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Effects of Individualized Educational Program on Medication Adherence and Physiological Parameters in Chronic Kidney Disease Mineral Metabolism Disturbance (CKD-MMD) Hemodialysis Patients

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Problem/Purpose

Chronic kidney disease mineral bone disease (CKD-MBD) is a common complication seen in many patients with CKD and almost all dialysis patients. Mineral metabolism is an important predictor of morbidity and mortality in dialysis patients, regardless of bone and muscle concerns. This study was to provide an effective nursing intervention to CKD-MMD hemodialysis patients with individualized educational program on medication adherence and physiological parameters, which are levels for serum calcium, phosphorus and intact PTH.

Method

Each experimental group and control group consisted of 35 patients. Nurses educated CKD-MMD hemodialysis patients individually for 20 minutes, three times a week for 4 weeks. In these individualized sessions, the nurses explained about CKD-MBD and its complication, interpretation of individual test result, importance of maintaining physiological parameter as suggested by NKF-K/DOQI and adherence to the medication prescription, and target physiological parameters results based on CKD stages given by NKF-K/DOQI. Medication adherence and physiological parameters were checked 1 week and 5 weeks after the education.

Results

There were significant increases in medication adherence and physiological parameters in the experimental group compared to the control group. The experimental group improved medication adherence (time, dosage, quantity) after 1 week ($p=.029$) & after 5 weeks ($p=.008$). The physiological parameters of experimental group improved in serum calcium (time $p=.012$), serum phosphorus (group $p=.011$, time $p=.008$), calcium-phosphorus product level (time $p=.001$), and intact PTH (time $p=.020$, time x group $p=.046$).

Conclusion

This individualized educational program for the CKD-MMD patients increased medication adherence and improved physiological parameters. Therefore, this individualized educational program is an effective nursing intervention.

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