Effectiveness of Instructional Intervention on Medical and Health Information of Patients with Diabetes Mellitus Type II

فاعلية التداخل التثقيفي على المعلومات الطبية والصحية للمرضى المصابين بداء السكري النوع الثاني

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المستخلص:

الهدف: تهدف الدراسة لتقييم فاعلية التداخل التثقيفي للمعارف الطبية والصحية للمرضى المصابين بداء السكري النوع الثاني .

المنهجية: دراسة وصفية في كل من المركز الوطني للسكري / الجامعة المستنصرية ,والمركز التخصصي لأمراض الغدد الصم والسكري التابع لمستشفى الكندي التعليمي في محافظة بغداد للمدة من ٣ كانون الثاني عام ٢٠١٢ ولغايـــة ١ نيسان ٢٠١٢, لتقييم فاعلية التداخل التثقيفي حول المعلومات الطبية والصحية لمرضى داء السكري النوع الثاني .صُممت استمارة استبيانية مشتقه من التداخل التثقيفي للوصول الى هدف الدراسة. اختيرت عينة غير احتمالية (غرضيه) شملت (٥٠) مريض مصاب بداء السكري يراجع كل من المركز الوطني للسكري/ الجامعة المستنصرية ,والمركز التخصصي لامراض الغدد الصم والسكري/الكندي. قسمت العينة الى مجموعتين متساويتين (٢٥) مريض كعينة تجريبية و(٢٥) كعينة ضابطة.تم تعريض عينة الدراسة لتداخل تثقيفي موجه,بينما لم تعرض العينة الضابطة للتداخل. جمعت المعلومات من خلال استخدام استبانة مصممة ومكونة من جزئين ، الجزء الأول يتكون من البيانات الديموغرافية , والجزء الثاني يشمل المعارف الطبية والصحية لمرضى داء السكري النوع الثاني وتحتوي على ١٣ فقره .

النتائج: بينت الدراسة أن هناك قلة في المعارف الطبية والصحية للمرضى المصابين بداء السكري النوع الثاني قبل تنفيذ التداخل التثقيفي لكن بعد تنفيذ التداخل التثقيفي تحسنت المعارف الطبية والصحية للمرضى المصابين بداء السكري بصورة كبيرة. تبين أن فاعلية التداخل التثقيفي لم تتأثر بالعمر، الجنس، المستوى التعليمي, مدة الإصابة بالمرض, للمشاركين هذا يعني أن التداخل ممكن تنفيذه لكل المرضى المصابين بداء السكري وتحقيق أهداف التداخل التثقيفي .

التوصيات: أوصت الدراسة بأن مراكز السكري في العراق يجب ان تتضمن تداخل تثقيفي بخصوص المعارف الطبية والصحية .

Abstract:

Objective: The objectives of the present study were to evaluate the effectiveness of the instructional intervention about medical and health knowledge of patients with diabetes mellitus type II.

Methodology: A Quasi- experimental study was carried out in National Center for Diabetes Mellitus/ Almustansria University, started from 4th January 2012, to 1st April 2012. Non-probability (purposive sample) of (50) diabetes mellitus type II, who visit National Center for Diabetes Mellitus/ Almustansria University. The study sample is divided equally into (25) study and (25) control groups. The study group received the instructional intervention. While the control not exposed to the instructional intervention. The data are collected through the use of constructed questionnaire, which consists of two parts. Part 1: consists of demographic characteristics. Part 2 consists of (13) items about medical knowledge and health of patients with diabetes mellitus type II.

Results: The findings of the study indicated that the patient's medical knowledge and health is low and poor before the implementation of the instructional intervention but after the implementation of the instructional intervention the medical knowledge and health of diabetes mellitus type II greatly improved.

Recommendations: The study recommended that that the diabetes centers in Iraq should include instructional intervention about medical knowledge and health of diabetes mellitus type II to increase awareness of diabetic patients regarding knowledge for diabetes mellitus type II.

Keywords: Medical knowledge, diabetes mellitus type II, patients.

