

Quality of previous diabetes care among patients receiving services at ophthalmology hospitals in Mexico¹

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ABSTRACT

Objective. To survey a large sample of type 2 diabetes mellitus (T2DM) patients in Mexico City to determine if patient experience, access to basic services, treatment, and outcomes differed between those with social security coverage and those without.

Methods. From 2001–2007 a total of 1 000 individuals with T2DM were surveyed in outpatient clinics of the three largest public ophthalmology hospitals in Mexico City. Patients reported information about their health status and receipt of basic diabetes services, such as laboratory glycemic monitoring and diabetes education. Rates were compared between those with (n = 461) and without (n = 539) social security.

Results. Almost half of the patients (46%) in these public facilities were social security patients that were unable to access other services and had to pay out-of-pocket for care. Half of respondents were originally identified as potentially diabetic based on symptom complaints (51%), including 11% with visual impairment. Most patients (87.9%) reported that their glycemic level was being monitored exclusively via fasting blood glucose testing or random capillary blood glucose tests; only 5.3% reported ever having a glycosylated hemoglobin test. While nearly all respondents reported an individual physician encounter ever, only 39% reported ever receiving nutrition counseling and only 21% reported attending one or more sessions of diabetes education in their lifetime. Processes of care and outcomes were no different in patients with and those without social security coverage.

Conclusions. In Mexico, the quality of diabetes care is poor. Despite receiving social security, many patients still have to pay out-of-pocket to access needed care. Without policy changes that address these barriers to comprehensive diabetes management, scientific achievements in diagnosis and pharmacotherapy will have limited impact.

Key words

Diabetes mellitus, type 2; diabetes complications; diabetic retinopathy; quality of health care; Mexico.

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Diabetes incidence and prevalence rates are skyrocketing throughout Latin America (1). In Mexico, diabetes has be-

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come the main cause of mortality, with 70 512 deaths or 13.7% of all deaths in 2007 attributable to the disorder (2). The number of new cases increased more than seven-fold in 1984–2007, with 396 641 new cases diagnosed that year (3). More recently, the Mexican National Health Survey of 2000 (ENSA 2000) (4–5)

reported an adjusted overall population prevalence of type 2 diabetes (T2D) of 8.2%, with comparative adjusted rates of 14.9% and 12.7% in Mexico and the United States, respectively (6). Total annual cost for diabetes in Mexico has reached US\$ 317 million in public institutions (7), of which US\$ 140 million are direct cost, and the remaining US\$ 177 million are indirect costs. When all individuals with diabetes are considered, regardless of source of care, total costs attributed to diabetes in Mexico increase to more than US\$ 15 billion, of which almost US\$ 2 billion represents direct costs, and about US\$ 13 billion, indirect costs (8).

Despite the urgency of this growing epidemic, deficiencies and limitations to improving the quality of diabetes care in Mexico prevail, including: (a) lack of health insurance and a scarcity of resources at the primary care level; (b) physician non-compliance with treatment guidelines, including generalists and specialists; (c) rejection of a multidisciplinary approach to the management of diabetes; (d) persistence of an acute disease model, rather than multidisciplinary services delivered in a way that is consistent with the Chronic Care Model (9). The poor quality of care at the national level has been documented by recent official reports (10, 11). For example, a recent study published by an agency of the Ministry of Health of Mexico, interviewed 2 328 diabetes patients and reviewed 5 444 clinical records and found that 34.4% of these patients had visual impairment, but only 7.5% had had an A1c measurement in the previous year, and of these, only 33% had levels below 6.5 percent (10). Recent data from the National Institute of Nutrition in Mexico City found that the average A1c level of patients with Type 1 diabetes (T1D) were 10.2%, and T2D, 9.0%; glycemic goals were achieved by only 12.9% of T1D and 23.7% of T2D patients; and only 6.4% and 4.4%, respectively, achieved all targets for their glycemia, blood pressure, and lipoprotein profile (10). The results of this study at a tertiary care hospital document the reported deficiencies in diabetes care (10).

