PSYCHOSOCIAL FACTORS AFFECTING BEHAVIOR MODIFICATION IN DIABETIC PATIENTS

A qualitative and quantitative analysis of patients with Type II Diabetes Mellitus in a primarily Hispanic Population in Northeast Community Clinics, Downtown Los Angeles.

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A NOTE ON THE DESIGN…

- I began the Primary Care Leadership Program interested in behavior change in diabetic patients, and had planned to assess patients' prediction of their Hemoglobin A1c scores as well as their adherence to diet, exercise and medication regimens.

- After a few days of interviews I realized that I needed to rethink the study design. None of the patients I interviewed were familiar with the concept of Glycosylated Hemoglobin, even when explained as "average blood sugar." My questions about adherence were met with apathy.

- Surprised by the lack of participation in their own health, I began to wonder about the factors contributing to the relative nonparticipation that I encountered. The problem was certainly not a lack of available information or passionate providers.

- This lead me to think about psychological frameworks that could underlie these behaviors.
- I began to explore the concept of Locus of Control…

LOCUS OF CONTROL

- Personal beliefs regarding one's control over outcomes were first categorized in Rotter's Internal-External Locus of Control Scale in 1966.

- Rotter's scale was specifically modified for health psychology in the late 1970s by Wallston, et al, who developed the Health Locus of Control scale and the Multidimensional Health Locus of Control scale, which quantify the generalized expectation about whether one's health is controlled by one's own behavior or by forces external to oneself.

- These scales have been further modified and applied to obesity, mental health, cancer, and diabetes.

- Surgenor, et al and Macrodimitris et al found that perceived control was negatively related to Hemoglobin A1c in 2000 and 2001, respectively, however, other studies have found the data linking health-related behaviors and internal locus of control to be ambiguous. Additionally, the relationship between locus of control and health behaviors appears to vary with the cultural setting.

THE PROBLEM: PSYCHOSOCIAL FACTORS AND GLYCEMIC CONTROL

- Psychosocial factors affecting the patient, such as anxiety, stress, lack of social support, low level of education, and emotional personality type have all been correlated with poor glycemic control. A few of these variables have been independently correlated with external locus of control.

- This study aims to explore whether perceived control is related to glycemic control, using glycosylated hemoglobin as its main index.

- The relationship between glycemic control and other psychosocial factors will also be examined, and the patients' understanding of glycemic control will be qualitatively reviewed.

METHODS

- All type II diabetes patients seen at the NECC downtown Los Angeles site on various days were asked to complete a brief survey regarding their diabetes.

- Demographic information and last Hemoglobin A1c level were recorded, as well as the date of this lab.

SURVEY: QUESTION 1 – MENTAL STATUS EXAM

- **What are your life goals? Please list three.**
- ¿Cuáles son sus metas en la vida? Por favor escriba tres.

- This question was intended to function as an extremely shortened mental status exam prior to broaching the topic of diabetes, to explore wellbeing and long-term thinking.
- The question is extremely open-ended so as to illicit heterogeneous responses that could be used in the qualitative portion of the study.

SURVEY: QUESTIONS 2 AND 3 – LOCUS OF CONTROL

- **On a scale of 1 to 10, how much control do you feel you have over your diabetes?**
En una escala del 1 al 10, ¿cuánto control cree usted que tiene sobre su diabetes?

    1   2   3   4   5   6   7   8   9   10

no control   **a lot of control**

- **On a scale of 1 to 10, how much control do you feel your doctor has over your diabetes?**
En una escala del 1 al 10, ¿cuánto control cree que su médico tiene sobre su diabetes?

    1   2   3   4   5   6   7   8   9   10

no control   **a lot of control**

- These questions were intended to examine locus of control using a multidimensional, diabetes and provider-referenced scale.
- The results will give three values: Perceived internal control (the first answer), Perceived external control (the second answer), and internal–external locus of control (first answer minus second answer).
- A fourth measure on the multidimensional scale, "chance control," will be assigned to patients who choose low values for both questions.

SURVEY: QUESTION 4 – GAINING CONTROL

- **How do you feel you can improve your control of your diabetes?**

- ¿Cómo piensa usted que puede mejorar el control de su diabetes?

- This question was intended to provide qualitative evidence regarding locus of control with reference to diabetes.

SURVEY: QUESTION 5 – MEASURING IMPROVEMENT

- **What do you think is the best way to know if your diabetes is getting better?**

- ¿Cómo cree usted que es la mejor manera de saber que su diabetes está mejorando?

