

The Relationship between Glucose Level- controlling Behaviour for Clients with Diabetes Mellitus and Their Demographic Characteristics

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ABSTRACT

Background: Diabetes Mellitus is a complex chronic disease, requiring continuous medical care with multi factorial risk reduction strategies beyond glycemic control.

Objective: The present study aims to determine the Relationship between Glucose Level- controlling Behaviour and Demographic Characteristics for clients with Diabetes mellitus.

Methods: Simple random sample of 60 diabetic clients who are attending Primary Healthcare Centers at Al-Karkh District of Baghdad were included in the present study. The participants were divided into experimental group (N=30) and control group (N=30), matched for age and gender.

Results: the experimental group are (35-<45) year old (59.4%), males (72.6%), married (66%), Bachelor Degree graduates (29.7%), self-employed (39.6%), having moderate socioeconomic status (72.6%) and urban residents (56.1%). There was highly significant comparative difference between the pretest and posttest I of the experimental group relative to glucose level controlling behavior. Also, there is highly significant comparative difference between the posttest I and posttest II of the experimental group relative to glucose level controlling behavior. In addition, there was highly significant difference between pretest, posttest I and posttest II of the experimental group relative to glucose level controlling behavior. The results of the study confirmed that the mean of age is (55.7) year, and the majority of the sample are male, first degree relatives with diabetes mellitus type-II are within positive bio-social aspect and laboratory screening had an effect on the incidence of diabetes mellitus type-II for first degree relatives to type-II diabetes mellitus.

Conclusion: Demographic Characteristics is effective in Glucose Level- controlling Behaviour for Clients for clients with DM.

Keywords: Demographic Characteristics, Glucose Level, Controlling Behavior, Diabetes Mellitus, University of Baghdad

INTRODUCTION

A chronic, progressive metabolic illness known as diabetes mellitus (DM) causes hyperglycemia primarily as a result of an absolute (Type 1 DM) or relative (Type 2 DM) insulin hormone shortage. DM nearly impacts every organ of the body because to metabolic disruptions brought on by hyperglycemia, particularly if long-term diabetes management is found to be subpar¹. Various studies conducted in many parts of the world suggest that there is lack of public awareness and knowledge of various aspects related to diabetes. With proper education, awareness, earlier detection and better care, many complications and co-morbidities can be reduced in diabetic population². Diabetes mellitus is a life-threatening disease. Global prevalence of diabetes mellitus is increasing rapidly providing a worrying indication and major threat to global health unless interventions are created through community awareness and knowledge regarding different aspect of DM³. Up until recently, it was thought to be a condition that mostly

affected industrialized nations, but current research shows that type 2 diabetes mellitus (DM) occurrences are increasing, with an earlier start and accompanying problems, in emerging nations⁴. Diabetes has a number of consequences that can cause chronic morbidities and death, including cardiovascular conditions, nephropathy, and retinopathy⁵. According to estimates from the World Health Organization (WHO), 346 million people worldwide have DM.

Without any action, this number is probably going to more than quadruple by 2030. Nearly (80%) of diabetes fatalities take place in low and middle income nations⁶. There are seven important self-care behaviors in persons with diabetes which predict good outcomes. These are healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors⁷. Diabetes has a number of consequences that can cause chronic morbidities and death, including car-

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diovascular conditions, nephropathy, retinopathy and neuropathy⁸⁻¹². The main objective of conducting this study in Iraq, and in particular in Baghdad, was to focus on Relationship between glucose level and control behavior in diabetic patients and their demographic characteristics.

