



CODEN [USA]: IAJPBB

ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.1473070>

Available online at: <http://www.iajps.com>

Research Article

### A CASE-CONTROL STUDY TO ASSESS THE DIABETES MELLITUS OF TYPE-II AND ISOLATE DIFFERENT PSYCHOSOCIAL ELEMENTS

<sup>1</sup>Dr. Mehwish Mushtaq, <sup>2</sup>Dr. Usama Bin Saeed, <sup>3</sup>Dr. Maryam Zuryab

<sup>1</sup>Gujranwala Medical College Gujranwala

<sup>2</sup>Services Hospital Lahore

<sup>3</sup>Riphah University Islamabad

**Abstract:**

**Objective:** Purpose of this research was to assess the Diabetes Mellitus of type-II and isolate different psychosocial elements which make link with it.

**Study Design:** Carried out case-control study.

**Place and Duration of Study:** Carried out this research study at Medical wards and Diabetic unit of Services Hospital, Lahore. Completed the study in the time duration of 06 months from July to December, 2012.

**Method:** Carried out Study on a population-based case-control with case to control ratio 1:1. In the study conscripted 100 subjects out of which are 50 cases and 50 controls having age more than 35 years. After taking approval made the selection from patients coming to Mayo Hospital Lahore as per criteria laid down in Hospital. Collected the Data after having interviews according to pretested questionnaire compiled it and analyzed through IBM SPSS software version 21.

**Results:** Amongst the selected patients 67% were men and 33% were women. Out of these selected cases for study purpose 70% are in the age group of 35 to 50 years, 96% were married and 36% were uneducated. Found the mean age of patients as 49.24, noted standard anomaly as 10.915. In bivariate scrutiny, Diabetes Mellitus type-2 was establish impressively connected with (Anxiety) OR: 5.348, 95% CI: 2.151-13.298, (Depression) OR: 5.063, 95% CI: 1.703-15.050, (High Fat Diet) OR: 2.471, 95% CI: 1.100-5.547, (Sedentary lifestyle) OR: 4.529, 95% CI: 1.952-10.508, and (Psychological Stress) was OR: 4.529, 95% CI: 1.952-10.508. Although, in multivariate scrutiny while all other risk aspects were controlling, (Anxiety) OR: 6.066, 95% CI: 1.918-19.191, (High fat diet) OR: 3.648, 95% CI: 1.265-10.522, (Overeating) OR: 3.196, 95% CI: 1.127-9.064 and psychological stress OR: 3.071, 95% CI: 1.151-8.188 were observed considerable.

**Conclusion:** In our research we revealed that the type-II Diabetes Mellitus was suggestively linked with Overeating, High fat diet intake, Psychological and Anxiety.

**Key words:** Type-II diabetes mellitus, anxiety, overeating, psychosocial, psychological stress, determinants and high fat diet.

**Corresponding author:**

**Dr. Mehwish Mushtaq,**  
Gujranwala Medical College,  
Gujranwala

QR code



Please cite this article in press Mehwish Mushtaq et al., A Case-Control Study to Assess the Diabetes Mellitus of Type-II and Isolate Different Psychosocial Elements., Indo Am. J. P. Sci, 2018; 05(10).

**INTRODUCTION:**

In this research aimed was to find out the psychological elements of Diabetes Mellitus type-2 at public sector hospital in Adult patients. Diabetes mellitus type-2 is an abdominal disorder that is categorized by the glucose of high blood in the context of insulin struggle and deficiency of relative insulin. [1] It revealed In 2010 that there were about 284 million people with diabetes type-II which are making diabetes cases about 90%. [2] In the world Pakistan is at seventh highest number of diabetics. [3] The analysis of works showed that psychological pressure [4,5] is an inclining cause in expansion of type-II diabetes. Increasing age [6], Fatness [7, 8] Inactiveness Lifestyle [9] and genetic bases [10, 11] were considered in diabetes and found to play role. Some other studies exposed anxiety [12, 13] and depression [14] were main sponsors. Smoldering [15-20] increases the risk and recognized that used smoke [21] was also a reason. Extreme overtime, perhaps due to over promise to work had been stated to be related with 4-fold greater risk of type-II diabetes [22]. It has revealed in study of Diabetes Mellitus that Upset Sleep [23] and Unfriendliness [24] labeled as risk issues. Noticed that persons who had momentous hard life activities during the last five years had a 1.6 fold increased risk compared to those persons who had not momentous hard life activities [25]. Also noticed that prolonged Intoxication [26], Lack of exercise [27], and small weight at the time of birth [28, 29] and Before Time Birth [30]. Examine that the change in life-style in moderating countries had increased the load of Diabetes mellitus-2. The increase in Diabetes Mellitus had produced chronic impediments leading to increased morbidity and mortality [31to36]. The Diabetes pandemic had impact to increase the burden on health system, health resources and health care providers. The anticipation stratagems, awareness movements about the encouragements of Diabetes Mellitus type-2 and modification in lifestyle could upgrade the health of public in the high risk in particular groups and in general in the country.

