mortality worldwide.[1] It occurs when the body cannot make good use of insulin it produces which leads to raised glucose levels in the blood.[2] Over the long term, high glucose levels in the blood may damage blood vessels and nerves and may cause various physical as well as mental health related problems. People with diabetes need to manage and control their disease to stay healthy. [3]

Global burden of Diabetes:

Diabetes is fast gaining the status of a potential epidemic in India with more than 62 million diabetic individuals currently diagnosed with the disease. In 2000, India (31.7 million) topped the world with the highest number of people with diabetes mellitus followed by China (20.8 million) with the United States (17.7 million) in second and third place respectively. According to Wild et al.[3] the prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with a maximum increase in India[4].

According to International Diabetes Federation (IFD) by 2040, one adult in 10 that is 642 million will have diabetes. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India, while China (42.3 million) and the United States (30.3 million) will also see significant increases in those affected by the disease. India currently faces an uncertain future in relation to the potential burden that diabetes may impose upon the country.[4]

Co morbidity:

There is a well-recognized association between diabetes, depression, anxiety and stress and evidence showed that chronic illnesses usually have co-morbid unrecognized mental health disorders. Although depression, anxiety, tension and stress are most commonly undiagnosed or underestimates among DM patients. Several authors have reported that patients with diabetes are at least twice at risk to suffer from depression, anxiety and stress compared to the general population. Diabetes Mellitus and psychiatric symptoms are two a major global public health problem which is increasing dramatically in developed and developing countries.[5]

A recent meta-analysis of 16 studies had revealed an alarming significant association between depression and increased risk of mortality (odds ratio, OR = 1.5) in patients with diabetes. A study had shown that it is common for both anxiety and depression to be present together in diabetic patients, forming what can be described as anxious depression, which was

identified as a strong predictor of cardiovascular outcomes. Conversely, identifying and treating anxiety and depression can contribute to improved clinical outcomes. [6]

Importance of mindfulness:

Mindfulness is a state of intentional, nonjudgmental focus on the present moment. The mindfulness practice of paying attention to the present moment helps us control the racing, repetitive, and non-productive thoughts that lead to stress.[7] Mindfulness practice reduces activity in the part of your brain called the amygdala. The amygdala is central to switching on your stress response, so effectively, your background level of stress is reduced. Mindfulness offers you the space to think differently about the stress itself. Observing how the increased pressure helps energize you has a positive effect on your body and mind. [8]

Mindfulness assists practitioners in refining awareness through the practice of a nonreactive, non-evaluative, moment to-moment awareness from an intentionally nonjudgmental perspective. This allows both positive and negative thoughts and emotions to pass quickly and can cultivate a greater awareness of the ways thoughts, feelings, and behaviors affect emotional, mental, and physical health. This may also help reduce distractive or ruminative thoughts and assist practitioners in better noticing, understanding, and integrating.[9]

Mindfulness is an important element in the treatment of a number of problems, including: depression, anxiety disorders, stress disorders, mood disorders and obsessive-compulsive disorder. It alleviates suffering associated with stress, anxiety and depression. As a major subject of increasing research interest, 52 papers were published in 2003, rising to 477 by 2012. Nearly 100 randomized controlled trials had been published by early 2014.[10]

NEED FOR THE STUDY

Diabetes mellitus is one of the most common chronic disorders that affect millions of people worldwide with a prevalence that is increasing rapidly globally and at an alarming rate especially in the Middle East and North Africa region. According to the International Diabetes Federation, more than 415 million people have diabetes in the world. India is the diabetes capital of the world. It is estimated that currently there are 40 million with diabetes in India and by 2025 this number will swell to 70 millions. This would mean every fifth diabetic in the world would be an Indian.[11]

A government health survey conducted across 26 states and Union Territories has found that more than a fifth of India's 125-crore population suffers from diabetes. According to the National Family Health Survey-4, whose results were released the overall incidence of diabetes was 20.3 percent. NFHS-4, conducted in 2015-16, recorded data from 6 lakh households, covering 7 lakh women and 1.3 lakh men. Some of the states where the incidence of diabetes was found to be higher than the national average include Goa (33.7 per cent), West Bengal (28.2 per cent), Assam (34.6 per cent) and Odisha (27.2 per cent). States with a higher incidence of hypertension include Punjab (35 per cent), Sikkim (44.8 per cent) and Maharashtra (26 per cent).[12]

Globally, an estimated 43 million diabetics have symptoms of depression. Also, diabetes is associated with anxiety disorders. Being diagnosed with diabetes is a life stressor by itself. It requires a large number of physical and mental accommodations. Depression adds to the burden of managing diabetes. Furthermore, health care utilization and costs increase with the coexistence of diabetes and major depression.[13] There is serious need to address mental health related issues in diabetic client so the investigator felt that mindfulness approach should also be explored for management of mental health related issues.

