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The Implementation of a Foot Care Model in a Comprehensive Foot Care Model in Urban, Inner City Dialysis Facility: A Quality Initiative

Stephanie Y. Sheridan, DNP, ANP-C, CNN-NP and Carolyn Schreeder, DM, MSN

Worldwide there are over 180 million people with diabetes, unfortunately that number is expected to double by 2030 (Broumand, 2007). The United States has approximately 26 million individuals with diabetes and, astonishingly, there are nearly 1.6 million new cases of diabetes in patients 20 years of age and older, which creates an enormous health care burden (Fitzgerald, 2008) (Livingstone, Van De Mortel, & Taylor, 2011). In 2007, diabetes total care cost over $175 billion in direct and indirect care with this overwhelming amount of financial care needed for diabetes, it's important to investigate any sources of preventative care available for this population (Center of Disease Control and Prevention (CDC), 2012) (Fitzgerald, 2008).

Diabetes is considered the underlying cause 44% of new End Stage Renal Disease (ESRD) cases, as well as the leading cause of lower extremity amputations (LEA) among diabetic patients with ESRD on hemodialysis. Problem-Without a standardized approach to assess lower extremities of hemodialysis patients in outpatient settings, this population is at high risk for development of foot ulcers and LEAs. The purpose of this article is to describe the implementation and results of a standardized foot care model that has significantly reduced the incidence of LEAs in an urban, inner city dialysis facility. The journal article is the sequel to "The Need of a Comprehensive Foot Care Model" (Sheridan, 2012).

Nephrology nurses from a large hemodialysis urban inner city facitilty were invited to participate in this project. Once informed consent was obtained, 11 nephrology nurses (2 males and 9 females) were asked to complete a pre questionnaire. An education program was provided regarding foot assessment, use of the SWM Tool, and proper Doppler utilization. A skills session followed after which the nephrology nurses were credentialed in foot assessment and assigned to assess diabetic patients on dialysis for foot care needs on a monthly basis. On completion of the project, the nephrology nurses were asked to complete a post questionnaire.

Methodology

A retrospective review was conducted to determine the current rate of amputations foot assessment on diabetic dialysis patients at this facility. Foot care was voluntary and if a patient refused, foot care was not performed. The foot assessment included visual inspection and use of SWM tool. Once foot assessment sheets were completed the data was given to the APN and locked in the APN's office. If any patients required a referral to podiatry, the Social Worker would be notified to assist with transportation to the appointment.

Analysis and Results

A paired t-test was used to assess the nurses knowledge between pre and post questionnaires. There was a significant increase in knowledge from (M=84.55) to posttest (M=94.09) (Table 2). The posttest grades improved approximately 9%, demonstrating significant increase of the nurse knowledge with p<.000. There were 35 diabetic patients with ESRD at the inner city dialysis facility who were assessed by the

credentialed nephrology nurses. Forty percent of the patients were male and 60% were female (Table 3). The average age was 58 years of age. The majority of the patients, 91%, were African American. The patients were found to have multiple abnormalities such as, hammertoe and onychomycosis, or callus and neuropathy (Table 4). There were four patients with previous amputations, three women and one male (Table 5). During the foot assessment there was less than 1% of the patients had no abnormalities. During this project, referrals (49%) were made to podiatry, (1%) to the wound center; no referrals to a surgeon were required.

On foot assessment, onychomycosis (60%), neuropathy (34%), corn, blisters, diminished pulses, hammertoes, and edema (1%), were identified through visual assessment and the use of SWM (Table 6). The reliability and validity of the SWM tool diagnosing foot disorders and its use in foot care assessments (Broersma, 2004) added confidence that a) the above disorders identified were accurate; and b) that the use of an evidence-based tool was important in this setting.

Limitations

There are limitations that must be considered when assessing the findings. The first limitation of this project is that only one inner city dialysis facility was involved. The second limitation was the number of patients willing to be assessed. Generalizability of the limitations must be considered before comparing the finding to other studies.

Conclusion

There is a high prevalence of lower extremity amputations in this population. Hemodialysis patients require nephrology nurses to assess their feet as part of their dialysis treatment to provide quick referral for early interventions to prevent amputations.

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