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Research Article

FAMILY SUPPORT AND LIFESTYLE IN PEOPLE WITH A RECENT T2D DIAGNOSIS

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ABSTRACT

Objective: describe the relationship between family support behavior, lifestyle and level of glycosylated hemoglobin in people with a recent type 2 diabetes diagnosis. **Material and Methods:** cross-sectional, descriptive, correlational study. 215 subjects participated between the ages of 20 and 50 with a diagnosis of T2D in a period of time no longer than 24 months, attending two urban health centers in the city of Puebla, Mexico. Two validated instruments and a data card were applied. The analysis strategies included descriptive statistics for the categorical variables, reliability of the instruments through Cronbach's alpha. **Results:** The results allowed the evaluation of lifestyle of recently diagnosed people and its relationship to family support.

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INTRODUCTION

Diabetes mellitus has increased considerably in most countries due to cultural and social changes: the aging of population, increased urbanization, changes in diet, reduction of physical activity and unhealthy behaviors. It is estimated that there are 415 million people with diabetes around the world and it is expected that there will be 642 million people with this disease by the year 2040 (International Diabetes Federation, [IDF], 2015). In Mexico, a prevalence with previous diagnosis of 9.2%, 8.6% men and 9.7% women was reported (National Survey of Health and Nutrition [Encuesta Nacional de Salud y Nutrición - ENSANUT]) (2012).

In a cohort study in Mexico City, the accumulated incidence of type 2 diabetes mellitus was of 14.4 and 13.7 per 1000 people-years for men and women respectively (González-Villalpando, Davila-Cervantes, Zamora-Macorra, Trejo-Valdivia, & González-Villalpando, 2014). The reviewed literature refers that, given the diagnosis of diabetes, a series of individual emotional reactions are created, which include rejection of diagnosis, fear, hopelessness, sadness, loss of identity, anxiety and fatalistic vision in the face of evolution. These conditions,

in many cases, impede the incorporation of a healthy lifestyle (4,5).

Lifestyle is a pattern of conduct that people develop as part of their way of life and is based on the interaction between living conditions and individual preferences, which are selected from the available options of the individual(1). Unhealthy lifestyles, such as: lack of physical activity, a diet rich in carbohydrates and fat, smoking and alcoholism, are associated with chronic diseases such as Type 2 diabetes (T2D), among others (2,3). However, what is intended, is for people with T2D to make healthy lifestyle changes, which continues to be a problem in this population. Family support is a factor that can help initiate and maintain lifestyle changes.

Family behavior in the man with T2D is any process in which family relationships promote health and well-being. Within these processes is the provision of emotional resources, information or instruments in response to the perception that their sick family member needs such help. These needs are often associated with acute or chronic stressful experiences like T2D. Therefore, family behaviors refer to the family resources that the person perceives and that are available or that are currently being provided to the person, which can influence

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behaviors with health implications such as diet, exercise, smoking, alcohol consumption, sleep, and adherence to medications (Cohen, Gottlieb & Underwood, 2000).

Lahey and Cohen (2000), indicate that family support behavior reduces the stressful effects and improves coping through the support of relatives, as support adjusts to the demands of the stressor, given that each stressful circumstance originates specific demands that affect the individual.

Research has also reported that people who receive greater family support showed lower levels of HbA1c (Choi, 2009), better quality of life (Gonzalez, Garcia & Ramirez, 2009), greater achievement of patient’s goals and fewer hospital admissions and days of hospitalization (Gyeong-Ju & Mi-Ja, 2012). On the other hand, Mayberry and Osborn (2012) reported that behavior of non family support were associated with less adherence to drug treatment and higher level of HbA1c. However, sometimes the family is little involved in following through with the change of lifestyle at the start of the T2D diagnosis. For this reason, the objective of this research was to describe the relationship between family support behavior, lifestyle and level of glycated hemoglobin in people with a recent type 2 diabetes diagnosis.

MATERIAL AND METHODS

Cross-sectional, descriptive, correlational study (6). 83 subjects participated between the ages of 20 and 50, with a diagnosis of T2D in a period no longer than 24 months, attending two urban health centers in the city of Puebla, Mexico.

The “Lista de Comportamientos de Apoyo y No apoyo (LCA)” (Diabetes Family Behavior Checklist – DFBC) was applied to measure the family support behavior (7). Translated into Spanish and culturally validated by Mendoza and Gallegos (2014), it consists of 16 items distributed in two dimensions: a) support behaviors and b) nonsupportive behaviors (8). The measured behaviors are: diet, exercise, glucose measurement, adherence to medication treatment and support *per se*, with a Likert-type response scale ranging from 1 never to 5 at least once a day. The score ranges between 16 and 80.

In addition, the Instrument to Measure Diabetic Lifestyles was applied, (Instrumento para Medir Estilo de Vida en Diabéticos Mellitus Tipo 2-IMEVID) consisting of 25 questions distributed along seven domains: nutrition, physical activity, smoking, alcohol consumption, information on diabetes, emotions and adherence to therapy, with a response scale ranging from Never to Almost always. The score ranges from 0 to 100 (9).

The Personal Factors card (Gutiérrez and Morales, 2015) contains general information about the participant, which include age, education, occupation and marital status.

For the collection of information, the participants were approached upon arrival at the health center to request attention in the Care Module for Patients with Chronic Disease. They were asked if they had a diagnosis of T2D and the time it had been since receiving the diagnosis. If the answer was affirmative and the time of diagnosis was less than or equal to 2 years, the patient was invited to participate in the study. The purpose of the study and the procedures to be performed were explained to them, when the participant agreed, they were

asked to sign the informed consent and to answer the questionnaires and the sociodemographic data card.

