



Envisioning Opportunities: Identifying vision care needs among inpatients with diabetes

Janaki J. Patel¹, Vineet M. Arora¹, Allison Louis¹, Victoria Moreira², Seenu Hariprasad¹, David O. Meltzer¹, Valerie G. Press¹

¹University of Chicago Medicine, Chicago, IL, ²Medical College of Georgia at Augusta University, Augusta, GA

Background

- Poor vision is common during hospitalization & negatively affects outcomes and self-management [1,2]
- Diabetes (DM) is an important contributor to the burden of preventable vision loss in US adults [3]
- Current guidelines recommend yearly eye exams for individuals with DM [4]
- Empowerment can play critical role in DM self-management [5]

Aims

- Identify vision status & perceptions of *inpatients with diabetes*
 - Study empowerment for self-managed care
 - Study knowledge & prevention of DM-related eye disease

Methods

- Eligible: ≥18YO, English-speaking, cognitively intact, hospitalized on general medicine service
- Design: ongoing, observational, prospective study of quality of care
- Study components:
 - Presenting near vision assessment (with corrective lenses if available) using pocket Snellen chart
 - Sufficient vision defined as better than or equal to 20/40 in better or both eyes
 - Patients with diabetes identified by self-report, chart review, or HbA1c ≥ 6.5
 - Survey tools (Table 1)

Results

- n=2,658 participants
 - Mean age: 51 ± 18 years; Majority female (59%) and African American (79%)
 - insufficient vision affected 1138/2658 (43%)
- Participants with DM (n=959, 36%) more likely to be African American (87% vs 76%, p<0.001) and older (mean age 56 ± 16 vs. 48 ± 19, p<0.001)
 - median HbA1c=7.6% (n=455), median blood glucose=151 (n=497); no significant difference in HbA1c based on vision status, after controlling for age (p=0.2)

Figure 1: Participants with DM are more likely to have insufficient vision than those without diabetes (p<0.001)

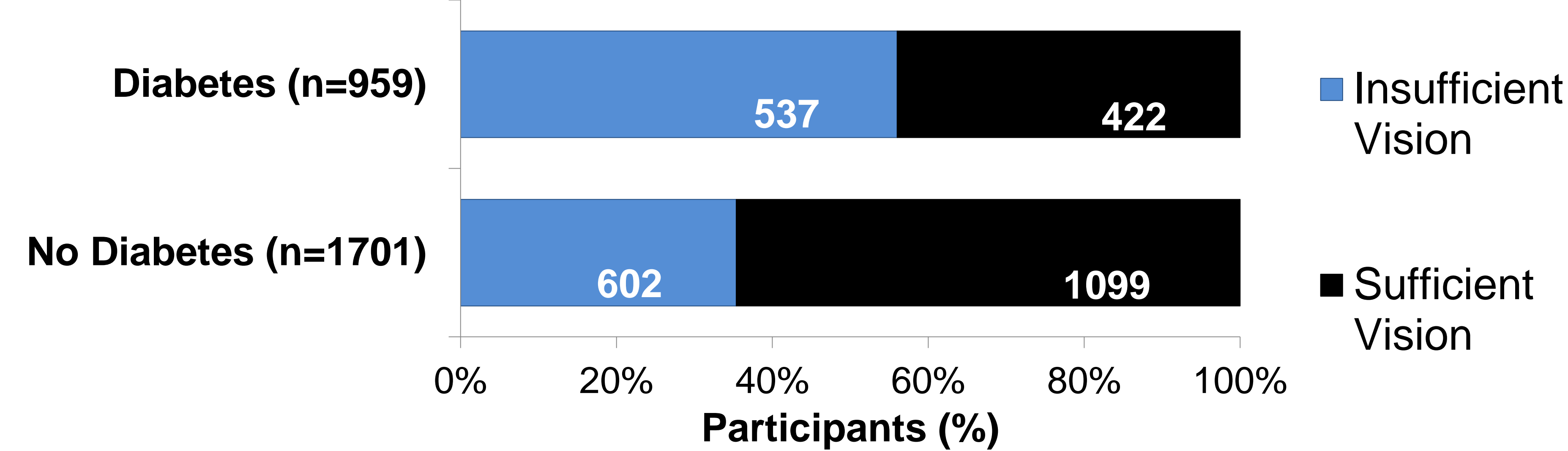


Figure 2: Many participants with DM have insufficient vision, and 1 in 4 participants with diabetes have insufficient lenses.

