The Influence of Lifestyle Medicine on Nurses’ Belief of Evidence Based Practice

by

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Abstract

Adult onset type 2 diabetes can be improved with lifestyle medicine, which is a prescriptive and patient-centered evidence-based practice model. It affords consistent patient monitoring and provides nurses with the education to support and assist individuals in improving their health. In this intervention, education and resources were given to improve nurses’ knowledge of lifestyle medicine and evidence-based practice. Public Health Nurses can help patients prevent or mitigate against diabetes related complications by utilizing lifestyle medicine. While lifestyle medicine programs vary, they all assist patients in adopting behaviors (e.g., diet, exercise) that will improve their health and quality of life.

Keywords: adult onset type 2 diabetes, lifestyle medicine, evidence-based practice, education
The influence of lifestyle medicine on nurses’ belief of evidence based practice problem

Introduction

Problem Description

A city-county health department, that has earned the distinction of being a Federally Qualified Health Center (FHQC), has struggled to manage the care of patients with adult onset type 2 diabetes. The clinic routinely sees patients who are noncompliant with the prescribed treatment and have glycosylated hemoglobin, Type A1C’s (HA1C) of 14 and blood sugars (BS) over 500 mg/dl. The health department identified two contributing sources to this problem.

First, the health department works with vulnerable populations that face multiple barriers accessing resources to improve their social determinants of health (SDOH). SDOH are conditions (economic stability, education, social and community context, health and health care, neighborhood and built environment) in the environment that impacts peoples’ quality of life (Healthy People 2020, 2017). There are limited resources in the community to assist patients in improving their SDOH, which poses challenges to health care professionals who are assisting patients in making health related changes.

Second, the health department identified several barriers facing nurses in improving patient noncompliance. The health department identified the nurses’ lack of knowledge about comprehensive approaches to delivering evidence-based practice (EBP) care and treatment of adult onset type 2 diabetes as factors contributing to the problem. The health department nurses identified lack of time needed to devote to patient education. The nurses perceived that this lack of time results in decreased collaboration with patients in disease management and inefficient coordination of resources.
The health department chose to implement a lifestyle medicine (LM) case management program as the model of choice to address the problem. Case management is defined as a “collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual’s and family’s comprehensive health needs through communication and available resources to promote quality, cost-effective outcomes” (Case Management Society of America, 2016). The question this paper attempts to answer is: How does the implementation of a lifestyle medicine case management program for diabetes education, as compared to standard case management, influence public health nurses in utilizing EBP models? The identified problem was the lack of knowledge and use of EBP in nursing care, as evidenced by the lack of standardized education and poor diabetic care outcomes. The solution proposed involved the development of an LM case management program that provided the nurses with standardized LM educational resources to use with diabetic patients. The theorized outcome is that the staff will be motivated to use EBP, which will be evident in the scores on the Evidence-Based Practice Belief Scale (EBPBS).

Available Knowledge

Adult onset type 2 diabetes is a preventable chronic condition that can have an adverse impact on an individual’s quality of life. There are 29 million adults with adult onset type 2 diabetes and 86 million adults with pre-diabetes in the United States (US). Adult onset type 2 diabetes accounts for 20% of healthcare spending in this country. Lifestyle modifications can reduce the risk of pre-diabetics developing type 2 diabetes by 58% (Centers for Disease Control [CDC], 2016). Educating patients about lifestyle modification is essential in eliminating the risk of developing type 2 diabetes and decreasing the complications associated with diabetes. Of equal importance to patients receiving education on lifestyle modifications is how this
information is shared and acted on in collaboration with the patient. The standard approach to diabetic patient education and management in the US includes a discussion of type 2 diabetes characteristics, treatment options, self-control measures, and educational resources (Moriyama et al., 2009; Sakane et al., 2011). The prevalence rate and the financial cost of adult onset type 2 diabetes suggest that new strategies may need to be employed to address this problem.

LM is a prescriptive and patient-centered EBP model that provides consistent patient monitoring and education. Prescriptive programs provide each patient with a specific detailed plan. For example, a patients’ exercise program should address the type, frequency, intensity, and time of exercise (Phillips & Kennedy, 2012). Patient centered programs collaborate with the patient in making healthy lifestyle changes that center on his or her goals, culture, and values (Moriyama et al., 2009). LM programs also provide nurses with the knowledge necessary to support individuals in making healthy lifestyle changes (smoking cessation, diet, exercise, and stress management) to improve their health. Using an EBP model is important because it incorporates the best research, nursing expertise, and patient or family preferences in determining optimal treatment and care (Schaffer, Sandau, & Diedrick, 2013).

