EVALUATION OF EMORY UNIVERSITY'S DIABETES EDUCATION FOR CLINICAL SUPPORT STAFF (DECSS) PROGRAM

BY

Jessica Delos Reyes
M.P.H., Emory University, 2012
B.S., Michigan State University, 2002

Thesis Committee Chair: Linelle Blais, PhD, CPF, Director of DTTAC

A report of
A Thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements of the degree of
Masters of Public Health in the Career MPH Program
2012

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BY

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Career MPH

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Abstract

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The objective of Emory University's Diabetes Education for Clinical Support Staff (DECSS) Program is to improve the delivery of diabetes care by enhancing skills and knowledge of clinical staff that support the care of individuals with diabetes. The behavior change goals for participants that take part in the program are to effectively (1) change participant's knowledge, attitudes, and beliefs about diabetes education, (2) influence participants to become effective educators in their personal and professional lives, and (3) instill participants with the necessary skills to teach patients, family members, and the community about diabetes care. A formative evaluation was completed with a mixed methodology design to measure the effectiveness of the program with the use of a pre-/post-assessment survey, a training evaluation, and post course feedback. Analysis of the assessment surveys and the skills training activities proved to be statistically significant in increasing knowledge gained and confidence in performing skills related to diabetes. The overall content and program satisfaction yielded generally favorable results and the findings have led to recommendations for changes organizationally and in program delivery. Follow-up studies on the long-term impact of the program and the role and influence of clinical support staff in teaching DSME (Diabetes Self-Management Education) is needed. This initial evaluation suggests there is a strong benefit in using the DECSS program to educate more clinical support staff and community health workers, with the ultimate goal of improving the quality of life and health of individuals with diabetes.

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CHAPTER 1: INTRODUCTION

Introduction

The incidence of diabetes continues to grow in the United States. The number of people diagnosed with diabetes has risen from 1.5 million in 1958 to 25.8 million in 2011, an increase of epidemic proportions (CDC, 2011). The prevalence of diabetes is increasing exponentially and is expected to reach 366 million worldwide by 2030 (Wild, 2009). As more individuals are diagnosed, there is a continual need to ensure that they are educated on the facts of the disease and steps in self-management, to prevent further health complications. Emory University's Diabetes Education for Clinical Support Staff (DECSS) Program was designed to support efforts in patient education by enhancing the skills and knowledge of clinical staff that support the care of individuals with diabetes. DECSS defines clinical support staff as healthcare technicians, medical assistants, non-clinicians such as physician office personnel, and community health workers. This section of the evaluation provides a brief overview of the public health problem, the importance of diabetes self management education, the instructional design for the program, a detailed description of DECSS, narrative of the logic model, and an explanation of the evaluation purpose and the questions it seeks to answer.

Public Health Problem

Problem statement

Diabetes now affects 25.8 million people, which is 8.3% of the United States population (CDC, 2011). Diabetes is the seventh leading cause of death in the United States (CDC, 2011). It is the leading cause of kidney failure, non-traumatic lower-limb

amputations, new cases of blindness among adults, and is a major cause of heart disease and stroke (CDC, 2011). Overall, the risk for death among individuals with diabetes is about twice that of a person of similar age without the disease (CDC, 2011). Financially, medical expenses for people with diabetes are more than two times higher than for those without diabetes (CDC, 2011). The total direct and indirect expenditure for the disease is about $174 billion dollars; where $58 billion results in indirect costs related to disability, work loss, and premature mortality (CDC, 2011). Boren et al. (2009) studied the economic benefits and costs associated with diabetes education. The findings indicated that the benefits associated with education on self-management and lifestyle modification for people with diabetes are positive and outweigh the costs associated with the intervention. Therefore, teaching efforts to educate patients and healthcare providers should continue as they have decreased costs and increased patient health outcomes.

Diabetes Self-Management Education

Diabetes self-management education (DSME) is a critical element of care for all people with diabetes and is necessary in order to improve patient outcomes (Funnell, 2008). The National Standards for DSME are designed to define quality diabetes self-management education and to assist diabetes educators in a variety of settings to provide evidence-based education (Funnell, 2008). "Diabetes self-management education is the process of providing the person with diabetes with the knowledge and skills needed to perform self-care, manage crises, and make lifestyle changes required to successfully manage this disease . The goal of the process is to enable the patient to become the most knowledgeable and hopefully the most active participant in his or her diabetes care. The term "self- management education" emphasizes the need for people to manage their

diabetes on a day-to-day basis." (Clement, 1995). The overall objectives of DSME are to support informed decision-making, self-care behaviors, problem-solving and active collaboration with the health care team to improve clinical outcomes, health status, and quality of life (Funnell, 2008).

Instructional Design

The DECSS program was designed with an online component and a face-to-face session based on the Instructional-Design Theory. This theory offers explicit guidance on how to better help people learn information and develop skills. The instructional methods should include clear information, thoughtful practice, informative feedback and strong intrinsic motivation for the participants (Reigeluth, 1999). It should be engaging in order for the participants to learn more effectively and with ease. (David, 2010). The theory requires at least two components: 1) methods for facilitating human learning and development (methods of instruction) and 2) indications of when and where not to use those methods (situational) (Reigeluth, 1999). Instructional situations evaluate if one method is more appropriate for a certain situation versus a different method.

Another aspect of an instructional situation is the desired instructional outcome such as the level of effectiveness, efficiency, and appeal you want or need from the instruction (Reigeluth, 1999). In researching diabetes, David et al. (2010) identified that although diabetes education classes are useful for providing general information to be tailored to the specific needs of each patient, the web-based method seems to be effective in continuing education. Therefore, the web-based method is recommended complementary to the face-to-face approach, for designing and delivering some topics of continuing education programs for patients and healthcare professionals (David, 2010).

As a result of this realization, the DECSS program employed a mixed and unique instructional design delivery online and face-to-face.

Description of the Program

Emory University is taking action in diabetes education and DSME through various programs, one of which is the Emory Latino Diabetes Education Program (ELDEP). ELDEP was established in 2005 and is the first nationally accredited all-Spanish diabetes education program. The mission of the program is to improve diabetes care for Latinos by providing diabetes-training programs for people with diabetes and the health care providers that care for them. Under ELDEP is a division titled, the Emory Latino Diabetes Improvement Project (ELDIP), which aims to address training needs in diabetes care for health professionals who seek education at Emory University. ELDIP developed an educational training academy that targets physicians, mid-level providers, nurses, dietitians, pharmacists and clinical support staff. Currently, there are 3 courses in the academy. The original two are the Diabetes Educator Course and Continuing Education meetings for physicians. On January 28, 2012, the third and latest development, The Diabetes Education for Clinical Support Staff (DECSS) Program piloted. Although, the DECSS program is under the Emory Latino Diabetes Improvement Project, it is not specific to the Latino population. The program seeks to educate all clinical support staff, regardless of race or ethnicity, in diabetes self-care behaviors in order to improve the health of all individuals with diabetes.

Amparo Gonzalez, the Director of ELDEP, identified a need for educating the entire multi-disciplinary team and all those involved in patient care. A multidisciplinary team combines the experience of, MD's, nurses, dietitians, podiatrists and other members

of the healthcare team, while placing the individual at the center. A multidisciplinary team approach has demonstrated better glycemic control, fewer complications and hospitalizations, improved patient quality of life and lower annual costs compared with standard primary care (Codispoti, 2004). Also, the Global Partnership for Effective Diabetes Management recommends implementing a multi- and interdisciplinary team approach to diabetes management to encourage patient education, self-care and shared responsibility for patients achieving glucose goals. (Del Prato, 2005). The DECSS program seeks to encourage this approach through educational training of clinical support staff. ELDIP defines clinical support staff as healthcare technicians, medical assistants, non-clinicians such as physician office personnel, and community health workers.

The curriculum that serves as the basis for the DECSS Program is the American Association of Diabetes Educators' (AADE) *Fundamentals of Diabetes Care Course*. The, *Fundamentals of Diabetes Care* is a self-paced, 6-module online program that focuses on training medical assistants, licensed practical nurses, and other healthcare technicians to deliver appropriate level diabetes care to patients within their practice setting (AADE, 2012). The goal of this program is that after completion, technicians will be better prepared to assist patients with diabetes and teach them DMSE. The online course includes a detailed multi-media lecture presentation, interactive exercises to reinforce learning, additional resources for continued learning, and printable job aids (AADE, 2012). The *Fundamentals* was designed for the Level 2 Healthcare Professional Non-Diabetes Educator. The AADE has categorized diabetes self-management education (DSME) based on provider levels. Level 1 includes professional healthcare providers who have little expertise in diabetes education and/or management but provide and/or

support healthcare services to individuals with diabetes. The level includes, but it not limited to medical assistants (MA); licensed practical nurses (LPN); registered nurses (RN); nutritionists, dietetic technicians, registered pharmacists (RPh); and others. Level 2, encompasses clinicians who care for persons with diabetes in their general practice but who have not received specialized entry-level training in diabetes disease management. It is the entrance point to the specialty field of diabetes education (AADE, 2012). Although this program is for clinical support staff, another cohort, community health workers were permitted in the program. Community Health Workers are identified by the AADE, as Level 1 Non-Healthcare professionals who have little expertise in diabetes education and/or management, but provide and/or support healthcare services to individuals with diabetes. This includes, but is not limited to: health promoters, health educators, and community health workers. These individuals do not have a clinical background, but who nonetheless work with persons with diabetes in supportive or clinical environments (AADE, 2012).

