

Background

- Prediabetes is an asymptomatic condition in which patients' blood glucose levels are higher than normal but do not meet diagnostic criteria for type 2 diabetes mellitus (T2DM)
- Screening for T2DM with a hemoglobin A1c (HbA1c) test and then providing brief information about prediabetes may provide a window of opportunity to increase patient engagement in behaviors to prevent T2DM
- Engagement in behaviors to prevent T2DM may be influenced by key behavioral mediators
 - Perception of risk for T2DM
 - Motivation to prevent T2DM
 - Patient activation
- The effects of screening for T2DM and providing brief information about prediabetes on potential mediators of engagement in preventive strategies is unknown

Objective

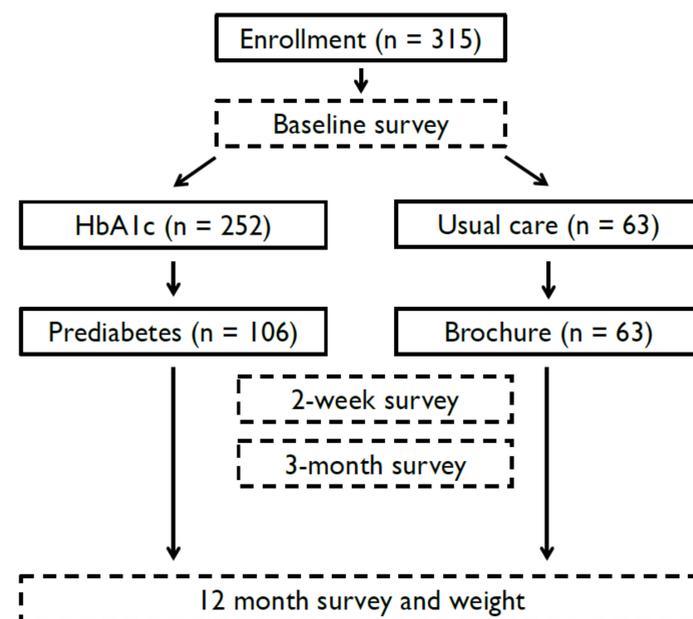
- To determine the effects of a HbA1c test and brief information about prediabetes on potential mediators of patient engagement in behaviors to prevent T2DM

Funding

- Study was funded by US Department of Veterans Affairs Health Services Research & Development Career Development Award 13-267
- Dr. Kullgren is a VA HSR&D Career Development awardee at the Ann Arbor VA Center for Clinical Management Research

Methods

- Randomized trial of 315 non-diabetic patients from the Ann Arbor Veterans Affairs Medical Center (AAVA)
 - 1 or more major risk factors for T2DM
 - Upcoming AAVA Primary Care appointment
 - No HbA1c test in the last 12 months



- Patients in the HbA1c test arm received via phone and letter brief standardized information about their HbA1c results based on VA and ADA guidelines
- Brochure arm was an attention control group in which patients reviewed a brochure about clinical preventive services
- Age and gender-adjusted difference-in-differences analyses compared 2-week and 3-month changes in key outcomes between participants in the HbA1c test arm who were found to have prediabetes and participants in the brochure arm
 - Perception of risk for T2DM in next 3 years (0 to 100)
 - Level of motivation to prevent T2DM (0 to 10)
 - Patient activation (0 to 100)

Results

Baseline Characteristics (n = 315)

Age, mean (SD)	61.7 (10.9)
Female, n (%)	27 (8.9)
College degree, n (%)	230 (74.2)
Race/ethnicity, n (%)	
White, non-Hispanic	253 (81.8)
Black, non-Hispanic	18 (5.8)
Hispanic	8 (2.6)
Household income, n (%)	
< \$50,000	170 (59.7)
\$50,000 to < \$100,000	94 (33.0)
> \$100,000	21 (7.4)
Fair or poor health status, n (%)	92 (29.8)

Perceived Risk of Developing T2DM in Next 3 Years

	Baseline mean (SE)	Diff-in-diff from baseline to 2 weeks ^a (P-value)	Diff-in-diff from baseline to 3 months ^a (P-value)
Brochure (n = 63)	22.5 (2.6)	Ref	Ref
All screened (n = 252)	24.5 (1.5)	0.4 (0.9)	-2.3 (0.5)
Normoglycemia (n = 134)	20.9 (1.9)	-6.6 (0.04)	-6.9 (0.04)
Prediabetes (n = 106)	27.4 (2.6)	6.8 (0.06)	3.1 (0.4)

^aAdjusted for age and gender.

Level of Motivation to Prevent T2DM

	Baseline mean (SE)	Diff-in-diff from baseline to 2 weeks ^a (P-value)	Diff-in-diff from baseline to 3 months ^a (P-value)
Brochure (n = 63)	7.1 (0.4)	Ref	Ref
All screened (n = 252)	6.6 (0.2)	0.5 (0.2)	0.4 (0.3)
Normoglycemia (n = 134)	6.6 (0.2)	0.01 (1.0)	-0.06 (0.9)
Prediabetes (n = 106)	6.6 (0.3)	1.0 (0.01)	0.8 (0.03)

^aAdjusted for age and gender.

Results

Level of Patient Activation

	Baseline mean (SE)	Diff-in-diff from baseline to 2 weeks ^a (P-value)	Diff-in-diff from baseline to 3 months ^a (P-value)
Brochure (n = 63)	65.6 (2.2)	Ref	Ref
All screened (n = 252)	63.8 (1.0)	4.3 (0.2)	-1.9 (0.4)
Normoglycemia (n = 134)	63.9 (1.3)	6.0 (0.06)	-1.3 (0.6)
Prediabetes (n = 106)	65.0 (1.8)	1.5 (0.6)	-3.6 (0.2)

^aAdjusted for age and gender.

Conclusions

- Using a screening HbA1c test to identify patients with prediabetes and providing brief standardized information about prediabetes increased patients' motivation to prevent T2DM
- Screening HbA1c tests and brief information about test results led to sustained change in risk perception only among patients with normoglycemia
- Screening HbA1c tests followed by brief information about test results did not change patients' level of activation

Implications for Policy and Practice

- National campaigns are now aiming to identify more Americans with prediabetes and connect them to Diabetes Prevention Programs
- The limited effects of screening tests and brief information alone highlight the need for strategies that can help patients with prediabetes translate motivation to prevent T2DM into sustained engagement in preventive behaviors