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A Comparative Study of Anxiety on Diabetic and Non- diabetic individuals in Covid-19 pandemic Situation

Ms. Dixsha Prabhakar Zende
Dept. of Psychology, Tuljaram Chaturchand College of Arts, Science and Commerce Baramati, Dist- Pune (Maharashtra).
Dr. Dhame Ganesh Murlidhar
Asst. Prof. Dept. of Psychology, Tuljaram Chaturchand College of Arts, Science and Commerce Baramati, Dist- Pune (Maharashtra).

Abstract:
The present research study aimed to compare anxiety between diabetic and non-diabetic individuals in covid-19 pandemic. The total sample size was 60 which was selected purposively from Baramati city. Each group consisted of 30 individuals (N=30 Type II diabetics; N=30 non-diabetics). State Trait Anxiety Inventory for adults constructed by Charles D Spielberger used for data collection. Between group research design was used.Tha data was analysed by using independent sample 't' test. The result revealed anxiety was significantly higher in diabetics patient as compared to non-diabetics.
Key Words: Covid 19, anxiety,diabetic patients, non-diabetic individuals.

In December 2019, a cluster of atypical cases of pneumonia was reported in Wuhan, China, which was later designated as Corona virus disease 2019 (COVID-19) by the World Health Organization (WHO) on 11 Feb 2020. The causative virus, SARS-CoV-2, was identified as a novel strain of corona viruses that shares 79% genetic similarity with SARS-CoV from the 2003 SARS outbreak on 11 Mar 2020, the WHO declared the outbreak a global pandemic. The rapidly evolving situation has drastically altered people's lives, as well as multiple aspects of the global, public, and private economy. Declines in tourism, aviation, agriculture, and the finance industry owing to the COVID-19 outbreak are reported as massive reductions in both supply and demand aspects of the economy were mandated by governments internationally.

As world is facing the pandemic due to COVID-19 (Corona Virus Disease 2019) which has high infection rate and associated morbidity & mortality. Thus, several measures are being taken to prevent its spread. And a major step taken by government of India in order to prevent its spread is temporary lock down of country along with all precautions advised like social distancing and social isolation Severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), the virus that causes Covid-19 There is a bidirectional relationship between Covid-19 and diabetes. Diabetes is associated with an increased risk of severe Covid-19. Severe metabolic complications of preexisting diabetes, for which exceptionally high doses of insulin are warranted, have been observed in patients with Covid-19. These manifestations of diabetes pose challenges in clinical management and suggest a complex path physiology of Covid-19–related diabetes. While diabetes is typically a manageable disease, it can create added stress. People with diabetes may have concerns related to regularly counting carbohydrates, measuring insulin levels, and thinking about long term health. However, for some people with diabetes, those concerns become more intense and result in anxiety.

People with diabetes may become anxious over a variety of things. These can include monitoring their glucose levels, weight and diet. They may also worry about short-term health complications, such as hypoglycemia, as well as long-term effects. People with diabetic are at higher risk for certain health complications, Such as heart disease, kidney disease, and stroke. Knowing this can lead to further anxiety. There is also some evidence that anxiety may play a role in causing diabetes. One study found that symptoms of anxiety and depression are significant risk factors for developing type 2 diabetes.

What is diabetes?

Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar (glucose) levels that result from defects in insulin secretion or its action or both. Diabetes mellitus commonly referred to as diabetes (as it will be in this article) was first identified as a disease associated with 'sweet urine' and excessive muscle loss in the ancient world elevated levels of blood glucose (hyperglycemia) lead to spillage of glucose into the urine hence the term sweet urine. Normally, blood glucose levels are tightly controlled by insulin a hormone produced by the pancreas insulin lowers the blood glucose level. When the blood glucose elevates (for example after eating food) insulin is released from the pancreas or normalize the glucose level. In patients with diabetes the absence or insufficient production of insulin causes hyperglycemia diabetes is a chronic medical condition meaning that although it can be controlled it lasts a lifetime. These are two major type of diabetes called type 1 and 2.

Type 1 diabetes: - Type 1 diabetes was also formerly called insulin dependent diabetes mellitus (IDDM) or juvenile cost diabetes mellitus. In type 1 diabetes the pancreas undergoes an autoimmune attack by the body itself and is rendered incapable of making in insulin. Abnormal antibodies have been found in the bloods that are part of the body's immune system. The patient with type 1 diabetes must rely on insulin medication for survival.