The Mexican health system dates back to 1943, when three important institutions were created: the Ministry of Health; the Mexican Institute of Social Security (IMSS), which delivers social security, including health care to employ-

ees in private institutions; and the Children's Hospital, the first of the now 10 national institutes of health in which tertiary care is provided (6). In the following years, additional providers of social security were created, including the Institute of Social Security and Social Services for State Employees (ISSSTE) for government employees.

Late in the 1960s, Mexico's hospital and specialty-oriented model began to exceed its capacity for meeting the population's health care needs. Furthermore, the system was not reaching many poor people in rural areas, and many households were having to use their own resources in the private market where poor-quality, unregulated services were being offered (12). Two recent reports (13, 14) based on an analysis of national, official surveys confirm these deficiencies. The first, an analysis of the 2006 National Health and Nutrition Survey, evaluated health care access and clinical outcomes by comparing adults with diabetes enrolled in Seguro Popular—a recently implemented medical coverage program for individuals without social security—to adults without health insurance (the control group) (13). The analysis showed that greater access to health care for those covered by Seguro Popular resulted in only slight diabetes-related health care improvements, still below the standards recommended by every international guideline on diabetes care. For example, the percentage of insulin users and the number of blood glucose measurements per month for those covered by Seguro Popular was 4.15% and 1.02, respectively, compared to 4.79% and 0.87 for the uninsured (13). The second report was based on an interim analysis of clinical indicators used to evaluate diabetes care in a national sample. It showed that 25.6% of patients with diabetes had no access to medical care; 6.6% of these patients had HbA1c lower than 7%, without significant differences in HbA1c values between those with access to health services and those without (14). The authors concluded that the current model for diabetes care in Mexico is ineffective and a paradigm change is necessary (14).

To learn more about the quality of diabetes care in Mexico, three ophthalmologic hospitals in Mexico City were selected for this study, based on several factors including their high quality of specialized care and low cost of services.

Each of the hospitals is a private assistance institution (IAP), established with the goal of delivering high quality ophthalmologic care to people without social security coverage. These hospitals have several distinguishing features: (a) they do not belong to the National Health System; (b) consequently, they are not referral centers—patients from all socioeconomic levels and from every state and geographic area of the country can seek ophthalmology care at the hospitals based on their perceived health status, not on clinical criteria; (c) as a result, ophthalmology interventions range from simple procedures, including eye screening, to complex interventions (i.e., vitrectomy). The high quality of the staff and the availability of resources for treating patients without a medical referral result in a huge demand for specialized ophthalmological care at these hospitals. Even those with social security coverage attend these hospitals when they run into delays or lack of access at their network clinics and hospitals. To meet the demand and stay financially stable, these hospitals receive funding through their boards, which are composed of benefactors from private enterprises, and charge fees based on a sliding scale, determined by socioeconomic level.

In 2001, a series of meetings were carried out under the direction of the Mexican Society of Ophthalmology to establish outpatient diabetes self-care classes at these ophthalmology hospitals. The classes were implemented as a response to a need perceived by the administrators and specialists at these centers: a substantial proportion of patients requesting ophthalmology care had serious deficiencies regarding the components of diabetes self-care, including a lack of basic knowledge regarding the disease, its consequences (acute and chronic complications), and treatment. As a prerequisite to the class, patients were asked to complete a survey that collected data on demographics and diabetes history. The purpose of the present study was to analyze data collected from a total of 1 000 diabetes patients who requested ophthalmology care (without a medical referral) for a screening or a visual impairment at one of the three ophthalmology hospitals. Using a large sample, this study identified new information regarding patient experience with diabetes care in Mexico.

In particular, this study examined patient experience with glycemic monitoring, diabetes education, and other essential services, and compared the experiences of patients with social security to those without it. These results are important because the study was the first to address how lack of access to diabetes care might impact visual impairment. The study results have implications for developing diabetes programs throughout Latin America since a lack of access to ophthalmologic care is a shared problem (15).

