# Low health literacy patients with diabetes are less likely to discuss contextual barriers to disease management with the doctor: an analysis of doctor-patient interactions

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## Abstract

Health literacy was assessed using a modified form of the Short Test of Functional Health Literacy in Adults (STOHFLA) measured on a scale from 1-5. Participants with a score of less than 4 experience problems with health literacy more than "rarely", and were classified as having "low" health literacy. Those with a score of 4 or greater were categorized as having "high" health literacy. Applying a validated coding methodology, medical records were examined to identify patients with "red flags" such as poorly controlled blood sugar (A1c), cholesterol or blood pressure that would indicate to the physician that the patient might be facing a contextual barrier to disease management. For patients with at least one red flag, two trained coders analyzed audio recordings of the medical visit. Each recording was coded to indicate whether an underlying "contextual factor" (CF), such as financial problems or lack of social support, was discussed as a possible contributor to their poor outcomes. Characteristics of high versus low health literacy patients were compared with independent samples t-tests and chi-squared tests, as indicated. The proportion of patients who discussed contextual barriers in the high versus low health literacy groups was compared using logistic regression, adjusting for age, time with diabetes, education level, nativity, and health insurance type. Medical records data, patient survey questionnaires, and audio recordings of medical encounters were obtained for a diverse, low-income sample (N=367) for patients with type 2 diabetes who consented to the Reducing Racial Disparities in Diabetes Coached Care study (R2D2C2).

## Background

- Prior analysis of the medical visits audio recordings had shown that effectively discussing and addressing contextual barriers to disease management improved the patient's outcomes with their chronic disease. However, even with adequate health care treatments, patients with chronic disease and "low" health literacy may fail to realize the full benefit of health care services if they cannot communicate effectively about barriers to disease management.
- Health Literacy is defined as how well patients interpret, communicate, and are aware of basic health information to make better decisions in their chronic disease management. Patients with a score of less than 4 experience problems with health literacy more than "rarely", and were classified as having "low" health literacy. Those with a score of 4 or greater were categorized as having "high" health literacy. Low health literacy may hinder doctor-patient communication about barriers to chronic disease management.

## Objectives

The current study examined audio recordings of medical visits to determine whether a patient's level of health literacy is correlated with his or her likelihood to discuss a contextual barrier with the doctor.

- ➢ Describe how low health literacy patients discuss contextual barriers with their doctor during their medical visit.
- ➢ Examine the difference between how patients with varying levels of health literacy discuss contextual factors during their medical visit.

## Methods

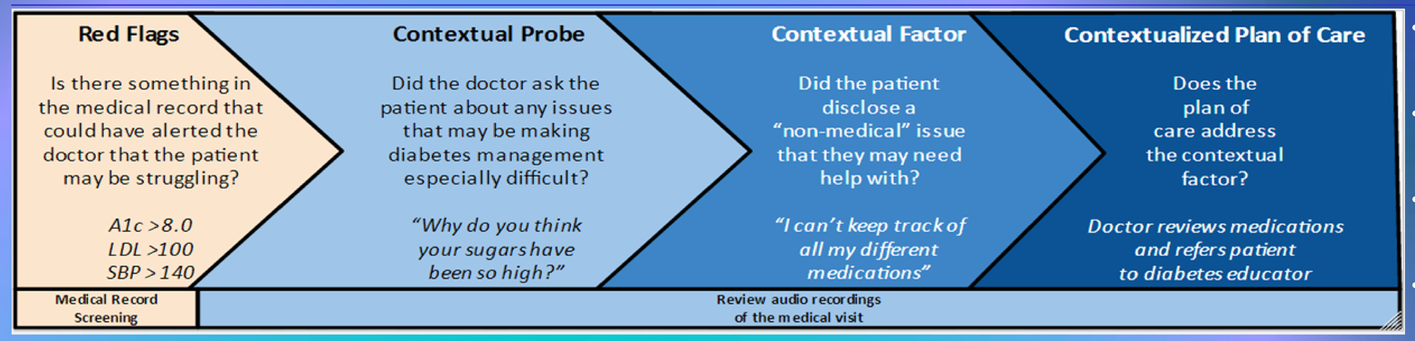


Figure 1: Overview of data collection and coding protocol

- Participants were patients with type 2 diabetes recruited from UCI-affiliated clinics (N=367)
- A validated coding method was adopted[1] and four terms were defined to identify a contextualization of care:
- Two coders coded each audio recording separately, and reconciled totals were recorded into data.
- After the data was collected for all coded recordings, medical data was reviewed a second time to determine if patients had made any progress or improvement