As mentioned above, the *Fundamentals of Diabetes Care* curriculum was designed as an online program, however, it was brought to Gonzalez's attention in the spring of 2011 that the curriculum completion rate was subpar at 31%. She recognized the richness of the curriculum and the need to educate the Level 1 and Level 2 providers. As a result, Gonzalez along with Britt Rotberg, the ELDEP Program Coordinator utilized the instructional design theory to offer the curriculum as an online and face-to-face program with emphasis on skill training. A goal was to put the curriculum into practical applications through hands on training.

The 6 modules in the course include:

TABLE 1: DESCRIPTION OF THE AADE'S FUNDAMENTALS OF DIABETES CARE COURSE	
Module 1: The Fundamentals	Participants learn about type 1, type 2, and gestational diabetes and how to recognize the common symptoms of uncontrolled diabetes
Module 2: Using Clinical Practice Guidelines to Reduce Risks	Participants discover how the various diabetes clinical practice guidelines can be used during patient interactions.
Module 3: Healthy Eating	Participants gain insight on healthy eating strategies diabetes patients need to know to successfully manage their disease.
Module 4: Being Active and Monitoring	Participants discover recommendations for physical activity, monitoring, and tips for working with patients to set appropriate goals.
Module 5: Taking Medications	Participants get the facts on the various medications used for diabetes management and some basic strategies to help patients take medications safely.
Module 6: Keeping and Staying Safe	Participants gain a comprehensive understanding of how to help patients stay safe and, hopefully, prevent complications.

Table adopted from www.aade.com

The objective of Emory University's Diabetes Education for Clinical Support Staff (DECSS) Program is to improve the delivery of diabetes care by enhancing the skills and knowledge of clinical staff that support the care for individuals with diabetes. The following are the overall Course Objectives:

1. Demonstrate knowledge of Type 1, Type 2, and gestational diabetes.
2. Describe the complications of diabetes and identify steps to care.
3. Gain insight on healthy eating strategies diabetes patients need to know to successfully manage their disease.
4. Understand recommendations for physical activity, monitoring, and tips for working with patients to set appropriate goals.
5. Get the facts on the various medications used for diabetes management and some basic strategies to help patients take medications safely.

6. Gain a comprehensive understanding of how to help patients stay safe and, hopefully, prevent complications.
7. Recognize the importance of an interdisciplinary diabetes care team.
8. Demonstrate a skill set to aid patients in diabetes care with the use of the plate method, exercise bands, and blood glucose meter, and drawing up insulin.
9. Describe the AADE7 Self-Care Behavior Framework as a guide to the delivery of diabetes education.

For participants who take part in the DECSS program, the behavior change goal is to effectively:

1) Change participants knowledge, attitudes, and beliefs about diabetes education
2) Influence participants to become effective educators in their personal and professional lives
3) Instill participants with the necessary skills to teach patients, family members, and the community about diabetes care.

Logic Model

The following logic model, developed for the DECSS program illustrates how each step of the program will ultimately lead to the overall goal of improving the quality of life and health of individuals with diabetes. The inputs of the program include: the program staff that will teach the modules, the clinical support staff participants (clinical and community health workers), the AADE *Fundamentals of Diabetes Care* curriculum, and the education materials to reinforce teachings and the DECSS program components (the skill-training portion of the program). The DECSS training is based on the learning framework proposed by the 7 AADE self-care behaviors for clinical support staff.

These inputs then allow for the activities of capacity training for the participants, where actual skills will be taught. The course training comprises the online portion where the participants complete Modules 1 and 2 and the face-to-face portion includes a presentation of modules 3-6 as well as skill training that will reinforce each of the modules. Additionally, empowering and training the participants on how to use diabetes educational resources is a key goal of the DECSS program. Through modeling behavior, clinical support staff will observe how particular resources are used to educate patients, repeat the behavior, and feel empowered to use the materials in their workplace.

The outputs are a result of the activities, which lead to a number of clinical support staff educated on diabetes self-management education (DSME), a number of clinical support staff trained on teaching skills related to DSME, and a number patient education materials available for clinical support staff and the healthcare team.

The short term outcomes or behavior changes to expect as a result of this training intervention for clinical support staff are: 1) increased knowledge and improve attitudes, and beliefs about providing diabetes education, 2) increased skills to educate patients, family members, and the community about diabetes care, and 3) increased their self-efficacy in their ability to improve diabetes control in patients. The outcomes are results of the instructor's interaction with the participants at the course.

The following intermediate goals will be a result of the participants returning to their workplace and communities to educate patients on DSME. They goals are: 1) an increased number of patients educated on DSME, 2) an increased number of identifiable teachable moments to educate patients on DSME, 3) an increased number of clinical

support staff trained on DSME, and 4) an increased number of resources available to patients to support self- care.

Upon completion of the program, ideally the participants will return to their communities and workplaces and put in practice the knowledge gained from the DECSS program to educate patients in order to obtain the long-term goals which include: patient adoption of self-management behaviors to lead to improved patient clinical indicators such as HgbA1C. Furthermore, the participants remain engaged and involved in teaching DSME long after the program has concluded. Finally, the long-term impact results in better-trained clinical support staff that can positively affect the quality of life and health of individuals with diabetes.

Figure 1. Logic Model for the DECSS Program

Program Content and Delivery Process

The DECSS program allotted 6 weeks for participants to complete a pre-assessment survey and the first 2 modules of the *Fundamentals* online, prior to attending the face-to-face program. The pre-assessment survey provides baseline data on participant knowledge prior to beginning the *Fundamentals* course. It is 30-question survey that highlights several of the key points that will be covered in the course. The 2 modules are to be completed prior to the face to face portion since they provide a solid foundation on the basics of diabetes such as: what is diabetes, types of diabetes, and complications, allowing for more time devoted to skill training during the face to face meeting. This will expectantly allow individuals at the Level 1 DSME to become familiar with diabetes terminology and fundamentals.

The agenda for the face-to-face portion includes registration, an icebreaker, lectures on modules 3-6 and skills training. The ice breaker affords participants the opportunity to identify themselves, share beliefs on diabetes education, how they hope to use the information attained from the course and voice what forms of support, coaching, and resources would be needed in their workplace. Gonzalez and Rotberg subsequently taught modules 3-6 and trained the participants on DSME skills they could teach their patients. 'The Healthy Eating' module focuses on teaching the skills of carbohydrate counting and using the plate method. 'The Being Active' module provides instruction on how to use exercise bands and perform chair exercises. Participants will learn how to use a glucose meter in module 4 and draw up insulin in module 5, "Taking Medications. Lastly, the same pre-assessment is provided as a post-assessment survey to participants to

identify if knowledge was gained through completion of the program. See Appendix A for assessment.

Purpose of the Evaluation

Evaluation is an important tool for measuring the extent to which, and the ways in which a program's goals are being met, and how the program contributes to the organizations mission. The CDC Framework for Evaluation was utilized as a guide for this study (See Appendix H for Framework components). A formative approach was taken over a summative approach in order to provide the program staff with information useful in improving the program and the process. Formative evaluations are an assessment process designed to identify potential and actual influences on the program and effectiveness of implementation efforts.

The following formative evaluation focuses on assessing quality, implementation, and impact of the DECSS program. In order to evaluate the effectiveness of the DECSS Program in improving attitudes and beliefs about providing diabetes education, and increasing knowledge and skills to teach patients, family members, and the community about diabetes care, as well as increasing confidence in their ability to improve diabetes control in patients. The following evaluation questions reflect stakeholder perspectives on establishing the focus and direction of this evaluation. These questions represent the organization's priorities for this study and provide a framework for all sections within the plan.

Evaluation Questions

1. Is the DECSS program effective in meeting the AADE 7 Self Care Behavior Framework?
2. Is the DECSS program effective in training clinical support staff on diabetes?
3. What is the overall participant satisfaction with the existing curriculum and delivery model?
4. Did the program increase skill competency levels in the activities of using the plate method, using an exercise band, using a glucose meter and drawing up insulin?

Summary

As the number of Americans living with diabetes has increased to 25.8 million, the need for successful interventions that aid in managing the disease also grows. Diabetes self-management education (DSME) has been identified as an effective measure to aid patients in improving health outcomes. The Diabetes Education for Clinical Support Staff (DECSS) Program was developed to reinforce DSME in patients by educating clinical support staff in through a mixed delivery method. This study assesses quality, implementation and impact of the DECSS program in order to improve upon the program.

CHAPTER 2: REVIEW OF THE LITERATURE

Significance statement

Diabetes affects 8.3 percent of Americans of all ages, and 11.3 percent of adults aged 20 and older, according to the National Diabetes Fact Sheet for 2011. About 27 percent of those with diabetes – 7 million Americans – do not know they have the disease (CDC, 2012). Ann Albright, Ph.D. RD, is the director of the CDC's Division of Diabetes Translation. She states, "These distressing numbers show how important it is to prevent type 2 diabetes and to help those who have diabetes manage the disease to prevent serious complications such as kidney failure and blindness." Diet, insulin, and oral medication to lower blood glucose levels are the foundation of diabetes treatment and management. Patient education and self-care practices are also important aspects of disease management that help people with diabetes lead improved lives (CDC, 2011).

Self-management education or training is a key step in improving health and quality of life. For this reason, programming efforts to educate healthcare professionals and patients on self-care behaviors such as healthy eating, being active, and monitoring blood sugar should continue to be developed to aid in improving patient outcomes and preventing co-morbid health complications. Programming efforts also need to assist individuals with diabetes in gaining the knowledge, coping and problem-solving skills needed to successfully manage the disease. The DECSS program supports these efforts and has the opportunity to improve diabetes management and clinical outcomes for patients.