In autoimmune diseases such as type 1 diabetes the immune system mistakenly manufactures antibodies and inflammatory cells that are directed against and cause damage to patients own body tissues. In person with type 1 diabetes, the beta cells of the pancreas which are responsible for insulin production are attacked by the misdirected immune system. It is believed that the tendency to develop abnormal antibodies in type 1 diabetes is in part genetically inherited though the details are not fully understood.

Type 2 diabetes: - Type 2 diabetes was also previously referred to as non-insulin dependent diabetes mellitus (NIDDM) or adult onset diabetes mellitus (ADDM). In type 2 diabetes patients can still produce insulin but do so relatively inadequately for their body's needs particularly in the face of insulin resistance as discussed above. In many cases this actually means the pancreas produces larger than normal quantities of insulin. A major feature of type 2 diabetes is a lack of sensitivity to insulin by the cells of the body particularly fat and muscle cells.

While it is said that 2 diabetes occurs mostly in individuals over 30 years old and the incidence increases with age we are seeing an alarming number of patients with type 2 diabetes who are barely in their ten years most of these cases are a direct result of poor eating habits higher body weight and lack of exercise.

Anxiety: Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. (APA)

State Anxiety: - State anxiety can be defined as a transitory emotional state consisting of feelings of apprehension, nervousness, and physiological sequel such as an increased heart rate or respiration (Spielberg 1979). From: International Encyclopedia of the Social & Behavioral Sciences, 2001.

Trait anxiety: Trait anxiety refers to the stable tendency to attend to, experience, and report negative emotions such as fears, worries, and anxiety across many situations. This is part of the personality dimension of neuroticism versus emotional stability. Trait anxiety also manifests by repeated concerns about and reporting of body symptoms. Trait anxiety is characterized by a stable perception of environmental stimuli (events, others' statements) as threatening.

Review of Literature:

Dr. Krishna J. Vaghela (2016) studied the anxiety level among diabetic and non-diabetic people. The result reported that statistically significant difference observed among diabetic and non-diabetic male participants in relation to anxiety their level. As regarding to female participants with diabetic and non -diabetic also significantly differ on their scores on anxiety. In conclusion the anxiety level was significantly higher in diabetic people both male as well as female.

D. Fisher, E. B. Delamater, Alan M. Bertelson, Amy D. Kirkley, Betty G. **(** 2016 **)** Reviews the psychological factors of diabetes with respect to etiology, psychological impact and adjustment to the disease, family dynamics, and psychological programs to aid diabetes management. Stress appears to influence metabolism both directly and indirectly. Little evidence exists for a consistent pattern of traits that typifies diabetes or poor management of the disease.

LCécileDantzer, JoelSwendsen,SylvieMaurice-Tison,RogerSalamon. (2003) A critically exam one the recent literature on anxiety and depression in juvenile diabetes is presented. The major conclusions of this review support the notion of a general association of psychological disorders with juvenile diabetes. However, while anxiety and depression appear to play an important and complex role in determining adaptation to the disease, their relationship to metabolic control does not yet appear clear. Additional prospective and controlled studies as well as multivariate models of chronic disease are now necessary to more fully understand the etiology and impact of these disorders in the adolescent population.

Ali Sabri Radeef , Ghassak Ghazi (2017) determine the prevalence and severity of depression, anxiety and stress among diabetic patients with periodontitis and to assess the association of emotional disturbances with the severity of periodontitis. The prevalence and severity of depressive, anxiety and stress symptoms (DAS) were assessed among those patients by using the self-rating Malay version of the Depression Anxiety and Stress Scale (DASS-21). Diabetic patients had higher rates of depression 27.7%, anxiety 50% and stress 34.8% compared to the non-diabetic group rate of 11.4%, 25.3% and 6.8% respectively. More diabetic patients showed clinically significant DAS than the non-diabetic group indicating more severe emotional disturbances. The research concluded that Managing diabetic patients need to be more comprehensive by focusing on the psychological as well as the physical wellbeing of the patients leading to more efficient treatment of diabetes and its complications.

