HSD30

Social Determinants of Health and GLP-1 Prescribing Patterns in T2D and Obesity: Real-World Evidence from a Large, National U.S. Linked EHR–Claims Network

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OBJECTIVES

Social Determinants of Health (SDOH) influence quality and access to medical care.[1] Recently, several GLP-1 (glucagon-like peptide-1) medications have been approved to manage type 2 diabetes (T2D) and later to manage obesity. SDOH indicators, such as income, influence how clinicians prescribe medication and the likelihood that patients will fill their prescriptions.[2] We used a large, linked real-world dataset to characterize cross-sectional associations between SDOH, clinical conditions, and GLP-1 prescribing in routine care.[3]

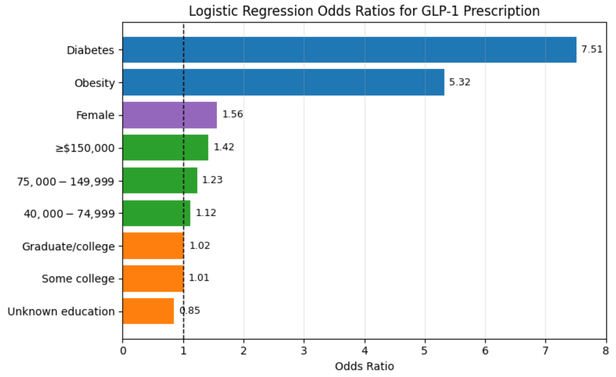
METHODS

This analysis used the TriNetX Linked Network, which includes approximately 21 million de-identified US-based patients, with electronic health record data linked with administrative claims.[4]
Logistic regression (LR) methods were used to evaluate the association between SDOH variables and medication prescriptions among a cohort of patients with evidence of type 2 diabetes, obesity or neither. We also assessed whether Bayesian Network (BN) analysis can enrich our understanding of this relationship. (Figures 2 and 3)

Table 1. Characteristics of Patients Prescribed GLP-1 Receptor Agonists (2022–2025)[5]

Number of patients = 3,221,930			
		N of patients	% of Total
Prescribed	Yes	141,621	4%
	No	3,080,309	96%
Sex	Male	1,843,194	57%
	Female	1,378,736	43%
Diagnosis	Obesity only	675,500	21%
	Diabetes only	284,193	9%
	Obesity and Diabetes	311,224	10%
	No Obesity and no Diabetes	1,951,013	39%
Income	< $40k	709,358	22%
	$40 - $74k	615,927	19%
	$75 - $149k	1,051,002	33%
	$150k+	845,643	26%
Education	High School or less	629,013	20%
	Some college	1,253,463	39%
	Graduate or college	439,879	14%
	Unknown	899,575	28%

Figure 1. Associations Between Patient Characteristics and GLP-1 Prescription



Diagnosis reference group: no diabetes and no obesity diagnoses
Sex reference group: male sex
Income reference group: income of < $40k Education
Education reference group: education of High School or less

Figure 2. Interrelationships Between Patient Characteristics and GLP-1 Prescribing Patterns: A Bayesian Network Structure.

