

Level of Stress among Diabetes Mellitus Patients

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ABSTRACT

Background: In particular, stress can have influence on glycemic control in different ways, especially in some “stress reactive” individuals (Riazi et al 2004). Diabetes itself is an important cause of stress in these patients. In fact, this disease involves life style changes, diet, frequent medical examinations, drugs, serious complications. **Objectives:** 1. To assess stress among diabetic patients both male and female working in sedentary and non sedentary jobs. 2. To examine the difference if any between patients practicing exercise and non practicing exercises and both type 1 and type 2 categories. **Sample:** The sample for the present study consists of 400 diabetic patients who attending for treatment in and around Tirupati city were selected for the present study. **Results:** The male and female patients found to be different in the experience of stress. The study also reveals that there are differences between patients of sedentary and non sedentary jobs with regard to their stress and. Study also indicates that there are differences between patients with exercises and without exercises with regard to their stress.

Keywords: Level of stress, Diabetic patients, Gender, Occupation, Exercise pattern

Stress is present in human's life at any time and its influence on human life is undoubtedly multi-dimensional. Stress triggers different physical and mental reactions in women and men with diabetes. So in this paper we wanted to determine the impact of stress on patients with diabetes. Diabetes is a disorder of glucose metabolism caused by a lack of the pancreatic hormone insulin, which results in the accumulation of sugar in the bloodstream (hyperglycemia) and the appearance of sugar in the urine. Symptoms include thirst, fatigue, weight loss, and excessive urination. The failure to metabolize glucose leads to the breakdown of fats in the body as an alternative source of energy; this process disturbs the acid-base balance in the body and results in the accumulation of ketones in the blood (ketosis) which, if untreated, can lead to convulsions, coma, and death. There are two main categories of the disease: Type 1, or insulin-dependent diabetes mellitus (IDDM) and Type 2, non-insulin-dependent diabetes mellitus (NIDDM). In Type 1 diabetes, which begins in childhood or adolescence, genetic factors and

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autoimmune processes damage the insulin-producing (beta) cells in the pancreas, so that patients depend on insulin injections for their survival. Type 2, also called ‘mature onset diabetes’, generally appears after the age of 40 and also has a hereditary component; Type 2 diabetics usually retain some beta cell function but show insulin resistance, often exacerbated by obesity. In the initial stages of the disease, Type 2 diabetes may be treatable with a combination of diet and exercise alone; in more severe or advanced cases, oral hypoglycemic and, eventually, insulin injections may be required. There is no evidence that stress causes diabetes. However, stress may sometimes unmask diabetes, by causing blood glucose levels to rise (Kahn and Weir, 1996). The body gears up to take action in response to stress. This preparation is called the fight-or-flight response (ADA, 2007). Repeated stress may lead to failing rheostat phenomenon of hypothalamus leading to less efficient hormonal control through feed-back mechanisms (Dilman,1986). In people who have diabetes, the fight-or-flight response does not work well. Insulin is not always able to let the extra energy into the cells, so glucose piles up in the blood (ADA, 2007). Making things worse, many sources of stress are not short-term threats. For example, it can take many months to recover from surgery. Stress hormones that are designed to deal with short-term danger stay turned on for a long time. As a result, long-term stress can cause long-term high blood sugar levels. Many long-term sources of stress are mental.

In particular, stress can have an influence on glycemic control in different ways, especially in some “stress reactive” individuals (RIAZI *et al...*2004). Diabetes itself is an important cause of stress in these patients. In fact, this disease involves life style changes, diet, frequent medical examinations, drugs, serious complications. All these components affect the patient. Changes in lifestyle including stoppage of smoking, diet and learning to manage injections may all contribute in addition to the worry regarding chronic illness (Davis *et al.*, 1999).

METHODOLOGY

Design

This study was a quantitative study .It employed a purposive sampling method. It was completed in the hospitals of Andhra Pradesh.

Participants

A total of 400 clients (200 males and 200 females) participated in this study. All of them are diabetic patients in that 100 male and 100 female with type 1 diabetes and 100 male and 100 female with type 2 diabetes. The samples are taken in the random selection from the Endocrine department and Diabetic clinics from selected hospitals.