AIM OF THE STUDY:

The aim of my study is to assess the effectiveness of Mindfulness on depression, anxiety and stress among patients with type 2 diabetes.

OBJECTIVES OF THE STUDY:

1. To assess the level of depression, anxiety and stress among patients with type 2 diabetes in experimental and a wait-list control group.
2. To compare the effectiveness of Mindfulness on depression, anxiety and stress among patients with type 2 diabetes in experimental group.
3. To compare the pre test and post test score of depression, anxiety and stress among patients with type 2 diabetes in a wait-list control group.
4. To compare the effectiveness of Mindfulness on depression, anxiety and stress among patients with type 2 diabetes in experimental and a wait-list control group.

HYPOTHESES:

H1: There will be significant difference before and after implementation of Mindfulness in the mean score of depression, anxiety and stress among patients with type 2 diabetes in the experimental group.

H2: There will be no significant difference between the pre test and post test score of depression, anxiety and stress among patients with type 2 diabetes in a wait-list control group.

H3: There will be significant difference before and after implementation of Mindfulness in the mean score of depression, anxiety and stress among patients with type 2 diabetes in the experimental group compared to a wait-list control group.

VARIABLES OF THE STUDY:

Independent Variable:

- Mindfulness (Mindfulness breathing awareness, Mindfulness body scan, Mindfulness)

Dependent Variable:

- Depression
- Anxiety
- Stress

RESEARCH APPROACH/ RESEARCH DESIGN: Quntitative approach and Randomized Control Trial Design was used.

SETTING OF THE STUDY: The study was conducted at Dhiraj General Hospital, 1360 bedded super-specialty hospital, Vadodara.

TARGET POPULATION: Patients with type 2 diabetes who are attending Dhiraj hospital, Vadodara

SAMPLE/SAMPLE SIZE: 98 patients with type 2 diabetes in the Dhiraj hospital, Vadodara

SAMPLING TECHNIQUE: The samples were selected conveniently and then using lottery method of simple random sampling techniques, they were randomly assigned to either to experimental or control group using computer generated random numbers.

CRITERIA FOR SELECTION OF SAMPLE:

Inclusion criteria-

- ✓ Clients diagnosed as Type II diabetes mellitus.
- ✓ Depression score on Depression, Anxiety and Stress Scale (DASS-42) should be more than and equal to 9
- ✓ Anxiety score on Depression Anxiety and Stress Scale (DASS-42) more than and equal to 7
- ✓ Stress score on Depression, Anxiety and Stress Scale (DASS-42) should be more than and equal to14

Exclusion criteria-

- ✓ Patients who will not be available at the time of data collection
- ✓ Patients below 25 years and above 65 years
- ✓ Patients who are critically ill having co morbidity of other physical or mental illnesses
- ✓ Patients with Gestational diabetes & Type I Diabetes mellitus

TOOLS USED FOR THE STUDY:

Section A- Items on socio-demographic variables

Section B- Items on assessment of depression, anxiety & stress by using depression, anxiety and stress scale (DASS-42)

RESULTS:

SECTION - I

Table 1: Frequency and percentage distribution of the demographic variables of patients in Experimental and a wait-list control group

N=98

Sr. No	Demographic variables	Experimental group (n=49)		Control Group (n=49)		$\chi 2$ value df p value
		f	%	f	%	
1	Age in years					
	a. 25-35	3	6.1	1	2	9.956
	b. 36-45	11	22.4	2	4.1	3
	c. 46-55	9	18.4	17	34.7	0.019*
	d. 56-65	26	53.1	29	59.2	
2	Gender					2.013
	a. Male	30	61.2	23	46.9	1
	b. Female	19	38.8	26	53.1	0.155^{NS}
3	Marital status					
	a. Single	1	2	5	10.2	3.497
	b. Married	41	83.7	40	81.6	2
	c. Widow	7	14.3	4	8.2	0.174^{NS}
	d. Divorced	0	0	0	0	
4	Type of family					4.021
	a. Nuclear	6	12.2	14	38.6	1
	b. Joint	43	87.8	35	71.4	0.044*

