

GLP-1 utilization in weight management: An analysis of adherence, persistence and outcomes by sociodemographics

Ruth Pereira PharmD, MBA¹; Amanda Bain, PharmD, MPH, MBA, FAMCP¹; Stephen Phillips, MBA¹; Tasneem Motiwala, PhD, MPH, SMBA^{1,2}
¹The Ohio State University Health Plan, Inc.; Columbus, OH; ²The Ohio State University Department of Family and Community Medicine; Columbus, OH



Background

- In the United States 40.3% of adults are obese, with 9.4% suffering from severe obesity.¹
- Obesity and overweight were associated with an estimated \$425.5 billion economic burden to U.S. businesses and employees in 2023.²
- Glucagon-like peptide-1 receptor agonists (GLP-1) have proven to be effective in promoting weight loss and improving metabolic health in overweight and obese individuals.³
- Sales of GLP-1 surged to over \$26.3 billion in 2023 which has prompted interest in their real-world effectiveness and value.⁴

Objectives

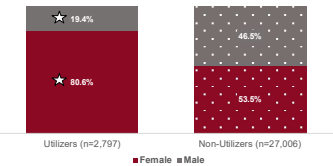
- To assess trends in GLP-1 utilization for weight management across different sociodemographic groups.
- To evaluate adherence, persistence, and biometric outcomes associated with GLP-1 utilization for weight management.

Methods

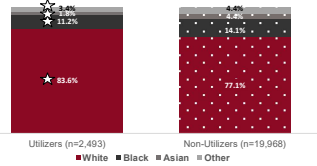
- Utilizers were defined as adults with ≥1 pharmacy claim for GLP-1 indicated for weight loss between 1/1/2022 and 6/1/2024.
- Index date for each utilizer was determined as the first prescription fill date for GLP-1 during the study period.
- Inclusion criteria required that individuals were new utilizers with no weight loss drug use in the 180 days prior to the index date and were continuously enrolled 180 days before and after the index date.
- Members with >56-day fills were excluded.
- Non-utilizers were defined as adults with any enrollment between 2021 and 2024, BMI ≥27, and no claims for GLP-1 indicated for weight loss.
- Adherence (defined as proportion of days covered (PDC) ≥80%) and persistence (allowed cumulative gap of <45 days) were measured over 180 days from index date.
- Utilization, adherence, and persistence were compared between sociodemographic and social vulnerability groups.
- Sociodemographics (gender, race, and age generation) were based on self-reported data.
- Social vulnerability was assessed using census data at the census tract level, categorizing members based on the density of vulnerable households. Members were assigned to quartiles, from least vulnerable to most vulnerable, with two middle quartiles designated as moderately low and moderately high vulnerability.
- Baseline weight/BMI was recorded as the latest weight/BMI within 180 days before the index date. Follow-up weight/BMI was recorded as the weight/BMI closest to 180 days within the 90-270 day period after the index date.
- Weight change was categorized as weight gain, <5% weight loss from baseline, 5% to <10% weight loss from baseline, and ≥10% weight loss from baseline, and analyzed by baseline BMI, sociodemographic, and social vulnerability groups.
- Statistical significance was determined using chi-square or one-way ANOVA with Tukey-Kramer multiple comparison tests.

Results

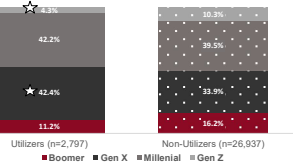
Utilizers vs. Non-Utilizers by Gender (p=2.2e-16)



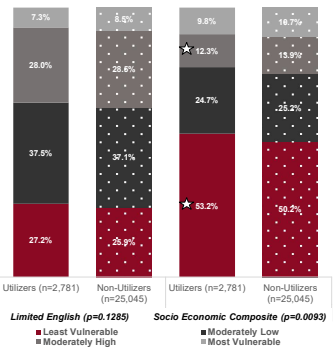
Utilizers vs. Non-Utilizers by Race (p=2.2e-14)



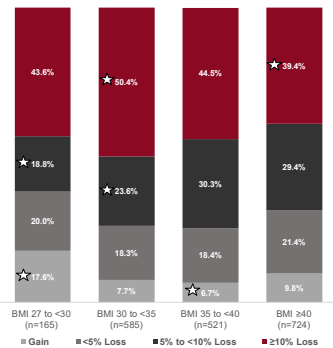
Utilizers vs. Non-Utilizers by Generation (p=2.2e-16)



