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Diabetes Self-Management Education (DSME) Program for Glycemic Control

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UNIVERSITY OF SAN DIEGO

Hahn School of Nursing and Health Science

DOCTOR OF NURSING PRACTICE PORTFOLIO

by

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A portfolio presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE

UNIVERSITY OF SAN DIEGO

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requirements for the degree

DOCTOR OF NURSING PRACTICE

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I. Acknowledgements

I would like to express my profound gratitude to the Palomar Medical Group and its administrative staff for their support, assistance, and encouragement throughout my evidence-based practice project, Diabetes Self-Management Education (DSME) for glycemic control. I appreciate the guidance and direction of my clinical mentor, Dr. Brian Meyerhoff. He remained in full support of my project and taught me much about the care of patients with chronic diseases.

I would also like to thank my professors at the University of San Diego Hahn School of Nursing and Health Science for their excellent mentorship, superlative wisdom, and unending guidance. I would like to specifically thank my faculty chair Dr. Kathy James and my seminar faculty mentor Dr. Scot Nolan for their wisdom, support, and advice during the course my Doctor of Nursing Practice program. I will forever be grateful for the knowledge and inspiration they bestowed upon me as I completed my doctoral degree.

Finally, I would like to thank my family, my mother Flora, and my children, RJ, PJ, and MJ, for their unconditional love and support throughout my academic career. I want to honor my father, Dr. Guillermo Peros, who passed away when I was 16, for his absolute love and unrestricted support for my education and chosen profession. Most especially, I wish to thank my beloved partner, Dr. Jerry Thrush, who has been very supportive, encouraging, committed, and understanding throughout my academic and professional career. He has been my inspiration as I pursued my professional goals. Thank you from the bottom of my heart.

II. Opening Statement: Purpose in Pursuing the Doctor of Nursing Practice

It has been a privilege to have served as a registered nurse for over 20 years. I currently practice as a board certified Nurse Practitioner in a large internal medicine clinic. My focus as an advanced practice nurse has been to enhance the caliber of patient care through the implementation of evidence-based interventions. I chose to pursue the Doctor of Nursing Practice degree to give back to the community by improving both the health of my patients as individuals, and groups of people with chronic diseases. In addition, it was my secondary mission to acquire the skills necessary to further serve the community by being able develop health policies that can have a broader impact on patient care and access.

I am very honored to have completed my Doctor of Nursing Practice degree at University of San Diego, Hahn School of Nursing and Health Science. I am confident that the education that I received has prepared me for my role as a health care leader.

This degree has helped me to attain my professional goals which are listed below:

- To safeguard quality and improve patient outcomes.
- To promote culturally relevant health care among diverse patient groups.
- To become an effective health care leader.
- To influence health care policy.

The culmination of my Doctorate in Nursing Practice degree was the completion and dissemination of the results of my evidence-based practice project. By completing this undertaking, I was able to contribute to the body of knowledge in nursing. I was able to identify a significant health care problem and implement evidence-based interventions which resulted in improved patient outcomes.

III. Documentation of Mastery of DNP Program Outcomes

Diabetes Self-Management Education (DSME) Program for Glycemic Control

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Keywords:

Diabetes Self-Management Education

DSME, Diabetes Mellitus

Abstract

Purpose: The purpose of this quality improvement project was to implement and evaluate the impact of Diabetes Self-Management Education (DSME) program with type *2* diabetes mellitus (DM) patients. The goals were to improve glycosylated hemoglobin (A1C) and improve patient satisfaction.

Methods: A quality improvement project using the Iowa model was implemented in a primary care setting in Southern California to provide DSME program for adults with type 2 diabetes. A nurse practitioner conducted three DSME group sessions, which were done for 90 minutes per session in a 4-month period. The American Association of Diabetes Educators (AADE) 7 self-care behavior guidelines were used to develop the DSME program. Five patients with type *2* DM participated in the program. Patient satisfaction and A1C levels were collected at baseline and after the completion of the program.

Results: The average AIC for patients at the initiation of DSME was 9%. After the completion of DSME program, the mean reduction in A1C was 1.44%, and the range change was 1% to 1.8 %. Twenty percent of total participants met the objective of decreased A1C level below 7%. Five patients, (100%), had 10% decrease in their A1C levels after completing the program and scored *"highly satisfied*" with the DSME program.

Conclusion: As the prevalence and incidence of diabetes increase, a coordinated model of care can meet the growing demand for access and utilization of DSME programs. Health care providers in primary care settings can replicate DSME programs focusing on chronic conditions to improve outcomes.