MATERIALS AND METHODS

Setting and recruitment

From 2001–2007 surveys were administered to individuals in the pool of diabetes patients presenting for specialized treatment at the three ophthalmology hospitals: Hospital “Dr. Luis Sánchez Bulnes,” Fundación Conde de Valenciana I.A.P., and Fundación Hospital “Nuestra Señora de la Luz” in Mexico City. At the time of registration, the patient’s income level and socioeconomic status were assessed by a social worker who determines the out-of-pocket fee based on a sliding scale. Each hospital determines the cost of its services relative to the socioeconomic status of the patient. The authors of the study did not have access to socioeconomic data from this group of patients.

Patients were identified in the waiting room of each hospital’s retinal disease department. The only instrument of measurement was a survey designed to assess baseline diabetes care in the implementation of Staged Diabetes Management™ (SDM) in Mexico (16). SDM is a structured diabetes program developed by the International Diabetes Center in Minneapolis, Minnesota (United States), a World Health Organization (WHO) collaborative diabetes center. Since 1995, SDM has been implemented in Mexico by one of the authors (JRS). The survey was administered to the patients by three of the authors, who in addition to inviting the patients to attend the diabetes classes, obtained their informed consent to carry out the survey.

The current study was proposed by the authors to the board of presidents of the Mexican Society of Ophthalmology and the Mexican Retina Society, and approved by Fundación Hospital Nuestra Señora de la Luz ethics committee.

Data collection and variables

The survey collected basic demographic information, as well as the number of years since the patient’s diabetes diagnosis. Patients were asked to report the event that led to their initial diagnosis (e.g., routine/targeted screening, visual impairment, or symptoms of hyperglycemia). Whenever available, patients reported what their fasting glucose level was on the date of diagnosis, current and prior use of antidiabetic medications, history of acute complications, previous hospital admissions, cardiovascular risk factors, chronic complications, and history of diabetes-related patient education, counseling, and primary care. For purposes of this study, clinical outcomes—including cardiovascular risk factors and history of acute and chronic complications—were determined from the patient’s self-report on the survey. Ophthalmologic diagnosis was not available for analysis.

Statistical analysis

Indicators of patient experience with diabetes care and the overall outcomes were examined and then compared by the subgroups with, and without, mandatory social security coverage. Differences were compared with Chi-square and t-tests.

RESULTS

In all, 1 000 patients with T2D completed the survey, including 611 women and 389 men from 22 of the 32 states in the country. The mean patient age was 60.5 years (Table 1). Although these hospitals are designed to provide specialty care for patients without private insurance, and receive private funding to do so, almost half of the sample (46.1%) reported also paying for coverage at a social security institution.

Slightly more than half of the patients reported that their diabetes was originally diagnosed due to symptoms of hyperglycemia; and only one-third was diagnosed by screening (32.5%). One in 10 survey participants reported that visual impairment was their original symptom leading to diabetes diagnosis. At the time of the survey, the main visual complaint was diabetic retinopathy (51.0%) (Table 2), and 16% were blind (16.3%).

Rates of cardiovascular risk factors were very high, including hypertension (57.9%), dyslipidemia (26.1%), obesity (20.9%), and smoking (15.5%). Chronic diabetes complications included diabetic neuropathy (25.8%), diabetic nephropathy (15.9%), diabetic foot disease (10.5%), and amputation (3.8%) (Table 2).

Glucose monitoring. Except for ISSSTE, glycated hemoglobin testing is still unavailable within either public or private health care institutions in Mexico, and this was reflected in the monitoring of patients in the current study. Fifty-nine percent (59.0%) reported that their glucose levels were monitored exclusively via fasting blood glucose tests or via random capillary glucose measurement (50.6%). In contrast, only 5.3% reported a prior A1c test, and 6.3% reported never having had a blood test for glycemic control.

Throughout Mexico, diabetes care largely consists of individual, brief physician-patient encounters. In the current study, nearly all respondents (98%) reported at least one diabetes-related medical visit in the prior time. By comparison, only 39.1% reported ever receiving nutritional counseling, and only 24.4% had attended one or more sessions of diabetes education (Table 2).