Introduction:

W.H.O, (2007) reported that the type-II diabetes may go unnoticed for years, because visible symptoms are typically mild, non-existent or sporadic, and usually there are no ketoacidotic episodes. Severe long-term complications can result from unnoticed type-II diabetes such as renal failure due to diabetic retinopathy, loss of sensation or pain due to diabetic neuropathy [21]. Reported that the majority of cases of type-II diabetes appear to be related to lifestyle. Aerobic exercise is beneficial in diabetes with a greater amount of exercise better results. It leads to decrease in HbA1c, improved insulin resistance. Resistance is also useful and combination of both types of exercise may be most effective [13]. Explained that diabetic diet that promotes weight loss is important. While, the best diet type to achieve this is controversial, a low glycemic index diet Diabetes mellitus is a chronic multisystem disease related to abnormal insulin production, impaired insulin utilization, or both. It is a serious health problem throughout the world.

Diabetes mellitus is a metabolic-cum-vascular syndrome of multiple etiologies characterized by chronic hyperglycemia with disturbance of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both [9]. Type-II diabetes is lifelong disease that affects the way your body uses food for energy. The disease develops when the cell of the body becomes resistant to insulin or when the pancreas cannot make enough insulin. Insulin is a hormone that helps your body's cells gets the energy they need from sugar. When insulin is not able to do its job, too much sugar builds up in your blood.

Diabetes mellitus occurs throughout the word, but it is more common in the more developed countries. There is an increase in prevalence of diabetes in developing countries, because of changing lifestyle and the termed of urbanization. According to World Health Organization (WHO), more than 150 million people wide, in the year 2004, but due to its growing incidence, it is thought that by the year 2025 this number will double. Asia and Africa are the most common affected areas. Diabetes is considered as a big killer and is among the top 5, of the most significant disease in the developed world. In 2005, there were about 20.8 million people with diabetes in the United States alone. While, an estimated 14.6 million have been diagnosed with diabetes, unfortunately, 6.2 million people were unaware that they have the disease [16] .has been found to improve blood sugar control. Type-II diabetes is characterized by the combination of peripheral insulin resistance and inadequate insulin secretion by pancreatic beta cells. Insulin resistance, which has been attributed to elevated levels of free fatty acids in plasma, leads to decreased glucose transport into muscle cells, elevated hepatic glucose production, and increased breakdown of fat [10].

Insulin is a hormone produced by B-cells in the islets of Langerhans of the pancreas, under normal conditions, insulin is continuously released into bloodstream in small pulsatile increments (a basal rate), with increased release (bolus) when food is ingested. The action of released insulin lowers blood glucose and facilitates a stable [7].

Methodology:

A quasi-experimental design was carried out throughout the present study on diabetes mellitus type II patients to evaluate the effectiveness of the instructional intervention about medical and health knowledge of patients with diabetes mellitus type II. The application of the program (instructional intervention) for the study group. The application of program is determine the effectiveness of planned teaching intervention on management of long –term complications. The present study was carried out in National Center for Diabetes Mellitus /Almustansria University**,** these Centers were the only governmental medical institutions in which

diabetes mellitus was performed in Baghdad City. Anon-probability (purposive), sample of (50) person who were attending the National Center for Diabetes Mellitus/Almustansria University, the study group were exposed to an instructional intervention,. These samples were selected according to the following criteria;

1. Diabetes mellitus type II patients, both male and female.
2. Level of education for these patients at least read and write.
3. Patients who were agree to participate in the present study.

Instrument:

Medical information and health of patients with diabetes mellitus type II

1. The instructional intervention about diabetes mellitus type II patients for management of long-term complications was designed and constructed throughout the use of finding which were obtained from the initial assessment of patient's knowledge and which was used to construct the instructional intervention, as well as throughout review of related literatures and previous studies.

2. Consists of (13)items which include: Participated in educational programs related to diabetes, knowledge about the disease diabetes, the symptoms of diabetes, knowledge about the causes of diabetes, knowledge about the long-term complications ,Identify ways to examine the sugar ,Identify ways to examine the foot Know the symptoms of low blood sugar, Know the signs of high blood sugar , Know a healthy diet for patients with diabetes, that you minimize the fat content in food , Know the main axes of the treatment of diabetes patient, Identify ways to treat diabetes. The questions were scored as Yes response (2) points and the No response (1) point. The cut of point was (1.5) and the low limit for evaluate of patients knowledge was (75), the relative sufficiency (RS).

