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Crystal A. Cusanelli

Southern Illinois University Edwardsville

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Executive Summary

Diabetic Foot Screening Tool: Utility in a Busy Primary Care Setting

Crystal Cusanelli

Introduction

Diabetes is a complicated endocrine disorder that is often managed in the primary care setting. Individuals with diabetes are at increased risk for complications affecting their feet, such as neuropathy, foot ulcers, and amputations. Providers in the primary care setting are often responsible for screening for foot complications, initiating the proper interventions or referrals based on examination findings, and providing education for patients regarding foot care. Providers in a rural clinic in the Midwest identified that, despite their best efforts to follow the standards of care set for patients with diabetes, foot care may sometimes be overlooked due to the complexity of these patients and the limited time during the office visit to address the problem.

Literature Review

Current guidelines recommend at least a yearly comprehensive foot screening for patients with diabetes (American Diabetes Association, 2017). The comprehensive examination includes a visual inspection, a pulse assessment, and a sensory examination. Only 69.8 percent of adults with diabetes in Illinois reported foot examinations by a health professional within the last year (CDC, 2016). This is below the objective established by Healthy People 2020, which is set at 74.8 percent (HealthyPeople.gov, 2017). While there is limited evidence available in the literature for the prevention of a first foot ulcer, approximately 75 percent of recurrent ulcers are considered preventable through integrated foot care, patient education and self-

management, and the use of the proper footwear (Bus & Netten, 2016). In previous studies, the use of a diabetic foot protocol has shown to reduce the amount of amputations in patients with a previous diabetic foot ulcer (Rerkasem et al., 2007). Interventions such as having visible foot care signage, using a reminder tool, provider education, and having the patients remove their socks before the provider entered the room have shown to increase the number of foot examinations performed (Gallman, Conner, & Johnson 2017).

Project Methods

Adherence to the recommended yearly diabetic foot examinations is a known problem at the state level. Similarly, providers in this practice noticed that they often forgot to perform the recommended diabetic foot screenings due to the lack of time during the office visit and the complexity of diabetic patients. The purpose of this project was to address the low incidence of foot screenings completed in the primary care office. The usability of a diabetic foot screening tool, provider satisfaction with the screening tool, and provider perceptions regarding foot care after piloting use of the tool were evaluated. The Normalization Process Theory (NPT) was used to guide this project. It is a middle-range theory that was developed between 1998 and 2008 by May et al. (2009) to explain how new processes become integrated into everyday practice through the use of implementation, embedding, and integration.

The project was presented to the Southern Illinois University Edwardsville Institutional Review Board (IRB) and it was concluded that the project did not meet the definition of research and thus, IRB approval was not needed. This was deemed a quality improvement project to assess the utility of a diabetic foot screening tool. There

were two providers in a rural clinic in the Midwest who agreed to participate in the project. A diabetic foot screening tool, based on current evidence-based guidelines and established protocol, was developed by the principle investigator in collaboration with the stakeholders. Participants were notified of the project through a recruitment statement for project participation. During the initial meetings, the providers were given instructions on how and when to fill out the diabetic foot screening tool. Staff were instructed to have diabetic patients remove their shoes and socks before the provider entered the room. The diabetic foot screening tool was used on all diabetic patients in the primary care office by all providers over a two-month period. Each provider was responsible for completing the diabetic foot screening tool for each patient with diabetes. The form was then scanned into the patient's chart.

Anonymous surveys created by the principle investigator were then sent out via Qualtrics to evaluate the provider satisfaction and the usability of the screening tool. A focus group with the providers, led by the principle investigator, was also conducted to gather additional post intervention data including providers' perceptions about diabetic foot care.

Evaluation

After a two-month period, two participants: one nurse practitioner and one physician, completed the post-implementation survey and participated in the focus group. Approximately 250 diabetic foot screening tools were completed during this time. The results of the project revealed that the providers were satisfied with the "assessment" and "sensory" portions of the screening tool, the written patient education, and the "straightforward" screening tool. Having the clients remove their socks and

shoes before the provider entered the room served as a reminder to the provider to complete the foot examination. The project fit the needs of this particular practice and increased the providers' perceived importance of foot screenings and education for patients with diabetes.

The surveys and focus group also revealed several improvements that could be made to the tool. The paper format of the diabetic foot screening tool was described as tedious and time-consuming to fill out. Providers stated they would be more likely to use the tool if it were in an electronic format. This would allow for easier access and could potentially save a considerable amount of time. This form could be edited within the electronic health record and the provider could check a box if the patient had a positive foot history or an abnormality in the sensory exam. The number of abnormalities could trigger a score which could help guide the provider in determining the patient's risk status and the subsequent plan. Feedback from providers also revealed that respondents did not completely agree with certain aspects of the "plan" portion of the screening tool recommending that any patient presenting with neuropathy be referred to a foot specialist. Providers did not believe this was necessary for all patients even though the ADA recommends that diabetic patients with loss of protective sensation be referred to a foot care specialist for preventive care and surveillance (ADA, 2017). Further education through an in-service within the practice about the benefits of a multidisciplinary approach to foot care would be beneficial in future projects.

Impact on Practice

While this project impacted the practice at the microsystem level represented by this specific clinic, further projects can be conducted to assess the usability of a diabetic

foot screening tool at the mesosystem level which would include implementing the tool in multiple clinics within that healthcare system. This project resulted in a heightened awareness for the need to perform the recommended foot examinations. Potential long-term impacts from this project could include a rise in the number of foot examinations conducted on diabetic patients. This could lead to an increased rate of detection of potential and current foot problems, resulting in appropriate interventions, treatment, and better patient outcomes. Additional recommendations for future projects may include using an electronic format of the screening tool, evaluating provider adherence to recommendations on the screening tool, and measuring how long it takes to complete the entire examination.

Conclusions

The results of this project suggest that providers prefer using a screening tool that is easy to use, quick, and thorough. Utilizing a written diabetic foot screening tool and having the clients remove their socks and shoes before the provider entered the room reinforced the need to perform the recommended foot examinations in the primary care office. Modifications can be made to the “plan” portion of the screening tool to fit the needs of the individual practice, and further education about the importance of multidisciplinary care can reinforce current foot care guidelines. Additionally, the paper format of the tool itself can be improved by transforming it into an electronic form. With regular foot examinations, diabetic foot problems can be identified early and the proper interventions or referrals can be made. Providers need to remain diligent in performing foot screenings and presenting patient education about foot care to decrease morbidity and mortality related to diabetic foot problems.