



## Patient and Provider Perspectives

## Do patients and physicians agree on diabetes management? A study conducted in Public Healthcare Centres in Brazil

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## ABSTRACT

**Objective:** To explore to what extent patients with diabetes agree with their physicians on diabetes management and whether the agreement varies according to patients' socio-demographic characteristics.

**Methods:** A cross-sectional study was conducted among patients with diabetes and their Family Health physicians in 108 healthcare centres in Belo Horizonte, Brazil. Patients and physicians were interviewed face-to-face using standard questionnaires. Physicians were unaware of which of their patients would be interviewed. Their responses were compared using descriptive statistics and Cohen's weighted kappa. **Results:** 282 patient–physician pairs were included. Kappa coefficients were often low, the highest was found for presence of diabetic foot and the lowest for kidney disease. Physicians tended to overestimate patients' risk of diabetes complications and underestimate patients' adherence to all diabetes self-management activities as well as diabetes control. Moreover, the agreement rate regarding adherence to diet, foot care and medicine prescriptions was significantly higher among male, younger and higher educated patients.

**Conclusion:** Results indicate that physicians' recommendations are generally poorly apprehended by their patients, especially by the lower educated, compromising the goal of patient-centred care.

**Practice implications:** Educational programmes need to incorporate strategies to improve the comprehension and effectiveness of physician–patient communication, especially with the most socially vulnerable groups.

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### 1. Introduction

The increasing prevalence and chronic nature of diabetes underscore the importance of continuity of care and promotion of self-management [1]. Many of the activities that are needed to achieve glycaemic control are carried out by patients themselves on a day-to-day basis, such as monitoring of blood glucose levels, medicating, dieting and exercise. For that reason, enhancing patients' capacities for the self-management of diabetes has become an important focus in current diabetes care [2]. Physician–patient relationship is a crucial element of effective chronic illness care. However, effective communication is complex because professional's and patient's perspectives may differ [3].

Physicians and patients are generally part of distinct social worlds and use different interpretative frameworks to address health problems [4,5]. The degree to which patients with diabetes follow advices regarding the dimensions of self-care behaviour is largely determined by their health beliefs or “mental models” of the disease [6–8]. Patients are motivated by their own perceptions on the likelihood that adverse events will occur, the impact of the disease on their everyday life, their personal control and the effectiveness of preventative strategies. On the other hand, physician's view about diabetes is based on their accumulated medical knowledge about and clinical experience with a variety of patients [4,5].

The way physicians understand their patients' health beliefs and preferences is a fundamental feature of patient-centred care [9]. Because perceptions of patients can influence physicians' communication and decision-making and because physicians often have limited awareness of their patients' perspectives [10,11], this topic constitutes an important field of research in diabetes related care, both in developed and developing countries.

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Diabetes affects more than 10 million Brazilians being the fifth most common cause of hospitalization and among the 10 major causes of mortality in the country. Despite the acknowledged improvements, diabetes complications remain high. According to the national registry for diabetes and hypertension, SisHiperDia, among the cases of diabetes registered: 4.3% had a diabetic foot disorder and 2.2% a previous amputation, 7.8% had renal disease, 7.8% already had a myocardial infarction and 8.0% stroke [12].

Brazil's Unified Health System (Sistema Único de Saúde; SUS) aims for universal access at all levels of care and primary care is increasingly provided by the Family Health Programme (FHP). Progressive expansion of this programme has improved access to integral and continuous care, being the platform for the prevention and management of chronic diseases, including diabetes [13]. The National Reorganization Plan for the care of diabetes and hypertension, besides other activities, gives incentives to group meetings and education programmes. Moreover, from early 2011, the People's Pharmacy Programme offers basic medicines for diabetes and hypertension free of charge [14].

We developed a study in Belo Horizonte, Southeast Brazil, using a mixed methods approach, integrating qualitative and quantitative methods to comprehend the perceptions of patients with diabetes and physicians about the disease and its treatment. First, we conducted focus groups meetings with patients with diabetes who attended primary and secondary health services. The results (submitted) showed us that patients struggle to control the disease and claim for more knowledge about diabetes. Second, we developed a cross-sectional epidemiological study among patients with diabetes and their own physicians who attended primary Healthcare Centres (HC).