When comparing the health status, blood glucose monitoring, and receipt of diabetes-related self-care support between patients with social security to

TABLE 1. General traits of the study population: 1 000 diabetes patients receiving services in ophthalmology hospitals in Mexico, 2001–2007

Variable	Females	Males	Total	Percentage
Participants	611	389	1 000	
Age (in years)	61.0	59.6	60.5	
Type 1 Diabetes	0	0	0	
Type 2 Diabetes	611	389	1 000	100.0
Method of diagnosis				
Screening	207	118	325	32.5
Symptoms of hyperglycemia	292	220	512	51.2

TABLE 2. Previous diabetes care and prevalence of cardiovascular risk factors and acute and chronic complications among 1 000 diabetes patients receiving services in ophthalmology hospitals in Mexico, 2001–2007

Variable	Females	Males	Total	Percentage
Method of glycemic control				
Fasting plasma glucose	363	227	590	59.0
Capillary blood glucose	302	204	506	50.6
Glycated hemoglobin	36	17	53	5.3
None	39	24	56	6.3
Treatment of diabetes				
Nutrition counseling	243	148	391	39.1
Diabetes education	129	81	210	21.0
Oral antidiabetic drugs	186	134	320	32.0
Insulin	129	69	198	19.8
Cardiovascular risk factors				
Hypertension	387	192	579	57.9
Dyslipidemia	172	89	261	26.1
Obesity	148	61	209	20.9
Smoking	58	97	155	15.5
Chronic complications				
Diabetic retinopathy	310	201	511	51.1
Diabetic neuropathy	168	90	258	25.8
Diabetic nephropathy	107	52	159	15.9
Blindness	86	77	163	16.3
Diabetic foot	52	53	105	10.5
Coronary heart disease	19	18	37	3.7
Stroke	29	14	43	4.3
Amputations	10	28	38	3.8

TABLE 3. Comparison of patients with social security coverage (SC+) and without coverage (SC-) among 1 000 diabetes patients receiving services in ophthalmology hospitals in Mexico, 2001–2007

Variable	Percentage		Percentage		P
	Number SC+	SC+ (%)	Number SC-	SC- (%)	
Fasting blood glucose	285	62.3	305	56.1	0.055
Capillary blood glucose	225	49.2	281	51.7	0.466
A1c	25	5.4	28	5.1	0.937
Diet	193	42.2	199	36.6	0.000
Insulin therapy	103	22.5	96	17.6	0.066
No therapy	36	7.8	64	11.7	0.052
Hypertension	276	60.3	305	56.1	0.199
Retinopathy	243	53.1	268	49.3	0.254
Blindness	71	15.5	92	16.9	0.607
Diabetic foot	45	9.8	60	11.0	0.607
Current smokers	80	17.5	75	13.8	0.129
Amputations	17	3.7	21	3.8	0.965

those without it, the findings showed essentially no differences between the two groups (Table 3). Receipt of diabetes education, glucose monitoring, and outcomes were no better among patients receiving mandatory private insurance, than among those who were uninsured. This was true in the sample overall, as well as when those with and without social security were compared within subgroups defined by patient gender. The one exception was that, overall, patients

with social security were slightly more likely to be using insulin (22.5% versus 17.7%).

DISCUSSION

Clinical trials have documented the role that hyperglycemia plays in the risk of microvascular complications in patients with T1D and T2D (17–22), and have demonstrated the effectiveness of blood glucose control to reduce the risk

of diabetic retinopathy. The Diabetes Control and Complications Trial (DCCT), for instance, showed that for each 10% decrease in A1c, there was a 39% decrease in risk over the range of A1c values (17, 19–22). Numerous guidelines have been published to reduce the impact of diabetes as a cause of visual impairment. WHO has proposed universal principles in eye care for patients with diabetes, including: (a) patient awareness regarding diabetes and the care required; (b) delivery of adequate care for diabetes; (c) required eye screenings for diabetic retinopathy; (d) society's commitment to deliver the necessary level of eye care; (e) awareness and motivation of patients to undergo an eye examination and return regularly for followup examinations (23, 24). Screening for early signs of sight-threatening diabetic retinopathy (STDR) to allow timely referral and treatment and reduce the risk of visual loss has been advocated throughout Europe and North America (25, 26). National programs for diabetic retinopathy screening have documented the clinical benefits of increasing coverage (27, 28).