- This question was intended to illicit qualitative evidence to explore how patients measure the progress of their diabetes.
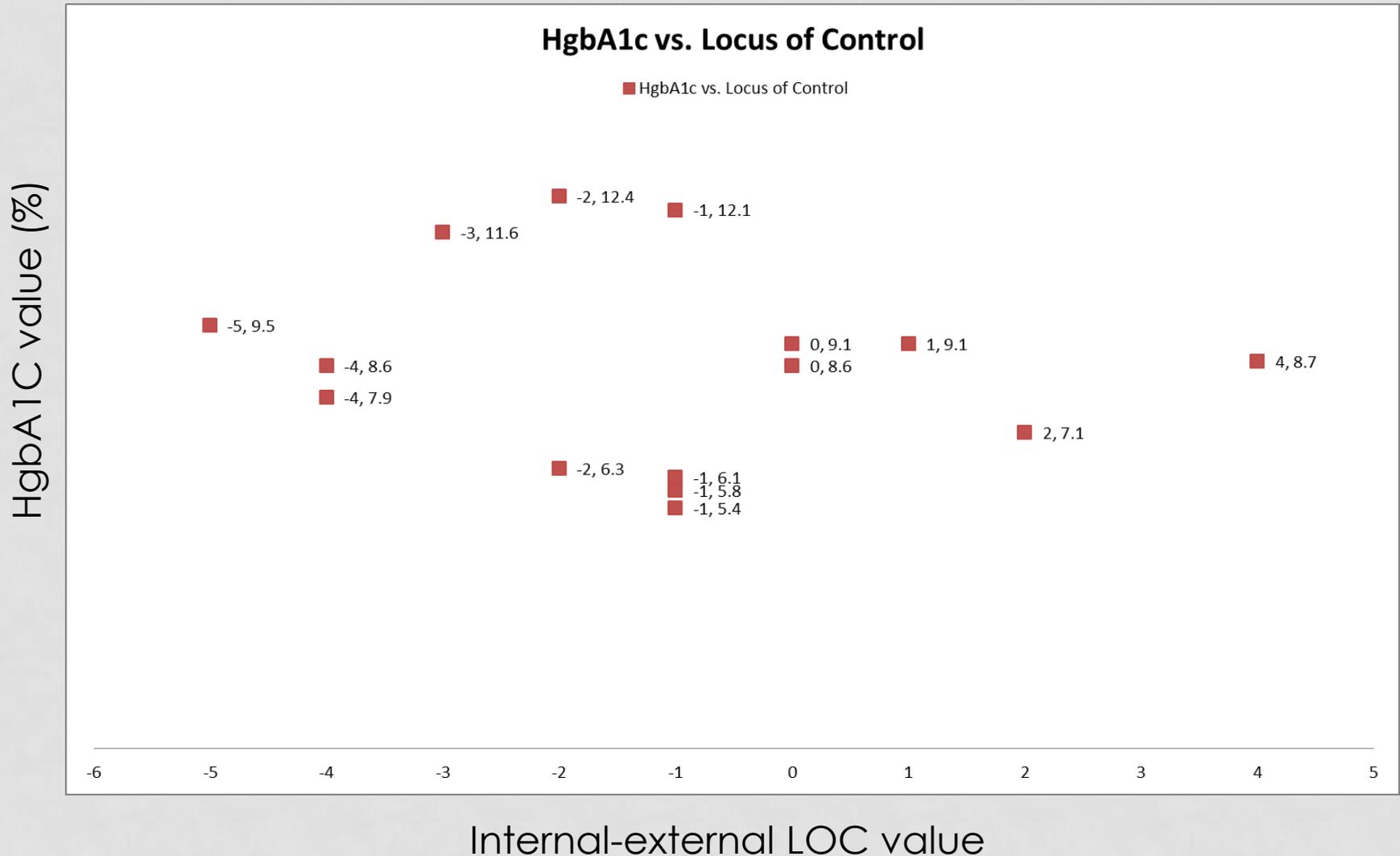
SURVEY: QUESTION 6 – DEFINITION OF SUCCESS

- **How will you know when you are successful in managing your diabetes?**

- ¿Cómo va a saber cuándo logre el éxito en el manejo de su diabetes?

- This question was included in the survey to gain a qualitative understanding of the endpoints that patients use to define success in managing diabetes.