5	Education					
	a. Illiterate	11	22.4	7	14.3	2.688
	b. Primary	15	30.6	17	34.7	4
	c. Secondary	11	22.4	8	16.4	0.611^{NS}
	d. Higher secondary	9	18.4	11	22.4	
	e. Graduation	3	6.2	6	12.2	
	f. Post graduation	0	0	0	0	
	g. Medical/paramedical education	0	0	0	0	
6	Occupation					
	a. Unemployed/ Homemaker	18	36.7	24	49	4.497 4
	b. Self employed	16	32.7	11	22.4	0.342^{NS}
	c. Govt employee	0	0	2	4.1	
	d. Farming	11	22.4	10	20.4	
	e. Retired	4	8.2	2	4.1	
7	Monthly income of family					
	a. ≤ 10,000	25	51	21	42.9	1.129
	b. 10,001 - 20,000	19	38.8	23	46.9	3
	c. 20,001 - 30,000	3	6.1	2	4.1	0.770^{NS}
	d. > 30,000	2	4.1	3	6.1	
8	Personal habits					
	a. Smoking	9	18.4	4	8.2	3.352
	b. Alcohol	0	0	1	2	3
	c. Tobacco chewing	7	14.3	6	12.2	0.340^{NS}
	d. Others	33	67.3	38	77.6	
	e. None	0	0	0	0	
9	Duration of diabetes mellitus					
	a. 2-5 years	29	59.2	30	61.3	1.171
	b. 6-9 years	14	28.6	12	24.5	3
	c. 10-13 years	6	12.2	6	12.2	0.759^{NS}
	d. > 14 years	0	0	1	2	

10	Previous source of health information					
	a. Mass media	4	8.2	8	16.3	3.749
	b. Health personnel	34	69.4	34	69.4	3
	c. Family members/ friends	3	6.1	4	8.2	0.289^{NS}
	d. Others	8	16.3	3	6.1	
11	Family history of diabetes					0.169
	a. Present	21	42.9	19	38.8	1
	b. Not present	28	57.1	30	61.2	0.681^{NS}

Table 1 depicts the frequency and percentage distribution of the demographic variables of patients with type 2 diabetes. According to their age in experimental group majority 26(53.1%) were in 56-65 years of age, followed by 11(22.4%) were in 36-45 years of age, 9(18.4%) were in 46-55 years of age and 3(6.1%) were in 25-35 years of age. In a wait-list control group majority 29(59.2%) were in 56-65 years of age, followed by 17(34.7%) were in 46-55 years of age, 2(4.1%) were in 36-45 years of age and 1(2%) were in 25-35 years of age. Regarding gender in experimental group, maximum 30(61.2%) were male patients and 19(38.8%) were female patients. In a wait-list control group, maximum 26(53.1%) were female patients and 23(46.9%) were male patients. As per marital status, in experimental group majority 41(83.7%) were married, 7(14.3%) were widow and 1(2%) were single. In a wait-list control group majority 40(81.6%) were married, 5(10.2%) were single and 4(8.2%) were widow. With regard to type of family, in experimental group maximum 43(87.8%) were living in joint family and 6(12.2%) were living in nuclear family. In a wait-list control group maximum 35(71.4%) were living in joint family and 14(38.6%) were living in nuclear family. According to education, in experimental group majority 15(22.4%) had up to primary education and only 3(6.2%) had graduation. In a wait-list control group majority 17(34.7%) had up to primary education and 6(12.2%) had graduation. As per occupation, in experimental group maximum 18(36.7%) were unemployed or homemaker, 16(32.7%) were self employed, 11(22.4%) were farming, 4(8.2%) were retired. In a wait-list control group maximum 24(49%) were unemployed or homemaker, 11(22.4%) were self employed, 10(20.4%) were farming, 2(4.1%) were retired. Regarding monthly income of family, in experimental group majority 25(51%) had income of less than or equal to Rs 10,000, 19(38/8%) had Rs 10,001-20,000, 3(6.1%) had Rs 20,001-30,000 and 2(4.1%) had above Rs 30,000. In a wait-list control group majority 23(46.9%) had income of Rs