In this large survey of diabetes patients at three different, public, ophthalmologic service providers, evidence was found regarding gaps in diabetes care in Mexico. The results are consistent with limited, prior data about deficiencies in diabetes ophthalmologic care in Mexico. In 1994, a study of a small sample of 100 diabetes patients endeavored to establish the frequency of diabetic retinopathy (29). The main finding was that 81% of the patients with diabetic retinopathy had not been previously diagnosed, and that patients with social security were no more likely to have had appropriate vision screening than uninsured patients (26).

The current study builds on this prior study, and shows that 15 years later, basic resources (i.e., glycated hemoglobin) for diabetes care are still unavailable in Mexico, even for social security beneficiaries. In Mexico, lack of coverage or limited access to public and private services, deficiencies in the quality of diabetes outpatient and inpatient care with low rates of dilated eye examinations, and a scarcity of diabetes educators result in very limited access to continuing diabetes education. More generally, organizational deficiencies, scarce economic resources, and shared lack of interest contribute to the current paradox that health care outcomes are worsening

at the same time as new scientific advances in diagnosis and treatment are being made. As a result, the burden of suffering from chronic complications is unprecedented.

The results of this study document the deficiencies. Patients in Mexico treated for visual impairment at three large public ophthalmology hospitals are diagnosed at a late stage of their disease and poorly monitored after diagnosis. Access to diabetes education and self-care support in the country is poor and chronic complications are prevalent. Mandatory payments to social security institutions, which should theoretically make private health services accessible, do not. As a result, patients have to pay out-of-pocket fees, over and above their payments for social security premiums. In the case of visual impairment, loss of sight is still a presenting symptom of diabetes, and

one-sixth of these patients are legally blind at the first visit.

The present study had the following limitations: although the three participating hospitals receive patients from every state in the country, the analysis was made on a predetermined number of patients, as part of an educational effort. Additional methods to assess the presence of chronic complications, and A1c measurements are also desirable for evaluating the effect of blood glucose control on the type and severity of visual impairment.

In conclusion, the results of this survey reflect the low quality of diabetes care that many people in Mexico receive. The deficiencies, along with substandard clinical monitoring of patients' blood glucose, contribute to the pathogenesis of ophthalmologic complications in Mexico. There is a dire need to change

the current vertical, prescriptive, and physician-centered model of diabetes care. Reducing clinical inertia, and introducing patient-centered, multidisciplinary, and collaborative management are prerequisites to improving the prognosis of individuals with diabetes. Unless these innovations occur in the real world, recommendations from international guidelines and scientific achievements will be useless.