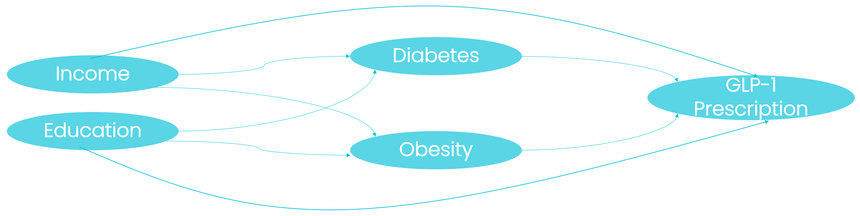
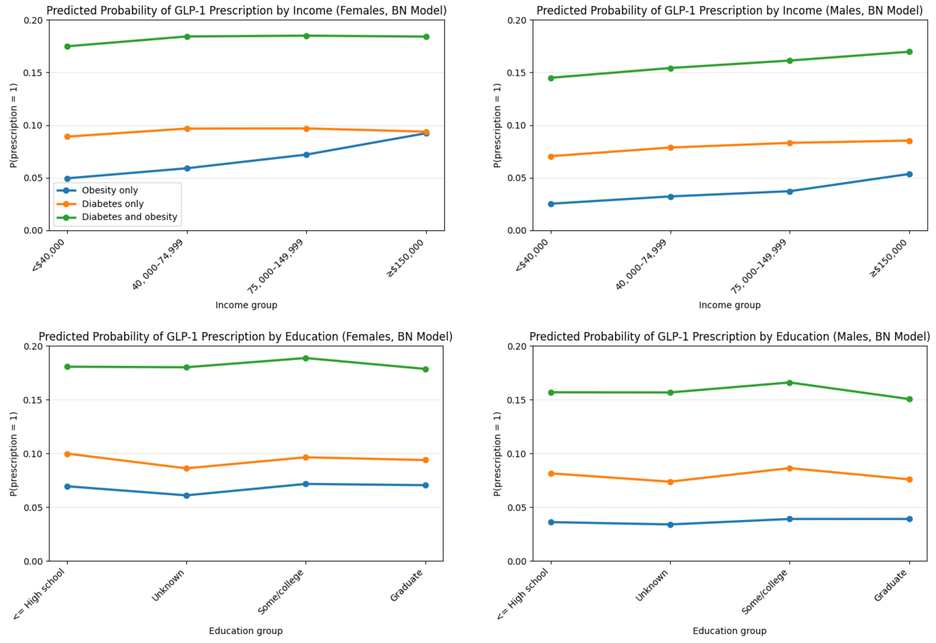


Figure 3. Probability of GLP-1 Prescription in Men and Women Across Income and Education, Stratified by Diagnosis, Based on the Bayesian Network Analysis



RESULTS

- About 1.3 million patients had a diagnosis of obesity or type 2 diabetes during the study period, which included patients with clinical encounters between 2022 and 2025. (Table 1)
- The rate of GLP-1 prescription ranged from 3% to 20% based on patient diagnoses and characteristics, with a combined diagnosis of T2D and obesity showing the highest rate. (Figure 3)
- Female patients were more likely to be prescribed GLP-1 medications than male patients, especially those with an obesity diagnosis and higher income. Among the key SDOHs, higher income increased the probability of GLP-1 prescription, while education level was not associated with it. (Figure 3)
- Analyzing data using LR and BN provides complementary information, (Figure 1 and Figure 3) where LR estimates marginal associations and BN enables joint and subgroup-specific probability estimation.

CONCLUSION

GLP-1 prescribing patterns are not uniform and vary according to patient demographic and social characteristics, including sex and income. These findings highlight measurable differences in prescribing patterns across patient subgroups.

[1] Braveman P & Gottlieb L. "Social determinants of health: it's time to consider the causes of the causes." Public Health Reports, 2014

[2] Eberly LA et al. "Racial, Ethnic, and Socioeconomic Inequities in Glucagon-Like Peptide-1 Receptor Agonist Use Among Patients With Diabetes in the US." JAMA Health Forum, 2021

[3] Berger ML et al. "Good Practices for Real-World Data Studies of Treatment and/or Comparative Effectiveness: Recommendations from the Joint ISPOR-ISPE Special Task Force on Real-World Evidence in Health Care Decision Making." Value in Health, 2017

[4] Stein E et al. "The TriNetX Linked EHR and Administrative Claims Network." ISPOR, 2024

[5] ICD-10-CM codes E11.* were used to identify patients with Diabetes; ICD-10-CM codes E66.*, Z68.3.*, and Z68.4.* were used to identify patients with Obesity diagnosis

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