**METHODOLOGY:**

This research was based on case-control to identify different psychological elements with Diabetes Mellitus type-2 in different patients while visiting Mayo Hospital Lahore. While studying the selected population was divided into two different groups. The study was comprised both men and women,

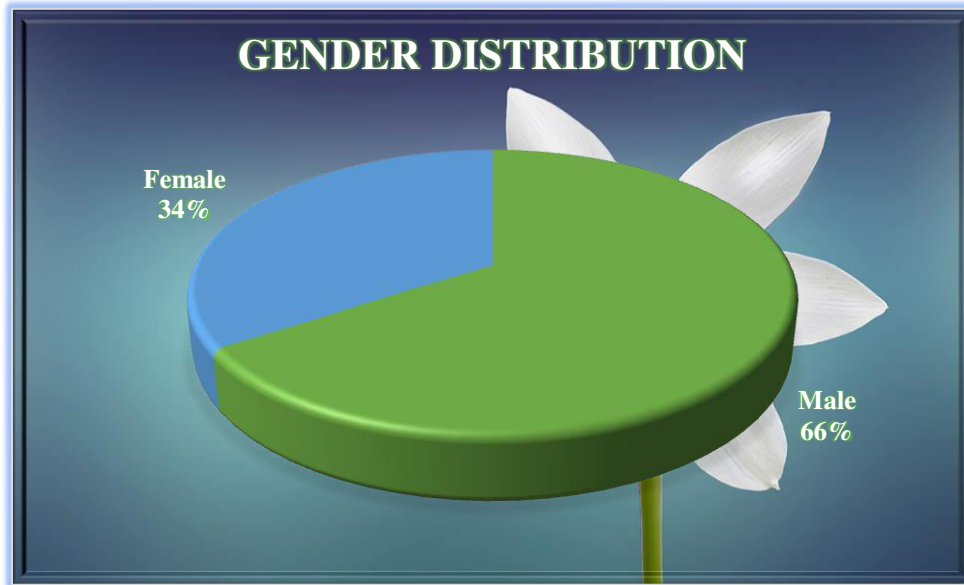
which was having age above 34 years. The population which was selected for study was divided into two groups. Out of which one group was contained of identified of type-II Diabetes Mellitus in Medical Units and Diabetic Clinic of Mayo Hospital as per laid down procedures for blood sugar levels. Those patients were also involved which were on oral dealing for Diabetes Mellitus. Omitted those patients from the study which was having difficulties of Diabetes Mellitus or using insulin or refused. The second group contained 50 individuals who were well controls and their sugar levels were normal. The suitable sampling method was used to enlist study rule as well as cases. Approval was also taken from all the nominated subjects. Evidence regarding the study subjects was kept in personal. While collecting the data all ethical and social consideration were in mind while interviews were conducted as per closed ended questionnaire. In interviews the questionnaires were comprised socio-demographic gender, marital status, qualification, name, age, occupation, contact information, address and family income. The needy fickle was Diabetes Mellitus type-II and self-governing fickle were anxiety, junk food intake, overweight, high fat diet, intoxication, despair, upset sleep, less exercise, before time birth, less at the time of birth, inactive lifestyle, extra eating, type A temperament, emotional tension, fatness, active and passive smoking. Scrutiny and entry of data was complete by analytical software IBM SPSS version 20. After narrate the anthropology features using percentages and frequency tables. To find the arithmetical consequential link of the fickle, the vicar ship examination and used chi square test. The disquiet was measured and binary logistic atavism was used to compute odds ratio and 95 % self-reliance interims to display arithmetical important link between independent and dependent fickle.

