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Deborah Swavely DNP, RN
Lehigh Valley Health Network, Deborah.Swavely@lvhn.org

Allison Vorderstrasse DNSc, APRN
Lehigh Valley Health Network

Edgardo Maldonado MD
Lehigh Valley Health Network, Edgardo.Maldonado@lvhn.org

Sherrine Eid MPH
Lehigh Valley Health Network, Sherrine.Eid@lvhn.org

Jeffrey Etchason MD
Lehigh Valley Health Network, Jeff.Etchason@lvhn.org

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Implementation and Evaluation of a Low Health Literacy and Culturally Sensitive Diabetes Education Program

Deborah Swavely DNP, RN; Allison Vorderstrasse, DNSc, APRN; Edgardo Maldonado, MD; Sherrine Eid, MPH; Jeffrey Etchason, MD
Lehigh Valley Health Network, Allentown, Pennsylvania

Background
- Health literacy – degree to which individuals have the capacity to obtain, process, and understand basic health information and services to make appropriate health decisions
- 36% of adults (78 million people) have low or basic healthy literacy skills
- Diabetes self-management is complex, requiring knowledge and skills pertaining to diet, exercise, blood glucose monitoring, and medication administration
- Individuals with diabetes and low health literacy (LHL) have poorer glycemic control, higher rates of retinopathy, and more episodes of hypoglycemia

Objective
Evaluate the effectiveness of a LHL diabetes education program by measuring patients' diabetes knowledge, self-efficacy, self-care, and metabolic control; and, patient, provider, and staff satisfaction.

Methods

Study Design
A prospective pre-post evaluation design was utilized to investigate the short term outcomes over 12 months for patients who completed the culturally sensitive LHL diabetes education program.

Participants
English and Spanish speaking patients with type 2 diabetes aged 18 years and older referred from six primary care medical practices located in an urban setting.

Program Description
- Individual and group diabetes education sessions provided in English and Spanish, encompassing 13 hours of education over 12 weeks
- The U.S. Diabetes Conversation Maps were used for their visual approach to diabetes education
- Staff received training on health literacy, effective and clear communication

Health Literacy
- 63.2% of patients had adequate health literacy, with 11.3% of patients scoring in the marginal, and 25.5% of patients in the inadequate health literacy categories

Measurements
- Self-reported demographic, and health information
- Health literacy using The Short Test of Functional Health Literacy in Adults (STOFHLA) tool and the diabetes knowledge using the Spoken Knowledge in Low Literacy for patients with Diabetes (SKILLD) tool
- A1C values from the hospital's data warehouse
- Self-efficacy using the Stanford Diabetes Self-efficacy tool
- Diabetes self-care using the Summary of Diabetes Self-Care Activities tool

Results
- Over the 12 month evaluation period a total of 277 patients enrolled in the program, with 106 patients having complete survey data
- 77.4% of the patients were Hispanic, mostly Puerto Rican, living in the United States for longer than ten years, and preferred to speak Spanish
- The mean age was 56.8 (± 10.4 years) with 66% of participants female. Over 88% of the patients had Medicare or Medicaid; and 13.2% had no insurance coverage
- Most patients were low income or at or below poverty and nearly half did not have a High School Diploma

Findings
- Patient knowledge significantly improved with 87.1% of the patients scoring 80% correct or higher on the SKILLD open concept exam compared to only 34% scoring 80% or higher prior to beginning the program.
- Significant improvements occurred in diabetes knowledge, self-efficacy, the diet, exercise, and foot care domains, with no statistical significant change in the frequency of glucose testing.

Conclusions
Results from the program evaluation were similar to other LHL diabetes education studies. Significant improvements occurred in diabetes knowledge, self-efficacy, the diet, exercise, and foot care domains of self-care, and A1C for patients who completed the program. Importantly, improvements in diabetes knowledge were significant for patients with both adequate and inadequate health literacy.

Given the relationship between LHL and poorer health outcomes and increased costs, health care organizations and providers need to take action to transform systems of care to address the literacy needs of patients.