

Continuous Glucose Monitoring Workflows for Elderly, Cognitively Impaired Adults with Type 2 Diabetes

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Background

Elderly adults with Alzheimer's disease-related dementia (ADRD) and type 2 diabetes tend to have difficulty in detecting hypoglycemic events. Over time, recurring hypoglycemic events increase the risk for severe consequences, such as hospitalization. Previous studies have shown continuous glucose monitoring (CGM) systems to be one of the best predictors of hypoglycemia, which can be difficult to discern normally. However, CGM systems have not been formally introduced to the ADRD population, so there is a need to understand how CGM can be incorporated into the diabetes care of elderly, cognitively impaired adults.

Objective

The goal of this project is to develop a better understanding of how CGM systems can be extended to the ADRD population and what potential barriers may develop.

Methods

A narrative review of how CGM systems are currently used by patients and caregivers was conducted using databases such as PubMed and Google Scholar, as well as clinical and CGM manufacturer manuals. Subsequently, a workflow extrapolated to ADRD adults was created based on these sources.

Findings

A total of 118 articles, websites, and guides were obtained and evaluated. Current CGM workflows consist of 3-9 steps. A total of five potential areas for improvement have been identified. The newly constructed workflow consists of 9 steps: (1) healthcare visit, (2) CGM education, (3) CGM pick-up, (4) sensor insertion, (5) scan/calibrate, (6) evaluate data, (7) replace sensor, (8) next healthcare visit, and (9) pharmacist alterations.

Conclusion

Current CGM workflows are oversimplified and do not detail processes that can be complicated for adults with diabetes and ADRD and their caregivers. However, more research still needs to be conducted to determine the severity of the identified barriers and how to overcome them. This project can inform future work on the integration of CGM into diabetes care for the ADRD population.