10,001-20,000, 21(42.9%) had income of less than or equal to Rs 10,000, 3(6.1%) had above Rs 30,000 and 2(4.1%) had Rs 20,001-30,000. With regard to personal habits, in experimental group maximum 33(67.3%) had no specific personal habits, 9(18.4%) had habit of smoking and 7(14.3%) had habit of tobacco chewing. In a wait-list control group maximum 38(77.6%) had other habits, 6(12.2%) had habit of tobacco chewing, 4(8.2%) had habit of smoking and 1(2%) had habit of alcohol. According to duration of diabetes mellitus, in experimental group majority 29(59.2%) had for 2-5 years, 14(28.6%) for 6-9 years and 6(12.2%) for 10-13 years. In a wait-list control group majority 30(61.3%) had for 2-5 years, 12(24.5%) for 6-9 years, 6(12.2%) for 10-13 years and 1(2%) had for above 14 years. As per previous source of health information, in experimental group maximum 34(69.4%) had information from health personnel, 8(16.3%) had information from other sources, 4(8.2%) had information from mass media and 3(6.1%) had information from family members and friends. In a wait-list control group maximum 34(69.4%) had information from health personnel, 8(16.3%) had information from mass media, 4(8.2%) had information from family members and friends and 3(6.1%) had information from other sources. With regard to family history of diabetes, in experimental group majority 28(57.1%) had no family history of diabetes and 21(42.9%) had family history of diabetes. In a wait-list control group majority 30(61.2%) had no family history of diabetes and 19(38.8%) had family history of diabetes.

SECTION – II

Table 2: Distribution of pre-test and post-test level of depression among patients with type 2 diabetes in experimental and a wait-list control group.

N=98

Level of depression	Experimental Group (n=49)				A wait-list control group (n=49)			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Normal	0	0	9	18.4	0	0	0	0
Mild	16	32.7	29	59.2	19	38.8	15	30.6
Moderate	22	44.9	10	20.4	28	57.1	34	69.4
Severe	9	18.3	1	2	2	4.1	0	0
Extremely severe	2	4.1	0	0	0	0	0	0

Table 2 depicts the distribution of pre-test and post-test level of depression among patients with

type 2 diabetes revealed that in experimental group, during pre-test majority 22(44.9%) had moderate depression, 16(32.7%) had mild depression, 9(18.3%) had severe depression and 2(4.1%) had extreme depression while in post-test maximum 29(59.2%) had mild depression, 10(20.4%) had moderate depression and 2(4.1%) had severe depression. In a wait-list control group during pre-test maximum 28(57.1%) had moderate depression, 19(38.8%) had mild depression and 2(4.1%) had severe depression where as in post-test maximum 34(69.4%) had moderate depression and 15(30.6%) had mild depression.

Table 3: Distribution of pre-test and post-test level of anxiety among patients with type 2 diabetes in experimental and a wait-list control group.

N=98

Level of anxiety	Experimental Group (n=49)				A wait-list control group (n=49)			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Normal	0	0	1	2	0	0	0	0
Mild	2	4.1	6	12.2	2	4.1	0	0
Moderate	3	6.1	31	63.3	10	20.4	9	18.4
Severe	21	42.9	9	18.4	28	57.1	31	63.2
Extremely severe	23	46.9	2	4.1	9	18.4	9	18.4

Table 3 depicts the distribution of pre-test and post-test level of anxiety among patients with type 2 diabetes showed that in experimental group during pre-test maximum 23(46.9%) had extreme anxiety, 21(42.9%) had severe anxiety, 3(6.1%) had moderate anxiety and 2(4.1%) had mild anxiety where as in post-test majority 31(63.3%) had moderate anxiety, 9(18.4%) had severe anxiety, 6(12.2%) had mild anxiety, 2(4.1%) had extreme anxiety and 1(2%) had no anxiety. In a wait-list control group, during pre-test majority 28(57.1%) had severe anxiety, 10(20.4%) had moderate anxiety, 9(18.4%) had extreme anxiety and 2(4.1%) had mild anxiety while in post-test maximum 31(63.2%) had severe anxiety, 9(18.4%) had moderate anxiety and 9(18.4%) had extreme anxiety.

Table 4: Distribution of pre-test and post-test level of stress among patients with type 2 diabetes in experimental and a wait-list control group.