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REFERENCES

- King H, Aubert RE, Herman WH. Global burden of diabetes, 1995–2025: prevalence, numerical estimates, and projections. *Diabetes Care*. 1998;21(9):1414–31.
- Sistema Nacional de Información en Salud (SINAIS). Defunciones 2007. Available from: <http://sinais.salud.gob.mx/mortalidad/index.html>. Accessed on 15 June 2009.
- Dirección General de Epidemiología. Compendio de Anuarios de Morbilidad 1984–2007. Available from: <http://www.dgepi.salud.gob.mx/infoepi/index.htm>. Accessed on 15 June 2009.
- Olaiz G, Rojas R, Barquera S, Shamah T, Aguilar C, Cravioto P, et al. Encuesta Nacional de Salud 2000. Tomo 2: La salud de los adultos. Cuernavaca, Morelos, México: Instituto Nacional de Salud Pública; 2003.
- Aguilar-Salinas CA, Velásquez Monroy O, Gómez-Pérez FJ, González-Chávez A, Lara-Esqueda A, Molina-Cuevas V, et al. Characteristics of patients with type 2 diabetes in México. Results from a large population-based nationwide survey. *Diabetes Care*. 2003;26(7):2021–6.
- Barceló A, Rajpathak S. Incidence and prevalence of diabetes mellitus in the Americas. *Rev Panam Salud Publica*. 2001;10(5):300–8.
- Arredondo A, Zúñiga A. Economic consequences of epidemiological changes in diabetes in middle-income countries: the Mexican case. *Diabetes Care*. 2004;27(1):104–9.
- Barceló A, Aedo C, Rajpathak S, Robles S. The cost of diabetes in Latin America and the Caribbean. *Bull World Health Organ*. 2003; 81(1):19–27.
- Wagner EH, Bennett SM, Austin BT, Greene SM, Schaefer JK, Vonkorff M. Finding common ground: patient centeredness and evidence-based chronic illness care. *J Alt Comp Med*. 2005;11(1)(Suppl 1):S-7–S-15.
- Secretaría de Salud México. Rendición de cuentas en salud 2008. México: Secretaría de Salud México; 2009.
- Lopez-Maldonado FJ, Reza-Albarran AA, Suarez OJ, Villa AR, Rios-Vaca A, Gomez-Perez FJ, et al. Degree of control of cardiovascular risk factors among a patient population with diabetes mellitus type 1 and 2. *Gac Med Mex*. 2009;145(1):1–6.
- Frenk J, Sepúlveda J, Gómez-Dantés O, Knul F. Evidence-based policy: three generations of reform in Mexico. *Lancet*. 2003;362:1667–71.
- Sosa-Rubi SG, Galárraga O, López-Ridaura R. Diabetes treatment and control: the effect at public health insurance for the poor in Mexico. *Bull World Health Organ*. 2009;87: 512–9.
- González-Villalpando C, López-Ridaura R, Campuzano JC, González-Villalpando ME. The status of diabetes care in Mexican population: are we making a difference? Results of the National Health and Nutrition Survey 2006. *Salud Publica Mex*. 2010;52(Suppl 1): S36–43.
- World Health Organization. Visual impairment and blindness, 2009. Available from: <http://www.who.int/mediacentre/factsheets/fs282/en/print.html>. Accessed on 5 August 2009.
- Rodríguez-Saldana J, Morales de Teresa M, Rosales-Campos, AC, Clark Jr CM, Mazze RM, Strock E. Effectiveness of Staged Diabetes Management on the quality of diabetes care in Mexico. *Practical Diabetes Int*. 2010; 27(4):242–7.
- Service FJ, O'Brien PC. The relation of glycaemia to the risk of development and progression of retinopathy in the Diabetes Control and Complications Trial. *Diabetologia*. 2001;44(12):1215–20.
- Kohner EM. Microvascular disease: what does the UKPDS tell us about diabetic retinopathy? *Diabet Med*. 2008;25(1)(Suppl. 2): 20–4.
- The DCCT Research Group. The relationship of glycemic exposure (HbA1c) to the risk of development and progression of retinopathy in the Diabetes Control and Complications Trial. *Diabetes*. 1995;44(8):968–83.
- The Writing Team for the Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Research Group. Effect of intensive therapy on the microvascular complications of type 1 diabetes mellitus. *JAMA*. 2002;287(19):2563–9.
- The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Research Group. Retinopathy and nephropathy in patients with type 1 diabetes four years after a trial of intensive therapy. *N Engl J Med*. 2000;342(6):381–9.
- Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Research Group. Prolonged effect of intensive therapy on the risk of retinopathy complications in patients with type 1 diabetes mellitus: 10 years after the Diabetes Control and Complications Trial. *Arch Ophthalmol*. 2008;126(12):1707–15.
- World Health Organization. Priority eye disease, 2009. Available from: <http://www.who.int/blindness/causes/priority/en/print.html>. Accessed on 5 August 2009.
- World Health Organization. Prevention of blindness from diabetes mellitus: report of a WHO consultation in Geneva, Switzerland, 9–11 November 2005. Geneva: WHO; 2006.