A pilot study was conducted at National Center for Diabetes Mellitus/Almustansria University, in order to determine the reliability of the study instrument which was used for measuring patient's the medical knowledge and health of regarding the diabetes mellitus type II. The study was conducted during the period of from18th February 2012, to 29th March 2012. The sample consists of (10) diabetes mellitus type II patient's.

Reliability of the questionnaire was determined through the use of test and retest approach, with interval period for approximately three weeks, for the determination of interval consistency of patient's medical knowledge and health regarding the diabetes mellitus type II . The results of the reliability present alpha correlation coefficient which was (r=0.91).

Data Collection:

Data collection was performed through the use of the study instrument and the application of the instructional intervention about diabetes mellitus type II patients for medical knowledge and health from 18th February 2012, to 29th March 2012. Pre-posttest approach were utilized as appropriate means of data collection and carried through three methods, booklets, lectures, and posters, pictures. The data were collected by the following techniques:

1. All participants were interviewed and informed about the study purposes and objectives.
2. All subjects were exposed to the pre-test in order to detect the patient's medical knowledge about diabetes mellitus type II.
3. The study group were exposed to the instructional intervention as groups in the same class room and environmental circumstances.
4. The study group were exposed to the post-test approximately more than two weeks after implementation of the instructional intervention. Data are analyzed through the use of SPSS (Statistical Process for Social Sciences) version 10.0 application Statistical analysis system and Excel application. The following statistical data analysis approaches were used in order to analyze and assess the results of the study:

I. data analysis:

a. Tables (Frequencies, Percentages, and cumulative percent) with comparison significant.

b. Summary Statistics tables including: Mean of score (M.S.) with their Standard Deviation (SD), Relative Sufficiency (R.S. %), and their assessment by cutoff point (0.50% & 0.66) due to scores (1, 2) and (1, 2, 3) respectively, Cutt of point= $\frac{2+1}{2}$ = 1.5, Standard Deviation. Relative sufficiency (RS) for the overall knowledge and management $\frac{2}{3}$ × 100 = RS= 66.6 Low, Interval =100-66.6=33 .4÷3=11.1, Moderate=66.7-77.8, High=77.9-88.9

-According to domain of patient's knowledge cut of point, Interval = 100 – 75 ÷ 2 = 12.5, 75 – 87.5 moderate, 88.5 – 100 high

c. Arithmetic Mean ($\bar{x}$) and Std. Dev. (S.D.).

Results:

Table 1. Observed frequencies and percent of demographical characteristics variables in the study and control groups with comparison significant

Variables	Groups	Control No=25		Study No=25		C.S. P_{-value}
		Freq.	%	Freq.	%	
Age Groups (Per years)	35 - 40	3	10.0	0	0.0	L.R.T. P=0.298 NS
	41 - 45	3	10.0	5	16.7	
	46 - 50	7	23.3	8	26.7	
	51 - 55	12	40.0	9	30.0	
	56 - 60	5	16.7	6	20.0	
	60 >	0	0.0	2	6.7	
	$\bar{x} \mp S.D.$	50.03 ∓ 6.30		51.52 ∓ 6.13		
Gender	Male	14	46.7	17	56.7	F.E.P.T. P=0.606 (NS)
	Female	16	53.3	13	43.3	
Levels of Education	Read and Write	5	16.7	0	-	L.R.T. P=0.081 NS
	Primary School Graduate	11	36.7	9	30.0	
	Intermediate School Graduate	5	16.7	5	16.7	
	Secondary School Graduate	3	10.0	7	23.3	
	Institute Graduate	3	10.0	3	10.0	
	College Graduate or Above	3	10.0	6	20.0	
Occupation	Employee	7	23.3	5	16.7	L.R.T. P=0.799 NS
	Retired	3	10.0	5	16.7	
	Self-employed	6	20.0	5	16.7	
	Housewife	12	40.0	11	36.7	
	Unemployed	2	6.7	4	13.3	
Monthly Income	Insufficient	8	26.7	15	50.0	L.R.T. P=0.112 NS
	Somewhat Sufficient	20	66.7	12	40.0	
	Sufficient	2	6.7	3	10.0	
Duration of having disease (Per years)	1 - 5	19	63.3	19	63.3	L.R.T. P=1.000 NS
	6 - 10	10	33.3	10	33.3	
	11 - 15	1	3.3	1	3.3	
	$\bar{x} \mp S.D.$	4.82 ∓ 2.58		4.82 ∓ 2.58		
Smoking	Yes	4	13.3	5	16.7	F.E.P.T. P=1.000
	No	26	86.7	25	83.3	