Diabetes mellitus and the sum of its associated complications were the leading cause of death, accounting for $174 billion in direct and indirect cost in the United States in 2007. The majority of direct costs were attributed to hospital admissions, medications, glucose monitoring supplies, and use of health care. Indirect costs were attributed to work absenteeism, reduced or loss of productivity because of early morbidity or mortality, and reduced quality of life among patients and their family members who care for them. Implementation of an evidence-based project (EBP), such as diabetes self-management education (DSME) program, is a model of care that will improve patient health care outcomes (Centers for Disease Control and Prevention, 2011).

The projected annual diabetes mellitus-related spending is expected to increase from $113 billion to $336 billion between 2009 and 2034. An estimated 25 million people in the United States have diabetes mellitus, and the number is expected to double by 2050 (Huang, Basu, O'Grady, & Capretta, 2009).

In 2012, the prevalence of Americans with diabetes increased to 29.1 million or 9.3% of the population. Of the 29.1 million, 21 million were diagnosed, and 8.1 million were undiagnosed. New cases accounting to 1.4 million Americans are diagnosed with diabetes every year. Diabetes alone, without adding its complications, was the seventh leading cause of death in the United States in 2010. At that time, 69,071 death certificates listed it as the underlying cause of death, and a total of 234,051 death certificates listed diabetes as a contributing cause of death (American Diabetes Association, 2016).

Expected Outcomes

Healthy People 2020 (Healthy People, 2016) established 16 objectives to reduce the disease and economic burden of diabetes mellitus and improve quality of life for all people who

have, or are at risk for, DM. One objective is to increase the number of patients participating in DSME. Expected outcomes for the quality improvement project at the time of implementation were based on American Diabetes Association's (ADA, 2016) standard of medical care to decrease A1C.

Review of the Literature

The search for the evidence began with accessing the PubMed database using the MeSH terms "diabetes self-management education," "DSME," and "diabetes mellitus." Search criteria were limited to human within 10 years. Five studies were selected for inclusion in the literature review for high relevance to the clinical question.

The implementation of DSME interventions within a multidisciplinary team generally included trained nurse-led care in close consultation with the patient's treating physician and families. Most interventions consisted of educational sessions delivered within a 6-month period to groups of no more than 10 patients. A meta-analysis of 34 published randomized clinical trials (RCTs) and a combined population size of 5,993 patients concluded that the DSME program showed a significant mean reduction in A1C by -0.70% in the intervention group. The strength of the study was the selection of electronic databases from PubMed and ISIS knowledge for relevant RCTs between 1999 and 2009, yielding 34 RCTs. The implementation of DSME interventions addressed the specific needs of diabetic patients from different cultural ethnic groups. With the increasing cost of diabetes care, limited human resources were burdensome to the healthcare system in some other countries. Endorsement of DSME was promoted to optimize evidenced-base practice (EBP) to meet the needs of diabetic patients (Tshiananga et al., 2012). Recognizing the prevalence of diabetes in Virginia, where type 2 diabetes was the sixth leading cause of death, Jesse and Rutledge (2012) conducted a study to evaluate the effectiveness of

multidisciplinary team nurse practitioner (NP) coordinated group visits in medically underserved Appalachia on health, knowledge, and self-efficacy of patients with type 2 diabetes. Two groups, a study group (n= 11) and a comparison group (n=15) participated in a three-week program. The study group that participated in the DSME program had better clinical outcomes, greater knowledge, and better self-efficacy. Post intervention mean blood sugar (146.36 mg/dl) improved 50.37 mg/dl from pre-intervention (197.73mg/dl). The results suggested that the DSME program led by NPs had a positive impact on the glycemic control, diabetes knowledge, and self-efficacy. The strength of this study was the implementation of DSME with the use of nurse practitioner coordinated team (NPCT) group visits and interdisciplinary team approach that offered an innovative way to improve healthcare outcomes. Even with free care and incentives during the program, there was a struggle to enroll participants. Barriers identified were lack of transportation and fuel, work, and family obligations. Non-randomization and the small size were limiting factors in the study.

The implementation of DSME in a private outpatient clinic in Hidalgo county located in South Texas used shared medical appointments (SMAs) and yielded positive outcomes, including a decrease in A1C after the 2nd and 3rd measurements, by 58% and 55% respectively (Sanchez, 2011). The patients who participated in the quality improvement project had improved self-management skills and reported satisfaction with the program. The strength of the study was the use of the Chronic Care Model as a framework for the development of EBP interventions. The limitation of the study was related to patients' demographics, as 96% of the patients who participated identified themselves as Mexican-American, and this subset may not be generalizable to the diverse population in the United States.