**RESULTS:**

The study included total 100 subjects out which 67% were men and 33% were women. Amid cases men were 64%. The majority cases were having age 35 to 50 years (70%) and uneducated (36%). The control group maximum subjects concern to men 70%, in between the age of 35 to 50 years 52% and uneducated were 24%. Therefore, both control and case groups congruent for gender and age. During study mean age of subjects found 49.20 ordinary deflection 10.815 and variation 118.214. See figure-1

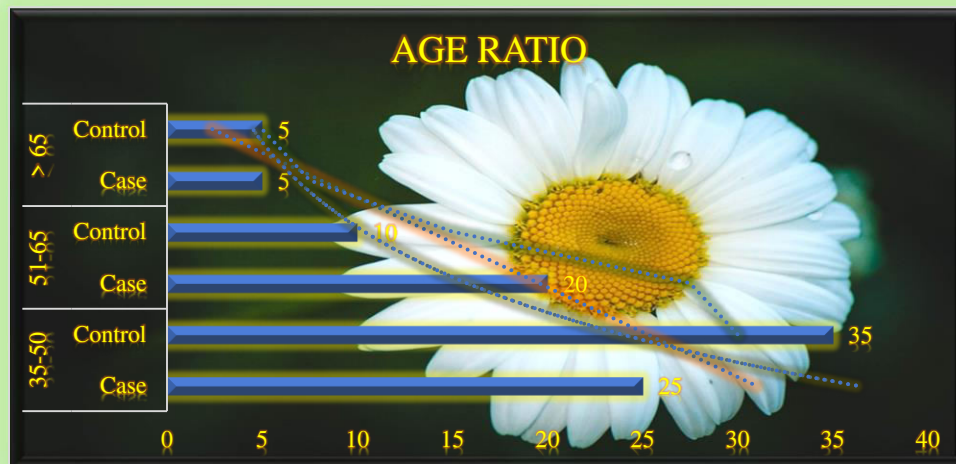
**Table No 1: Gender Distribution**

Variables	Male	Female
Frequency	67	35
Percentage (%)	67 %	35 %



**Table No 2: Age Ratio**

Age (Years)		Percentage (%)
35-50	Case	25
	Control	35
51-65	Case	20
	Control	10
> 65	Case	05
	Control	05



During the institution scrutiny it was revealed that Diabetes Mellitus type-II was pointedly linked with Anxiety [OR:

5.248, 94.9% CI: 2.141 - 13.288] Mental state [OR: 5.065, 94.95% CI: 1.693 - 15.060], diet with High fat, [OR: 2.481, 94.9% CI: 1.103 - 5.546] Inactive Life style [OR: 4.530, 94.9% CI: 1.953 -10.509] and Mental Stress [OR: 4.530, 94.9% CI: 1.953 - 10.507]. While, Intoxication, upset sleep, junk food, less exercise, heavyweight and Fatness, before time birth and less weight at the time of birth, active and inactive Smoking and Type-A character were not establish important statistically. Details are shown at below in Table 3.