F.E.P.T= fisher exact probability test. L.R.T. = Likelihood Ratio test, Freq. =Frequency, %= percentage, C.S. = Comparative Significance, x = mean, S.D. = Standard Deviation, NS= Non Significant

This table demonstrates that the highest percentages of age factor are reported at (51 - 55 yrs.) group and the studied samples (Control and Study) have reported (53.3%) and (43.3%) of Female in each sample respectively. With respect to the studied Levels of Education's individuals, the two samples have

indicated and acquired the same numbers of individuals for obtaining the compensate status. Relative to subjects of Occupation, results indicate that highest percentages of the studied samples are with (Housewife), while Monthly Income has reported Somewhat Sufficient and Insufficient in (Control and Study) samples respectively. With respect to the studied Duration of having disease (per years), the two samples have indicated and acquired the same numbers of individuals for obtaining the compensate status and have reported the vast majority at the first period (1 – 5) years. Finally, Smoking habit shows that most of the studied samples have no smoking habit.

Table 2. Observed frequencies and percent of Body Mass Index in the study and control groups with comparison significant

Variables	Groups	Control		Study		C.S. P_{-value}
		Freq.	%	Freq.	%	
Body Mass Index	Normal weight	2	6.7	6	20	L.R.T. P=0.123 NS
	Over weight	15	60	8	36.7	
	Obese	8	33.3	11	43.3	
	$\bar{x} \mp S.D.$	29.37 ∓ 4.39		29.91 ∓ 5.12		

NS: Non Significant at P>0.05, Freq. =Frequency, %= percentage, C.S. = Comparative Significance, x = mean, S.D. = Standard Deviation

This table shows the distribution of the observed frequencies according to the different the body mass index (BMI) groups between the two samples which are corresponding proportionally also, the result has indicated that there has been a non-significant relationship at P> 0.05 between BMI Groups and the two studied samples. In addition to that, the main values of the two samples are recorded at critical upper bound of an overweight status.

Table 3. Comparison between (control and study) samples related to medical and health information of patients with diabetes mellitus type II items at pre period

Medical Knowledge And Health Of Patients With Diabetes Mellitus Type II	Pre-Control No=25				Pre-Study No=25				P_{-value}	C.S.
	M.S.	S.D.	R.S.	Ass.	M.S.	S.D.	R.S.	Ass.		
1-Have you Participated in educational program about diabetes mellitus	1.00	-	50	F	1.00	-	55	F	OC	NS
2 - Have knowledge about diabetes mellitus	1.00	-	50	F	1.10	0.31	58.5	F	0.237	NS
3 - Do you know the symptoms of diabetes	1.00	-	50	F	1.17	0.38	50	F	0.052	NS
4 - Have knowledge about the etiology of diabetes mellitus	1.00	-	50	F	1.00	-	50	F	OC	NS
5 - Have knowledge about long-term complications of diabetes	1.00	-	50	F	1.00	-	56.5	F	OC	NS
6 -Do you Know the methods of testing blood glucose	1.00	-	50	F	1.13	0.35	50	F	0.112	NS
7 - Do you Know the methods of examining the foot	1.00	-	50	F	1.00	-	50	F	OC	NS
8 - Do you Know the symptoms of Hypoglycemia	1.00	-	50	F	1.00	-	53.5	F	OC	NS
9 - Do you Know the symptoms of Hyperglycemia	1.00	-	50	F	1.00	-	53.5	F	OC	NS
10 - Do you Know the Healthy Diet System for Diabetics	1.00	-	50	F	1.07	0.25	53.5	F	0.492	NS
11 - Do you Know that you should reduce fats in food	1.00	-	63.5	F	1.07	0.25	68.5	F	0.492	NS
12 - Do you Know the main domains for managing diabetics	1.27	0.45	50	F	1.37	0.49	51.5	F	0.580	NS
13 - Do you Know the methods of managing Diabetes Mellitus	1.00	-	50	F	1.03	0.18	55	F	1.000	NS