Compared to routine standard diabetes care, LM programs have had significant effects on the health outcomes of diabetic patients (Moriyama et al., 2009; Sakane et al., 2011). It is widely known that lifestyle modifications are important in addressing diabetes; however, in a sample of 5,000 physicians, only 51% were comfortable prescribing weight loss treatment, whereas in a sample of 150 nurses, 70% were comfortable providing nutrition education (Foster et al., 2003; Parry Strong, Lyon, Stern, Vavasour, & Milne, 2014). These findings indicate that healthcare professionals need access to education and tools regarding lifestyle medicine to improve healthcare outcomes for diabetic patients.
In a review of successful LM programs targeting adult onset type 2 diabetes, three characteristics were consistently present. Successful LM programs were defined as participants demonstrating improvements in at least one of the following: HA1C, body weight, waist circumference, cholesterol, blood pressure, and patients returning for follow-up appointments.

The first characteristic is that programs should be patient-centered. Healthcare providers should assess each patient’s educational background, knowledge of diabetes, family support, environment, cultural needs, and goals for improved health. Furthermore, healthcare practitioners should collaborate with patients in setting goals and tailoring plans to suit patients’ cultural needs. When patients understand their condition, learn how to use family, peer, and professional support to set and monitor goals, and make decisions regarding how to manage their diet, exercise, and stress, they feel empowered and motivated to make better decisions regarding their lifestyles (Moriyama et al., 2009).

The second characteristic is consistent monitoring and follow-up, which increases patients’ trust of nurses, improves health outcomes, and helps nurses in the early detection and management of symptoms or complications (Partiprajak, Hanucharurnkul, Piaseu, Brooten, & Nityasuddhi, 2011). In a study that implemented a lifestyle intervention program, participants received 20 to 40-minute educational counseling sessions with a nurse twice a year and educational materials via fax monthly for 3 years. The results showed that the lifestyle intervention group reduced their calorie intake and increased their exercise compared to the control group at the 1 and 3-year marks. The intervention group’s incidence of diabetes and its body mass index (BMI) were also lower than the control group’s (Sakane et al., 2011).

The third characteristic is diabetes education and support for nurses. Nurses need comprehensive education and adequate time to become familiar with new diabetes resources.
Nurses also need support and training in behavioral patient change counseling, such as motivational interviewing, and require the resources necessary to provide care and education to patients (Jansink, Braspenninck, Van Der Weijden, Elwyn, & Grol, 2010; Moriyama et al., 2013; Parry Strong et al., 2014; Sakane et al., 2011). Motivational interviewing is an EBP counseling style that assists patients in resolving their ambivalence about change by supporting them in determining for themselves what change will be made and how it will be achieved (Mulimba & Byron-Daniel, 2014). In studies in which program participants successfully changed their lifestyle behaviors, nurses were educated in cognitive behavioral techniques such as motivational interviewing, engaged in health counseling, and given access to interdisciplinary experts (Moriyama et al., 2013; Sakane et al., 2011).

The literature review of successful LM programs identified several characteristics and strategies used to motivate patients to change behaviors to improve diabetic patient outcomes, however the demographics of the participants in the studies have access to more resources and less barriers to SDOH than the population served at the health department. For instance, the participants in the studies all had health insurance, whereas the health department provides care to a population that is primarily uninsured or on Medicaid. One study tracked employment rates for its participants but did not make a correlation regarding employment status and patient outcomes. The studies also did not provide strategies or tools to help patients in poverty who were homeless, unemployed, lived in food deserts, lacked transportation resources, or overcome barriers to improving their SDOH.

**Rationale**

A team was formed to implement the LM case management program, which consisted of a Doctor of Nurse Practice (DNP) student, the FQHC Chief Executive Officer, and a clinic
physician. The Iowa model was used as the theoretical model because it emphasizes organizational change at the practice level that impacts patient populations and is a guide that nurses and members of a multidisciplinary team can use to implement evidence-based research findings (Shaffer et al., 2012). The results of the literature search of LM programs targeting diabetes were used to guide the development of the intervention. The team also selected interventions that would be easy for the nurses to integrate into their workflow. Interventions that may have placed additional strain on the limited time the nurses have with patients may not have been accepted well.