S.V. MADHU, Md (2015) In this study of mental health among diabetic women living in New Delhi, India, researcher found that high levels of anxiety disorder symptoms were common, affecting more than 25% of the total sample. Although women's depression and anxiety symptoms were patterned somewhat similarly, there were some important differences. For example, anxiety symptoms were significantly more widespread than depression symptoms across the entire sample of diabetic women. Also, high anxiety symptom levels were more common among recently diagnosed diabetic women than among diabetic women diagnosed longer in the past, a trend that was not present for the depression data. These results suggest that it might be appropriate to time anxiety screening, treatment, and prevention differently than depression interventions for people with chronic diseases.

Hamza Maqsood, Hassan Abdullah Shakeel, Ali Raza Khan, Basit Ali, Syed Asfand Yar Shah (2018) The study showed a high prevalence of anxiety levels in insulin users as compared to non-insulin users. Certain symptoms like anxious mood, tension, fears, and depressed mood, cardiovascular and gastrointestinal symptoms appeared with mild anxiety levels while other symptoms like insomnia, somatic symptoms, and autonomic symptoms, respiratory and genitourinary symptoms appeared with high severity levels. The presence of risk factors for anxiety among patients of diabetes predicts a causal relationship and deserves attention from clinicians.

Yatan pal Singh (Department of Psychiatry, Lady Harding Medical College and Associated Hospitals, New Delhi, India), Rajesh Sagar (Department of Psychiatry, All India Institute of Medical Sciences (AIIMS), New Delhi, India) (2011) Research has established the relation between diabetes and depression. Both diabetes and anxiety/depression are independently associated with increased morbidity and mortality.

Objectives of the Study:

1. To study the state - trait anxiety level of diabetic patients.
2. To study the state - trait anxiety level of non-diabetic patients.
3. To compare state - trait anxiety level on diabetic and non- diabetic individuals in covid 19 pandemic Situation.

Hypotheses:

I. There will be significant difference in the level of Strait Anxiety in diabetic patients and non - diabetic.
II. There will be significant difference in the level of Trait Anxiety in diabetic patients and non - diabetic.

Statement of the Problem: To study the comparison of anxiety between diabetic and non-diabetic individuals in covid-19 pandemic situation.

Research Variables:

1) Independent variables : Diabetic & non-diabetic.
2) Dependent Variable:

I) Level of state Anxiety
II) Level of trait Anxiety

Operational Definition:

Anxiety: - Anxiety could be defined in dictionary terms as "state of being uneasy, apprehensive, or worried." An operational definition of the term could include observable measures such as sweating palms (observable as sweat

gland activity), increased heart rate (observable with heartbeat recording), dilated pupils, and other observable physiological changes. It could also be a self-rating scale (1 to 7) or a paper and pencil questionnaire.

State Anxiety: - State anxiety can be defined as transitory emotional state consisting of feelings of apprehension, nervousness, and physiological sequel such as increased heart rate or respiration (Spielberger 1979).

Trait anxiety: - refers to the stable tendency to attend to, experience, and report negative emotions such as fears, worries, and anxiety across many situations. This is part of the personality dimension of neuroticism versus emotional stability.

Anxiety disorder: - Anxiety disorders are a group of mental disorders characterized by significant feelings of anxiety and fear. Anxiety is worry about future events. These feelings may cause physical symptoms, such as increased heart rate and shakiness.

Sample: The sample for the present study was drawn from Baramati City.The sample chosen for the present study consist of 60. Type II diabetics 30 and non-diabetics 30. The purposive and incidental sampling method was used in the data collection.

Research Design: Between group design was used for the present study.

Data Collection:

For these researches study participants were selected from different hospital in Baramati city area. Out of these patients divided into 30 diabetic and 30 non-diabetic patients. During the data collection process, I used paper pencil method. I also gave an instruction regarding how to solve the test including filling up the initial and primary information (e.g. Name, age, gender, marital status etc.). I also maintained the record on medical history and the diet plan of diabetic patients, along with their daily routine and how they coped up with pandemic their exercise routine and so on. .