THEORY LINKAGES IN THE LOGIC MODEL

The following section will review the science and theory underlying the linkages in the logic model and intervention strategy. It will review the various links of a sequence of outcomes from immediate (learning) outcomes through intermediate (behavioral) and long-term goals to the health status outcome.

INPUTS:

The inputs are based off of the AADE7 Self-Care Behaviors Framework and other programs similar to educating clinical support staff.

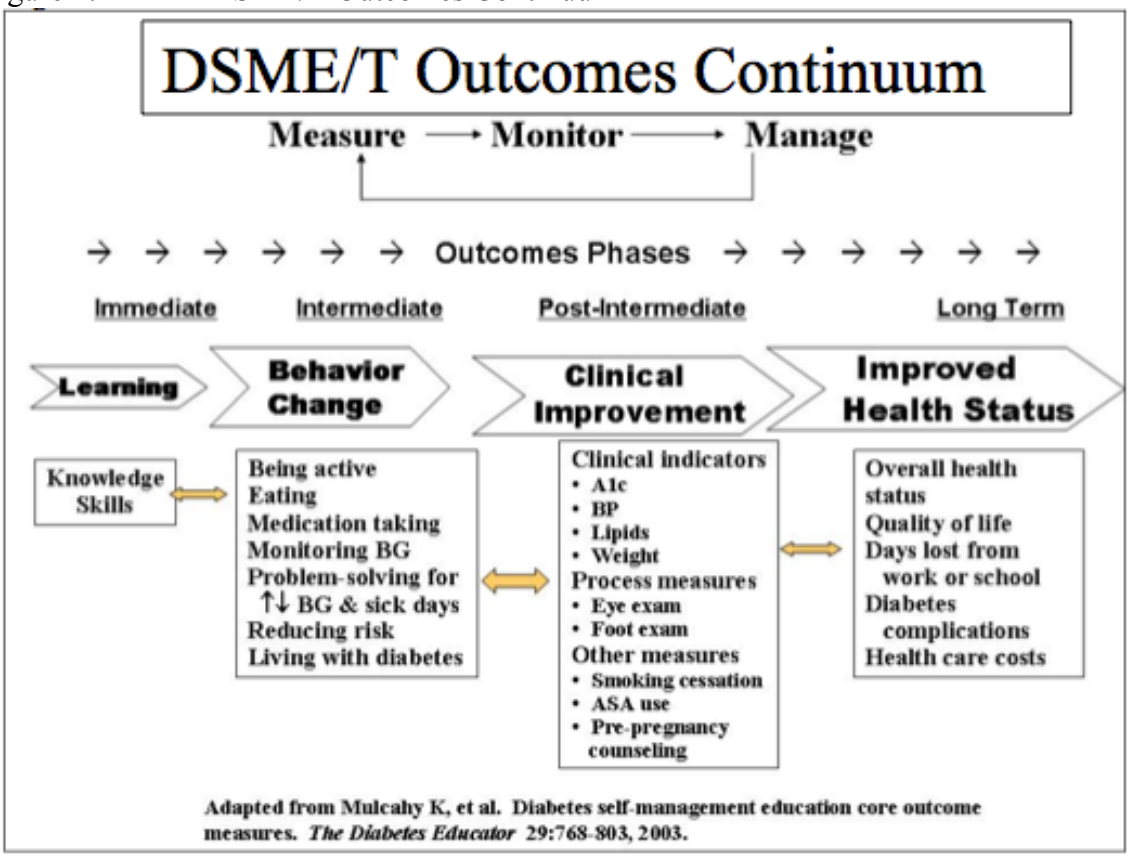
AADE7 Self-Care Behaviors Framework

The American Association of Diabetes Educators (AADE) states the primary goal of diabetes education is to provide knowledge and skill training, help individuals identify barriers, facilitate problem-solving and coping skills to achieve effective self-care behavior and behavior change (Educators, 2011). Behavior has been defined as the primary outcome of diabetes education (with behavior change being the primary measurement) because in the care of chronic disease, it is the key element in attaining or maintaining desired levels of clinical parameters, and in turn health and health-related outcomes (AADE, 2011).

The DECSS program based its programming upon evidence-based practices and the widely accepted framework, the AADE 7 Self-Care Behaviors (AADE7), which is the *Fundamentals of Diabetes Care* embodies. The AADE, has defined the AADE7 as a framework for patient centered diabetes self-management education and training (DSME/T) and care. The 7 self-care behaviors essential for successful and effective

diabetes self-management are *healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks*. The AADE7 provides an evidenced-based framework for assessment, intervention and outcome (evaluation) measurement of the diabetes patient, program, and population (Peeples, 2007). The seven behaviors framework supports a paradigm shift in diabetes from a content-driven practice to an outcomes-driven practice toward a focus on patient centered goals for facilitating behavior change that affects clinical and health related outcomes as illustrated in Figure 2 below (Mulcahy, 1999) (AADE, 2011).

Figure 2: AADE DSME/T Outcomes Continuum



Clinical Support Staff

The DECSS Program termed '*clinical support staff*' as healthcare technicians, medical assistants, nursing assistants, office support staff, and community health workers. Clinical support staff is the chosen audience for this program because of their unique opportunities to educate and influence patient care. Clinical support staff spends time with the patient at intake, upon arriving to the physician's office, in weighing them, and following up with the patient at the end of their physician visits. The staff is able to engage with the patient in dialogue, which may serve as an opportunity for 'teachable moments.'

"Teachable moments' have been defined as events or circumstances which can lead individuals to positive behavior change (Lawson, 2009). Lawson et al. (2009) suggested that clinician-patient interaction is central to the creation of teachable moments for health behavior change. Therefore, given that clinical support staff engage in ongoing patient care, it follows that education of this group with the fundamentals of diabetes care is necessary to support their ability to encourage behavior change in patients.

Additionally, increased trust and patient satisfaction have often been linked with medical assistants (Tache, 2010). A study to assess the role of medical assistants (MAs) in the delivery of services to patient's revealed that MAs were more likely to discuss diet/nutrition and exercise with patients (Palmer, 2008). They held positive beliefs about educating patients and it was more feasible to delegate delivery of care to this willing team member (Palmer, 2008). Furthermore, Ruggiero et al. (2010) evaluated the impact of an intervention utilizing certified medical assistants with specific diabetes training to

work with a multidisciplinary diabetes care team to help provide basic diabetes education and self-care support in low-income minority populations with type 2 diabetes (Ruggiero, 2010). Participants were randomized to either a medical assistant coaching arm (MAC) or the treatment as usual (TAU). Results revealed no significant difference between the A1C levels of the patient, however, a trend was observed, where A1C levels decreased across time for the MAC group. Moreover, ANOVA comparisons indicated that the MAC group experienced significantly greater increase in perceived empowerment and a larger reduction in perceived diabetes related problems than the TAU arm. These researches concluded that the inclusion of the medical assistant as part of the diabetes care team holds promise in improving outcomes and should be further examined (Ruggiero, 2010).

Certified nursing assistants (CNAs) are also an integral part of the care team as well. Prestia & Dyess (2012) developed a program of communication, education, and accountability to highlight the role of the CNA as a team member. This resulted in increased understanding about the CNA role in delivering high-quality patient care and increasing patient satisfaction with responsiveness of staff.

The DECSS program includes community health advocates in its cohort as well, due to a high demand for diabetes education and research supporting their positive effect on patients. Community Health Workers (CHWs) are frontline public health workers who are trusted members of and/or have an unusually close understanding of the community they serve. This trusting relationship enables CHWs to serve as a liaison between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery (APHA, 2012). A CHW

also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy (APHA, 2012). A study by Walton et al. (2012) discovered that interventions utilizing community health workers to assist with diabetes management have demonstrated improvements in overall patient outcomes (Walton, 2012). Furthermore, a study by Hargraves et al. evaluated CHWs' efforts to assess patients' readiness to change and facilitate self-management goal setting. In this study, six pairs of community health centers (CHC) were randomly assigned to employ CHWs on a health care team. The results revealed that patient self-management goals and clinical measures from both control and intervention CHCs before and after deploying CHWs, found a significant increase in self-management goal setting between the intervention and control health centers (Hargraves, 2012).

ACTIVITIES:

The DECSS program is a diabetes capacity building course. The course curriculum leads to outputs of clinical support staff educated and trained to teach patients on DSME.

Capacity Building through Training

Capacity building has developed as a health promotion approach that enables people to address determinants of health and to improve health outcomes. Capacity-building is defined in a study by Hawe et al. (1998) as seeking to develop health promotion skills and resources, and also problem-solving capability, at five levels; the individual; within health care teams; within health organizations; across organizations; and within the community (Hawe, 1998). Capacity building on an individual level

requires the development of conditions that allows individual participants to build and enhance existing knowledge and skills. It also calls for the establishment of conditions that will allow individuals to engage in the process of learning and adapting to change (United Nations, 2006). The benefits show that there is potential to build individual skills and strengthen community action to promote sustainable health behaviors and support health environments (VicHealth, 2004).

SHORT TERM OUTCOMES

Based upon the constructs of the social learning theory and adult learning principle the activities and outputs will produce short-term outcomes that lead to behavior change and self-efficacy.