**Specific Aims**

The project was conducted to determine whether implementation of an LM case management program for diabetes education, as compared to standard case management, can influence nurses in using EBP models. The nurses’ lack of knowledge and use of EBP in nursing care, as evidenced by the lack of standardized patient education, lack of continuity of care for patients, and poor diabetic care outcomes were identified as problems. This project sought to provide nurses with the skills needed to educate patients on healthy lifestyles to prevent or reduce the complications of diabetes. The goal of the project was to assess and improve nurses’ beliefs and attitudes regarding EBP by providing standardized education and resources on LM for use in patient education. The theorized outcome is that the staff will be motivated to use EBP, which will be evident in the scores on the EBPBS.

**Methods**

**Context**

The setting for this project is at a city-county health department and an FHQC with two locations: one in a rural area and the other in a metropolitan area of the Midwestern United States.
States. The health department clinic provides services related to adult health, prenatal health, pediatric, women’s health, sexually transmitted diseases, and immunizations. The clinic staff consists of nurses, physicians, nurse practitioners, medical assistants, and social workers, all of whom provide primary care services. The target population for the process improvement was the nurses working in these two locations. Most of the patients served by the health department live in poverty or are homeless and face multiple barriers to accessing resources to improve their SDOH. They struggle to secure basic necessities, such as shelter, food, clothing, and transportation. Choosing healthy food options can be a challenge for this population because they face food insecurity issues. They live in food deserts or eat at soup kitchens, which decreases their access to healthy food options. Increasing their physical activity also poses a challenge for patients who stay in homeless shelters or have little to no disposable income to spend on extracurricular activities. These patients may not be able to enjoy outdoor activities in their communities because the impoverished neighborhoods where they live may leave them susceptible to crime. The population served by the health department lacks reliable transportation, which prevents patients from getting back and forth to scheduled appointments.

A process review of current diabetic case management was conducted at the health department. The clinic sees diabetic patients at least four times a year. During these visits, the nurses provides 2 to 5 minutes of education; however, the education provided does not come from a standardized program and may or may not include information about diabetes management. In certain cases, nurses address whichever emergent issues take precedence in the short amount of time they have to triage the patient. The physician then sees the patient for about 8 to 10 minutes. During this visit, the physician assesses the patient: reviews lab values and vital signs, medical conditions, and current complaints; and provides referrals as needed. There was
no notification alert in the electronic health record (EHR) to notify clinic staff of missed appointments or whether the patient followed through with referrals.

There was no standardized plan or strategy in place to improve the health outcomes of diabetic patients. The health department wanted to improve patient outcomes by developing an EBP standardized case management program based on LM and educating the nurses on EBP and its use.

**Interventions**

The DNP student completed a literature search, the findings of which were reported to the project team. Based on the literature search, the team decided that the four times a year the nurses were seeing patients was sufficient to provide consistent monitoring and follow-up. At each appointment, the nurse would assess and address the patients’ educational needs using a standardized LM diabetic educational guidebook and a “patient action plan” worksheet. The nurse would use a standardized LM diabetic education guidebook based on EBP to review standards of care, diabetes basics, nutrition, exercise, diabetes-associated conditions, and referral to community resources as needed or as time permits. Motivational interviewing would be used by the nurse to ask patients questions regarding barriers to following the prescribed treatment to reduce noncompliance, help coordinate services, and complete the action plan.

The nurse would collaborate with patients to develop a patient centered action plan that was appropriate and acceptable to the patient. An educational presentation was given to the nurses regarding the LM pilot program resources and application, which covered the following key areas: a program overview and health provider roles, EBP, how to locate EBP guidelines, LM, a literature review of successful LM programs, resources for diabetes education,
motivational interviewing and its application, the “my action plan” worksheet, and community resources.

**Study of the Interventions**

To investigate whether the implementation of an LM pilot program influenced nurses’ belief in and use of EBP, Melnyk, Fineout-Overholt, and Mays’s (2008), EBPBS was used before and after the presentation. The EBPBS is a 16-item survey scale that measures an individual’s beliefs regarding EBP and his or her ability to implement it. The pre and posttest data were analyzed to find variations in survey results. A comparison of the survey results and an examination of the interventions were done to find a causal relationship between the two.