## Results

| | Low health literacy (N= 69) | High health literacy (N=97) |
|---|---|---|
| Age, y, mean ± SD | 58.6 ± 9.9 | 58.2 ± 10.4 |
| Female, % | 69.2 ± 0.5 | 56.8 ± 0.5 |
| White, % | 0.0 | 22.1 |
| Hispanic, % | 84.6 | 73.6 |
| Vietnamese, % | 15.4 | 4.2 |
| Time, y, mean ± SD | 12.7 ± 7.5 | 9.4 ± 6.6 |
| Private insurance, % | 1.5 | 20.0 |
| Medicare, % | 27.6 | 21.0 |
| Medicaid, % | 46.1 | 31.6 |
| Some college or more, % | 3.3 | 35.5 |
| Born in the US, % | 4.8 | 29.5 |

Table 1: Patient characteristics of low and high health literacy in patients with type 2 diabetes

- Compared to patient in the low health literacy group, patients with high health literacy tend to be younger
- Patients with lower health literacy have had diabetes for a longer amount of time
- Patients with low health literacy are less likely to have private health insurance.
- Patients with high health literacy tend to me more educated.
- Patients born in the U.S. are more likely to have high health literacy.

## Discussion

- Most importantly, patients with low health literacy are more likely to be non-native, have had diabetes for a longer period of time, and are less educated.
- Despite having adequate access to medical care, patients with low health literacy are less effective at communicating their contextual barriers to their doctor.

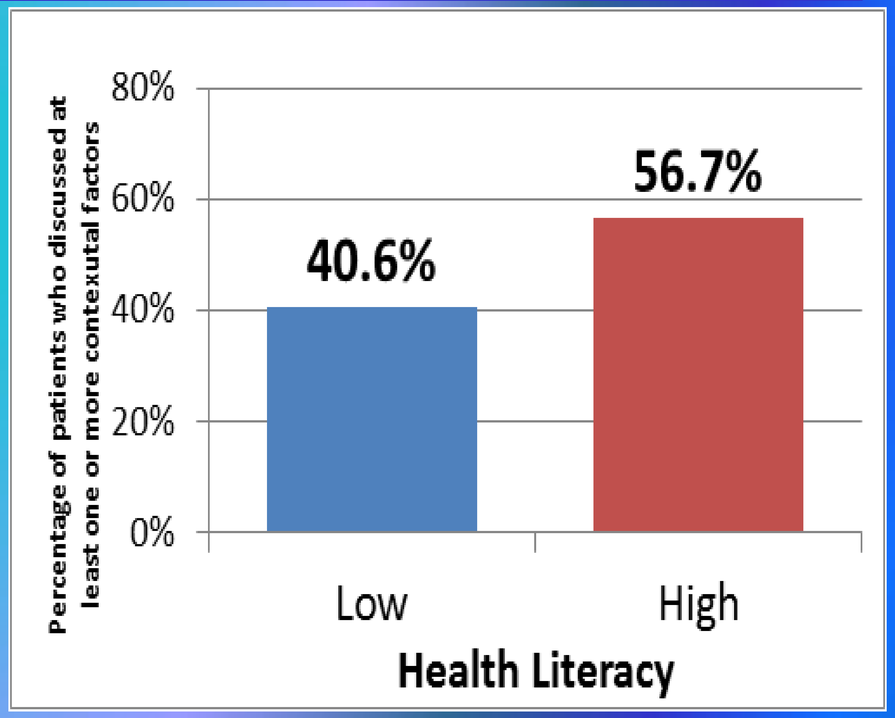


Figure 2: Percentage low and high health literacy patients who discussed CF during medical visit

- In low health literacy patients 59.4% did not discuss any CF during their medical visit.

## Conclusions , Implications, and Future Studies

- Low health literacy may contribute to less effective doctor-patient communication about barriers to disease management.
- Patients with low health literacy are less likely to raise a contextual factor during the medical visit, resulting in less effective interaction between doctor and patient.
- Because effective communication about contextual barriers has been shown to contribute to improved health outcomes, approaches to help both doctors and low health literacy patients overcome barriers to communication may help reduce disparities in outcomes associated with health literacy.

**1.** Weiner, S.J., Kelly, B., Ashley, N., Binns-Calvey, A., Sharma, G., Schwartz, A., et al. Content coding for contextualization of care: evaluating physician performance at patient-centered decision making. Med Decis Making. 2014; 34(1):97-106. [PMID: 23784847]