The Social Learning Theory (SLT) served as a guide for the activities in the DECSS Program. Bandura's Social Learning Theory posits that people learn from one another, via observation, imitation, and modeling (Bandura, 1977). It has often been called a bridge between behaviorist and cognitive learning theories because it encompasses attention, memory, and motivation (Bandura, 1977). He determined that there are 3 basic models for observational learning: the live model, verbal instruction, and a symbolic model. The SLT emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others (Bandura, 1997). In the DECSS program, the participants are being taught diabetes education through: 1) A live model – which includes an actual person demonstrating the desired behavior and 2) Verbal instruction – in which an individual describes the behavior in detail and instructs the participant in how to perform the behavior. Participants will receive diabetes education through lectures (verbal instruction) and proceed with the skills training workshop (live

model). The instructor will first explain each skill, demonstrate it, and have the participants display each behavior as their acknowledgement of understanding.

In order for adults to learn, and reach the short-term outcomes, the program needed to be designed in an appropriate manner for adult learning. Malcolm Knowles (2005) first theorized the adult learning principle. His term 'andragogy' was defined as the 'art and science of helping adults learn.' The following assumptions and principles were considered in information delivery. The adult learning principle is based on 5 assumptions: 1) adults are independent and self-directing, 2) they have accumulated a great deal of experience which is a rich resource for learning, 3) they value learning that integrates with demands of everyday life, 4) they are interested in immediate, problem centered approaches, and 5) they are motivated to learn by internal drives than by external ones (Kaufman, 2003). He later developed 7 principles on how to teach learners:

1. Establish an effective learning climate, where learners feel safe and comfortable expressing themselves.
2. Involve learners in mutual planning of relevant methods and curriculum content.
3. Involve learners in diagnosing their own needs-this will help to trigger internal motivation.
4. Encourage learners to formulate their own learning objectives –this gives them more control of their learning.
5. Encourage learners to identify resources and devise strategies for using the resources to achieve their objective.
6. Support learners in carrying out their learning plans.

7. Involve learners in evaluating their own learning-this can develop their skills of critical reflection.

Throughout the DECSS program the developers utilize these principles by identifying the motivations of the adult learners and gaining feedback on their needs for resources and support services in teaching DSME.

Self-Efficacy

Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes (Bandura, 1994). Self-efficacy is a product of Bandura's Social Learning Theory (Bandura, 1994). The DECSS program short-term outcomes reflect self-efficacy through increased confidence in the participant's ability to improve diabetes control in the patients as clinical support staff.

Summary

There were limited literature reviews on evaluations of DSME programs for clinical support staff. However, through various literature searches, there is supportive evidence that educating clinical support staff produces meaningful results in affecting patient health outcomes. Furthermore, the logic model's linkages with capacity building, the social learning theory, and adult learning principle support behavior change and self-efficacy that will be useful in DSME.

CHAPTER 3: METHODOLOGY

Introduction

This chapter provides an overview of the process in evaluating the DECSS program. This evaluation takes a formative approach based employing the CDC Framework for Evaluation to aid in assessing the overall content delivery and participant satisfaction. (See Appendix H for framework components). In looking at the methodology, it is important to identify the stakeholders that will be affected by this evaluation and the primary intended users that will be making informed decisions on the program. Other topics of discussion include the sample population, research design, procedures, instruments and plans for data analysis, limitations and delimitations.

Stakeholders

ELDEP Staff

The primary stakeholders identified as the DECSS Program developers are: Amparo Gonzalez, RN,CDE, FAADE, and Britt Rotberg, MS, RD LD. Gonzalez is the program director of the Emory University School of Medicine Multicultural Diabetes Education and Professional Diabetes Education programs in Atlanta, GA. She developed Emory's Multicultural Diabetes Education program, which is offered in both Spanish and English and incorporates a variety of models to address the needs of the practices that implement it. She also created the Emory Diabetes Education Training Academy (EDETA). Rotberg is the Program Coordinator of the Emory University School of Medicine Multicultural Diabetes Education and Professional Diabetes Education

programs in Atlanta, GA. In 2011, she began working for Emory University as the Coordinator for the Emory Latino Diabetes Education Program (ELDEP) as well as the other professional diabetes educations courses that fall under the Emory Diabetes Education Training Academy (EDETA). They are the primary stakeholders as they deal directly with the program, development, recruiting, and implementation.

Secondary sponsors include Dr. Guillermo Umpierrez, the American Association of Diabetes Educators (AADE), Emory University and Sanofi-Aventis. Dr. Umpierrez is a professor of medicine in the division of endocrinology, metabolism at Emory University School of Medicine, chief of diabetes and endocrinology at Grady Memorial Hospital, and head of the Emory Latino Diabetes Education Program (ELDEP). Under his leadership, ELDEP has received funding in the amount close to $500,000 from the Healthcare Georgia Foundation and the pharmaceutical industry to develop a culturally sensitive, community-based diabetes education program targeting healthcare professionals and Latinos with diabetes in the metro Atlanta and throughout the state of Georgia (Emory, 2012). He is vested in the success of this program and the impact it will have on diabetes patients.

Emory University

Emory University is recognized internationally for its outstanding professional schools and being one the Southeast's leading health care systems. The DECSS course is offered under Emory University's School of Medicine Multicultural Diabetes Education and Professional Diabetes Education Program. Since the program is representing this prestigious University, Emory will be interested in the program effectiveness, impact, and participant satisfaction.

American Association of Diabetes Educators

The American Association of Diabetes Educators (AADE) is a multidisciplinary association of healthcare professionals dedicated to integrating self-management as a key outcome in the care of people with diabetes and related chronic conditions (AADE, 2012). AADE developed the curriculum, *The Fundamentals of Diabetes Care,* which is the foundation of the DECSS course. This will be the first time *The Fundamentals of Diabetes Care* course will be offered in a face-to-face session. The AADE has interest in the success rate of the program as well as feedback on the course being delivered with a mixed method versus solely online. If participant reviews and data support behavior change, this could lead to changes in the curriculum and/or efforts to offer the *Fundamentals* as DECSS has designed it.

Sanofi – Aventis

Sanofi is a diversified global healthcare leader with nearly 100,000 professionals in more than 100 countries. Sanofi US is dedicated to the ideal that each of us can impact results and play a role in improving the health and well being of people everywhere. They strive to educate the public about diseases and conditions. The DECSS program is operating under an educational grant that Sanofi-Aventis is funding for ELDIP. As the funding organization for this program, they will be interested in the outcomes and impact of the DECSS program.

Primary Intended Users

Primary users of the evaluation are the specific persons who are in a position to do or decide something regarding the program. In practice, primary users will be a subset

of all stakeholders identified. A successful evaluation designates primary users early in its development and maintains frequent interaction with them so that the evaluation addresses their values and satisfies their unique information needs. The primary intended users of the DECSS program evaluation are Amparo Gonzalez and Britt Rotberg as they will be able to use the evaluation and make informed decisions on the program.

Stakeholder Engagement in Evaluation

Gonzalez and Rotberg are involved in the evaluation process in several facets. The written evaluation was developed for the program and edits were made by the developers to accommodate their needs. Additions that were made to the document pertained to presenter evaluations, timeliness of the dissemination of information, sufficiency of information provided, parking convenience, and whether there was enough technology support for the pre-course tasks. Gonzalez also moderated the oral feedback portion at the end of the course. See Appendix E and F for feedback script and dictation.

Population and Sample

The population targeted for the course is clinical support staff. This encompasses medical assistants, nursing assistants, healthcare technicians, physician office staff, and community health workers. Although the *Fundamentals* curriculum was designed for the Level 2 provider, DECSS is inclusionary for Level 1 (non-clinicians) and Level 2 (clinical) providers. There were 25 initial registrants, the 11 individuals that did not attend the course reported they would complete the full course online on their own or registered for the second course to allow for more time in completing modules 1 and 2. Of the 14 women from the Greater Atlanta area that attended the program, there were 7

community health workers and 7 individuals with a clinical background. The community health advocates had occupational titles of 'community health worker', 'community health educator' and 'teacher.' The clinical support staff consisted of medical assistants, nursing assistants, registered nurses, licensed practical nurses, and case managers.

Research Design

The research design employed in this evaluation considered the scope of the evaluation questions developed by the primary stakeholders. A descriptive study design can reveal whether the program operated as planned, if knowledge was gained from the program, and if participants gained teachable skills. Also, the use of qualitative and quantitative data will present a comprehensive depiction of the program producing detailed findings to analyze, interpret, and gain a deeper understanding of the program. The research design chosen for this evaluation is a mixed-method design (descriptive study).

Procedures and Data Collection Instruments

In order to answer the 4 evaluation questions developed with the stakeholders, there will be several data collection instruments used in the study. The methods used are a pre-assessment of baseline diabetes knowledge of the participants, a post-assessment, written evaluation forms, feedback evaluation session, and course improvement activity.

Pre-assessment and Post-assessment surveys

In order to gauge the level of knowledge of each participant attending the course a pre-assessment survey is necessary to gain baseline data. The AADE's Fundamentals of

Diabetes Care course did not include a pre-test for the participants. The DECSS developers created a pre-assessment survey on surveygizmo.com using the same 30 questions obtained from the post assessment. Survey gizmo will provide quantitative data on overall results and each individual question. The post assessment will be completed by each of the 14 participants at the conclusion of the program. The scale for the assessments will range from 0% to 100% where 100% reflects that all questions were answered correctly. Quantitative data will be produced from these activities.

Written Evaluation

All DECSS participants will complete a written evaluation at the end of the program. See Appendix B for evaluation. The 3-page evaluation will present questions in a likert-scaling manner about the program content, presenter effectiveness, instructional methods, program satisfaction, and skills evaluation. Likert-type scales use fixed choice response formats and are designed to measure attitudes or opinions. These ordinal scales measure levels of agreement/disagreement. Respondents will be offered 5 pre-coded responses with the neutral point being neither agree nor disagree or neither . The responses range from 'strongly disagree' to 'strongly agree' and skill evaluations ranged from 'not at all confident' to 'very confident'. Under each section participants can record comments on what they enjoyed about the program and what could be improved. The results will yield quantitative and qualitative data. The following represent sample questions in the evaluation.

