ETHIOPIAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 07, July-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

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THE MANAGEMENT OF CARDIOVASCULAR DISEASE

Abstract: Cardiovascular disease (CVD) includes heart disease (i.e., myocardial infarction and angina), stroke, hypertension, congestive heart failure (CHF), hardening of the arteries, and other circulatory system diseases. CVD is the number one cause of death in America, responsible for more than 40% of annual deaths. Progress in managing the CVD population may be advanced by closely examining the results of previous studies in this arena. The purpose of this article is to describe the results of a literature review on disease management (DM) strategies targeting CVD (i.e., hypertension, congestive heart failure, and hyperlipidemia and/or coronary artery disease [CAD]) in managed care populations, compare the rigor of the studies and their findings by disease state, and posit directions for future research. Of the 9 studies in DM of hypertension evaluated, 4 were randomized controlled studies, 2 were controlled studies, and the remaining 3 were before-and-after comparisons. Interventions used to manage hypertension included provider reminder systems and timely feedback, use of ancillary health care staff (such as pharmacists and nurses) to increase monitoring, and the implementation of treatment guidelines to standardize care.

Keywords: Cardiovascular disease, health, management, lifestyle

The impact of a pharmacist-managed hypertension clinic compared with usual care in a staff-model HMO was evaluated in a randomized controlled, management duties included blood pressure (BP) and lab monitoring with appropriate therapeutic changes and patient education related to lifestyle modifications and drug use. The primary goal of the evaluation was to assess the cost-effectiveness of the intervention; cost measured was total health care costs, and the effect was the amount of BP lowered. Results after 6 months showed that the average decrease in systolic BP was greater in the intervention group (n = 164) compared with the usual care group. Five full-text articles presenting study results in hyperlipidemic-CAD, managed care populations were available. The interventions included cholesterol screening and clinical intervention services, dietary educational counseling, automated provider reminder notices for cholesterol remeasurement and treatment of elevated low-density lipoprotein cholesterol (LDL-C), and a pharmacist-managed lipid clinic. The impact of a Medicare-sponsored program on cholesterol screening was evaluated in a randomized controlled study by Ives et al.27 Participants were either enrolled in a hospital-based screening service (n = 1,131), a physician-based screening service (n = 1,347), or had no screening (n = 1,225). The 2 intervention groups received encouragement to lower cholesterol by lifestyle modifications (i.e., diet and exercise), and if total cholesterol was ≥240 mg/dL, then referral for further care (including drug therapy) was made. After 1.5 years, the mean change in total cholesterol for the 3 cohorts was similar (-6.5% for the hospital group, -6.6% for the physician group, and –5.7% for the control group). After controlling for lipid-lowering drug use, total cholesterol lowering was similar in the 3 cohorts. The hospital-based cohort had a significantly higher number of provider visits per patient compared with the provider-based cohort. Many DM programs involved multiple interventions, and most studies did not measure the impact of individual interventions. The identification of effective intervention components can lead to greater efficiencies in DM. Also underdeveloped are optimal methods for targeting patients by risk stratification and the use of control groups in DM program evaluation. Further research is needed about specific DM interventions in patient populations that are well defined in key variables that include disease severity and number and type of comorbid conditions.

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Long-term risk of complications resulting from CVD should be considered and measured as an outcome. Lack of continuous enrollment makes it difficult to measure long-term outcomes such as mortality. Whether or not DM interventions decrease mortal,ty in chronic conditions will require considerable research employing longitudinal designs extended over a number of years.

This qualitative review did not attempt to quantify the findings. The review was intended to provide some idea of the availability of quantitative analysis conducted for CVD interventions specifically in managed care populations. Although the prevalence of CVD intervention strategies in managed care populations is increasing,5 effectiveness analyses in the scientific literature are uncommon. However, the available results suggest that a variety of interventions demonstrate some effectiveness in improving outcomes to the 3 disease states that were the subject of this review. Types of interventions that demonstrated effectiveness included case management, physician reminders and feedback, pharmacist-managed clinics, patient education, and development of self-management skills. Published studies of CHF management typically involved multifaceted programs, which included multiple health care professionals, patient and physician education, intensive drug therapy, emphasis on lifestyle modifications, and close monitoring. Specifically, effective management strategies for CHF included case management and physician education with an emphasis on close patient monitoring. The high incidence of hospitalization and ER visits associated with CHF warrant close follow-up. In contrast, hypertension and hyperlipidemia-CAD may be silent diseases in the initial stages and not result in frequent use of health care services. Chronic outpatient management and follow-up along with development of selfmanagement skills appeared to work well in these 2 conditions. For example, pharmacist-led management techniques and use of automated provider notices and intensive patient education demonstrated effectiveness in hypertension. Additionally, effective interventions reported in hyperlipidemia-CAD populations also included pharmacist-led management strategies and automated provider reminders. The only evaluation of case management,28 specifically in the care of hospitalized CAD patients, was reportedly effective. Whereas all the published CHF intervention programs appeared to be successful, 3 studies of hypertension and hyperlipidemia DM interventions were unsuccessful.21,27,29 Winickoff et al.21 showed that physician feedback did not improve clinical outcomes, contrary to the results reported in other studies.18,20,22-23 The success of DM programs depended on provider and patient acceptance.31 Although providers acted on reminder notices, it was not always clear that provider action translated into patient compliance, perhaps compromising program success. Similarly, Ives et al.27 showed that preventive cardiovascular care for Medicare patients did not lower cholesterol; selection bias was a possible factor because study participation was voluntary. As a result, control patients were most likely motivated individuals who were concerned with their health, perhaps accounting for the absence of a difference in cholesterol reduction between control and program participants. Lastly, Schectman et al.29 showed that dietary counseling did not increase patient knowledge, which was actually associated with baseline educational level. Clinical parameters were not assessed, and whether or not the counseling showed improvements in cholesterol was not known. Appropriate end point measurement affected the success of the DM program.5 Bias against publishing studies of programs that do not show significant results probably accounts for the small number of articles that describe ineffective DM

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