OC= (Out of comparisons); Indicating that absolutely coincidence between the two groups would be. F =Failure under cutoff point 1.5 (i.e. R.S. =75). , NS: Non Significant at P>0.05, MS=Mean of Score, Ass.=Assessment, RS= Relative significant

This table revealed in term of summary statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%), as well as comparison

significant through testing the statistical hypothesis which indicate that the same responding should occur at pre period in each items of " (Part-I: Medical Knowledge and health of patients with Diabetes Mellitus Type II " in the control and the study samples. The results shows and indicate that absolutely coincidence of responses have been reported between the two samples in that period since non-significant differences at P>0.05 would be recorded along all items of the cited part, and these outcomes would be accentuated of reliability and suitability for selection individuals of patients of the two samples.

Table 4. Comparison for the control sample in medical and health information of patients with diabetes mellitus type II items at (pre – post) periods study

Medical Knowledge And Health Of Patients With Diabetes Mellitus Type II	Pre-Control No=25				Post-Control No=25				P_{-value}	C.S.
	M.S.	S.D.	R.S.	Ass.	M.S.	S.D.	R.S.	Ass.		
1- Have Participated in educational program about diabetes mellitus	1.00	-	50	F	1.00	-	50	F	OC	NS
2- Have knowledge about diabetes mellitus	1.00	-	50	F	1.00	-	50	F	OC	NS
3-Do you Know the symptoms of diabetes mellitus	1.00	-	50	F	1.00	-	50	F	OC	NS
4- Have knowledge about the etiology of diabetes mellitus	1.00	-	50	F	1.00	-	50	F	OC	NS
5- Have knowledge about long-term complications of diabetes	1.00	-	50	F	1.00	-	50	F	OC	NS
6- Do you Know the methods of testing blood glucose	1.00	-	50	F	1.00	-	50	F	OC	NS
7- Do you Know the methods of examining the foot	1.00	-	50	F	1.00	-	50	F	OC	NS
8- Do you Know the symptoms of Hypoglycemia	1.00	-	50	F	1.00	-	50	F	OC	NS
9- Do you Know the symptoms of Hyperglycemia	1.00	-	50	F	1.00	-	50	F	OC	NS
10- Do you Know the Healthy Diet System for Diabetics	1.00	-	50	F	1.00	-	50	F	OC	NS
11- Do you Know that you should reduce fats in food	1.00	-	50	F	1.00	-	50	F	OC	NS
12- Do you Know the main domains for managing diabetics	1.27	0.45	63.5	F	1.33	0.48	66.5	F	0.580	NS
13- Do you Know the methods of managing Diabetes Mellitus	1.00	-	50	F	1.00	-	50	F	OC	NS

NS= Non Significant at P>0.05, F= Failure under cutoff point 1.5 (i.e. R.S. =75). OC= (Out of comparisons); Indicating that absolutely coincidence between the two groups would be, MS=Mean of Score, Ass. =Assessment, RS= Relative significant

This table reveal in term of summary statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%), as well as a significant comparison through testing the statistical hypothesis which indicate that the same responding should be occurred between pre and post periods in each items of " Part-I: Medical Knowledge and health of patients with Diabetes Mellitus Type II " in the control sample. The results show and indicate that absolutely coincidences of responses have been reported between the two periods and these outcomes would be more reliable and suitable for the studied design since non-significant differences at P>0.05 would be recorded along all items of the cited part . In other words, the results accentuate the stability respond for individuals of patients in that sample.

Table 5. Descriptive of the study group response to medical and health information of patients with diabetes mellitus type II items at (pre – post) periods

Medical Knowledge And Health Of Patients With Diabetes Mellitus Type II	Pre-Study No=25				Post-Study No=25				P_{-value}	C.S.
	M.S.	S.D.	R.S.	Ass.	M.S.	S.D.	R.S.	Ass.		
1- Participated in educational instruction about diabetes mellitus	1.00	-	55.0	F	2.00	0.00	100	P	0.00	HS
2- Have knowledge about diabetes mellitus	1.10	0.31	58.5	F	2.00	0.00	100	P	0.00	HS