25. Prasad S, Ahmad A, Kamath GG, Phillips RP, Bowen-Jones D. Screening for diabetic retinopathy. *Pract Diabetes Int.* 1999;16(1):51-5.
26. Baker R, Grimshaw JR, Thompson JR, Wilson A. Services for diabetic retinopathy screening in England and Wales: a survey of ophthalmologists. *Practical Diabetes Int.* 1999;16(1):33-4.
27. Garvican L, Clowes J, Gillow T. Preservation of sight in diabetes: developing a national risk reduction programme. *Diabet Med.* 2000; 17(9):627-34.
28. Misra A, Bachmann MO, Greenwood RH, Jenkins C, Shaw A, Baraka O, Flatman M, Jones CD. Trends in yield and effects of screening intervals during 17 years of a large UK community-based diabetes retinopathy screening programme. *Diabet Med.* 2009; 26(10):1040-7.
29. Rodríguez-Villalobos E, Ramírez-Barba E, Cervantes-Aguayo F. Frecuencia y oportunidad del diagnóstico de retinopatía diabética. *Salud Publica Mex.* 1994;36:275-80.

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RESUMEN

Calidad de la atención previa de los pacientes diabéticos atendidos en hospitales de oftalmología en México

Objetivo. Determinar si hay diferencias en cuanto a las experiencias de atención de la diabetes, el acceso a los servicios básicos, el tratamiento y la evolución clínica entre las personas que disponen o no de seguro social de salud mediante la encuesta de una muestra amplia de pacientes que padecen diabetes mellitus tipo 2 en la Ciudad de México.

Métodos. Se encuestó a 1 000 pacientes con diabetes tipo 2 en la consulta externa de los tres hospitales públicos de oftalmología más importantes de la Ciudad de México. Los pacientes proporcionaron información acerca de su estado de salud y su experiencia respecto de la atención básica de diabetes; por ejemplo, el control de la glucemia mediante análisis de laboratorio y la información que recibieron acerca de la enfermedad. Se compararon los datos estadísticos entre quienes disponían de un seguro social de salud ($n = 461$) y quienes carecían de este tipo de seguro ($n = 539$).

Resultados. Casi la mitad de los pacientes (46%) que se atienden en estos hospitales públicos disponen de seguro social de salud, pero no pudieron acceder a otros servicios y debieron pagar de su bolsillo para recibir atención. La mitad de los entrevistados (51%) eran pacientes que habían sido considerados presuntos diabéticos a partir de los síntomas que habían referido, de los cuales 11% presentaron discapacidad visual. La mayoría de los pacientes (87,9%) refirieron que solo se controlaban mediante análisis glucemia en ayunas o análisis aleatorios (sin ayunar) de una muestra de sangre capilar; solo 5,3% refirieron que alguna vez se habían efectuado el análisis de glucohemoglobina (HbA1c). Si bien prácticamente la totalidad de los encuestados refirieron haber tenido alguna consulta médica, solo 39% informaron haber recibido orientación nutricional en alguna ocasión y solo 21% refirieron haber asistido a una o más sesiones informativas sobre la diabetes. No se registraron diferencias en la atención ni la evolución clínica entre los pacientes que disponen de un seguro social de salud y aquellos que carecen de este tipo de seguro.

Conclusiones. En México, es deficiente la calidad de la atención en materia de diabetes. A pesar de contar con un seguro social de salud, muchos pacientes deben pagar de su bolsillo para acceder a la atención que necesitan. De no modificarse las políticas con el fin de abordar los obstáculos que encuentran los pacientes para acceder al tratamiento integral de la diabetes, serán limitadas las repercusiones de los avances científicos que tengan lugar en materia de diagnóstico y farmacoterapia.

Palabras clave

Diabetes mellitus tipo 2; complicaciones de la diabetes; retinopatía diabética; calidad de la atención de salud; México.