The empathy of general practitioners and association with morbimortality in type 2 diabetes mellitus

Empatía de médicos generales y asociación con morbimortalidad en diabetes mellitus tipo 2

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Abstract

Introduction: patients' experiences of empathy may be associated with beneficial outcomes in diabetes mellitus.

Objective: To determine the association between empathy in care and outcomes in diabetic patients.

Methods: A pragmatic, cluster-randomized, pragmatic controlled trial was conducted to examine the effects of empathy in intensive multifactorial treatment among people with diabetes.

Results: Higher CARE score terciles were associated with lower all-cause mortality rates compared to the low CARE score tercile in the univariate model.

Conclusions: Our findings highlight the value of the empathic human aspects of medical care in the mortality and quality of life of diabetic patients.

Keywords: empathy, primary care, diabetes mellitus, morbimortality. source:DeCS

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Resumen

Introducción:las experiencias de empatía de los pacientes pueden estar asociadas con resultados beneficiosos en la diabetes mellitus.

Objetivo:Determinar la asociación entre la empatía en la atención y resultados en pacientes diabéticos

Método:Se realizó un ensayo controlado, pragmático, aleatorizado por grupos, que examinó los efectos de la empatía en el tratamiento multifactorial intensivo entre personas con diabetes

Resultados:Los terciles de puntaje CARE más altos se asociaron con tasas más bajas de mortalidad por todas las causas en comparación con el tercil de puntaje CARE bajo en el modelo univariable .

Conclusiones:Los hallazgos resaltan el valor de los aspectos humanos empáticos de la atención médica en la mortalidad y calidad de vida de los pacientes diabéticos.

Palabras Clave: empatía, atención primaria , diabetes mellitus , morbimortalidad fuente :DeCS

Introduction

Empathy is a key healthcare concept emphasized in policies, codes of practice, national clinical guidance and medical training. It is also a high priority for patients. Empathy refers to care that incorporates understanding the patient's perspective, shared decision-making between patient and physician, and consideration of the broader context in which the illness is experienced[1]. It has been hypothesized that improved patient experiences with physician empathy could lead to better health outcomes. This could occur through therapeutic consultations that foster patient activation, empowerment, and motivation toward self-management. This, in turn, could lead to greater adherence to medication, physical activity, diet and smoking recommendations[2]. There is also evidence to suggest that empathy may additionally improve patient satisfaction, which itself is independently associated with outcomes. Through these processes, patient-centered empathic care experiences can contribute to optimizing the management of chronic conditions such as type 2 diabetes[3].

Studies have suggested that patients' experiences of empathy may be associated with beneficial intermediate outcomes in type 2 diabetes[4]. However, how empathy affects long-term health outcomes that account for most diabetes-related morbidity and healthcare costs is unclear. Previous empathy studies had short follow-up periods and only examined associations with cardiovascular disease (CVD) risk factor levels or modeled risk[5]. Such studies rely on extrapolation, leading to errors and biases in estimates of associations with CVD events[6]. In addition, the short study follow-up time makes reverse causality more likely; sicker patients experience more physician-centered consultations. To overcome these limitations, we examined the association between patients' experiences with physician empathy in the first year after diagnosis of type 2 diabetes and the incidence of CVD events and all-cause mortality over ten years.

Method

A pragmatic, cluster-randomized, pragmatic, controlled trial was conducted examining the effects of intensive multifactorial treatment compared with routine care among persons with diabetes detected by primary care screening. In the city of Miraflores,49 general practices participating in a stepwise screening program used a validated risk score that identified persons at high risk of having prevalent undiagnosed type 2 diabetes. Those in the top quartile of the risk score were invited to undergo initial random capillary glucose and glycosylated hemoglobin (HbA1C), followed by fasting blood glucose testing and confirmatory oral glucose tolerance testing for those with elevated values for one or both of the initial tests. This study was approved by the Universidad Regional Autónoma de Los Andes (UNIANDES). Patients were followed for ten years, from 2010 to 2020.

Exclusion criteria were pregnancy, lactation, psychiatric illness precluding informed consent, or illness with a probable prognosis of less than one year. The 867 patients screened for diabetes agreed to participate and were randomized at the practice level to the intervention group (intensive multifactorial treatment) or the control group (routine care). The multifactorial intervention was not designed to influence empathy experiences and there were no differences in empathy measures between the trial groups 12 months after diagnosis. Therefore, data from both groups were pooled and presented to the entire cohort.