Table 5. Continues

3- Know the symptoms of diabetes mellitus	1.17	0.38	50.0	F	2.00	0.00	100	P	0.00	HS
4- Have knowledge about the etiology of diabetes mellitus	1.00	-	50.0	F	2.00	0.00	100	P	0.00	HS
5- Have knowledge about long-term complications of diabetes	1.00	-	56.5	F	2.00	0.00	100	P	0.00	HS
6- Know the methods of testing blood glucose	1.13	0.35	50.0	F	2.00	0.00	100	P	0.00	HS
7- Know the methods of examining the foot	1.00	-	50.0	F	2.00	0.00	100	P	0.00	HS
8- Know the symptoms of Hypoglycemia	1.00	-	53.5	F	2.00	0.00	100	P	0.00	HS
9- Know the symptoms of Hyperglycemia	1.00	-	53.5	F	2.00	0.00	100	P	0.00	HS
10- Know the Healthy Diet System for Diabetics	1.07	0.25	53.5	F	2.00	0.00	100	P	0.00	HS
11- Know that you should reduce fats in food	1.07	0.25	68.5	F	2.00	0.00	100	P	0.00	HS
12- Know the main domains for managing diabetics	1.37	0.49	51.5	F	2.00	0.00	100	P	0.00	HS
13- Know the methods of managing Diabetes Mellitus	1.03	0.18	55.0	F	2.00	0.00	100	P	0.00	HS

HS: Highly Significant at P<0.01, P: Pass upper cutoff point (2); (i.e. R.S. =66.67%), F: Failure under cutoff point 1.5 (i.e. R.S. =75), MS=Mean of Score, Ass. =Assessment, RS= Relative significant

This table revealed in term of summary statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%), as well as comparison significant through testing the statistical hypothesis which says that the same responding should be occurred between pre and post periods in each items of " Part-I: Medical Knowledge and health of patients with Diabetes Mellitus Type II " of the study sample. The results show and indicating that absolutely a non-coincidences of responses have been reported between the two periods and these outcomes would be more reliable and suitable for the studied design since highly significant differences at P<0.01 would be recorded along all items of the cited Part and these ought to be underline the effectiveness of the applicable program.

Table 6. Descriptive Statistics and comparison significant between (control and study) groups in medical knowledge and health of patients with diabetes mellitus type II items at post period

Medical Knowledge And Health Of Patients With Diabetes Mellitus Type II	Post-Control No=25				Post-Study No=25				P_{-value}	C.S.
	M.S.	S.D.	R.S.	Ass.	M.S.	S.D.	R.S.	Ass.		
1- Participated in educational program about diabetes mellitus	1.00	-	50	F	2.00	-	100	P	0.00	HS
2 - Have knowledge about diabetes mellitus	1.00	-	50	F	2.00	-	100	P	0.00	HS
3 - Know the symptoms of diabetes mellitus	1.00	-	50	F	2.00	-	100	P	0.00	HS
4- Have knowledge about the etiology of diabetes mellitus	1.00	-	50	F	2.00	-	100	P	0.00	HS
5- Have knowledge about long-term complications of diabetes	1.00	-	50	F	2.00	-	100	P	0.00	HS
6- Know the methods of testing blood glucose	1.00	-	50	F	2.00	-	100	P	0.00	HS
7- Know the methods of examining the foot	1.00	-	50	F	2.00	-	100	P	0.00	HS
8- Know the symptoms of Hypoglycemia	1.00	-	50	F	2.00	-	100	P	0.00	HS
9- Know the symptoms of Hyperglycemia	1.00	-	50	F	2.00	-	100	P	0.00	HS
10- Know the Healthy Diet System for Diabetics	1.00	-	50	F	2.00	-	100	P	0.00	HS
11- Know that you should reduce fats in food	1.00	-	50	F	2.00	-	100	P	0.00	HS

Table 6. Continues

12- Know the main domains for managing diabetics	1.33	0.48	66.5	F	2.00	0.00	100	P	0.00	HS
13- Know the methods of managing Diabetes Mellitus	1.00	-	50	F	2.00	-	100	P	0.00	HS

HS: Highly Significant at P<0.01, P: Pass upper cutoff point (2); (i.e. R.S. =66.67%), MS=Mean of Score, Ass. =Assessment, RS= Relative significant

This table reveals in term of summary statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%), as well as comparison significant through testing the statistical hypothesis which says that the same responding should be occurrences between the two samples at the post period in each items of the " Part-I: Medical Knowledge and health of patients with Diabetes Mellitus Type II ". Nevertheless discord of testing the preceding hypothesis with the statistical theory, since a repeated of measurement design were analyzed. Whereas the results show and indicate that absolutely a non-coincidences of responses have been reported between the two samples and these outcomes would be more reliable and suitable since a highly significant of differences at P<0.01 would be recorded along all items of the cited Part and these ought to be underline the effectiveness of the applicable program again.