The figures of glycated hemoglobin were obtained from the participant's medical file. The last recorded number, no older than a month, was taken into account. If the information was not available, a sample was obtained or an appointment was made to obtain one according to the availability of the participant.

Analysis strategies. Descriptive statistics were obtained for the categorical variables. The reliability of the instruments was obtained by Chrombach's alpha.

This project had the authorization of the Research, Ethics and Biosafety committees of the Faculty of Nursing of Nuevo León, Mexico. The ethical principles of health research, as stated in the General Health Law regarding research, were respected.

RESULT

The average age of the 83 people with recently diagnosed T2 D who participated was 40.18 (*SD*= 5.82), 72.3% (60) of the sample were female, 25.3% (21) of the sample had six years of formal schooling, having an average of 7.22 years (*SD*= 4.2). In relation to marital status, 69.9% (58) reported being married. 44.6% (37) out of the people surveyed work within the household. 47.0% (39) had received the diagnosis by a physician within 24 months, with a mean of 18.3 months (*SD*= 6.86).

The amount of glycated hemoglobin (HbA1c) for people recently diagnosed must be a concentration of ≤6.5%. The results show that 28.9% (24) of the participants were in control in accordance with the standards of the American Diabetes Association. 10.8% (9) were in control and 39.7% (50) were not in control.

The lifestyle reported by the people surveyed showed a score between 28 and 98 (*M*= 70.46, *SD*= 14.07) which can be considered a good lifestyle on its general scale; supportive behaviors ranged from 0.00 to 76.56, presenting a mean of 35.52 (*SD*= 19.81) also on its general scale.

In the aspect of exercise and emotions, the lifestyle of the person with a recent diagnosis of type 2 diabetes presented the lowest means with 56.43 (*SD*= 28.55) respectively, and the highest was in tobacco consumption with 88.86 (*SD*=24.46); supportive behavior in the general scale reported 35.52 (*SD*=19.81) in average and 37.99 (*SD*= 22.91) in the presence of family support behaviors.

Table 1 shows the descriptive data of the sample.

Variable	\bar{X}	<i>SD</i>	Minimum V.	Maximum V.
Age	40.18	5.82	26	50
Years of Schooling	7.22	.20	1	18
Time with T2D in months	18.13	46.85	3	24
HbA1c	6.96	.512	5.8	8

N=83

Table 2 descriptive data of the instruments

Variable	\bar{X}	<i>SD</i>	Minimum V.	Maximum V.
IMEVID	70.45	14.06	28.00	98.00

Nutrition	71.68	14.99	27.77	100.00
Exercise	56.42	27.52	.00	100.00
Tobacco consumption	88.85	24.46	.00	100.00
Alcohol consumption	81.92	25.09	.00	100.00
Information	68.37	30.76	.00	100.00
Emotions	56.42	28.84	.00	100.00
Adherence	75.15	21.25	25.00	100.00
Family support behaviors	35.52	19.80	.00	75.56
Supportive behaviors	37.98	22.91	.00	100.00
Nonsupportive behaviors	32.35	21.20	.00	82.14
Generic behaviors	37.44	24.36	.00	.91.56
Dietary behavior	40.43	21.52	.00	81.25
Monitoring/glucose behavior	32.83	24.11	.00	91.67
Medication behavior	28.91	21.75	.00	75.00
Exercise behavior	36.34	24.43	.00	100.00

A general index was obtained from each variable.
N=83

Negative and significant relationships were found when relating age and years of schooling. ($r = -.297$; $p = .006$).

Table 3 Correlations between the variables of the study

	Age years	Schooling years	Diagnosis time months	HbA1C	Lifestyle	Supportive behaviors
Age, years	<i>r</i> 1					
	<i>p</i>					
Schooling, years	<i>r</i> -.297**					
	<i>p</i> .006					
Time of diagnosis, months	<i>r</i> .206	-.197				
	<i>p</i> .062	.074				
HbA1C	<i>r</i> .049	-.112	-.056			
	<i>p</i> .661	.312	.615			
General	<i>r</i> .014	-.026	-.036	.185		
INDIMEVID	<i>p</i> .897	.818	.748	.093		
General Behavior	<i>r</i> .072	.186	-.017	-.092	.092	1
	<i>p</i> .515	.092	.882	.410	.408	

General INDIMEVID, general index of lifestyle; General Behavior IND, general behavior index.
** Correlation is significant at 0,01 level (bilateral) N=83.

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DISCUSSION

The results coincide with those reported by Hernández R, Elnecavé O, Huerta U and Reynoso (2011) who reported that 30% of the study subjects were in good control, as well as with the results of glucose control measured by the glycated hemoglobin reported an average of 7.4 ($SD=2.02$) for subjects who did not have good control (11); Figueroa, Cruz, Ortíz, Lagunes, Jiménez and Rodríguez, (12).

The results described show that people with recently diagnosed type 2 diabetes relate healthy lifestyles, however, only 43.3% of them are controlled according to the criteria of the American Diabetes Association, 2017 for people who have recently been diagnosed with type 2 diabetes (13).

Family is the first support network of the individual and acts as a valuable resource in the promotion of health and prevention of the disease. Hence, people with a diagnosis of T2D (14) who report having family support show better lifestyles, especially in the decrease of tobacco consumption with 88.86 ($SD=24.46$). In this study, the general supportive behaviors reported a 35.52 ($SD=19.81$), findings that coincide with what was mentioned by Azzollini, Bail and Vidal 2011, (15).

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