Final Project Abstract

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Abstract

Chronic diseases, like diabetes, are some of the major causes of mortality in the world with the prevalence and cost of these diseases only continues to rise Hacker (2024). The Centers for Disease Control and Prevention (CDC) estimates that in the US alone, 34.2 million people have diabetes, with 29.7 million people diagnosed with the condition and 8.7 million continue to be undiagnosed Centers for Disease Control and Prevention (2025). As of 2024, the American College of Physicians has issued new guidelines for first line pharmacologic treatments for type 2 diabetes. The new recommendations are adding sodium–glucose cotransporter-2 (SGLT-2) inhibitor or glucagon-like peptide-1 (GLP-1) agonist to metformin and lifestyle modifications American College of Physicians (2024). These recommendations may stem from systematic analyses which show glycemic control decline after 2010 with gaps in treatment particularly seen among younger adults, Mexican Americans, and uninsured individuals, who are already at higher risk for diabetes complications Fang, Wang, Coresh, & Selvin (2021).

In a cohort of patients newly diagnosed with type 2 diabetes, we aim to compare the efficacy of the recommended treatment strategies: adding either an SGLT-2 inhibitor or a GLP-1 agonist . A control group will include patients treated solely with metformin and lifestyle interventions, ranging from ages 18 years or older. The analysis will be stratified by ethnicity and age groups to assess the differential effectiveness of these interventions on glycemic control, body weight, cardiovascular risk factors, and cardiovascular outcomes over a one-year follow-up period. Additionally, treatment pathways will be analyzed to identify common sequences of therapy modifications and persistence rates across different patient subgroups.

References

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