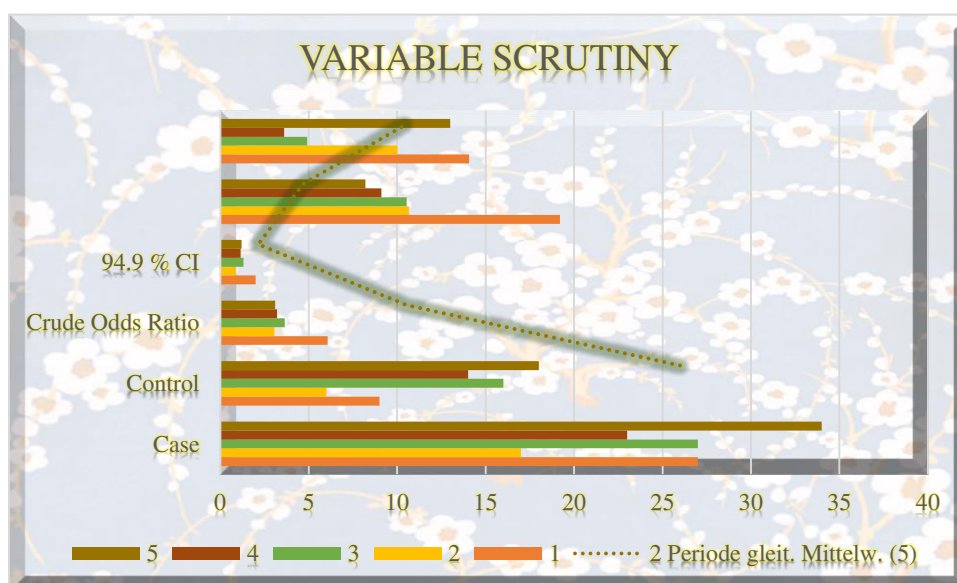
**Table No 3: Bivariate Scrutiny**

No	Psychosocial Elements	Diabetes Mellitus Type-II		Bivariate Scrutiny			Chi-Square Value
		Case n=50	Control n=50	Crude Odds Ratio	94.9 % CI		
					Lower	Upper	
1	Intoxication	3	2	1.432	0.245	9.587	0.211
2	Anxiety	27	9	5.248	2.141	13.288	14.063
3	Mental state	18	15	5.065	1.693	15.060	9.543
4	Upset sleep	16	10	1.882	0.756	4.690	1.871
5	Diet with High Fat	28	17	2.481	1.103	5.546	4.889
6	Junk Food	15	19	0.700	0.303	1.608	0.712
7	Less Exercise	39	32	2.63	0.840	5.103	3.501
8	Heavyweight and Fatness	19	15	1.724	0.745	4.002	1.621
9	Before time Birth & Less Weight at Birth	3	1	0.503	0.423	1.625	1.016
10	Overeating	23	14	2.246	1.005	5.203	3.603
11	Inactive life style	35	17	4.530	1.653	10.509	12.981
12	Active Smoking	11	13	0.803	0.307	2.050	0.244
13	Inactive Smoking	15	22	0.558	0.255	1.245	2.245
14	Mental Stress	36	18	4.530	1.953	10.507	13.003
15	Type-A character	23	21	1.155	0.520	2.432	0.141

Used the variable logistical relapse model to control the possible confusing result. Therefore, noticed that there were some alterations in between the adjusted odds-ratio and crude odds-ratio. Also noticed that after governing for all the causes, studied the toughest statistically momentous cooperation showed by Mental Stress [OR: 3.101, 94.9% CI: 1.201 - 8.201], Surplus eating [OR: 3.201, 94.9% CI: 1.141 - 9.104], Anxiety [OR: 6.070, 94.9% CI: 2.003 - 19.201] and diet with High fat [OR: 3.650, 94.9% CI: 1.305 - 10.544]. Table below show the details.

**Table No 2: Variable Scrutiny**

No	Psychosocial Elements	Diabetes Mellitus Type-II		Variable Scrutiny			Chi-Square Value
		Case n=50	Control n=50	Crude Odds Ratio	94.9 % CI		
					Lower	Upper	
1	Anxiety	27	9	6.070	2.003	19.201	14.064
2	Mental state	17	6	3.050	0.870	10.665	10.002
3	Diet with High Fat	27	16	3.650	1.305	10.544	4.901
4	Surplus eating	23	14	3.201	1.141	9.104	3.602
5	Mental Stress	34	18	3.101	1.201	8.201	13.002



### DISCUSSION:

During study regarding type-II Diabetes Mellitus, revealed that psychological elements may vary from one population to other population. Causes which founded ominously linked in the study were diet with high fats, excessive eating, mental stress and anxiety. In 2007 engum had experienced anxiety as a risk cause for the growth of diabetes, collected data from a great Norwegian potential population-based study [n=37, 291]. Noticed that both misery and standard anxiety were related with an enlarged risk for the growth of type-II diabetes at the 10 years follow up [OR: 1.6, 94.9% CI: 1.4 – 1.9]13. In the study anxiety was establish an important disposing determinative. In 2008 Mezuk et al were capable to contain a total of 14 studies in which explored misery as a risk element for diabetes, signifying [6,816] occasion cases. [12] In meta analytic review, risk for occasion diabetes was 65% higher in miserable members than to non-miserable members [OR: 1.65,