**Measures**

Pre and posttest data of the EBPBS was used to determine whether the implementation of an LM pilot program influenced nurses’ belief in and utilization of EBP. The EBPBS’s reliability and validity are expressed as a Cronbach’s alpha value > .90 (Melnyk et al., 2008). Contextual elements that effect the nurses’ belief and utilization of EBP are related to not having the time or knowledge to access resources to search and implement EBP. The nurses were taught how to find EBP resources, but they self identified that the problem of lack of time regarding EBP was unable to be addressed due to financial constraints.

**Analysis**

A one-way table was created to analyze the survey data. The mode measure of central tendency was used to compare the pretest and posttest data. The mode is an appropriate measure for analysis because it identifies the most frequent answer for each survey question (Heavey, 2015).
Ethical Considerations

Approval for this project was obtained from Capella University’s Institutional Review Board (IRB) committee. No ethical concerns were identified during the planning, implementation, or evaluation of this project.

Results

Interventions for the LM program included providing resources, tools, and education for the nurses. The nurses were given the EBPBS presurvey before being given a presentation on the LM program. The objectives of the presentation were to provide (a) an overview of the LM program pilot program, (b) education on EBP is and resources to locate EBP guidelines, (c) education and resources for diabetes (d) education and resources on health department and community resources, and (e) education and resources on MI. The use of Microsoft PowerPoint, video case studies, reviewing website resources, and a question and answer session were educational strategies used to present the material.

The nurses were given a PowerPoint presentation with information regarding the project focus, the rationale for the LM, literature review of successful LM programs, LM program overview and health provider roles, resources to find EBP diabetic guidelines, and newly emerging research on diabetes. The steps of MI were reviewed with strategies given to facilitate MI and common barriers that can hinder MI in patient-provider communication. Video case studies of patient-provider interactions were viewed, and the nurses identified the communication techniques that facilitate and hinder MI. The “My Action Plan” worksheet was reviewed to explain how to use MI to assist patients in developing goals to improve their health outcomes.
The nurses were given a standardized LM diabetic educational guidebook to use when educating patients. The guidebook was created as a quick reference for the nurses to use in educating patients. It provided information and resources on diabetic standards of care; an overview of type 2 diabetes; resources on nutritional, physical activity, and diabetes related complications. The LM educational guidebook also included the MI PowerPoint, a copy of the American Diabetes Association patient brochure, the national standards for diabetes self-management education programs, community resources, and EBP guideline resources.

After the presentation, the nurses were given the EBPBS. Four nurses participated in the LM case management program presentation. Before the presentation, the presurvey results showed that all participants agreed that they knew the steps of EBP and, believed that EBP improves care, and should be used to provide care. There were neutral responses regarding how to measure the outcomes of clinical care, how to access the best resources, whether they had the confidence and ability to implement EBP where they work, and whether the care they deliver is EBP. There were neutral and negative responses regarding EBP taking too much time, being able to implement EBP sufficiently to make changes in practice, searching for and implementing EBP in a time-efficient manner, and EBP being difficult.

The post-survey results showed no change in the participants’ understanding of the steps of EBP and, belief that EBP improves care and should be used in providing care. All participants were now confident that they could measure the outcomes of clinical care, knew how to access the best resources, believed the care they deliver is EBP, and had the confidence and ability to implement EBP where they work. The positive change was an indication that the LM program had a beneficial effect on nurses’ beliefs in the efficacy of EBP. Several LM program interventions may have contributed to the positive change. First, the nurses were taught how to
find EBP guidelines and relevant research on diabetes. Second, the nurses were given “patient action plan” worksheets and educated on how to use MI to assist patients in developing a treatment plan. Third, the nurses were given diabetic educational and community resource guides to assist in patient education and address patients’ socioeconomic needs. There were still neutral or negative responses regarding searching for the best evidence in a time-efficient manner, EBP taking too much time, and overcoming barriers to implementing EBP. The results of the post-survey after the presentation on LM reinforces the evidence that LM programs can have a positive effect on nurses’ belief in the efficacy of EBP.