	Strongly Disagree				Strongly Agree
Program Satisfaction					
1. Overall, I am satisfied with the DECSS Program……..…	1	2	3	4	5
2. The location for this program was to my satisfaction……..	1	2	3	4	5
3. I was satisfied with the food and refreshments provided during the program	1	2	3	4	5
4. The flow of the program was conducive to learning……..……	1	2	3	4	5
5. The parking arrangements were satisfactory……..	1	2	3	4	5
6. The communication from Emory regarding the DECSS program was timely...	1	2	3	4	5
7. The communication from Emory regarding the DECSS program was sufficient	1	2	3	4	5
8. The technology support for completing the pre-test survey and modules was adequate…….	1	2	3	4	5

Comments:

_____

_____

SKILLS EVALUATION

Prior to taking this course, how confident were you in your ability to do the following:

	Not at All Confident		**Confident**		**Very Confident**
Use the Plate Method	1	2	3	4	5
Use Exercise Bands	1	2	3	4	5
Use a Glucose Meter	1	2	3	4	5
Draw Up Insulin	1	2	3	4	5

Comments:

_____

_____

After taking this course, how confident are you in your ability to do the following:

	Not at All Confident		Confident		Very Confident
Use the Plate Method	1	2	3	4	5
Use Exercise Bands	1	2	3	4	5
Use a Glucose Meter	1	2	3	4	5
Draw Up Insulin	1	2	3	4	5

Comments:

_____

_____

Oral Feedback

An oral feedback session will be conducted following the written evaluation to gather immediate feedback from the participants on their thoughts on the delivery of the program, timing, and content. The evaluator developed the questions for the feedback discussion with assistance from the primary stakeholders. See Appendix D and E for script and dictation. The session, facilitated by the program director, will be 15-20 minutes long and be built into the program agenda so no one will be held overtime. There may be apprehension from participants in voicing their concerns; therefore individuals have an opportunity to write down responses anonymously on the written evaluation.

Course Improvement Activity

The stakeholders of the program stressed an importance on obtaining information on participant satisfaction. Several questions on the written evaluation address these

questions however; they want to delve deeper into how the program could be improved to enhance satisfaction and learning. For that reason, a course improvement activity will be conducted to identify how the program could be improved overall. During this activity, participants provide feedback on areas they believe should be changed or improved upon for the next course and those that should continue to remain in the program. To facilitate this portion of the evaluation, each participant will be provided with two pieces of paper, one with a blue flag and the other with green flag. Participants will write down the items that should be considered or changed for the next course on the blue note and items that should be kept for the next program on the green note. See Appendix F for complete results. The exercise will highlight the major sections of the program that were valuable and those that garner further contemplation on usefulness.

Plan for Data Analysis

The methods of data collection will be both quantitative and qualitative. The plans for analysis include using SPSS to evaluate knowledge gained from the program with the pre-assessment, and post assessment results. The pre and post assessment scores will be entered directly into SPSS and analyzed using the 'paired t-test' function. The t-test assesses whether the means of two groups are *statistically* different from each other. The results will denote if there was a statistical significant difference in knowledge gained post course. A *t*-test will also be used to analyze confidence levels of the participants in performing the skills pre-course and after DECSS. Qualitative data from the evaluations, feedback session, and course improvement activity will be used to support or refute the data. Descriptive statistics and graphs will be created in SPSS to provide the mean, minimum, and maximum of each test, as well as the frequency of

scores. Microsoft Excel will have data imported from the written evaluation to provide descriptive statistics including means and percentages as well as to create bar graphs derived from the likert scale results.

The use of a recorder on a Mac Book Pro will capture the oral feedback discussion portion that will later be transcribed. See Appendix E for full dictation.

Limitations and Delimitations

There are several limitations of this evaluation that are beyond the control of the investigator. The DECSS developers did not develop the AADE pre-assessment survey and it is unknown whether it was tested for validity. Pre-testing with the intended population to assure intended interpretation of the questions was not conducted due to resource constraints. Also, the pre-assessment survey was not administered in a controlled setting. The participant's completion of the pre-assessment took place at their workplaces and homes. The environment and their own self inflicted time restraint can possibly affect test performance and scores. The time devoted to the pre-assessment could have varied among the participants as well due to it not having a time limit.

The scope of this evaluation is limited due to the convenience sample and size, which decreases generalizability of the findings. The small 'n' of 14 may not be a true representation of all 'clinical support staff population,' meaning that strong conclusions cannot be drawn on this population. Additionally, the power to detect is a limitation. Due to the size of the sample it may not be sufficient to detect significant differences if they exist in the population. The small denominator of 14 may lead to misconceptions of the data when reviewing percentages. One or two responses could drastically increase or decrease a percentage depicting false impressions of the information. DECSS program

also accepted Level 1 DSME providers (non-clinicians) for the course although the Fundamentals Course was designed for the Level 2 DSME provider. The differences in clinical health education background may skew pre-assessment and post-assessment results. Consequently, the lack of prior clinical knowledge of community health workers may produce significant differences between the two groups in all evaluation methods.

The study is limited by the usefulness of the results to the stakeholders. If the study findings are not utilized, the improvements in the program will not be made. Also, the stakeholder involvement in the oral feedback evaluation may limit forthright feedback on the program.

There were a few elements of delimitation in this evaluation. An inclusionary delimitation was that participants were required to complete the pre-assessment survey and first 2 modules of *The Fundamentals of Diabetes Care* prior to attending the face-to-face session. This ensured that all participants had the same introduction and baseline information available to them prior to meeting. An additional delimitation is that the Likert-type scales used for the evaluation were designed specifically for this program and have not been tested in other programs. It is unsure if the tools are valid instruments in evaluation.

IRB Clearance

IRB Clearance was obtained on January 4, 2012 and a formal letter was provided to Emory University's Rollins School of Public Health. The determination received from the IRB is that this is a true evaluation and not 'research' requiring IRB review.

Summary

This evaluation was designed with input from the stakeholders and primary intended users. Through a mixed method approach it will be able to produce comprehensive findings to analyze, interpret, and formulate recommendations for future programs.

CHAPTER 4: RESULTS and FINDINGS

Introduction

This chapter discusses the findings for this evaluation study from qualitative feedback from written evaluations, the feedback session, and course improvement activity as well as, quantitative data from pre- and post-assessments. The data will be organized by the evaluation question that the findings supports or refutes.

Findings

1. Is whether the DECSS program is effective in meeting the AADE 7 Self Care Behavior Framework?

The AADE 7 self-care behaviors essential for successful and effective diabetes self-management are healthy eating, being active, monitoring, taking medication, problem solving, healthy coping, and reducing risks. The curriculum presented in the DECSS Program, *The Fundamentals of Diabetes Care,* encompassed all 7 Self-Care Behaviors of the Framework. The following table illustrates each self-care behavior, how Fundamentals of Diabetes Care curriculum covered the subject matter and the manner in which DECCS incorporated the behavior in the program.

Table 2. Overview of how DECSS incorporated the AADE7

AADE 7 Self-Care Behavior	**Fundamentals of Diabetes Care Curriculum**	**How the DECSS Program incorporated the curriculum and self-care behavior**	**DECSS Program was successful in incorporating the AADE 7 Self-Care Behavior into the course?**
Health Eating	Module 3: Healthy Eating. Participants gain insight on healthy eating strategies diabetes	Britt Rotberg MS, RD, LD taught Module 3 and trained participants on carbohydrate	Yes

	patients need to know to successfully manage their disease.	counting and the plate method	
Being Active	Module 4: Being Active. Participants discover recommendations for physical activity, monitoring, and tips for working with patients to set appropriate goals.	Jessica Delos Reyes RD LD taught Module 4 and trained participants on chair exercises and using exercise bands	Yes
Monitoring	Module 4: Monitoring. Participants get the facts on the various medications used for diabetes management and some basic strategies to help patients take medications safely.	Amparo Gonzalez RN, CDE, FAADE taught module 4 and trained participants on using a glucose meter and logging glucose levels	Yes
Taking Medications	Module 5: Taking Medications. Participants get the facts on the various medications used for diabetes management and some basic strategies to help patients take medications safely.	Amparo Gonzalez RN, CDE, FAADE taught module 5 and reviewed insulin and oral medications. Participants were taught how to draw up insulin	Yes
Problem Solving	Module 6: Keeping and Staying Safe. Participants gain a comprehensive understanding of how to help patients stay safe and, hopefully, prevent complications.	Amparo Gonzalez RN, CDE, FAADE taught module 6 and how to problem solve if glucose levels are elevated or below goal ranges. Diabetes emergency kits were reviewed.	Yes
Healthy Coping	Module 6: Keeping	Amparo Gonzalez	Yes

	and Staying Safe. Participants gain a comprehensive understanding of how to help patients stay safe and, hopefully, prevent complications.	RN, CDE, FAADE taught module 6 and discussed how to provide support to patients and engage patient support system	
Reducing Risks	Module 6: Keeping and Staying Safe. Participants gain a comprehensive understanding of how to help patients stay safe and, hopefully, prevent complications.	Amparo Gonzalez RN, CDE, FAADE taught module 6 and discussed tips to reducing risks for the patients.	Yes

2. Is the DECSS program effective in training clinical support staff on diabetes?

This question is supported by pre-/post-assessment data. The pre-/post-assessment covered 30 questions and material from Modules 1-6 of AADE's Fundamentals for Diabetes curriculum. All 14 participants completed the pre and post assessment for the course. The pre-assessment was completed prior to starting the online Modules 1 and 2 in a self-paced home environment. The scores are on a scale from 0% - to 100% where 100% indicates the participant answered all questions correctly. The mean score was 71.66% with a low of 56.7% and a high of 83.8%. The post assessment mean score was 95.49% with a low of 76.7% and a high of 100%. There were 0 participants who answered all of the questions correctly (obtaining a 100%) prior to starting the course. A total of 6 individuals answered all of the questions correctly and earning a 100% in the post assessment. All 14 participants showed a statistical improvement in their scores at the completion of the course.