94.9% CI: 1.36 – 1.87]. However, outcomes for miserly, which were obtained in our study were not in accordance with earlier studies. Different likely studies have verified the hypothesis that common sensitive tension connected with an increased risk for the growth of type II diabetes [Rod et al., 2008] [OR; 2.5; 94.9% CI; 1.3 - 4.7] [5]. Our study was done on the Japanese community-based and revealed that the relation amongst observed mental pressure and the onset of diabetes were examined [Kato et al., 2008] [OR; 1.37, 94.9% CI; 1.14-1.67] between male and [OR; 1.23, 94.5% CI; 0.99-1.152] among female [4]. While studying revealed that psychological pressure was statistically significant. Director of the centers for Nano medicine, Jamey D Marth, Ph.D. has discovered a passageway that associate diets to a structure for molecular events responsible for the onset and severity of diabetes [37]. Existing researches presented that other causes related with growth of the infection were fatness, inactive



lifestyle, upset sleep, active smoking, passive smoking, no regular exercise, type-A personality, rubbish food, before time birth and low weight at the time of birth [17-37]. Therefore, the alertness should be formed about the danger elements of deadly disease and change in lifestyle should comprise the improved behavior in public about stoppage of risk elements of Diabetes Mellitus.

### CONCLUSION:

According to resultant statistics of the current study revealed that the following elements linked with Diabetes Mellitus Type-2, diet with high fats, Overeating, mental stress and Anxiety.

### REFERENCES:

1. Cotran RS, Kumar V, Abbas A, Robbins S L, Fausto N. Cotran and Robbins Pathologic Basis of Disease. 7th ed. Philadelphia: Saunders; 2006:1194–1195.
2. Textbook of endocrinology by Williams, 12th ed. Philadelphia: Saunders /Elsevier. 2010:1371–1435.
3. The Express tribune {internet} Karachi. 2011 May 5 {cited 2012 July 20} Presented from: <http://tribune.com.pk/story/162251/pakistan-has-seventh-highest-number-of-diabetics-in-the-world/>
4. Noda M, Kato M Inoue M, Tsugane S, Kadowaki T. Mental issues, coffee and risk of diabetes mellitus between teen-aged Japanese: a population-based eventual study in the JPHC study cohort. *Endocr J* 2009; 56[3]:459-468.
5. Schnohr P, Kristensen T, Rod N, Prescott E, Grønbaek M. Supposed pressure as a risk element for alterations in health performance and cardiac risk sketch: a longitudinal study. *J Intern Med* 2009; 266 [5]:467-475.
6. Vokonas P, Rosner B, Weiss S, Cassano P. Fatness and body fat circulation in relation to the occurrence of non-insulin- needy diabetes mellitus: an eventual group study of men in the normative aged study. *Am J Epidemiol* 1992; 136: 1474–86.
7. McCance D, Narayan K, Rate of weight gain, Hanson R, weight variation, and occurrence of NIDDM. *Diabetes* 1995; 45: 261–66.
8. Liu S, Williamson D, Ford E. Weight alteration and diabetes occurrence: results from a national cohort of US grown-ups. *Am J Epidemiol* 1997; 145: 214–22.
9. Graham A, Frank B, Joann E, Walter C, Tricia Y. TV Watching and other Inactive Performances in relative to risk of obesity and type-II DIABETES Mellitus in Female. *Jama*. 2003; 289 [14]:1785-1791.
10. Vaag A, Ohm K, Beck N, Poulsen P. Heritability of type-2 [non-insulin needy) Diabetes Mellitus and strange glucose patience – a population - based alike study. *Diabetologia* 1999; 42 [2]:139-145.
11. Anja F, Carola c, Agneta E, Eriksson J. Later Metabolic flaws in people at enlarged hazards for Non-Insulin needy DIABETES Mellitus. *NEngl J Med* 1989; 321: [337-343].
12. Albrecht S, Eaton WW, Golden SH, Mezuk B. Misery and Type-II Diabetes over the lifecycle. *Diabetes Care* 2007; 31: [2383-2390].
13. Engum A. The part of misery and Anxiety in start of Diabetes in a huge population -based study. *J. Psychosom Res* 2007; 62: [31-38].
14. Beekman A, Twisk J, Snoek F, Heine R, Pouter F, Knol M. Misery as a risk element for the start of Type-II2 diabetes: a meta- examination. *Diabetologia* 2006; 49: [837-845].
15. Madsbad S and Christiansen E. Diabetes Mellitus and smoking. *Neth J. Med* 1996; 48 [4]:150-62.
16. Goldbourt. U, Medalie. J Herman. J, Papier. C. Main elements in the growth of Diabetes Mellitus in 10,000 male. *Arch Intern. Med* 1975; 135: [811–17].
17. Carman. W, Lamphier. D, Butler. W, Ostrander. L. Diabetes Mellitus in Michigan, tecumseh: occurrence, incidence, and related situations. *Am. Epidemiol* 1982; 116: [971–80].
18. Zimmet. P, Balkau. B, Raper. L, King. H. Elements linked with the growth of Diabetes in the Micronesian people of Nauru. *Am J. Epidemiol* 1985; 122: [594–605].
19. Stampfer .M, Rimm. E, Manson. J. Smoking and the risk of Diabetes in Female. *Am. J community Healthiness* 1993; 83: [211–14].
20. Colditz. G, Chan. J, Rimm. E, Willett. W, Stampfer. M. Potential study of Smoking, whiskey use, and risk of Diabetes in Male. *BMJ* 1995; 310: [555–59].
21. Used smoke related to type. ii Diabetes and Obesity {Internet} {unknown place} 2012 July 08 {quoted 2012 July 19} Existing
22. From: <http://www.diabetescare.net>
23. Araki S, Kawakami N, Shimizu H, Ishibashi H, Takatsuka N. Overtime, psycho-social work situations, and incidence of noninsulin needy Diabetes Mellitus in Japanese Male. *J. Epidemiol Public Health* 1999; 53: [359-363].
24. Strazzullo. P, Cappuccio. FP, Miller. MA, D. Elia. LD. Amount and feature of sleep and occurrence of Type-II Diabetes: a methodical review and meta-enquiry. *Diabetes Care* 2010; 33: [414-420].
25. Aggression & urine norepinephrine cooperate to