A quasi-experimental EBP intervention using a 5-week DSME program was implemented for a total of 144 diabetic patients at the border of Texas and Mexico, with two groups formed: an intervention group (n=74) and a control group (n=65). Both groups were predominantly female, aged 40 years old and older, low income, and acculturated. The interventions were patient-centered and based on the standards from the American Diabetes Association. The intervention group had a significant reduction in A1C values with a median difference of 0.3% (n=45). Patient's engagement in diabetes self-care management and increased self-confidence were demonstrated after the implementation of this culturally sensitive DSME program. The strength of the study was that the multidisciplinary team members leading the program were all bilingual, trained and experienced in diabetic care. In addition, the intervention group and control group had similar baseline demographic and physiologic parameters (Pena-Purcell, Boggess, & Jimenez, 2011).

In an effort to provide the best quality care for diabetic patients, the University of Pittsburg Medical Center embarked on a quality improvement initiative using the DSME program. Four primary care practices were involved in this program and a nurse who was a certified diabetic educator (CDE) provided the program from January 2003 to December 2006. Of the 5,344 patients in the four practices, 784 received the DSME program. The mean baseline A1C value was 7.8% at the beginning of the program. At the completion of the program, there was a significant decrease in A1C (-0.29%, $p < 0.0001$). This report demonstrated that integrating DSME into primary care clinics was an effective way to improve to glycemic control. The nurse CDE coordinated the entire group and follow up visits. Along with providing patient education, the nurse CDE also provided the clinic staff with updates and treatment algorithms in diabetes management. The patients who did not participate in the DSME program may have received

DSME in another setting and this was recognized as a limitation of this study. At the time of the study, the nurse CDE and physicians did not routinely document DSME services and referrals. Other limitations were inadequacy in tracking billing codes and laboratory values, and poor referral patterns (Siminerio, Ruppert, Emerson, Solano, & Piatt, 2008).