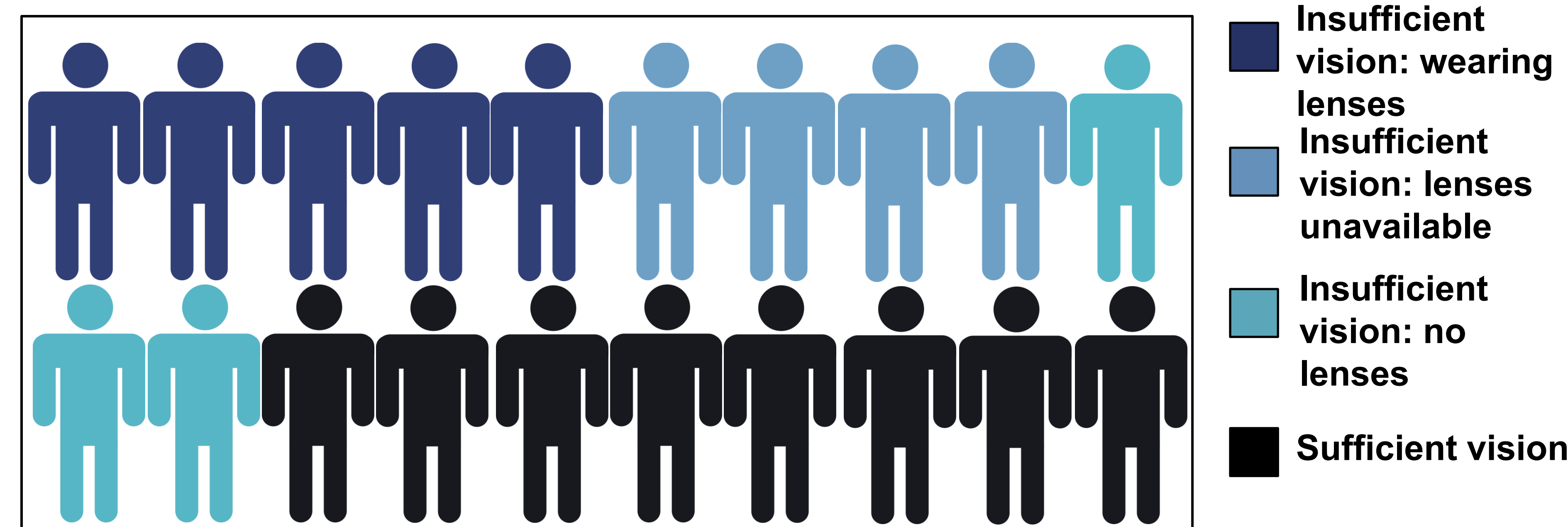


Table 2: Empowerment (DES-SF) scores of those with insufficient vision are significantly lower (n=494) [*p<0.05]

Question	Insufficient Vision [Median (IQR)]	Sufficient Vision [Median (IQR)]	p
Overall*	4.4 (3.4, 4.6)	4.5 (4.1, 4.8)	<0.001
Dissatisfied self-care	3 (3, 5)	3 (3, 5)	0.14
Diabetes goal into plan*	5 (4, 5)	5 (5, 5)	<0.001
Overcoming barriers to goals*	5 (4, 5)	5 (5, 5)	<0.001
Feel better about diagnosis	4 (2, 5)	4 (2, 5)	0.1
Positive coping with stress*	4 (3, 5)	5 (3, 5)	0.02
Support for caring for DM*	5 (4, 5)	5 (4, 5)	<0.001
Stay motivated*	5 (4, 5)	5 (5, 5)	<0.001
Insight into care choices*	5 (4, 5)	5 (5, 5)	<0.001

Results

Figure 3: Diabetes Knowledge
Participants with DM and insufficient vision are more likely to get all questions on the DVKT correct, but almost 1/2 did not get them all correct (p<0.001).

