Who Is Most at Risk of Unrecognized Diabetes? A Study to Inform Pharmacist Action

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Background

Diabetes remains a major public health challenge in the United States, with a substantial proportion of cases undiagnosed or unrecognized. Approximately 1 in 4 adults with diabetes are unaware of their condition, contributing to delayed treatment and increased risk of complications such as cardiovascular disease, nephropathy, and retinopathy.[1] Early identification of diabetes is therefore critical to improving outcomes and reducing healthcare costs.

Objectives

To identify patients unaware of their diabetes diagnosis and guide pharmacists toward those who would benefit most from targeted education and awareness strategies.

Methods

Data from the 2015-2018 National Health and Nutrition Examination Survey (NHANES) were analyzed using SAS. Adults aged ≥18 years with available HbA1c and diabetes questionnaire data were included. Lab-defined DM was defined as HbA1C ≥6.5%, and self-reported DM as answering 'yes" to having been told they have diabetes. The outcome was unrecognized diabetes (lab-defined DM with self-reported no DM). Covariates included sociodemographic characteristics, insurance status, BMI, hypertension, self-rated health, routine place for healthcare, marital status, family income, and language. Survey weights were applied to generate nationally representative estimates. Bivariate analyses and survey-weighted multivariable logistic regression with infinite degrees of freedom were conducted to estimate adjusted odds ratios (ORS) and 95% confidence intervals (Cls) for predictors of unrecognized diabetes status.

Results

Figure 1: The Screening Gap
What NHANES Data (2015-2018) Reveals

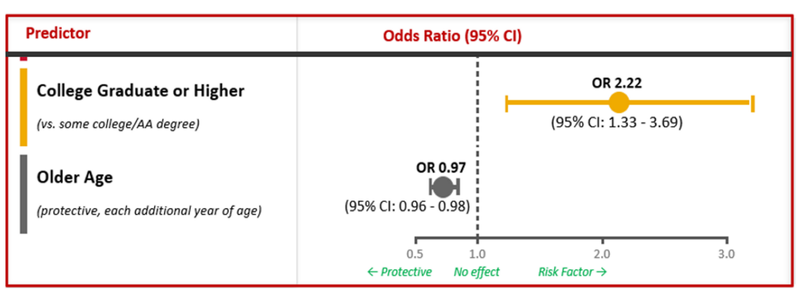
4.66%
of U.S. adults are unaware they have diabetes (lab-confirmed diabetic but self-report "No Diabetes")
NHANES 2015-2018 | n = 10,706
Nationally representative sample

	No Lab-Defined DM (A1C < 6.5%)	Yes Lab-Defined DM (A1C >= 6.5%)
Self-Reported Conditions: No DM	True Negative n = 8,613 (80.45%)	DISCORDANCE: Unrecognized Diabetes n = 499 (4.66%)
Self-Reported Conditions: Yes DM	Discordance: False Perception of Having Diabetes n = 416 (3.89%)	True Positive n = 1,178 (11.00%)

Figure 2: Multivariable Logistic Regression Results

Variable / Comparison	OR	95% CI
Race/Ethnicity (ref: Non-Hispanic White)		
Mexican American	0.886	0.509 – 1.541
Other Hispanic	1.097	0.639 – 1.884
Non-Hispanic Black	1.044	0.651 – 1.672
Non-Hispanic Asian	1.061	0.577 – 1.951
Other/Multi-racial	0.86	0.362 – 2.044
Education (ref: Some college/AA degree)		
Less than 9th grade	1.324	0.810 – 2.164
9th–11th grade	0.953	0.554 – 1.640
High school graduate/GED	1.188	0.755 – 1.870
College graduate or higher	2.218	1.334 – 3.687
Unknown/Missing	1.287	0.066 – 24.939
Continuous Variables		
Poverty-income ratio (PIR)	0.945	0.850 – 1.051
Age (years)	0.969	0.958 – 0.979
Insurance Status (ref: Insured)		
Uninsured	1.176	0.769 – 1.799
BMI Category (ref: Overweight, 25–<30)		
Underweight/Normal (<25)	1.607	0.812 – 3.181
Obese (≥30)	1.255	0.788 – 1.998
Sex (ref: Male)		
Female	1.306	0.816 – 2.088

Figure 3: Who Is Being Missed?
Predictors of Unrecognized Diabetes Status



Results (continued)

Adults with a college degree or higher had increased odds compared to those with some college or an associate degree (OR=2.22, 95% CI 1.33-3.69). Older age was protective against discordance (per-year OR=0.97, 95% CI 0.95-0.98. Race/ethnicity, insured status, and family income were weaker or not significant.

Discussion

The most notable finding was the significantly higher odds of diagnostic discordance among college-educated patients (OR = 2.22; 95% CI: 1.33–3.69) compared to those with some college education. This may reflect a tendency among highly educated patients to underestimate risk when asymptomatic, engage less frequently in routine primary care despite having insurance access, or receive less proactive screening. Increasing age was independently associated with lower odds of discordance (OR = 0.969 per year), suggesting that younger patients may have less established care relationships or fewer opportunities for guideline-concordant screening. No statistically significant associations were observed for race/ethnicity, sex, insurance status, BMI, or poverty-income ratio, underscoring that discordance is not confined to traditionally underserved groups.

Conclusion

Pharmacists can reduce diagnostic discordance by recognizing lack of routine care as a risk indicator and using clear communication and teach-back strategies, particularly for younger, asymptomatic, and highly educated patients.

References