RESULTS AND STATISTICAL ANALYSIS

- Since the study is still ongoing the data has not been fully analyzed, but here are a few of the ways that relationships in the data will be examined:

- Internal locus of control values correlated with HgbA1c

- External locus of control values correlated with HgbA1c

- Internal-external scale value correlated with HgbA1c
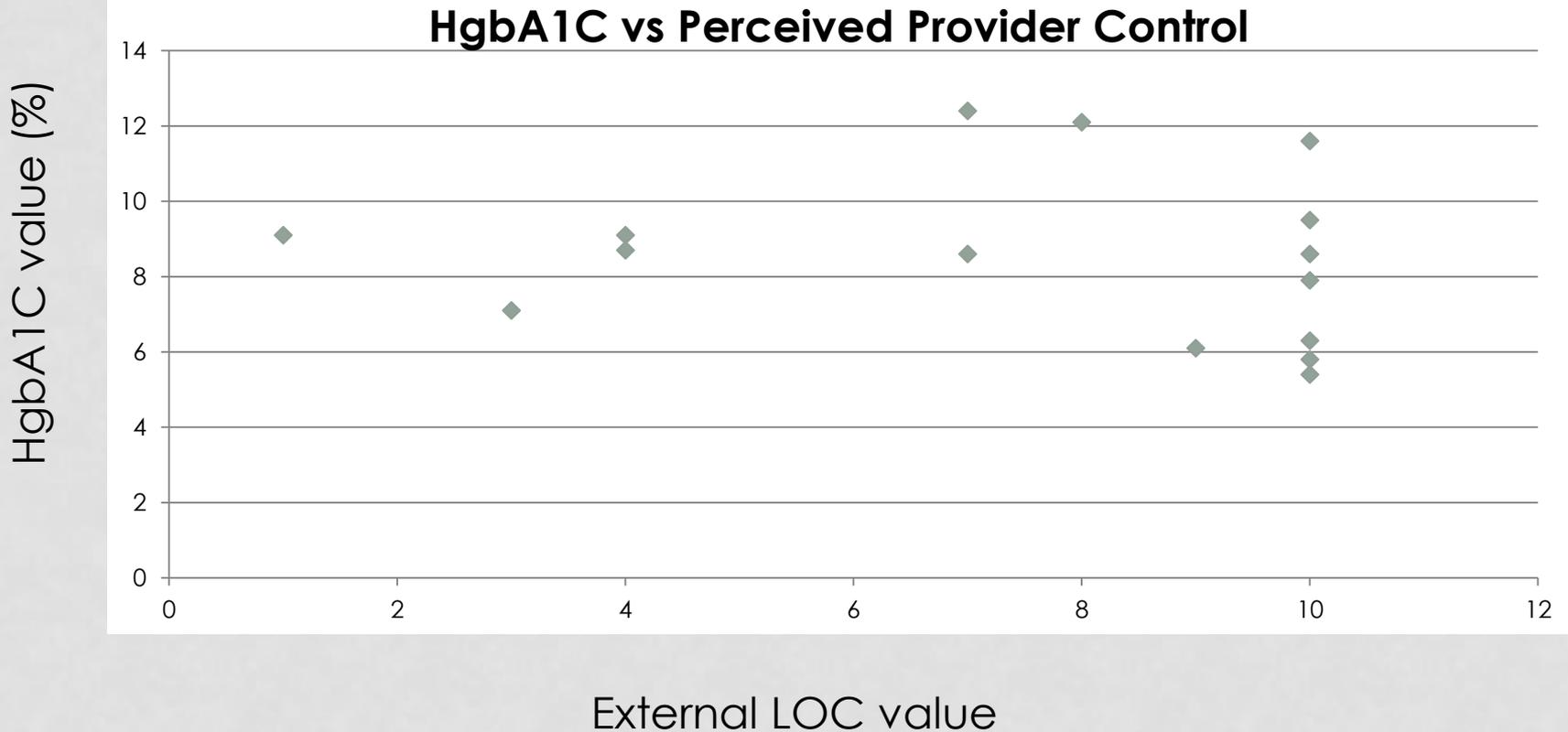
PRELIMINARY DATA HANDLING

HgbA1c vs. Locus of Control

■ HgbA1c vs. Locus of Control

HgbA1C value (%)

Internal-external LOC value

Data points: -2, 12.4 ; -1, 12.1 ; -3, 11.6 ; -5, 9.5 ; 0, 9.1 ; 1, 9.1 ; 4, 8.7 ; -4, 8.6 ; 0, 8.6 ; -4, 7.9 ; 2, 7.1 ; -2, 6.3 ; -1, 6.1 ; -1, 5.8 ; -1, 5.4