The present study was set out to answer the following two questions: (1) to what extent do patients with diabetes and their own physicians agree on diabetes-related issues? and (2) Do physician–patient agreements vary according to patients' socio-demographic characteristics?

## 2. Methods

### 2.1. Study population/data collection

A cross-sectional epidemiological study was conducted among patients with diabetes and their own Family Health physicians at the public Health System of Belo Horizonte, Brazil. The city has 147 HC distributed in nine Health Districts, of which 25 were not eligible to participate because they did not have a physician at the time of the study. From 122, 11.5% ( $n = 14$ ) HC refused to participate, mainly due to reported business of HC managers at the time of data collection. But, this refusal has not biased the distribution of HC participation as there were no differences between the population covered by HC participants and non-participants with regard to Health Vulnerability Index (HVI), an index which identify areas with the highest risk for health [15].

The sample size calculation for testing the agreement between patients and their physicians included in this study ( $n = 250$ ), was based on a minimum kappa coefficient of 0.30, precision of 0.10 and confidence level of 95%.

Patients inclusion criteria were: (1) having been diagnosed with diabetes type 1 or type 2 by physicians; (2) minimum of 20 years of age; (3) last consultation were with the interviewed physician. Information about patients and their physicians was provided by the HC manager.

Patients were invited to participate after leaving their physicians' appointments because the questionnaire included questions related to the current visit. When more than one patient of the same physician was eligible, the first in the list was invited to participate. Physicians were invited to participate in the study as

they arrived at the HC. The names of the patients chosen to be interviewed were not informed to the physician in order to prevent changes in his/her conduct at the consultation.

Data gathering took place between January and July 2011 by means of interviews held at the HC. Trained professionals informed the aims of the study to patients and physicians and those who agreed to participate signed the informed consent statement before the interviews. In order to guarantee the confidentiality of the data, participants' names were omitted at the questionnaire. Reliability was tested on 10% of the participants by means of reapplying selected questions of the general questionnaire. This produced a mean kappa value of 0.76. The present study was approved by the Research Ethics Committees of the Universidade Federal de Minas Gerais and the Health Secretary of Belo Horizonte.

### 2.2. Measurements

Initially, a qualitative study was conducted with patients with diabetes to explore their understanding and opinion about questions included in the questionnaire. This information was used to improve the final version of the questionnaire. Patients' and physicians' questionnaires were pre-tested before data collection. Key patients' and physicians' variables analysed in this study are described in the following paragraphs.

### 2.3. Patients' variables

Sociodemographic characteristics included gender, age and years of education. Self-rated health (SRH) was measured by the question: "In general, compared to people of your age, how do you consider your own health status?" There were five possible answers: very good, good, regular, bad or very bad which were grouped into good (very good + good), regular and bad (bad + very bad)

#### 2.3.1. Characteristics of diabetes

Patients were asked about their medication for diabetes and classified in two categories: one or more oral hypoglycaemic agents (OHA) and insulin combined with one or more OHA's. Duration of diabetes was inferred by the question "How old were you at the time you received the diagnose of diabetes?" together with age at interview. We opted to ask this way, because we believe that people remember better the age of diagnose than the time since diagnose.

#### 2.3.2. Self-care recommendations

Information on diet and physical activity recommendations was obtained by the question: "Have you received any advice about (your diet/physical activity) from your physician?" Response options: yes or no. Patients using insulin and who had a portable glucometer were also asked about recommendation to self-monitoring their blood glucose: "Have you received any advice from your physician on how to test your blood glucose?" Responses options: yes or no.

Participation in group meetings were obtained by the question: "Have you ever participated in group meetings of patients with diabetes at the healthcare centre that you attend?" Responses were grouped into three categories: "I am currently participating", "ex-participant" and "I, never participated".

#### 2.3.3. Physician–patient relationship

Patients were asked about the number of visits they had with their physicians in the previous twelve months and responses were collapsed into two categories: "less than five" and "five or more" visits. They also provided information on how long they were being examined by their current physician.

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