TABLE 3. DECSS PRE-/POST-ASSESSMENT SCORE

Test Number	Pre-Assessment Score	Post Assessment Score
1	76.7%	93.3%
2	70.0%	100.0%
3	66.7%	96.7%
4	56.7%	90.0%
5	60.0%	96.7%
6	83.3%	100.0%
7	73.3%	100.0%
8	80.0%	90.0%
9	80.0%	96.7%
10	80.0%	100.0%
11	63.3%	76.7%
12	63.3%	100.0%
13	70.0%	100.0%
14	80.0%	96.7%

TABLE 4. PRE-/POST-ASSESSMENT DESCRIPTIVE STATISTICS

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	14	56.70	83.30	71.6643	8.64448
Posttest	14	76.70	100.00	95.4857	6.48096
Valid N (list wise)	14				

FIGURE 3. BAR GRAPH DISPLAYING PRE-ASSESSMENT SCORES VERSUS POST ASSESSMENT SCORES OF EACH PARTICIPANT

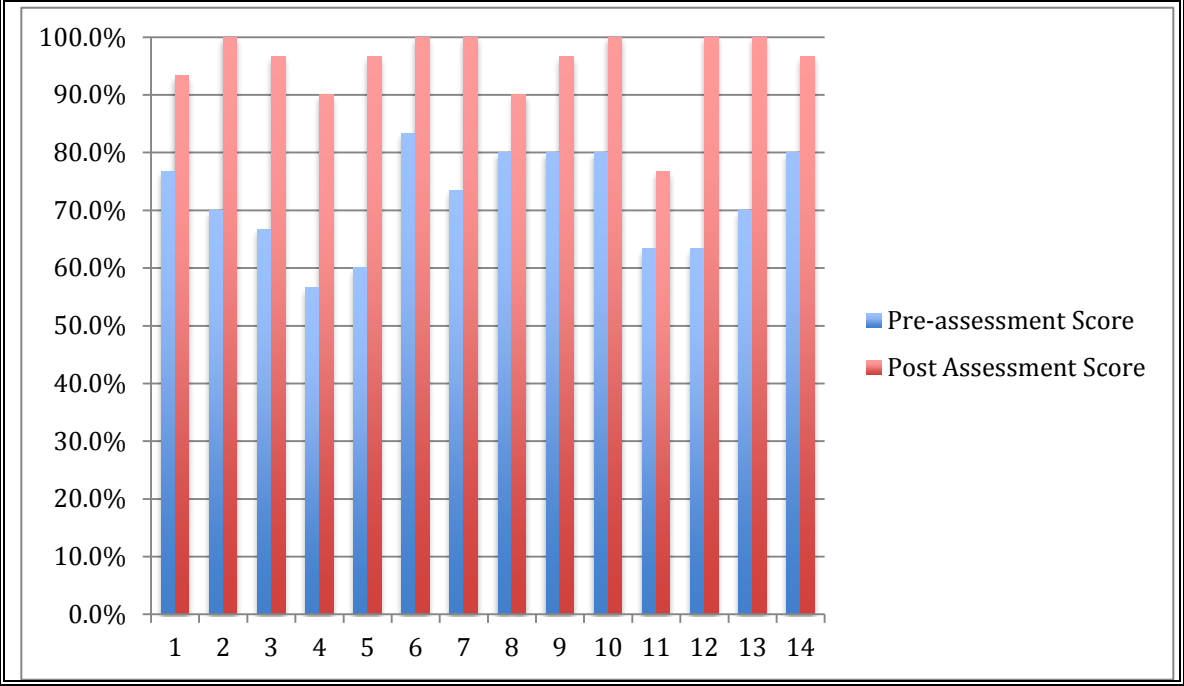


TABLE 5. PAIRED SAMPLE STATISTICS FOR PRE-/POST ASSESSMENT

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	71.6643	14	8.64448	2.31034
	Posttest	95.4857	14	6.48096	1.73211

TABLE 6. PAIRED SAMPLE T-TEST RESULTS FOR PRE-/POST ASSESSMENT

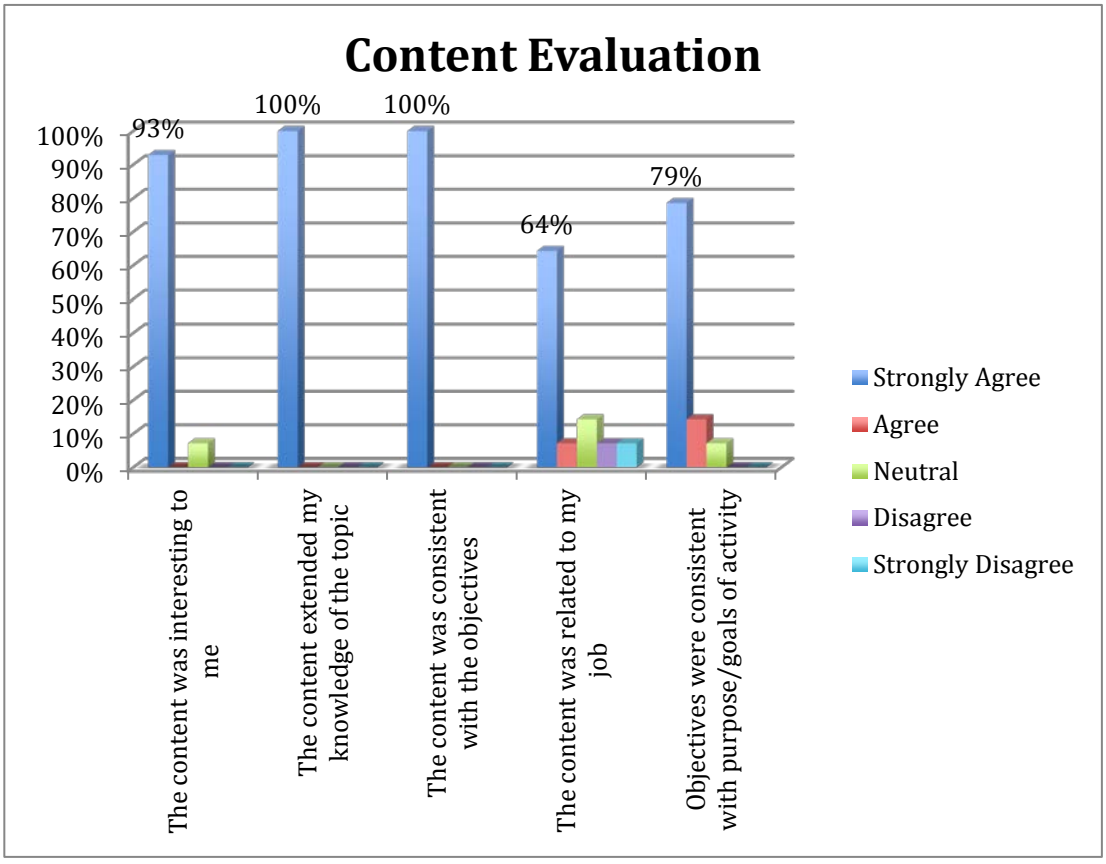
	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pretest - posttest	-23.82143	9.04222	2.41664	-29.04225	-18.60060	-9.857	13	**.000**

A one-tail paired sample t-test for the pre and post assessment was analyzed to detect if there was a difference between the means of the two variables. This analysis revealed the participants pre assessments (*m* = 71.66, *s = 2.31)* compared to the post assessments (*m* =95.49, *s* = 1.73*), t (*13*)* = 9.857*,* $p \leq 0.05$. The null hypothesis is that there is no difference between the pre and post results once the participants completed the course and the course did not have an effect on the scores of the pre and post assessment. The p value = 0.00, which is ≤ 0.05. Therefore, the null hypothesis is rejected and the result is statistically significant, meaning that the alternative hypothesis is accepted and the course did cause a change in the post scores of the assessment.