Description of the Evidence-Based Interventions

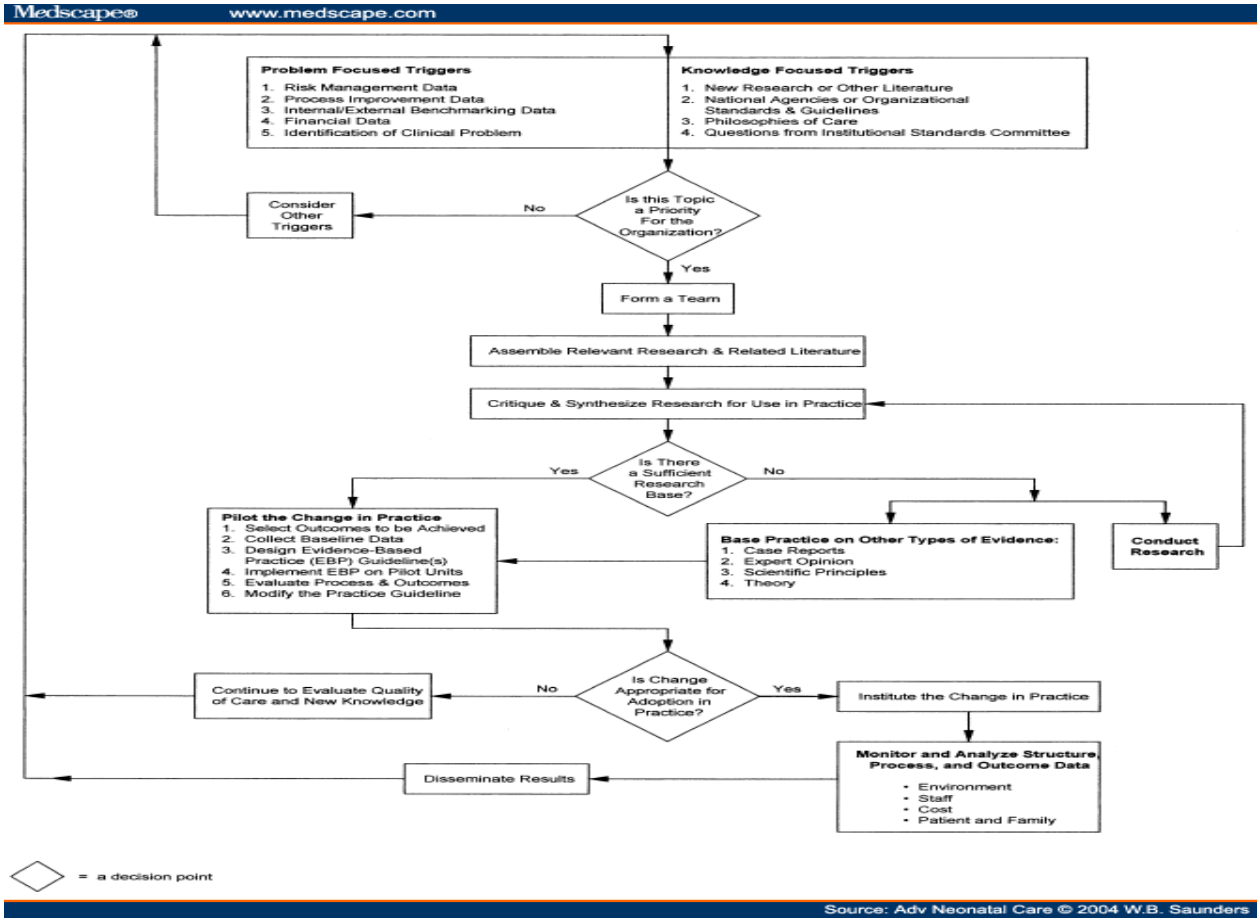
The DSME was a program, which facilitated and empowered individuals to learn about diabetes mellitus and its complications. A study conducted by Sanchez (2011) had 70 participants, with an average A1C of 7.95% at the initiation of the DSME program. The Plan-Do-Check-Act cycle model was used. A physician and two nurse practitioners employed at the primary care clinic were involved in the implementation of the DSME. Ninety-minute appointments were scheduled for the patients and classes with handouts were provided in English and Spanish. Different learning formats were applied, including oral and video presentations with handouts, which were written at the fifth-grade literacy level. The baseline sample included 70 patients, 65 of whom had a second visit, and 49 had a third visit. Baseline A1C was 7.95%. Fifty-nine patients (84%) had a second A1C and 22 patients (31%) had a third A1C. On second measurement, 24 (41%) had A1C levels <7% and 52 had A1C levels <9%. On third measurement, 7 (32%) had A1C levels <7% and 19 (86%) had A1C levels <9%. For patients who had a second A1C values, 25 (42%) had an increase and 34 (58%) a decrease. For the third measurement, 10 (45%) had an increase and 12 (55%) a decrease in A1C (Sanchez, 2011). The overall outcome was that most participants had a decrease in A1C by the completion of the program.

Methods

Implementation of Iowa Model

Diabetes mellitus is a chronic and disabling disease that affects many patients across the nation. The Iowa model focused on improving quality of care and emphasized a collaborative, multidisciplinary team approach that enabled continuity of care (see Figure 1). The steps used in the Iowa model were concise, with step-by-step problem solving methods, and included an important element with the use of multidisciplinary approach throughout the process. The Iowa model provided guidance and direction from the identification of a relevant clinical question in a current practice setting up to the dissemination of results. The model was specific and systematic. The hallmark of Iowa model was the integration of services, which involved considerable interaction among the team members and involving continuous open communication between patients and health care providers (Melnyk & Fineout-Overholt, 2011)**.**

Figure 1: Iowa Model



Implementation of AADE 7 Self-Care Behaviors

The American Association of Diabetes Educators (AADE) 7 Self-Care Behavior guidelines were used to develop the DSME program, which provided an ideal framework for the concept of self-care management (see Figure 2). Seven core behavioral guidelines were used to develop the essential EBP therapeutic interventions in the care of patients with diabetes (American Association of Diabetes Educators, 2016).

Figure 2: AADE 7-Self-Care Behaviors

Population and Setting

The population of interest for the DSME program was adults with type 2 DM in a private primary care internal medicine clinic in Southern California, with five physicians and two nurse practitioners. Potential participants were randomly selected from the electronic database using a variable of A1C more than 8%. Initial telephone conversation was conducted to discuss their

participation. Five patients agreed to participate. Informed consent was obtained from each participant before the start of the program. The clinic medical board and the University of San Diego Institutional Review Board approved the implementation of this DSME program. Most patients in the clinic population were adults over age 45, and sources of insurance included private insurance, Medicare, and Medicaid.

