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Family Nurse Practitioner/Pharmacist Collaborative Medication Counseling in Patients With Diabetes

Kristene Diggins, DNP, DCC

ABSTRACT

Medication adherence is an ongoing challenge in patients with diabetes on multidrug regimens. With multiple prescription medications, adherence to the individualized drug regimen can become a problem, and diabetes management worsens. It is pivotal for patients and nurse practitioners to have the opportunity to work with a pharmacist in the outpatient setting to review individualized medication regimens. In this study, the medication regimens of diabetic patients were reviewed with a pharmacist, and suggested changes to the regimen were implemented by the nurse practitioner. Follow-up A1Cs were reviewed 6 months after implementation, and there was a statistically significant improvement in the A1C levels.

Keywords: A1C, counseling, diabetes, medication, multidrug

Patients with diabetes are often on a multidrug regimen to treat their diabetes and other existing comorbidities. Polypharmacy is often defined as 4 or more prescribed drugs.[1] Medication self-management is a challenge for patients with diabetes who are on a polypharmacy regimen. Compliance decreases with polypharmacy regimens. As few as 33% of patients with diabetes have a medication possession ratio of 80% or more, and adherence to multiple daily dosing is found to be as low as 38% overall.[2]

Interprofessional medication therapy management is effective in managing chronic disease and drug-related issues in patients on a multidrug regimen. Medication management programs for chronic disease conditions can be improved through collaboration between clinicians and pharmacists.[3] Although pharmaceutical counseling is widely practiced and followed on patient hospital discharge, this type of inpatient pharmaceutical counseling is not often followed in the outpatient setting. Pharmacists spending time with patients reviewing medications in primary care translates into important improvements in health status and cost reductions.[3,4] The value of having a pharmacist in the outpatient setting is the accessibility to this expert's input into patient medication regimens. The ability to work directly with the pharmacist allows the nurse practitioner (NP) to receive direct feedback and make necessary changes to the patient's individual medication regimen.

Lee et al[5] published a review in *JAMA* showing that multidisciplinary, collaborative, pharmaceutical counseling actually reduced low-density lipoprotein, glucose, and blood pressure readings in diabetes and other comorbidities. Patients at the clinic who were on a regimen of 4 or more medications and who had a diagnosis of uncontrolled diabetes mellitus (A1C $>$ 7.5) were selected for pharmaceutical counseling.[6]

Patients assigned to this study were referred to pharmaceutical counseling in the ambulatory setting and followed by their primary care provider. The follow-up visits monitored patient-verbalized understanding of their drug regimen. Outcomes were measured and seen by improvement in critical indicators, such as A1C, low-density lipoprotein levels, and blood pressure readings. This published review was used as a framework for this family NP (FNP)-driven project.

The implementation of pharmaceutical counseling in collaboration with clinicians and pharmacists has been shown to be an effective method of improving

medication regimen efficacy and adherence.[7,8] FNPs provide the important foundation for intercollaborative medication management with pharmacists in primary care.[9] The value of pharmaceutical counseling to improve chronic disease indicators has long been validated in the inpatient setting.[10]

STUDY OVERVIEW

This FNP-driven project implemented a collaborative practice between FNPs and pharmacists over a period of 6 months. The goal of the project was to provide outpatient pharmaceutical counseling in a free clinic for patients with diabetes. The majority of patients at this clinic are uninsured (many are homeless) and have received fragmented care, contributing to their medication nonadherence. The objective outcome measured was A1C levels before and after pharmaceutical counseling.

At the onset of the project, patients at this clinic on a multidrug regimen (4 or more medications) were seen by an FNP. A referral form was completed by the FNP identifying polypharmacy and uncontrolled diabetes mellitus type 2 as the reason for the consult with the pharmacist. This form triggered an appointment with the pharmacist for face-to-face counseling with the patient.

At the pharmaceutical counseling appointment, pharmacists reviewed the patients' comprehensive medication list and then answered the patients' questions. Pharmacists discussed with the patients the best time of day to take their respective medications and also discussed combination medication options in order to increase compliance and limit daily medications. Cost was reviewed as well, to determine if compliance challenges were based on the cost of the regimen. Generic options were explored, and these suggestions were noted in the chart and were followed by the FNP at the patients' subsequent appointments. Suggestions were made on best possible options for the diabetes medication regimen.

The pharmacist spent 20-30 minutes at the initial visit reviewing the patient's medication regimen with the patient, answering questions as needed. Pharmacists assessed prescription refill behavior and supported medication refill through interaction with the patient. The pharmacist made recommendations on possible generic cost savings changes or combination medications that would help increase understanding and compliance. Possible drug-to-drug interactions of medications were also noted, and suggestions for changes were made in the notes. Finally, a reminder was included in the note by the pharmacist for any follow-up ongoing labs that may be needed or missing based on the patient's chart. A follow-up visit with the FNP was scheduled at the conclusion of the visit with the pharmacist.

Patients then had a follow-up visit with the NP to review the medication regimen suggestions given by the pharmacist. Questions were addressed, and medication regimens changed as needed at the follow-up visit with the FNP. The patient was given follow-up visits monthly by the FNP, and the pharmacist was available for follow-up consultation after the return visit with the FNP. Patients had the opportunity for 1 follow-up with the pharmacist during the 6-month project.

After 6 months of the initial visit with the pharmacist counseling, diabetes management was assessed through A1C levels found in the patients' charts. A1Cs at the 6-month follow-up were compared with preintervention levels. These results are reviewed in this brief report.

BARRIERS

In the beginning stages of implementation, it was noted that the reports from the pharmacists included recommendations for the FNP that were embedded in the pharmaceutical consult note and were overlooked because of the layout of the note. To address this problem, the pharmacists' note developed to include a separate recommendation on the form. This pharmaceutical plan section was then integrated into the form to advise the patients' nurse of recommended changes or follow-up in drug therapy. The decision was also made to emphasize to the nursing staff the importance of placing the pharmaceutical consult notes on the patients' charts and bringing these notes to the NP. This improved advising the FNP of the new recommendation section on the form.