

Cost-Effectiveness Analysis of a Community Pharmacist-Based Intervention to Prevent Cardiovascular Complications in Patients with Type 2 Diabetes in Iran

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Background: Studies have shown that managing type 2 diabetes mellitus by community pharmacists improves clinical outcomes, including glycated hemoglobin (HbA1c), controls blood pressure and total cholesterol, and reduces the risk of cardiovascular disease.

Objective: Since there are no well-designed studies to assess the impact of community pharmacist intervention on the improvement of type 2 diabetes mellitus (T2DM) management in Iran, we aimed to evaluate the cost-effectiveness of community pharmacist intervention in controlling T2DM, compared to no intervention, in Iran. In this study, standard care provided by community pharmacists is considered the comparator.

Methods: In a 12-month assessment at a community pharmacy, 55 patients received usual care (comparator), while another 55 received a diabetes management protocol from the community pharmacist. The pharmacist focused on correcting medication use, lifestyle modification, and improving diet. The economic evaluation involved conducting the study from the healthcare system perspective. A Markov model for a 10-year time horizon was chosen to assess the long-term effects and cost savings, with the outcomes included life years gained (LYG) and the reduction in the 10-year risk of cardiovascular events. Direct costs for both intervention and comparator are considered in this study.

Results: Pharmacist's interventions significantly reduced average HbA1c levels (p-value= 0.009), lowered risks for CVD and stroke in the intervention group compared to the comparator group (p-value= 0.009), HDL profile in the intervention group improved significantly (p-value=0.016), and LDL level had a statistically significant reduction in the intervention group (p-value=0.05). The SBP of the patients in the intervention group showed a statistically significant improvement from the community pharmacist standard care (p-value 0.003). Conversely, the comparator experienced increased SBP levels. The intervention group's estimated risks for CHD and stroke—both nonfatal and fatal—were lower than those of the comparator.

Cost-effectiveness analysis showed that pharmacists' interventions in T2DM patients

resulted in a cost of -1469.02 USD with 0.045 LYGs compared to the comparator group.

Conclusion: Study findings suggest that involving community pharmacists in diabetic programs can be a cost-effective program to significantly reduce HbA1c, LDL levels, and risks for CVD and stroke, and improve HDL levels.