Program Intervention

The coordinator of this EBP conducted a comprehensive community assessment to learn about the existing diabetes education resources and the self-perceived needs of target population. Other activities included organizing human, material, and financial resources needed for establishing a DSME program, engaging existing partners and key stakeholders by informing them about the DSME program, educating them about its benefits and discussing the structure, scope, and evaluation methods of the DSME program. Exploring methods for sustaining and disseminating the DSME program were beneficial for the implementation of this EBP.

Educational materials based on standards of care, which were culturally relevant, available in English, and written at the 5th grade literacy level, were provided to the patients. Topics that were included were signs and symptoms of acute and chronic complications of diabetes, lifestyle modification with diet and exercise, compliance with medications and treatments, preventative and regular follow-up visits, and coping behavior. The program coordinator collected data from the electronic medical record (EMR) for two weeks, enrolled the target population to the program, and obtained their most recent A1C within three months of the start of the DSME program. The program coordinator conducted a total of three DSME group sessions in a 4-month period and each session was conducted for 90 minutes. The final

evaluation was done after the third session. Variables measured were the patient's A1C and satisfaction with the program.

Data Collection

Data was collected on each of the five patients who participated and completed the DSME program between October 2015 and February 2016 (Table 1). Outcome interpretation was based on the ADA standards of care for glycemic control. The program evaluation tool was developed by the author of this program and was approved by the clinic management.

Table 1: Patient Demographics

Total Participants: 5		Results
Age:	30-59	3
	60-74	2
	75 or above	0
Years with DM:	4 or less	4
	5-10	1
	11 or above	0
Sex:	Female	3
	Male	2
Marital Status:	Married	3
	Single	0
	Separated/Divorced/Widowed	2

Data Analysis

Descriptive statistics were used to determine the percentage of patients who were able to maintain the clinical recommendation for A1C of 7% or lower. Post-evaluation comments were collected and transcribed in verbatim format to capture the satisfaction of patients at the end of the program.

Results

Table 2 indicated the percentage of patient's initial and post A1C in this DSME program. The average AIC for patients at the initiation of DSME was 9%. After the completion of DSME program, the mean change in A1C was 1.44%, and the range change was 1% to 1.8 %. Twenty percent of the participants met the objective of an A1C level below 7%. All five patients, which accounted to 100%, had at least a 10% decrease in their A1C levels after completing the program. All five participants indicated they were *"highly satisfied*" with the DSME program.