A numerical score for empathy was calculated based on responses to the Consultation and Relational Empathy (CARE) measure, a questionnaire completed by participants at 1-year follow-up[7]. The CARE measure quantifies patients'care experiences with a focus on empathy. Given that type 2 diabetes care in Ecuador is provided by primary care physicians along with nurses, we asked about the diabetes care experiences of these two types of professionals in primary care. The measure includes the following ten items: how good was the general practitioner at (1) making feel comfortable, (2) allowing to tell your story, (3) listening, (4) being interested in you as a whole person, (5) fully understanding your concerns, (6) showing care and compassion, (7) being positive, (8) explaining things clearly, (9) helping you take control, (10) making a plan of action with you? A total CARE score (range: 10-50) is

obtained by summing the responses to each question on a 5-point Likert scale.

At the time of diagnosis, participants completed standardized questionnaires to provide baseline information regarding age, sex, occupation, ethnicity, smoking and medication use. In addition, clinical and anthropometric measures were obtained according to standard operating procedures by trained personnel. Finally, for each endpoint of interest, relevant clinical information, including death certificates, postmortem reports, medical records, hospital discharge summaries, electrocardiograms, and blood test results, was sent to an independent expert unaware of CARE scores for adjudication according to an agreed-upon criterion.

The database and statistical processing of the data were performed and analyzed in the statistical program SPSS 26 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used for the results collection, presentation and interpretation.

The baseline characteristics were summarized and tested for differences between CARE score tertiles using a 1-way analysis of variance for continuous variables and a χ^2 test for categorical variables. Incidence rates were calculated as events divided by person-time at risk, reported per 100 person-years. Hazard ratios (HRs) and 95 % CIs were calculated from Cox proportional hazards regression models to analyze the association between CARE score categories by tertiles and CVD events or all-cause mortality. CARE score tertileswere used to allow clinical interpretation of findings (i.e., low, moderate, high), but also modeled CARE score as a continuous variable, unit score difference. We ran stepwise univariable and multivariable models in a complete case analysis only. Individuals who had experienced a CVD event or died before CARE score measurement at one year were excluded from the analysis.

Results

The participants' mean (SD) age was 61 (7.1). Most participants were male (60 %) and white (97 %), and 35 % reported full-time employment. The mean (SD) HbA1C value was 6.51% (0.86%) or 48.0 (7.0) mmol/mol. The mean (SD) total cholesterol level was 4.49 (0.93) mmol/L, and the mean (SD) systolic blood pressure was 135.4 (18.8) mm Hg. Analysis of baseline characteristics of participants with and without missing data showed no significant differences. Of 867 participants, 628 had a full CARE score and 7 experienced a CVD event before baseline, leaving 621 participants for full case analysis. Tertile 3 corresponded to a CARE score >46, tertile 2 to a CARE score of 38 to 46, and tertile 1 to a CARE score ≤37. There were no differences in clinical variables between CARE score tertiles. The mean (SD) follow-up time of the study after completion of the CARE score was 10.1 (1.84) years. A total of 120 participants (19 %) experienced a CVD event (20 myocardial infarctions, 35 strokes, 37 revascularizations, 1 amputation, and 27 CVD deaths). A total of 132 participants (21 %) died during follow-up; 60 due to cancer.

Higher CARE score tertiles were associated with lower rates of CVD events compared with the low CARE score tertile in univariable and multivariable models; however, this did not reach statistical significance (Table1).

Table 1 . Association between empathy experience and incidence of CVD events and mortality.

CARE scoringcategory	Numberofevents	Eventrate a	UnivariateCR (95% CI)	P-value	MultivariateHR (95 % CI) b	P-value
LCA events						
CARE score, difference per unit						
Tercile1		1.59	1		1	
Tercile2		1.07	0.67 (0.38-1.19)	.17	0.64 (0.35-1.14)	.13
Tercile3		1.27	0.80 (0.46-1.39)	.42	0.66 (0.38-1.16)	.16
Continuous CARE score per unit			0.99 (0.97-1.02)	.67	0.99 (0.96-1.01)	.33
Mortalityfromany						

cause						
CARE score, difference per unit						
Tercile1	28	1.55	1		1	
Tercile2	20	1.07	0.61 (0.35-1.07)	.08	0.49 (0.27-0.88)	.01
Tercile3	23	1.32	0.86 (0.52-1.42)	.55	0.60 (0.35-1.04)	.05
Continuous CARE score per unit			0.99 (0.97-1.01)	.31	0.97 (0.95-0.99)	.03

Source: statistical analysis, CARE = consultation and relational empathy measure; CVD = cardiovascular disease; HbA1C = glycosylated hemoglobin; HDL = high-density lipoprotein; HR = hazard ratio; LDL = low-density lipoprotein, p≤ 0.05.

Note: Estimates are from Cox proportional hazards regressions. Tertile 1 corresponds to a CARE score ≤37, tertile 2 to a CARE score 38-46, and tertile 3 to a CARE score >46.