Discussions:

1. Discussion of the demographic characteristic of the study sample

Through the data analysis distribution of demographic variables table (1) report that most of the diabetes mellitus type II patients are (51-55) years old and this account for 9 (30%) of the study group, the diabetes mellitus type II patients in the control group were similar to years old and this account for 12 (40%). In the study group the mean age is (51.52 years) while in the control group the mean age is (50 years) [21]. Who had already found that the mean age of the sample was (56.8) years old? ADA mansion the incidence of Type II diabetes occurs most often after the age of 40 (although the American Diabetes Association says there is an alarming potentially lifestyle related increase in the number of people under age 40 now developing this kind of diabetes). It's estimated that millions of people have type II diabetes and do not know it [1]. Some person relative diabetes mellitus type II first degree spontaneously feeling that he has polyurea and polydipsia visited the doctor, there is positive status but he isn't know the alarming time to happen after 40 year ago. About 0.6 million of diabetic persons was among the (>40- 64) years age group. Age-specific prevalence of diabetes was (14.0%) in men, (19.4%) in women aged (40-64), respectively. This age-related increase in diabetes prevalence was significantly greater among women than men (p< 0.003 for sex-age interaction). Age-specific prevalence of IFG was (5.4% to 6.9%), in men (7.1% to 7.4%), in women aged (40-64), respectively; the interaction of sex and age on prevalent IFG was significant (P <0.0001) [3].

Regarding gender of the studied sample has reported 16 (53.3%) and 13 (43.3%) of female in each sample and remaining were male. Overall, males and females seem to be equally affected. The incidence of type II DM differs throughout the world, probably due to environmental, genetic and behavioral factors. People with Indian, Pacific Islander or Australian Aboriginal heritage are at particularly high risk of developing type II diabetes. The incidence is essentially equal in women and men in all populations. This finding is agreement with study that reported the majority (66%) of them were females while (34%) were male in his study of barriers in self-care in non-insulin diabetes mellitus in elder women [19].

With respect to the studied levels of education's individuals, the two samples has indicated and acquired the same numbers of individuals for obtaining the compensate status. According to level of education of the sample in

both group were primary school graduate 9 (30%) of patient in study group and 11 (36.7%) of patient in the control group. This finding indicates that the diabetes mellitus type II patients have an acceptable level of education to participate in instructional education to improve their knowledge about management of long –term complications (The researcher). Relation to subject of occupation, results indicated that highest percentage of the studied samples are with housewife, 11 (36.7%) of diabetes mellitus type II patients in the study group and 12 (40%) in the control group.

when they studied type II diabetes: incremental medical care cost during the first (8) years after diagnosis and found that in their sample of diabetes mellitus type II patient's, medical costs were more than double those of matched non-diabetic controls [(18)]. The majority of diabetes mellitus type II patients in this study have somewhat sufficient and Insufficient, monthly income in the study group and the control group, 12 (40%), 20(66%) and 15 (50%), 8(26.7%) respectively. With respect to the studied Duration of having disease (1 – 5), per years is the most diabetes duration 19(63.3%),and the mean was (4.82) years, the two samples has indicated and acquired the same numbers of individuals for obtaining the compensate status and has reported the vast majority at the first period (1 – 5) years.

Quite a few determinants are associated with development and progression of albuminuria, and smoking is one of them in diabetic patients. Smoking is related to such variables of renal dysfunction as albuminuria, which may accelerate the progression to loss of renal function. Smokers were at 2.2 time's greater risk for albuminuria in diabetic patients compared to non-smokers after controlling their glycated hemoglobin [(7)].