3. What is the overall participant satisfaction with the existing curriculum and delivery model?

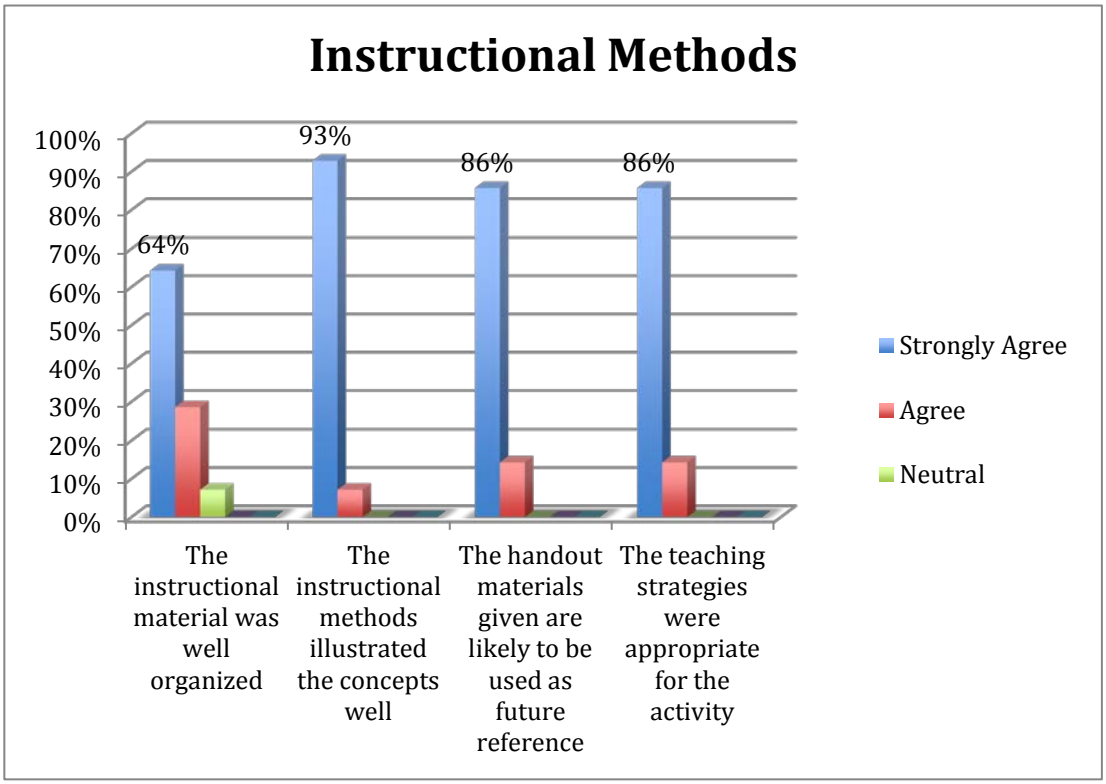
The written course evaluation results address this question. See Appendix C course evaluation results. All 14 participants completed the written course evaluation at the end of the program. The bar graph below displays the participant's satisfaction with the content of the course. The results indicate that 13/14 (93%) of the participants 'strongly agree' that the content as interesting to them. 14/14 (100%) of the participant's 'strongly agree' that the content extended their knowledge and was consistent with the objectives. The lowest percentage reflected that 9/14 (64%) of the participants 'strongly agree' the information provided was related to their present occupation however there were only 2 individuals that 'disagreed.' 11/14 (79%) of the individuals report the objectives were consistent with the activities of the program.

FIGURE 4. BAR GRAPH ILLUSTRATING WRITTEN EVALUATION RESULTS ON COURSE CONTENT



The instructional method in the program is two-fold. There is an online portion completed by the participant in a self-paced environment of their choice and then they completed the face-to-face segment at Emory's Faculty Office Building at Grady. 9/14 (64%) of participants expressed that they 'strongly agreed' that the instructional material was well organized and 4/14 (29%) still 'agreed' with this comment totaling 13/14 (93%) with positive feedback. 12/14 (86%) of the participants believed the teaching strategies were appropriate for the activity.

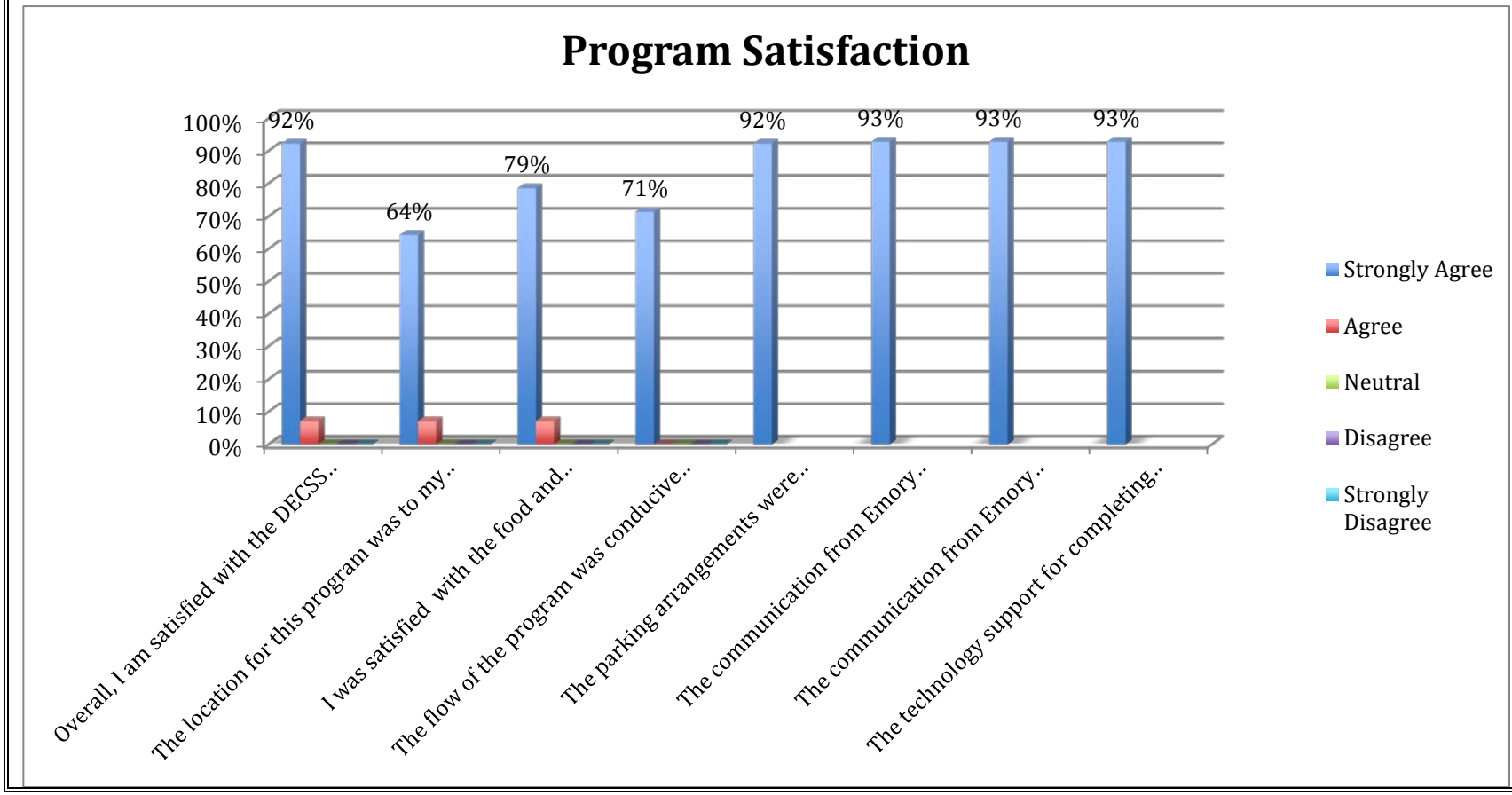
FIGURE 5. BAR GRAPH ILLUSTRATING WRITTEN EVALUATION RESULTS ON COURSE CONTENT



The program satisfaction results indicate that overall, 92% or above (13/14 participants) 'agree' or 'strongly agree' that they are satisfied with the DECSS program, parking arrangements, timely and sufficient communication, and technology support for pre-assessment survey and modules. Seventy one percent of the participants agreed with the flow of the program and that it was conducive to learning and 79% agreed that they were satisfied with the food and refreshments of the program. The area of the program that received the least approval was the location of the program. Sixty four percent of the participants agreed that the location for the program was to their satisfaction.

Delivery method of this course is online and in a face-to-face session. When asked about the delivery method of the course, mixed answers were found. However, during the oral feedback session, there was a general consensus to continue offering the program with the mixed method of completing the first two modules online prior to the face-to-face portion. See Appendix E and F for a complete listing of results from the feedback session and course improvement activity.

FIGURE 6. BAR GRAPH ILLUSTRATING WRITTEN EVALUATION RESULTS ON PROGRAM SATISFACTION



4. Did the program increase skill competency levels in the activities of using the plate method, using an exercise band, learning how to use a glucose meter and drawing up insulin?

The skills confidence level section on the written evaluation aids in answering this question.

TABLE 7. PAIRED SAMPLE STATISTICS ON SKILLS TRAINING EVALUATION RESULTS

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	preplate	2.7143	14	1.20439	.32189
	postplate	4.7143	14	.61125	.16336
Pair 2	preband	2.8571	14	1.35062	.36097
	postband	4.7857	14	.42582	.11380
Pair 3	premeter	3.1429	14	1.87523	.50118
	postmeter	4.6429	14	.74495	.19910
Pair 4	preinsulin	3.1429	14	1.87523	.50118
	postinsulin	4.4286	14	1.01635	.27163

TABLE 8. PAIRED SAMPLE *T*-TEST RESULTS FOR EACH SKILL TAUGHT IN THE COURSE

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	preplate - postplate	-2.00000	1.35873	.36314	-2.78451	-1.21549	-5.508	13	.000
Pair 2	preband - postband	-1.92857	1.32806	.35494	-2.69537	-1.16177	-5.434	13	.000
Pair 3	premeter - postmeter	-1.50000	1.82925	.48889	-2.55618	-.44382	-3.068	13	.009
Pair 4	preinsulin - postinsulin	-1.28571	1.68379	.45001	-2.25791	-.31352	-2.857	13	.013