PRELIMINARY DATA HANDLING

HgbA1C vs Perceived Patient Control
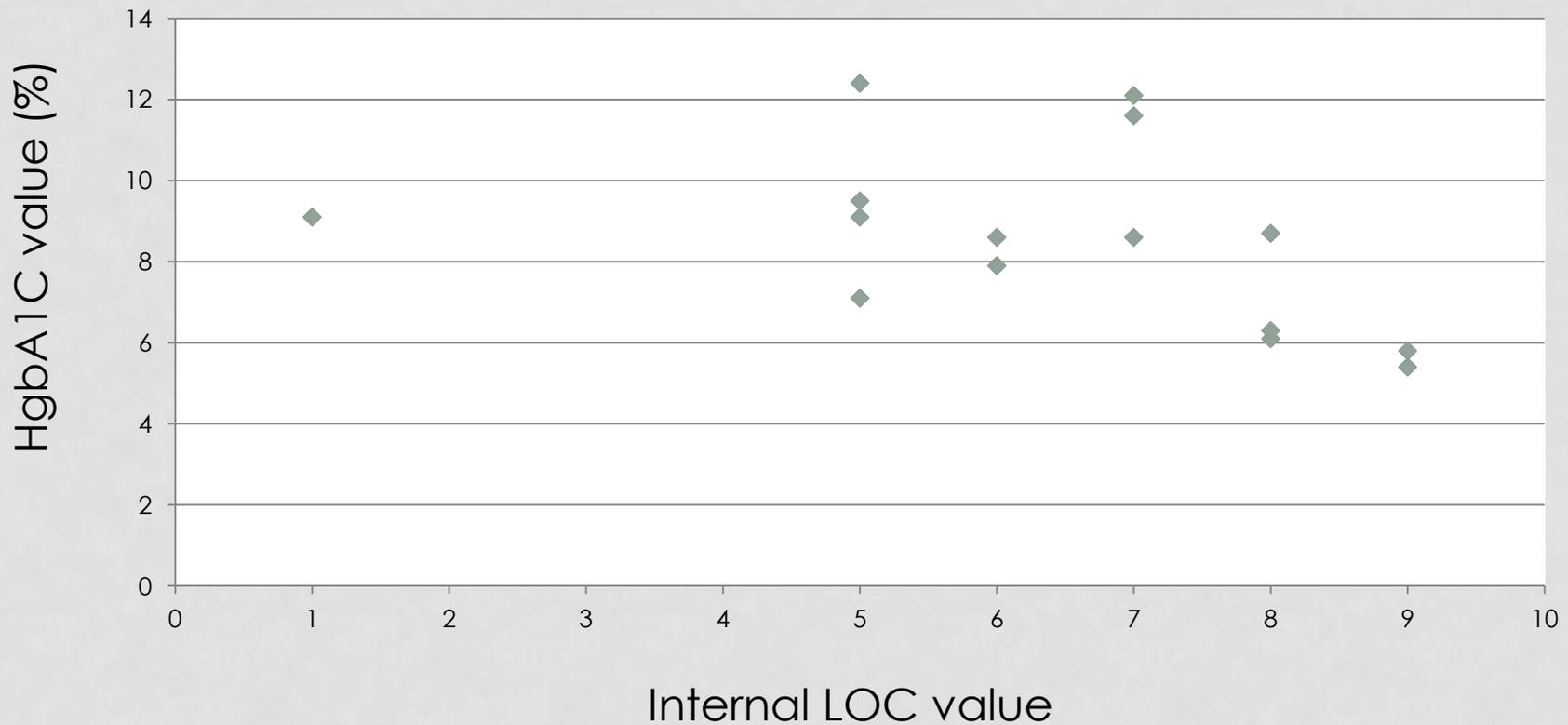
PRELIMINARY DATA HANDLING

QUALITATIVE DATA GROUPING

- **Question 1: What are your life goals? Please list three.**

Life goals: weight/diet/exercise/DM	14
Life goals: work	5
Life goals: family	3
Life goals: happiness/health/wellbeing	12

- Patients listing non-diabetes related life goals: 15/20

QUALITATIVE DATA GROUPING

- **Question 4: How do you feel you can improve your control of your diabetes?**

Controlling diabetes: diet	16
Controlling diabetes: exercise	3
Controlling diabetes: medication	5
Controlling diabetes: PCP visits	3

- Patients listing self-initiated behaviors (pink): 16.5/20

QUALITATIVE DATA GROUPING

- **Question 6: How will you know when you are successful in managing your diabetes?**

Measure of success: blood sugar	5
Measure of success: lab values	5
Measure of success: stopping medications	2
Measure of success: weight loss	1
Measure of success: feeling better	4
Measure of success: no longer have diabetes	2

- Patients listing self-initiated behaviors (pink): 5/20
- Patients listing a subjective measure (yellow): 4/20

POSSIBLE CONCLUSIONS AND OUTCOMES

- If a negative correlation exists between internal-external locus of control values and HemoglobinA1c, supporting the hypothesis that low perceived control over one's diabetes in the context of the provider-patient relationship is associated with poor glycemic control, the possible reasons for the prevalence of externalized control loci in diabetic patients in this particular community clinic should be explored.

FUTURE QUESTIONS

- How is the provider-patient relationship contributing to an external locus of control for diabetic patients?

- Is this framework culturally bound, or generalizable to a larger population?

- What changes could be made in the way diabetic patients are treated to engender more perceived control?