Discussion

Summary

The research findings from the presurvey conducted before the EBPBS survey reinforced the health department’s finding that the nurses have a lack of knowledge of EBP care and treatment options. The post-survey results indicated that providing nurses with education on LM programs that are grounded in EBP provides them with the skills needed to educate patients on healthy lifestyles and to prevent or reduce the complications of diabetes. It also helps improve nurses’ utilization of and belief in the efficacy of EBP.

Interpretation

Overall, the nurses believed that EBP was important to patient care. The improved responses on the EBPBS regarding measuring the outcomes of clinical care, understanding how to access the best resources, the confidence and ability to implement EBP where they work, and their belief that the care they deliver is EBP indicate that the LM pilot program educational presentation and resources had a significant impact on the nurses’ belief in and perceptions of EBP. However, the nurses’ neutral or negative responses regarding the search for the best
evidence in a time-efficient manner, EBP taking too much time, and overcoming barriers to implementing EBP showed that the presentation did not significantly impact the perceptions of timely EBP implementation. These findings are similar to those in a 2012 study that found that nurses valued EBP but indicated that the lack of time was a barrier in this regard (Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012). The data in the project showed that education and training regarding LM and EBP have a positive effect on nurses’ ability to implement EBP in their workplace and make sufficient changes in their practice, which can potentially have profound implications for diabetic patients, including preventing or reducing diabetes-related complications via the utilization of LM. A study of FHQC’s where 21 individuals from across four states identified priorities in their organizations that need to be addressed found several common themes among them. The recurrent themes that came up among the FHQC were assistance with EHR in receiving meaningful use incentives, workforce recruitment and retention, clinical work, resources, funding, space, time, and diabetes (Allen et al., 2014).

Although the LM program incorporated several characteristics of successful LM programs, more of these interventions are needed. The action plan that the patient develops with the nurse is patient-centered and will encourage patient compliance with treatment. A standardized assessment would be beneficial in helping the nurses narrow down and identify how to assist the patients in developing the plan. The program is providing consistent monitoring and follow-up by seeing patients four times a year, which will aid the nurses in early detection and management of symptoms or complications. A procedural process in the EHR system that contacts patients when they miss their appointments is needed to catch patients who may otherwise get overlooked. The nurses have access to educational supports, but structural
supports, such as allocating more time the nurses want for research and patient engagement have not been implemented.

**Limitations**

Although the LM program had a positive effect on nurses’ beliefs in and perceptions of EBP, two barriers to providing diabetic patient care were not addressed. There was no change in the amount of time the nurses have to spend with patients. In fact, the health department was going through the process of deciding whether to continue to operate the clinics due to their lack of financial viability. The issues of missed appointment alerts and the documentation of follow-up on referrals were also not addressed due to EHR system issues. Another limitation of the study was that the sample size of four nurses may not be truly reflective of the population at large.

**Conclusion**

Diabetes is a preventable chronic condition that can have an adverse impact on an individual’s quality of life and place an enormous amount of pressure on the financial resources of health care organizations. Nurses’ beliefs in and use of EBP models such as LM and MI to provide care to diabetic patients can assist patients in making lifestyle changes that can improve their health outcomes. However, LM has its limitations, especially when working with a population that has challenges to accessing resources that improve their SDOH. The findings indicate that providing nurses with resources and education on LM and EBP can have a positive effect on nurses’ beliefs regarding the use of EBP, including improving their knowledge of measuring outcomes of clinical care, their knowledge of how to access the best resources, their confidence and ability to implement EBP where they work, and their beliefs that the care they deliver is EBP. The study findings indicate that the nurses believe that they lack the time to
search and analyze EBP. More research is needed to evaluate whether there is a lack of time or whether it is an issue of nurses’ time management. Additional research is also needed to evaluate the implementation of an LM pilot program to study the relationship between nurses’ beliefs in and use of EBP and patient outcomes.
References


APPENDIX A. STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

Capella University’s Academic Honesty Policy (3.01.01) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person’s ideas or works.

The following standards for original work and definition of plagiarism are discussed in the Policy:

Learners are expected to be the sole authors of their work and to acknowledge the authorship of others’ work through proper citation and reference. Use of another person’s ideas, including another learner’s, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)

Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else’s ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University’s Research Misconduct Policy (3.03.06) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.
Statement of Original Work and Signature

I have read, understood, and abided by Capella University’s Academic Honesty Policy (3.01.01) and Research Misconduct Policy (3.03.06), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the APA Publication Manual.

Learner name and date
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