Table 2: Results of Initial and Post A1C

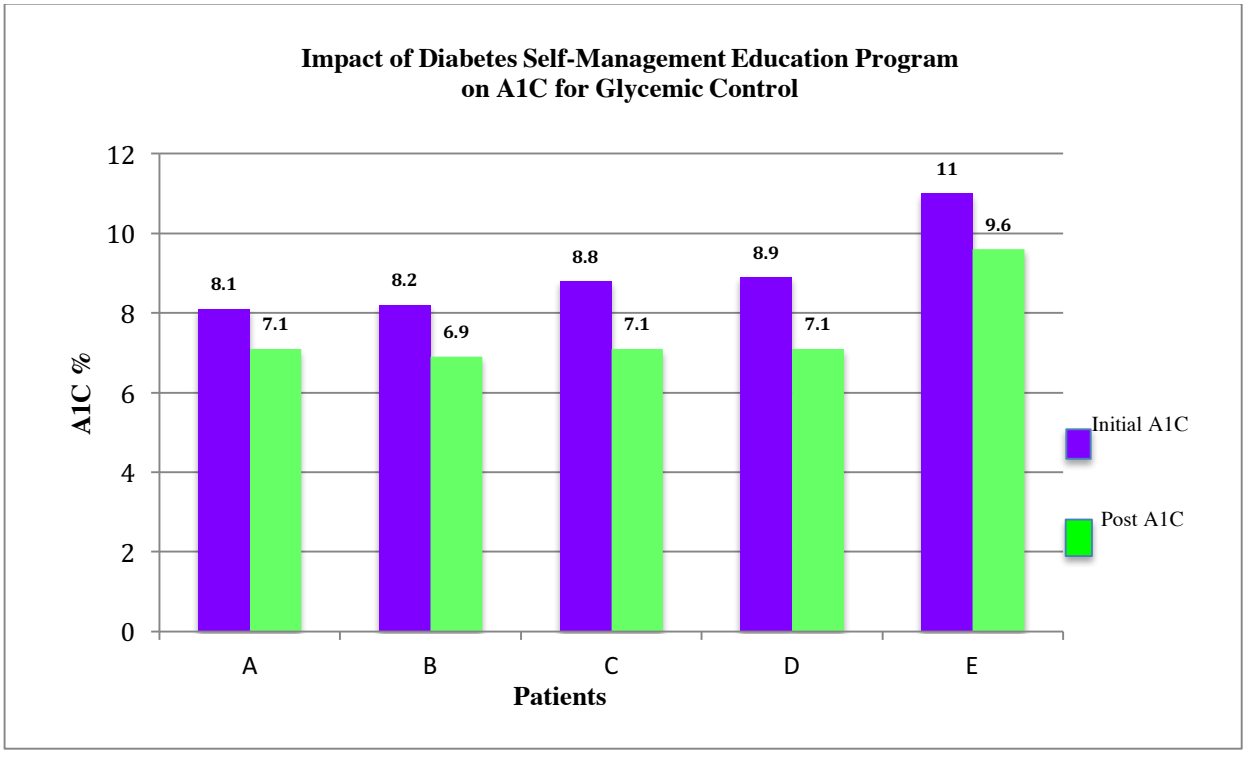


Table 3 indicated the actual statements from the patients after the completion of the program and this demonstrated positive feedback.

Table 3: Comments from Patients

Patients	Comments
A	*"I am glad I came to this class, It eased my concerns about my diabetes."*
B	*"Diabetes is indeed a journey."*
C	*"I learned the value of diet, exercise, medication, and treatment compliance…"*
D	*"Now I know the importance of reading food labels."*
E	*" I will take control of my diabetes from now on."*

Discussion

Diabetes self-management education (DSME) program was found to be appropriate for patients who were willing and motivated to self-manage their health condition to improve their outcomes. Although the program had a small sample size of only five patients, the project was consistent with the literature regarding the benefits and sustainability of DSME. The patient population who participated in the DSME had similar outcomes in A1C and patient satisfaction as previously reported. Standards of diabetic care were reviewed, implemented, and evaluated. The data obtained was interpreted as having a positive impact on glycemic control and patient satisfaction. Assisting patients with diabetes to appreciate and learn the value of self-

management was a critical step in the implementation of DSME. Patient empowerment and a collaborative approach among the multidisciplinary team members were imperative in the overall outcomes of the program. The DSME program improved patients' outcomes by reducing A1C. This reduction of risks and complications of diabetes improves the quality of life of patients with diabetes. Diabetic education helped the patients understand diabetes, its progression, and possible complications. It also provided encouragement and guidance to the patients to help them engage in self-care management for optimal health (Kent et al., 2013).

Limitations

Limitations of the project were related to sampling size, patient demographics, and patient learning preferences. This small sample of five patients may limit the generalizability of the results. The average age of the participants was 59 years old with a range of 46 to 74. The age spectrum was wide with different education levels and specific individual needs. The program was only presented in English format, limiting the possible participation of patients who speak other languages. Lack of controlled group without DSME intervention may limit the findings. There was also no long-term follow-up of A1C to monitor the duration of improved glycemic control after the program had finished.

Another limitation was the difference in clinical practice recommendations, outcomes, and quality indicators. The evidence regarding the risk reduction of diabetes with an A1C of 7% was inconsistent with the quality indicators used by payers as benchmarks, which was set at 9%. The National Committee for Quality Assurance (NCQA, 2015) was the only organization that tracked and reported outcomes and process measures based on the Healthcare Effectiveness Data and Information Set (HEDIS), which was developed through a partnership among the public and

private organizations representing healthcare consumers and purchasers, and health services researchers.

Recommendations

The results in the implementation of a DSME program contributed to the growing body of literature and demonstrated that this DSME program was effective in improving glycemic control with high patient satisfaction. Nurse practitioners, diabetic educators, and primary care providers benefited from evidence-based DSME programs tailored to the unique needs of patients with type 2 DM. Evaluation of the DSME program demonstrated an effective glycemic control and improved patient outcome based on the quality indicator of a decreased A1C.

As the incidence and prevalence of diabetes increase, other health care providers in the primary care setting can replicate evidence-based DSME programs. Future DSME programs should be tailored with the implementation of telephonic education and the use of electronic devices to reach out using the modern technology. Increased marketing and advertising to recruit more patients were recommended to increase participation. Future classes were suggested for patients with specific needs, such as obesity, depression, and insulin versus noninsulin treatments.