Higher CARE score tertiles were associated with lower rates of all-cause mortality compared with the low CARE score tertile in the univariable model; however, this did not reach statistical significance (Table 1). In the multivariable model, the moderate and high CARE score tertiles were associated with significantly lower rates of all-cause mortality compared with the low CARE score tertile (HR 0.49; 95 % CI, 0.27-0.88, *P* = 0.01 and HR 0.60; 95 % CI, 0.35-1.04, *P* = 0.05, respectively).

Discussion

In this 10-year follow-up of newly diagnosed type 2 diabetes patients, those who reported better empathy experiences in the first 12 months after diagnosis had a significantly lower risk (40% to 50%) of all-cause mortality over the next ten compared with those who experienced little practitioner empathy. Participants who experienced better empathy also showed a trend toward a lower risk of CV events, although this was not statistically significant. In trying to manage the growing burden of preventable chronic disease, medicine is increasingly moving toward precision medical care, goal-directed care, and technology-based assessment, seemingly focusing less on the human, interpersonal, and empathic aspects of care. The findings suggest that patients' experiences with these elements of care early in the course of diabetes may be an important determinant of mortality risk. The potential clinical impact is considerable and comparable to pharmacological treatments, without the associated side effects or nonadherence problems.

The results extend previous research on the relationship between physician empathy experiences and outcomes in type 2 diabetes. Most studies have examined associations with intermediate health outcomes, such as blood glucose level or blood pressure, rather than CVD events or mortality[8]. While these have shown associations between physician empathy and intermediate outcomes, most have included short follow-up periods that rely on extrapolation to determine potential effects on long-term CVD events and mortality[9]. An earlier observational study of a cohort of patients with newly diagnosed type 2 diabetes showed a small but statistically significant association between CARE scores and intermediate health outcomes, including blood pressure and lipid parameters, but no association with modeled 10-year cardiovascular risk[10]. The multifactorial nature of CVD events and all-cause mortality could contribute to inconsistencies between modeled and actual CVD events/mortality. In addition, residual confounding and challenges in defining, measuring, and capturing the concept of practitioner empathy could further contribute to differences in findings. This could also be important when considering why we observed significant findings for mortality rather than CVD events. Patient factors could be important in understanding this. For example, evidence suggests that patients with lower levels of anxiety or those with positive expectations/optimism (who are more likely to

report better perceptions of care) are also likely to live longer[11]. Measures of quality of life and optimism could be valuable to examine; several recent systematic reviews suggest direct pathways between positivity and cause-specific mortality, which does not always include cardiovascular disease. Similar associations have been demonstrated between loneliness, social isolation and mortality[12].

Another explanation for our findings may be that empathetic, patient-centered physicians are more likely to successfully promote positive behavior change, such as medication adherence or physical activity[13]. Previous studies have also reported that physician empathy is associated with greater patient motivation toward activation, empowerment, and disease self-management. Another way in which physician empathy might function is that it may reflect the physician's listening skills and the patient's confidence to disclose what is wrong so that it can be addressed, but this is a challenge to measure and quantify[14,15] .

Empathy experiences were examined during the first year after diagnosis using the CARE measure, which has undergone extensive validation work in primary care. It is a robust tool in its ability to capture the patient's experience of physician empathy within a single experience and has some evidence for its predictive validity and durability over time[16]. However, it remains a single measure taken at a single point in time, which may not accurately reflect experiences in subsequent years. CARE scores were also used as tertiles to allow the findings to be clinically interpretable, representing low, moderate, and high empathy experiences.

Previous studies suggest that the first year after diagnosis may be pivotal in determining subsequent experiences, patients' long-term health decisions, and clinical outcomes[17,18]. The dynamic nature of healthcare experiences over the long course of type 2 diabetes may contribute to variations in perceived empathy over time that were not captured in the present study. This longitudinal experience of practitioner empathy as the chronic disease progresses difficult to capture and is limited by the absence of valid and reliable measures of empathy over time[19].

There are many additional undefined and unmeasurable components of health care experiences that may include practitioner factors (e.g., training, experience, attitude) and the context of care (e.g., system factors such as workload, time pressure, resources), which may affect the perception of the practitioner's empathy skills[20]. In addition, the patient's perception of the physician's empathy may also reflect the patient rather than the physician's skills. These factors were not examined in the present study and may be independently related to the risk of all-cause mortality or CVD events and contribute to the observed findings.

Conclusions

The findings highlight the value of the empathic human aspects of medical care that also require this same personalized medicine enacted in a different form. The potential impact of this type of medicine is significant and may be more effective than focusing exclusively on the biological characteristics of the disease. These findings justify incorporating more empathetic personalized medicine into preventive strategies. More research is needed to establish a causal pathway that can explain how empathic skills may affect all-cause mortality and to understand how patients' perceptions of physician empathy may influence health outcomes.

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