N=98

Level of stress	Experimental Group (n=49)				A wait-list control group (n=49)			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Normal	3	6.1	15	30.6	3	6.1	1	2
Mild	19	38.8	25	51	22	44.9	24	49
Moderate	24	49	9	18.4	24	49	24	49
Severe	3	6.1	0	0	0	0	0	0
Extremely severe	0	0	0	0	0	0	0	0

Table 4 depicts the distribution of pre-test and post-test level of stress among patients with type 2 diabetes revealed that in experimental group, during pre-test maximum 24(49%) had moderate stress, 19(38.8%) had mild stress, 3(6.1%) had severe stress and 3(6.1%) had no stress while in post-test maximum 25(51%) had mild stress, 15(30.6%) had no stress and 9(18.4%) had moderate stress. In a wait-list control group during pre-test maximum 24(49%) had moderate stress, 22(44.9%) had mild stress, 3(6.1%) had severe stress and 3(6.1%) had no stress while in post-test maximum 24(49%) had moderate stress, 24(49%) had mild stress and 1(2%) had no stress.

SECTION - III

Table 5: Comparison of Effectiveness of Mindfulness on Depression, Anxiety and Stress among Patients with Type 2 Diabetes in experimental group.

N=49

Experimental Group	Pre-test Mean±SD	Post-test Mean±SD	Mean D	t value	df	p value
Depression	17.16±4.89	12.37±3.34	4.79	9.109	48	0.001*
Anxiety	19.41±4.60	13.47±2.99	5.93	10.07	48	0.001*
Stress	19.45±3.96	16.0±3.50	3.44	7.363	48	0.001*

***P<0.05 level of significance NS-Non significance**

Table 5 illustrates that according to depression among patients with type 2 diabetes in pre-test mean was 17.16±4.89 and in post-test was 12.37±3.34 with mean difference of 4.79 with obtained value t=9.109, df=48, p=0.001 was highly significant. Regarding anxiety among patients with type 2 diabetes in pre-test mean was 19.41±4.60 and in post-test was 13.47±2.99 with mean difference of 5.93 with obtained value t=10.07, df=48, p=0.001 was highly significant.As per stress among patients with type 2 diabetes in pre-test mean was 19.45±3.96 and in post-test was 16.0±3.50 with mean difference of 3.44 with obtained value t=7.363, df=48, p=0.001 was highly significant.

Table 6: Comparison of Effectiveness of Mindfulness on Depression, Anxiety and Stress among Patients with Type 2 Diabetes in a wait-list control group.

N=49

Experimental Group	Pre-test Mean±SD	Post-test Mean±SD	Mean D	t value	Df	p value
Depression	15.39±3.61	15.18±2.61	0.20	0.661	48	0.512^{NS}
Anxiety	16.96±3.18	17.53±2.93	0.57	1.731	48	0.135^{NS}
Stress	18.71±2.65	18.98±2.43	0.26	0.889	48	0.379^{NS}

***P<0.05 level of significance NS-Non significance**

Table 6 illustrates that according to depression among patients with type 2 diabetes in pre-test mean was 15.39±3.61 and in post-test was 15.18±2.61 with mean difference of 0.20 with obtained value t=0.661, df=48, p=0.512 was found non significant. Regarding anxiety among patients with type 2 diabetes in pre-test mean was 16.96±3.18 and in post-test was 18.98±2.43 with mean difference of 0.57 with obtained value t=1.731, df=48, p=0.135 was found non significant. As per stress among patients with type 2 diabetes in pre-test mean was 18.71±2.65 and in post-test was 16.0±3.50 with mean difference of 0.26 with obtained value t=0.889, df=48, p=0.379was found non significant.

Table 7: Comparison of Effectiveness of Mindfulness on Depression, Anxiety and Stress among Patients with Type 2 Diabetes in experimental group and a wait-list control group.

N=98

Comparison Post-test	Experimental group Mean±SD	Control group Mean±SD	Mean D	t value	df	p value
Depression	12.37±3.34	15.18±2.61	2.81	4.645	96	0.001*
Anxiety	13.47±2.99	17.53±2.93	4.06	6.778	96	**0.001***
Stress	16.0±3.50	18.98±2.43	2.98	4.891	96	0.001*

***P<0.05 level of significance NS-Non significance**

Table 7 illustrates the Comparison of outcome of multidimensional approach on depression, anxiety, stress and quality of life among patients with type 2 diabetes in experimental group and a wait-list controlled group which was tested by using unpaired t test.