Materials

Stress questionnaire: This study was used to check stress questionnaire (Dr. Terry looker & Dr Olga Gregson. A book of stress wise, 1994) was used to measure stress in diabetic clients, it

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consists of 25 questions and evaluation will be done on 4 levels (low, moderate, high and very high).

Procedure

Data were collected by using Purposive sampling method. The questionnaire i.e check stress is based on self report questionnaire. The reason for choosing this design is that the design enabled the researcher to generalize from sample to discover the stress in diabetic patients. The written request has kept and permission granted to meet the patients attending various diabetic clinics and hospitals. Total of 1000 patients were attending the hospital and clinics out of them 400 patients responded positively, Hence the sample for the study is 400. SPSS software was used for the statistical analysis of the data.

RESULTS

Data was collected on stress from the diabetic patients and subjected to appropriate statistical techniques. The data was analyzed by using descriptive statistic and t-test. The results obtained are presented in the following tables.

Table 1 shows the mean, SD , SEM and ‘t’ value for the scores on stress in male & female

	Gender	N	Mean	Std. Deviation	Std. Error Mean	‘t’ value
Level of Stress	male	201	2.82	.511	.036	1.860 NS
	female	199	2.72	.481	.034	

Table 1 shows the mean, standard deviation , standard error of mean and t-value for scores on stress obtained by male and female diabetic patients. The test was conducted to observe any difference if existence between this two regarding stress. The table shows no significant difference between male and female members (Mean =2.82 and 2.72 respectively and t=1.860 non significant at 0.05 level)

Table 2 shows the mean, SD , SEM and ‘t’ value for the scores on stress obtained by the employees with sedentary and non-sedentary job

	Type of Occupation	N	Mean	Std. Deviation	Std. Error Mean	‘t’ value
Level of Stress	Sedentary	250	2.69	.463	.029	4.127**
	non sedentary	150	2.90	.528	.043	

*****significant at 0.01 level***

Further table 2 shows mean, standard deviation ,standard error of mean and t-value for scores on stress obtained by sedentary and non sedentary employees the obtain t-value of 4.127 was found to be significant at 0.01 level between sedentary and non sedentary employees, it shows that non sedentary employees experiencing more stress (M=2.90 then compare to employees with

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sedentary job M=2.69). The study conducted by Aikens JE.1997 revealed that extremely non sedentary (heavy workers) may strengthen life stress-glycemia associations in NIDDM.

Table 3 shows the mean, SD, SEM and 't' value for the scores on stress with Type A & Type B Diabetes

	Diabetes type	N	Mean	Std. Deviation	Std. Error Mean	't' value
level of stress	type A	200	2.97	.400	.028	8.768**
	type B	200	2.57	.506	.036	

***significant at 0.01 level*

Further table 3 shows mean, standard deviation, standard error of mean and t-value for scores on stress obtained by type A and type B diabetic patients the obtain t-value of 8.768 was found to be significant at 0.01 level between type A and type B diabetic patients, it shows that type A diabetic patients experiencing more stress (M=2.97 then compare to type B diabetic patients M=2.57). The study conducted by Clin Chim Acta 2002 revealed that insulin dependent diabetic patients had more stress compare to non insulin dependent diabetic patients.

Table 4 shows the mean, SD, SEM and 't' value for the scores on stress Obtained by diabetic patients with exercises and without exercises

Level of stress	N	Mean	Std. Deviation	Std. Error Mean	t' value
Exercises	237	2.70	.466	.030	3.203**
Without exercises	163	2.87	.527	.041	

***significant at 0.01 level*

Further table 4 shows mean, standard deviation, standard error of mean and t-value for scores on stress obtained by diabetic patients based on exercises pattern. With or without exercises the obtain t-value of 3.203 was found to be significant at 0.01 level between exercises pattern of diabetic patients, it shows that who are not doing exercises regularly has more stress (M=2.87 compare to who are doing exercises regularly M=2.70). The health Harvard.edu 2011 clearly explains that exercises will decreases stress directly.

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Conflict of Interests: The author declared no conflict of interests.

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