- forecast insulin opposition: A normative aged study. *Psychoses Med* 2006; 68: [718-726].
26. Bouter. L, Grootenhuis. P, Vries. H, Heine. R, Mooy. J. Main worrying life occasions in relation to Prevalence of hidden Type-II2 Diabetes. *The Horn Education. Care of Diabetes* 2009; 23: [197-201].
  27. Irving. H, Baliunas. D, Patra. J, Taylor. B, Mohapatra. U, Roerecke. M Whiskey as a risk element for Type.II Diabetes: In organized analysis and meta-study. *Care of Diabetes* 2009; 32 [11]: [2123-2132].
  28. Gavin. JR, Heath. GW, Holloszy. JO, Hagberg. JM. Effects of exercised and no exercised on glucose patience and insulin compassion. *Bulletin of Applied Structure*; 55 [2]: [512-517].
  29. Roumain. J, Lindsay RS, Hanson RL, Dabelea D, Knowler WC. Type 2 diabetes and low birth weight: the role of paternal inheritance in the association of low birth weight and diabetes. *Diabetes* 2000; 49 [3]: [445-449].
  30. Phillips DI. Birth weight and the future development of diabetes. A review of the evidence. *Diabetes Care*. 1998 Aug; 21(2):150-5.
  31. Hofman PL, Fiona R, Wndy EJ, Craig J, David BK. Premature Birth and later insulin Resistance. *NEJM* 2004; 351: 2179-2186.
  32. Basit A, Hydrie MZ, Hakeem R, Ahmedani MY, Masood Q. Frequency of chronic complications of type II diabetes. *JCPSP* 2004; 14:79-83.
  33. Ahmed N, Khan J, Siddiqui TS. Frequency of dyslipidaemia in type 2 diabetes mellitus in patients of Hazara division. *J Ayub Med Coll Abbottabad* 2008; 20:51-4.
  34. Khoharo HK, Qureshi F. Frequency of cardiac autonomic neuropathy in patients with type 2 diabetes mellitus reporting at a teaching hospital of Sindh. *JCPSP* 2008;18:751-4.
  35. Wahab S, Mahmood N, Shaikh Z, Kazmi WH. Frequency of retinopathy in newly diagnosed type 2 diabetes patients. *J Pak Med Assoc* 2008; 58:557-61.
  36. Ahmed N, Jadoon SA, Khan RM, Mazahar UD, Javed M. Type 2 diabetes mellitus: how well controlled in our patients? *J Ayub Med Coll Abbottabad* 2008; 20:70-2.
  37. Moin S, Gondal GM, Bano U. Risk of development of chronic kidney disease in patients with type 2 diabetes having metabolic syndrome. *JCPSP* 2008; 18:472-6. Ohtsubo K, Chen MZ, Olefsky JM, Marth JD. Pathway to diabetes through attenuation of pancreatic beta cell glycosylation and glucose transport. *Nat Med*. 2011 Aug 14;17(9):1067-75.