METHODOLOGY

Experimental design, using experimental-control groups approach, is carried throughout the present study to for the period of November 25th 2021 to November 20th 2023. Simple random sample of 60 diabetic clients who are attending Primary Healthcare Centers at Al-Karkh District of Baghdad were included in the present study. The participants were divided into experimental group (N=30) and control group (N=30), matched for age and gender. The main objective of conducting this study in Iraq, and in particular in Baghdad, was to focus on Relationship between glucose level and control behavior in diabetic patients and their demographic characteristics. The demographic characteristics included age, gender, and the fact that the two need a clear focus in such studies, which focused on two groups: the first group is the study group, which consisted of 30 people, and they participated in the programs, implementing the programs, and implementing the goals of the programs, and the second group was the control group, and this group did not undergo any change. That is, they did not participate in the special programs that were prepared by the researchers and were presented to a group of 12 experts in various medical, nursing, statistical and language specializations, where 5 of them were in the community health nursing specialty, 4 of them were in the community medicine specialty, and 1 of them was in the English language specialty. For the purpose of translating the questionnaire, one of them majored in medical statistics, and one of them was majored in Arabic language for the purpose of reviewing the content of the lectures that were presented through the programs that he prepared in a scientific way. The stability of the study instrument is assessed using test-retest reliability. Based on the responses of (10) diabetic clients, the Pearson correlation coefficient is calculated. The results of this calculation show that the correlation coefficient supports the notion that the instruments are very accurate assessments of the phenomenon under study. The study instruments consisted of two major parts: first part related to sociodemographic characteristic and the second part is related to diabetic foot self-efficacy¹³. Such selection is employed of pool of subjects (10-21). Data were analyzed through the use of statistical package of social sciences (SPSS) version 23¹⁴⁻²⁴.

RESULTS

The experimental group are (35-<45) year old (59.4%), males (72.6%), married (66%), Bachelor Degree graduates (29.7%), self-employed (39.6%), having moderate socioeconomic status (72.6%) and urban residents (56.1%). There was highly significant comparative difference between the pretest and posttest I of the experimental group relative to glucose level controlling behavior. Also, there is highly significant comparative difference between the posttest I and posttest II of the experimental group relative to glucose level controlling behavior. In addition, there was highly significant difference between pretest, posttest I and posttest II of the experimental group relative to glucose level controlling behavior. The results of the study confirmed that the mean of age is (55.7) year, and the majority of the sample are male, first degree relatives with diabetes mellitus type-II are within positive bio-social aspect and laboratory screening had an effect on the incidence of diabetes mellitus type-II for first degree relatives to type-II diabetes mellitus (Table 1).

Table 1: Socio-demographic characteristics of the study

List	Characteristics	Frequency	Percent
1	Age (Years)		
	25-<35	6	19.8
	35-<45	18	59.4
	45-<55	5	16.5
	55-64	1	3.3
Total		30	100
2	Gender		
	Female	8	26.4
	Male	22	72.6
Total		30	100
3	Marital Status		
	Married	20	66.0
	Single	3	9.9
	Divorced	4	13.2
	Widowed	3	9.9
Total		30	100
4	Education		
	Primary school	5	16.5
	Middle School	5	16.5
	High School	6	19.8
	Diploma Degree	5	16.5
	Bachelor Degree	9	29.7
Total		30	100
5	Occupation		
	Housewife	8	26.4
	Self-employed	12	39.6
	Employed	10	33.0
Total		30	100
6	Socioeconomic Status		
	Low (7-10)	3	9.9
	Moderate (11-25)	22	72.6
	High (26-29)	5	16.5
Total		30	100
7	Residence		
	Rural	2	6.6
	Suburban	11	36.3
	Urban	17	56.1
Total		30	100

Results, out of this table, depict that most of the experimental group are (35-<45) year old (59.4%), males (72.6%), married (66%), Bachelor Degree graduates (29.7%), self-employed (39.6%), having moderate socioeconomic status (72.6%) and urban residents (56.1%).

Table 2: One-way analysis of variance for the difference between the experimental group's glucose level controlling behavior and their age

Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F-Statistics	Level of Significance
Between Groups	17.333	3	5.778	0.683	0.571
Within Groups	220.033	26	8.463		
Total	237.367	29			

Results, out of this table, show that there is no significant difference between the experimental group's glucose level controlling behavior and their age (Table 2).

Table 3: One-way analysis of variance for the difference between the experimental group's change behavior and their gender

Group	Size	Mean	Standard Deviation	T-test	Degree of Freedom	Level of Significance
Gender	30	1.733	0.449	21.108	29	0.000
Change Behavior	30	34.267	2.876	65.260	29	

Results, out of this table, present that there is highly significant difference between the experimental group's change behavior and their gender (Table 3).