Potential for National and Global Impact

Diabetes self-management education is the foundation of diabetes care and is essential for improving knowledge and skills necessary to perform self-management. DSME improves A1C and patient satisfaction. Preventing complications of diabetes and maintaining glycemic control require a multidisciplinary approach, utilizing appropriate EBP interventions, in addition to optimal self-management practices and behavior changes (Shaw, Killeen, Sullivan, &

Bowman, 2011). Implementation of DSME serves as a cornerstone in the management of diabetes. Self-care management is essential to ensure patients are adhering to lifestyle changes such as diet and exercise, patient compliance with medication regimens, and are utilizing appropriate health care services.

Diabetes self-management education serves as a model of practice that should be replicated in primary care settings worldwide to meet the high demands of growing epidemic of diabetes. DSME addresses a large group of individuals with a chronic condition and a common interest. Billing codes and reimbursements for health care providers differ in every state, therefore, standardized billing guidelines are needed to track the impact of process and outcome measures.

Implications for Clinical Practice

Quality improvement projects, such as DSME, are opportunities to implement evidence based-interventions to improve patient outcomes and influence health care policy. Nurse practitioners who have expertise in diabetic management can apply for federal funding and have opportunities to improve health care policy through the implementation of DSME in an effort to improve diabetic outcomes. In collaboration with other healthcare disciplines, nurse practitioners have greater impact and potential to conduct quality improvement projects using EBP, focusing on the management of chronic diseases and improving patients' outcomes. The DSME program impacts a large group of patients at the same time, therefore, providing optimal use of medical and community resources.

The Agency for Healthcare Research and Quality (AHRQ) supports DSME as an innovative program to improve health care outcomes of patients with DM (AHRQ, 2013). Recommendation to continue providing DSME programs in primary care setting was highly

encouraged based on relevance, efficiency, impact, effectiveness, and sustainability. Evaluation of the program demonstrated an improvement in structure and outcome measures based on quality indicators. Qualitative indicators according to the anecdotal statements from patients were positive.

References

Agency for Healthcare Research and Quality. (2013). Community-based, culturally tailored educational program helps low-income South Korean immigrants improve self-management behaviors, disease control, and other health markers. Retrieved from https://innovations.ahrq.gov/profiles/community-based-culturally-tailored-diabetes-education-program-helps-low-income-south#contactInnovator

American Association of Diabetes Educators. (2016). AADE Self-Care Behaviors. Retrieved from https://www.diabeteseducator.org/patient-resources/aade7-self-care-behaviors

American Diabetes Association. (2016). Statistics about diabetes. Retrieved from http://www.diabetes.org/diabetes-basics/statistics/?loc=db-slabnav

Centers for Disease Control and Prevention (2011). National Diabetes Fact Sheet Retrieved from http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2001.pdf

Dall, T. M., Zhang, Y., Chen, Y. J., Quick, W. W., Yang, W. G., & Fogli, J. (2010). The economic burden of diabetes. *Health Affairs*, *29*(2), 297-303. doi: 10.1377/hlthaff.2009.0155

Healthy People. (2016). Diabetes. Retrieved from https://www.healthypeople.gov/2020/topics objectives/topic/diabetes/objectives

Huang, E. S., Basu, A., O'Grady, M., & Capretta, J. C. (2009). Projecting the future diabetes population size and related costs for the U.S. *Diabetes Care*, *32*(2), 2225-2229.

Jaber, R., Braksmajer, A., & Trilling, J. S. (2006). Group visits for chronic illness care: Models, benefits, and challenges. *Family Practice Medicine*. Retrieved from http://www.aafp.org/fpm/20060100/37grou.html.

Jessee, B. T., & Rutledge, C. M. (2012). Effectiveness of nurse practitioner coordinated group visits for type 2 diabetes in medically underserved Appalachia. *Journal of the American Academy of Nurse Practitioners*, *24*, 735-743. doi: 10:1111/j.1745-7599.2012.00764x

Kent, D., Melkus, G. D., Stuart, P. W., McKoy, J. M., Urbanski, P., Boren, S. A., ... Lipman, R. (2013). Reducing the risks of diabetes complications through diabetes self-management education and support. *Population Health Management*, *16*(2), 74-81. doi: 10.1089/pop.2012.0020

Melnyk, B. M., & Fineout-Overholt, E. (2011). Models to guide implementation of evidence-based practice. In *Evidence-based practices in nursing and healthcare: A guide to best practice*, 2, 251-272. Philadelphia. Lippincott, Williams & Wilkins.