Tool Used for Study:

State Trait Anxiety Inventory: - State Trait Anxiety Inventory for adults constructed by Charles D Spielberger (1968, 1977). The state trait anxiety inventory (STAI) has been used extensively in research and clinical practice it comprises separate self-report scales for measuring state and trait anxiety. The s-anxiety scale (STAI from Y-1) consists of 20 statements that evaluate how respondents feel right now at this moment. The anxiety scale (STAI-Y-2) consist of 20 statements that asses how people generally feel. STAI-Y-S Anxiety and T-Anxiety scales are printed on opposite sides of a single page test form.

All items are rated on a 4-point scale (e.g., from “Almost Never” to “Almost Always”). Higher scores indicate greater anxiety.Internal consistency coefficients for the scale have ranged from .86 to .95; test-retest reliability coefficients have ranged from .65 to .75 over a 2-month interval (Spielberger et al., 1983). Test-retest coefficients for this measure in the present study ranged from .69 to .89. Considerable evidence attests to the construct and concurrent validity of the scale (Spielberger, 1989).

Result and Discussion:

There are two types of sample of equal size; DIABETIC AND NON-DIABETIC individuals for the analysis of data, the result of the test tabulated are along with their description. The hypotheses were tested and the outcome is discussed based on the result.

Table 1 shows the Mean, S.D. and on State and trait anxiety towards diabetic and non diabetic individuals.

Variables	N	Min.(score)	Max.(score)	Mean(M)	SD
State anxiety	60	22	78	45.41	11.31
Trait anxiety	60	32	80	48.18	9.36

TABLE NO 1 indicates that overall score for diabetic and non-diabetic individuals on state and trait anxiety inventory. For STAI (State anxiety Mean =45.41, SD=11.31) and (Trait anxiety Mean= 48.18, SD=9.36)

Table 2 shows Diabetic and non-diabetic individuals on anxiety level

Variables		N	Mean	SD	SEM
STATE ANXIETY	DIABETIC	30	51.23	9.56	1.74
	NON-DIABETIC	30	39.60	9.95	1.81
TRAIT ANXIETY	DIABETIC	30	52.03	9.73	1.77
	NON-DIABETIC	30	44.33	7.28	1.32

TABLE NO.2 Indicates that the Mean and SD of STATE ANXIETY for Diabetic individuals are M=51.23 and SD= 9.56 respectively and STATE ANXIETY of Non-diabetic individuals are (Mean=39.60, SD=9.95) the standard error of measurement of state anxiety for diabetics are SEM=1.74 and for non-diabetics are SEM=1.81
The table also indicates Mean and SD of TRAIT ANXIETY of diabetic individuals that is (Mean=52.03, SD=9.73) and that of Non-diabetic individuals are (Mean=44.33, SD=7.28).And standard error of measurement of trait anxiety for diabetic individuals are SEM=1.77 and non-diabetic individuals SEM=1.32

TABLE NO: 3

Variables	Group	N	't'	df	Sig.
State	DIABETICS	30	4.61	58	.000
	NON-DIABETICS	30			
Trait	DIABETIES	30	3.46	58	.001
	NON-DIABETICS	30			

Table no 3 indicates that the't' value for state anxiety for diabetic individuals t=4.61 and of trait anxiety for diabetic is t = 3.46. The 't' value for state anxiety for non-diabetic individuals t=4.61 and of trait anxiety for non-diabetic is t = 3.46.
The hypotheses are statistically significant and accepted. The research was based on empirical findings and of theoretical background. The present research findings are similar in line with previous research as Dr. Krishna J. Vaghela (2016) reported that statistically significant difference observed among diabetic and non-diabetic male participants in relation to anxiety their level. Ali Sabri , Ghassak Ghazi (2017) Diabetic patients had higher rates of depression 27.7%, anxiety 50% and stress 34.8% compared to the non-diabetic group rate of 11.4%, 25.3% and 6.8% respectively.

Conclusion: It is concluded from the result that There is significant difference in the level of Strait Anxiety in diabetic patients and non - diabetic.
Diabetic patients are high on Trait Anxiety as compared to non - diabetic.

Suggestions:
1. The study should be done on young diabetic patients and young non diabetic individuals as broad sample.
2. Comparison between males and females also can be done using similar variables.
3. Comparison between diabetic and non-diabetic can be done by using different variables such as depression, personality and adjustment.

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