Table 4: One-way analysis of variance for the difference between the experimental group's glucose level controlling behavior and their marital status

Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F-Statistics	Level of Significance
Between Groups	13.033	3	4.344	0.504	0.683
Within Groups	224.333	26	8.628		
Total	237.367	29			

Results, out of this table, reveal that there is no significant difference between the experimental group's glucose level controlling behavior and their marital status (Table 4).

Table 5: One-way analysis of variance for the difference between the experimental group's glucose level controlling behavior and their education

Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F-Statistics	Level of Significance
Between Groups	21.333	4	5.333	0.610	0.659
Within Groups	218.533	25	8.741		
Total	239.867	29			

Results, out of this table, indicate that there is no significant difference between the experimental group's glucose level controlling behavior and their education (Table 5).

Table 6: One-way analysis of variance for the difference between the experimental group's glucose level controlling behavior and their occupation

Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F-Statistics	Level of Significance
Between Groups	6.550	2	3.275	0.379	0.688
Within Groups	233.317	27	8.641		
Total	239.867	29			

Results, out of this table, depict that there is no significant difference between the experimental group's glucose level controlling behavior and their occupation (Table 6).

Table 7: One-way analysis of variance for the difference between the experimental group's glucose level controlling behavior and their residence

Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F-Statistics	Level of Significance
Between Groups	55.437	3	18.479	2.641	0.071
Within Groups	181.929	26	6.997		
Total	237.367	29			

Results, out of this table, show that there is no significant difference between the experimental group's glucose level controlling behavior and their residence (Table 7).

DISCUSSION

The experimental group are (35-<45) year old (59.4%), males (72.6%), married (66%), Bachelor Degree graduates (29.7%), self-employed (39.6%), having moderate socioeconomic status (72.6%) and urban residents (56.1%). This study agree with another study²⁵⁻³³. In contrast, analysis of diabetic clients' socio-demographic characteristics in the indicates that most of them are middle age single males with Diploma Degree housewives having moderate socioeconomic status and living in urban area too. These findings summarize the actuality and the nature of these clients' life. 510 type 2 diabetes individuals who were enrolled in non-communicable disease clinics at nine primary healthcare facilities in Qatar were the subject of a cross-sectional study. The majority of patients, or 71.2%, are men and over 50 years old, according to the report. Nearly half of patients (48.7%) have at least a secondary education, and 32.5% are either housewives or do not have a job²⁶. On (294) diabetic patients, a different cross-sectional facility-based study design is conducted. The survey notes that women (59.5%) make up the bulk of the participants^{34,35}. Another cross-sectional clinic-based study with a total of (472) participants reveals that the majority of diabetic patients are (40-59) year olds who live in rural areas and have poor incomes and education levels³⁶⁻³⁹. Data from (4,556) patients with type 2 DM are evaluated in a descriptive analysis. According to the results, there were 2549 (55.9%) female participants and 2007 (44.1%) male participants. The study's population has a mean age of (47.72) years and an SD of (10.82) years. Ninety-nine percent of the patients are from cities^{40,41}. There was highly significant comparative difference between the pretest and posttest I of the experimental group relative to glucose level controlling behavior. Also, there is highly significant comparative difference between the posttest I and posttest II of the experimental group relative to glucose level controlling behavior. In addition, there was highly significant difference between pretest, posttest I and posttest II of the experimental group relative to glucose level controlling behavior. Analysis of such relationships depicts that diabetic clients' change and glucose level controlling behaviors are influenced by their gender difference at the experimental. This finding can be interpreted in a fashion that male clients develop better attitudes toward glucose level controlling behavior than females after being exposed to the Trans-theoretical Model, this is on one side. A facility-based cross-sectional study is conducted with (294) diabetic customers^{42,43}. The study discovers that participants' conduct in controlling their blood sugar is greatly influenced by their education level. 28 percent of the individuals exhibited strong awareness of this conduct, which is somewhat more than a quarter. According to the results of the current study, participants' conduct in controlling their blood glucose levels is significantly correlated with their degree of college and university education^{44,45}. Among (396) diabetic patients, a

different cross-sectional survey based on health facilities is carried out. The results of this study conflict with those of the current study, which show that self-monitoring of blood glucose is linked to marital status and socioeconomic status^{46,47}.

CONCLUSION

Demographic characteristics is effective mean in enhancing the glucose level controlling behavior for diabetic clients.

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