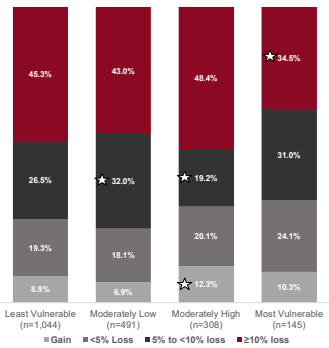
Utilizers vs. Non-Utilizers by Social Vulnerability Index



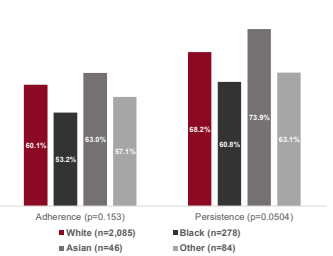
Weight Change by BMI (p=9.5e-06)



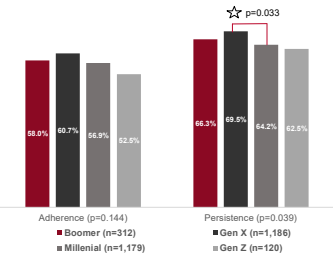
Weight Change by No High School Diploma (p=0.0022)



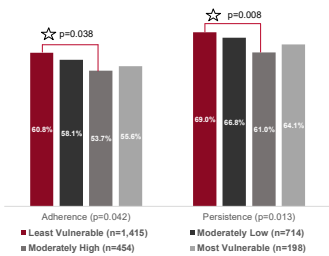
Adherence and Persistence by Race



Adherence and Persistence by Generation



Adherence and Persistence by No High School Diploma



Discussion

- Past studies have shown women were more likely than men to attempt weight loss, including using GLP-1.^{5,6,7} This study also found significantly higher GLP-1 use among females (p<0.05).
- A previous study found higher GLP-1 use in Whites compared to other racial groups.⁷ Likewise, this study found higher GLP-1 use in Whites and lower use in Blacks and Asians (p<0.05).
- GLP-1 utilization was significantly higher in Gen X and lower in Gen Z (p<0.05), aligning with a study that showed a significantly higher likelihood to initiate GLP-1 in millennials and Gen X, and a nonsignificant finding among Gen Z.⁸
- Another study found a positive association between weight loss attempts and factors such as education and income.⁹ Similarly, this study found significantly higher utilization among the least vulnerable socioeconomic groups and lower utilization among the most vulnerable groups.
- A previous long-term study found that weight loss at 104 weeks was positively associated with baseline BMI.⁹ This study found that the largest proportion of GLP-1 utilizers with ≥10% weight loss were in the group with baseline BMI of 30 to <35. In the groups with higher baseline BMI (35 to <40 and ≥40), a larger proportion of utilizers lost 5% to <10% compared to the 30 to <35 baseline BMI group. The group with lowest baseline BMI (27 to <30) had a significantly larger proportion of utilizers gaining weight.
- Adherence did not differ significantly by gender, generation, or race. This study found a significant difference in persistence, with Gen X showing higher persistence compared to millennials (p=0.033). A real-world study showed that individuals aged ≥35 were more likely to continue GLP-1 for at least 12 weeks.¹⁰
- This study found lower education was associated with reduced adherence and persistence which was aligned with a study that linked socioeconomic status, including less education and poverty, to worse drug adherence.¹¹

Limitations

- The study did not account for confounders such as comorbid conditions, lifestyle factors, or concurrent treatments, which may affect the validity of the observed outcomes.
- Using census tracts to determine social vulnerability does not allow for identification of individual member characteristics.
- Medication shortages may have impacted adherence and persistence.
- The time window for follow-up BMI measurements may have introduced variability, potentially affecting the accuracy of weight assessments.

Conclusions

- GLP-1 utilization was higher in female, White, and Gen X populations.
- Lower education was associated with reduced adherence and persistence.
- More research is recommended to investigate associations between social vulnerability and baseline BMI on weight loss.

References

1. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
2. World Health Organization. Obesity and overweight. 2023; Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>.
3. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
4. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
5. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
6. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
7. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
8. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
9. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
10. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.
11. American Medical Association. Obesity. 2023; Available from: <https://www.ama-assn.org/practice-management/obesity>.