2. Discussion of body mass index (BMI) of the sample

Table (2) shows the distribution of the observed frequencies according to the different of the body mass index (BMI) groups between the two samples which were corresponding proportionally also, the result has indicated that the majority of the body mass index (BMI) were (25-29.9 k/ M2) that mean overweight with 11 (36.7%), and there has been a non-significant relationship at P> 0.05 between BMI Groups and the two studied samples. In addition to that, mean values of the two samples were recorded at critical upper bound of an overweight status. This result was in agreement with that of Aguilar, et al., (2002) who had found that BMI between (25-29.9 k / M2) in an urban adult Mexican population with type II diabetes.

3. Discussion of medical knowledge and health of patients with diabetes mellitus type II items at pre period (control and study) groups

Table (3) reveals in term of summary statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%). The results show and indicate that absolutely coincidence of responses have been reported between the two samples in that period since non-significant differences at P>0.05 would be recorded along all items of the cited part, and these outcomes would be accentuated of reliability and suitability for selection individuals of patients of the two samples . This means that both groups have inadequate knowledge concerning for diabetes mellitus type II patients about medical knowledge and health of patients with diabetes mellitus type II (the researcher). These results emphasize the importance of instructional education for diabetes mellitus type II patients to help them prevent or decrease the long –term complications.

4. Discussion of medical knowledge and health for patients with diabetes mellitus type II items at (pre-post) periods in control group.

Table (4) reveals in term of summary statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%). The results show and indicate that absolutely coincidences of responses had been reported between the two periods and these outcomes would be

more reliable and suitable for the studied design since non-significant differences at P>0.05 would be recorded along all items of the cited part . In other words, the results accentuated the stability responses for individuals of patients in that sample. This result is supported by [2] .This study indicated the diabetes mellitus type II patients in the control group maintain poor knowledge about medical knowledge and health for diabetes mellitus type II patients in the pre and the post-test.

Ambigapathy stated there is a deep need for an increase in the awareness of diabetes management and its complications in the primary healthcare sector [6]. Continuing education on diabetes mellitus and its complications for primary healthcare providers is crucial and this should be accompanied by a regular assessment of their diabetic knowledge. Screening for diabetes is important, but equally crucial is patient education and counseling. It is evident from this study that patients are not sufficiently equipped with the knowledge to comprehensively manage their disease. Knowledge of diabetes is therefore essential for primary healthcare and other diabetic patients in order to prevent co-morbidities, which may compromise their lifestyles as well as increase the burden on public health care.

This means that diabetes mellitus type II patients did not acquire knowledge concerning medical knowledge and health for diabetes mellitus type II patients, Therefore, the researcher asserts to supply diabetes mellitus type II patients with knowledge concerning medical knowledge and health for diabetes mellitus type II patients in order to maintain a safe life free from complications.

5. Discussion of medical knowledge and health for patients with diabetes mellitus type II items at (pre-post) periods in study group.

Table (3) reveals the summary of the statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%). The results show and indicate that absolutely a non-coincidences of responses have been reported between the two periods and these outcomes would be more reliable and suitable for the studied design since highly significant differences at P<0.01 would be recorded along all items of the cited Part and these ought to underline the effectiveness of the applicable program. Also a positive change was observed in weight control in that the number of patients reported to weigh themselves increased. This means that the instructional intervention is effective in improving the knowledge of diabetes mellitus type II patients' in the study group.

6. Discussion of medical knowledge and health of Patients with diabetes mellitus type II items at (post periods) in control and study group. Table (4) reveals the summary of the statistics (mean of score, standard deviation, relative sufficiency and assessment according to the (cutoff point = 1.5, i.e. R.S. =75%). The results indicate that absolutely a non-coincidences of responses have been reported between the two samples and these outcomes would be more reliable and suitable for the studied design since highly significant differences at P<0.01 would be recorded along all items of the cited Part and these ought to underline the effectiveness of the applicable program [19].

Reported that long-term interventions to ensure long-term maintenance of initial behavior change are needed. This means that the importance of instructional education to improve knowledge of diabetes mellitus type II patients concerning medical Knowledge and health is to decrease or prevent complications.

Recommendations:

Based on the previously listed conclusions, the researcher recommends that:

1. Establishing and increasing specialized diabetic centers in every governorate in Iraq.
2. All diabetic centers in Iraq should include instructional about management of long-term complications for diabetes mellitus type II patients and instruction intervention program

should be implemented in all diabetic centers in Iraq.

3. An education program should be designed to increase people's education about self-care regimen.

4. Specialist nurse for diabetics' disease in every center.

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