National Committee for Quality Assurance. (2015). Comprehensive Diabetes Care. Retrieved from http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality/2015-table-of-contents/diabetes-care

Pena-Purcell, N. C., Boggess, M. M., & Jimenez, N. (2011). An empowerment-based diabetes self-management education program for Hispanic/Latinos:A quasi-experimental pilot study. *The Diabetes Educator*, *37*(6), 770-779. doi: 10:1177/0145721711423319

Sanchez, I. (2011). Implementation of diabetes self-management education program in primary care for adults using shared medical appointments. *The Diabetes Educator*, *37*(3), 381-391. doi: 10:1177/0145721711401667

Shaw, K., Killeen, M., Sullivan, E., & Bowman, P. (2011). Disparities in diabetes self-management education for uninsured and underinsured adults. *The Diabetes Educator*, *37*(6), 813-819. doi: 10.1177/0145721711424618

Shen, H., Edwards, H., Courtney, M., McDowell, J., & Wu, M. (2012). Peer-led diabetes self-management programme for community-dwelling older people in China: Study protocol for quasi-experimental design. *Journal of Advanced Nursing*, *68*(12), 2766-2777. doi: 10.1111/j.1365-2648.2012.06059.x

Siminerio, L. M., Ruppert, K., Emerson, S., Solano, F. X., & Piatt, G. A. (2008). Delivering diabetes self-management education (DSME) in primary care: the Pittsburgh regional initiative for diabetes education. *Disease Manage Health Outcomes*, *16*(4), 267-272.

Tshiananga, J. T., Kocher, S., Weber, C., Erny-Albrecht, K., Berndt, K., & Neeser, K. (2012). The effects of nurse-led diabetes self-management education on glycosylated hemoglobin and cardiovascular risk factors. *The Diabetes Educator*, *38*(1), 108-123. doi: 10:1177/0145721111423978

IV. Concluding Essay: Reflections on Growth in Advance Practice Nursing Role

Evidence-based practice, effective patient care, and multidisciplinary approach are my ultimate objectives while practicing as a nurse practitioner. After working for 20 years as a registered nurse in different inpatient departments, including emergency departments, acute surgical care units, and endoscopy units, I became very passionate in advancing my professional and academic career. In 2013, after traveling for two years, I completed Master of Science in Nursing at Holy Names University in Oakland, California. Thereafter, I began to practice as a Nurse Practitioner in internal medicine private clinic.

I started my Doctor of Nursing Practice program at the University of San Diego in 2014. The DNP curriculum at USD provided me with valuable tools and opportunities to learn and understand the global health care systems, health care policies, finances, public health issues, and expected health care outcomes that were complex and challenging. I have attained outstanding skills and deeper knowledge as an advanced practice nurse through the exceptional mentorship and support of the professors and staff of USD. I have developed many creative leadership techniques that were valuable in enhancing my profession in improving health care outcomes, developing health care policies, and incorporating data into decision making. Building on the established roles of an advanced practice nurse, the DNP curriculum at USD provided me with vast knowledge and experience in strategic planning, effective communication, data management, and the application of critical business concepts.

During the initiation of my EBP project, I learned the essence of careful data gathering and the value of open communication. With the implementation of my evidence-based interventions, I came across many challenges. At the culmination of my capstone project, I was able to reflect on many important things that heightened my awareness to life, health, relationships, values, and

priorities. I realized the value of partnership and collaboration in creating reputations in our nursing profession. I embraced the lessons and ideas I learned from the teachings of Dr. Susan Instone during her class in "*Philosophy of Reflective Writing."* The dialogue movements taught me many aspects of provider-patient relationships that are essential in being an effective health care provider while maintaining professionalism and integrity.

The outstanding education I obtained from USD during my doctoral program allowed me to grow as an eloquent public speaker and as a critical writer. When I conducted the poster presentation at the 39th California Association for Nurse Practitioners (CANP) educational conference in Newport Beach on March 17-20, 2016, I was able to present the final results of my EBP project with confidence, pride, and enthusiasm. I met with many remarkable, outstanding, and highly-talented advanced practice nurses, who shared similar passion, dedication, and thirst for excellent patient care. To disseminate the final results of my project, I made two oral presentations. The stakeholder presentation and the school presentation were attended by many, and they were both valuable experiences.

In summary, the DNP program at USD improved my whole being mentally, academically, professionally, physically, emotionally, and spiritually. I became more aware of my surroundings and it made me realize that the future of health care lies in maximizing the education and collaboration of practitioners. By completing the terminal degree of my profession, I have been able to fulfill my goals as an advanced practice nurse and as an individual.