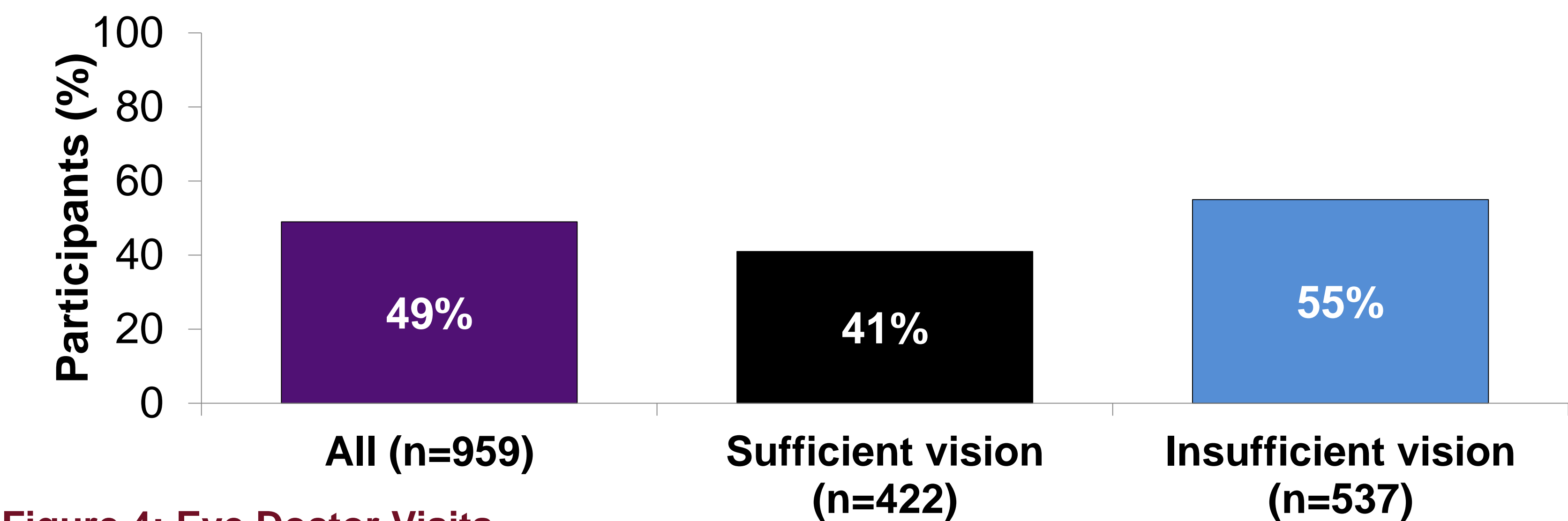
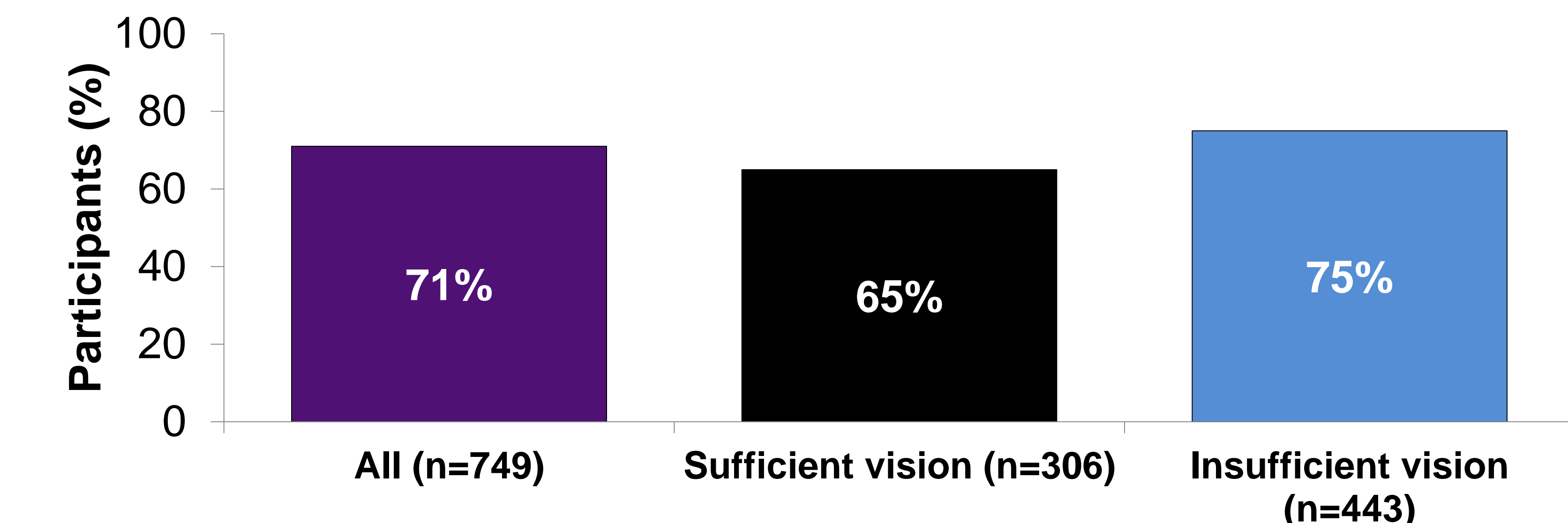


Figure 4: Eye Doctor Visits
Participants with DM and insufficient vision are more likely to have visited an eye doctor this year or last year, but almost 1 in 4 deny a recent visit (p<0.001).



Conclusions

- Insufficient vision affected over 1/2 of inpatients with diabetes
 - Corrective lenses and self-report of obtained vision care ≠ sufficient visual acuity during hospitalization
 - Vision correction during hospitalization may have widespread impact
- Insufficient vision associated with lower empowerment in self-management but adequate knowledge regarding vision-related care
 - Further work needed to evaluate effects of lower empowerment among inpatients with DM

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Acknowledgments

- Thanks to Nicole Twu, Richa Adhikari, Elizabeth Donnelley, Ashley Snyder; The Hospitalist Project Team, Ainoa Coltri, Andrea Flores; study participants
- Funding: NHLBI 1K23HL118151; CoA Pilot Award; Chicago Center for Diabetes Translation Research (NIDDK P30 DK092949; Dean's office of the Biological Sciences Division of the University of Chicago)

Table 1: Survey Tools

Survey Tool	Description
Hospitalist questionnaire [6]	Ongoing study of quality of care and outcomes
Vision care questionnaire	Perceptions and attainment of vision care and vision needs
Patient's history of DM	Current vision problems, HbA1c, DM management
Diabetes Empowerment Scale-Short Form (DES-SF) [7]	Self-management and self-efficacy measurement
Diabetes & Vision Knowledge Test (DVKT)	(1) People with DM should have vision checked; (2) People with DM often have vision problems including serious eye disease; (3) Frequency of recommended dilated eye exams; (4) What eye problems or diseases do people with DM get?