According to depression among patients with type 2 diabetes in experimental group mean score was 12.37±3.34 and in a wait-list control group was 15.18±2.61 with mean difference of 2.81 with calculated value t=4.645, df=96, p=0.001 was highly significant.

With regard to anxiety among patients with type 2 diabetes in experimental group mean score was 13.47±2.99 and in a wait-list control group was 17.53±2.93 with mean difference of 4.06 with calculated value t=6.778, df=96, p=0.001 was highly significant.

Regarding stress among patients with type 2 diabetes in experimental group mean score was 16.0±3.50 and in a wait-list control group was 18.98±2.43 with mean difference of 2.98 with calculated value t=4.891, df=96, p=0.001 was highly significant.

CONCLUSION:

Significant decrease in anxiety, depression, and stress in the experimental group in the post test was found. However, there were no significant changes in any of the aforesaid measures in the wait list control group.

RECOMONDATION:

1) A longitudinal study can be conducted to assess the long term effects of mindfulness interventions on depression, anxiety and stress among patients with type 2 diabets.

2) Similar study can be conducted on a sufficiently large sample to detect meaningful differences in outcomes between the intervention and control groups.

3) In addition to psychological measures, similar study can be conducted to assess diabetes-related outcomes, including glycemic control, medication adherence and diabetes related distress.

4) Meta analysis and systematic reviews can be conducted to assess the long term effects of mindfulness interventions on depression, anxiety and stress among patients with type 2 diabets.

5) Similar studies can be conducted to assess the effects of mindfulness interventions on other chronic medical conditions.

BIBLIOGRAPHY :

Mustapha, W., Hossain, Z. S., & Loughlin, K. O. (2014). Management and Impact of Diabeteson Quality of Life among the Lebanese Community of Sydney: A Quantitative Study. Journal of Diabetes & Metabolism, 5(6), 329. https://doi.org/10.4172/2155-6156.1000329

1. International Diabetes Federation. (n.d.). Care and prevention: improving the quality of life of people with diabetes and those at risk. Retrieved from https://www.idf.org/about-diabetes/what-is-diabetes.html

2. Diabetes Research Institute Foundation. (n.d.). The best hope for the cure. Retrieved from https://www.diabetesresearch.org/what-is-diabetes

3. International Diabetes Federation. (n.d.). Facts & figures. Retrieved from https://idf.org/about-diabetes/facts-figures/

4. Rajendra, P., & Vishwanathan, M. (2021). Epidemiology of type 2 diabetes in India. Indian Journal of Ophthalmology, 69(11), 2932–2938. doi:10.4103/ijo.IJO_1627_21

5. Kaveeshwar S A and Cornwall J. The current state of diabetes mellitus in India. Australasian medical journal. Jan 31 2014; 7(1): 45–48. doi: 10.4066/AMJ.2013.1979

Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3920109/

6. Louise Delagran, Roni Evans. Mindfulness for Stress Reduction.

https://www.takingcharge.csh.umn.edu/mindfulness-stress-reduction

7. Samash Alidina. Nine Ways Mindfulness Reduces Stress. Guided Meditations-Mindful Healthy Mind Healthy Life. July 17. 2019.

https://www.mindful.org/9-ways-mindfulness-reduces-stress/

8. Whitebird RR, Kreitzer MJ, O'Connor PJ. Mindfulness-Based Stress Reduction and Diabetes. Diabetes Spectr. 2009 Sep 21; 22(4): 226–230. doi : 10.2337/diaspect.22.4.226

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2909138/

9. MF Rodrigues, Antonio Egidio Nardi. Mindfulness in mood and anxiety disorders: a review of the literature. Trends Psychiatry Psychother. 39 (3), Jul-Sep 2017 doi: https://doi.org/10.1590/2237-6089-2016-005

10. Kharroubi AT, Darwish HM. Diabetes mellitus: The epidemic of the century. World J Diabetes. 2015 Jun 25;6(6):850-67. doi: 10.4239/wjd.v6.i6.850.

11. Holt, R. I., de Groot, M., & Golden, S. H. (2014). Diabetes and depression. Current Diabetes Reports, 14(6), 491. http://doi:10.1007/s11892-014-0491-3

12. Tan K.C., Chan G.C., Eric H. etall.Depression, anxiety and stress among patients with diabetes in primary care: A cross-sectional study.Malaysian Family Physician: The Official Journal of the Academy of Family Physician of Malasiya 2015; 10(2): 9–21. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4826577/