A likert-scale evaluation tool was developed to assess confidence in performing each skill prior to the course and after the course completion. A two-tailed paired t-test was analyzed for each skill to detect if there were any statistical differences in confidence levels upon completion of the course. The null hypothesis is that completion of the course did not effect the confidence of the participants in performing the plate method, using exercise bands, using a glucose meter, or drawing up insulin. For the plate method, the analysis revealed the participants pre plate ($m=2.71$, $s = 0.328$) compared to the post plate ($m=4.71$, $s = 0.163$), $t(13) = 5.508$, $p \leq 0.05$. The p value = 0.00 which ≤ 0.05. Therefore, the null hypothesis is rejected and the result indicates a statistically

significant improvement in this behavior. The plate method portion of the course did indeed affect the confidence level of the participants in performing the plate method. The exercise band skill training yielded results pre band (m = 2.85, s =0.360) compared to post band (m=4.78, s=0.113), t (13) = 5.434, $p \leq 0.05$. The p value = 0.0 was ≤ 0.05. Thus, the null hypothesis is rejected. Results show a statistically significant improvement in confidence level regarding the exercise band portion of the course. The glucose meter pre skill training results were (m=3.14, s=0.5011) and post meter skills (m=4.64, s=0.199), t (13) = 3.068, $p \leq 0.05$. The p value = 0.009 which is ≤ 0.05. As a result, the null hypothesis is rejected and the results of the glucose meter training were statistically significant showing that skill training increased the participant's confidence level when using a glucose meter. The last skill taught was on how to draw up insulin. Pre-insulin data shows (m=3.14, s=0.501) and post insulin (m=4.42, s = 0.271), t (13) = 2.857, $p < 0.05$. The p-value = 0.013, which is ≤ 0.05. Hence, the null hypothesis is rejected and the results are statistically significant. Overall, the skills training portion of the course was successful in increasing participant confidence in all 4 skills taught.

Qualitative data from evaluation survey tools provided the following feedback regarding the participant's pre and post feelings when completing the skill sets taught:

- "This program and training is very well organized, informative and should be offered to many people."
- "I knew very little beforehand. I have a learned a lot. Thank You."
- "Today I feel very confident with all the skills listed above."
- "This has been a very informative and interacting workshop. I was definitely taught new skills that are applicable for helping my consumer manage and control their diabetes."

Other Findings

There was dissimilar feedback from participants categorized as community health workers versus those with clinical backgrounds. For instance, one of the community health care workers stated in the feedback session that she had difficulty with the course material and that more time was needed for each session. The clinicians appeared more at ease with the content and flow of the program than the community health care workers. The pre-test assessment survey results support this conclusion since scores were lower for the community health workers versus those with a clinical background, however all participant scores improved as a result of the program.

The course agenda veered off the planned schedule and participants expressed the most concerns with the pace of the program and timing. Further attention to content length of each module and time allotted for skill training may garner more consideration in the future. Starting the course late was due in part to half of the participants arriving past the expected starting time. Emphasis on punctuality should be more strongly encouraged in e-mail correspondence to keep on pace with the agenda.

Summary

Assessment survey results, evaluation responses and post course feedback have produced valuable findings for the DECSS Program. Overall, the DECSS program was a positive experience for the participants of the program. Statistical analysis of the pre-/post assessment survey and the skills training activities were statistically significant in increasing knowledge gained and confidence in performing skills related to diabetes care. All p-values observed were <0.05. The overall content, program satisfaction yielded

generally favorable results. More attention to planning the agenda and content of each module should be looked at closer as several responses referenced allowing more time for the modules. Lastly, the differences in familiarity and comfort level with the material among the clinicians and community health workers should be addressed.

CHAPTER 5: CONCLUSION, IMPLICATIONS, RECOMMENDATIONS

Introduction

The following chapter summarizes the overall findings of the Diabetes Education for Clinical Support Staff (DECSS) Program. These findings are based on the interpretation of the surveys, review of the qualitative data, and results of the data analysis for knowledge gained and skills acquired. Recommendations for the DECSS program will be discussed, as well as suggestions for further evaluation studies of this program. Lastly, a personal perspective on the evaluation process will be provided.

Summary of the Major Findings

The main questions asked in this study were to identify 1) if the DECSS program was effective in meeting the AADE 7 Self Care Behavior Framework, 2) if the DECSS program was effective in training support clinical staff on diabetes, 3) if the participants were satisfied with the existing curriculum and delivery model, and 4) did the program increase skill competency levels in the activities of using the plate method, using an exercise band, using a glucose meter and drawing up insulin? The evaluation results demonstrated overall effectiveness and satisfaction of the program, with some areas of potential improvement.

The DECSS program was effective in meeting the standards of the AADE 7 Self Care Behavior Framework with the use of a curriculum that covered all 7 behaviors in its 6 modules. The AADE is dedicated to providing healthcare professionals with tools to help patients change their behaviors and accomplish their diabetes self-management goals. The AADE fulfilled this mission with the development of *The Fundamentals of*

Diabetes Care. The course modules coupled with the skills training was positively received by the participants of the program. When looking at the pre- and post-assessment data, the results reveal that the DECSS program was effective in training clinical support staff on diabetes. The assessment mean levels revealed a vast improvement in scores from 71.55% prior to the course and 95.49% after completion. Also, the *t*-test was statistically significant, denoting that the program increased participant's diabetes-related knowledge.

In terms of program satisfaction and delivery, instructional methods, and program satisfaction the participants on average agreed with how the DECSS program was presented. However, there were minor disagreements among the clinicians and community health workers on the delivery of the program and content. Several community health workers 'did not feel comfortable' with the material in modules 1 and 2. One participant stated that she disliked the online portion prior to the face-to-face session and another felt that she needed a clinical terminology guide. Also, there were multiple recommendations requesting more time to cover the material. Despite these comments, 92% of the participants strongly agreed that 'overall, they were satisfied with the DECSS program.

An area for further consideration is in regards to content evaluation. Sixty-four percent of the participants indicated that they strongly agreed that the material was related to their job. Although this percentage may seem low there were only 2/14 (14%) that 'disagreed' and stated the content was not related to their job. Further questions should be asked about whether information covered in the program needs to be catered more towards the audience's needs or if recruitment for the program needs to be

reconsidered for those that will be able to utilize resources and knowledge available in the program. Being that this program is designed under the Social Learning Theory, the developers may need to consider live or verbal instruction models that consist of role-play scenarios for creating 'teachable moments' in the workplace so that the participants have direction on how to transition into conversations relating to DSME.

The final question of the evaluation sought to determine if skill competency levels were increased after completing the course for the: plate method, use of exercise bands, use of a glucose meter, and drawing up insulin. Statistical analyses of pre and post confidence surveys identified that competency and confidence improved in performing all 4 skills. Qualitative feedback comments also revealed an increased sense of self-efficacy in performing the skills.

The short-term outcomes of the program were also achieved; 1) participants increased knowledge, attitudes, and beliefs about providing diabetes education, 2) increased skills to teach patients, family members, and the community about diabetes care, and 3) increased confidence in clinical support staff's ability to improve diabetes self-management in patients. One participant stated, "This program has impacted the way I view being able to assist clients with diabetes. I feel confident with the resources, knowledge, and skills to present the materials to my clients. I look forward to sharing the 7 Self-Care Behaviors." The data supports self-efficacy and success in capacity building.

Implications

Studies on the role of clinical support in diabetes self-management education appear to be limited and a search for similar courses in literature proved unsuccessful. Participants of the program even stated that they were not trained on DSME because they

are instructed to refer the patient to the dietitian or physician. Part of DSME is having the ability to know when to refer a patient to another provider, however, empowering clinical support staff in diabetes education increases the possibility for more "teachable moments" in the health care setting (Funnell, 2008). Several studies have identified the value and importance of clinical support staff, and community health workers in patient care and diabetes self-management training (Walton 2012). DECSS could serve as a 'pilot' for other educational programs. Further in-depth studies on the long-term impact of the DECSS program may prove beneficial for healthcare field, which may lead to new approaches in educating clinical support staff and community health care workers. Also, partnering with the American Association of Medical Assistants (AAMA) to increase educational opportunities for medical assistants would enhance their skill set as well as advocate for their profession. Continued exposure within the healthcare field could garner attention from other disciplines to view them as a vital link between patient and providers.

Recommendations for the DECSS Program

In order to fully meet the need of the audience, participants were asked to contribute their opinions for course improvement. The participants provided feedback on areas of the program to continue and ones that the developers may need to consider changing for the next course. The most common response for improvement was to allow for more time in the program, whether more face-to-face time or slowing down the pace of the each presentation. Additional input centered around creating another class for non-clinicians and allowing participants to complete all 6 modules before the face-to-face session if they desire and removing the online portion all together.

Comments that centered on allowing more time for the program and removing the online portion were primarily from the community health workers. These sentiments were expressed in e-mail correspondence with the program coordinator as well as voiced during the program. This response was anticipated given that the *Fundamentals* course was designed for the Level 2 (clinical) provider as opposed to the Level 1 (non-clinical) provider. While recommendations from the evaluation would suggest having a separate program for the Level 1 provider may prove useful for the needs of this cohort and allow for the Level 2 provider to advance their knowledge more deeply however, limited time and resources may not allow for such programming. Practical consideration such as priorities, costs, space, and other resources determine to what extent recommendations will be followed. The director of the program mentioned that due to limited manpower conducting two programs might not be feasible. An alternative recommendation would be for community health care workers to complete all 6 modules prior to attending the course. Immersing themselves with the content beforehand may calm anxieties about the material during the program. Furthermore, program developers may need to become more available to this group prior to the program.

Another alternative to consider is an optional conference call for support. Original registration for the program yielded greater than 14 participants, however some were moved to the next course because they did not complete the pre-course work or they felt overwhelmed with the material. Having a support conference call may ease fears on the content and provide the assistance needed to navigate the online course, without placing the burden on the DECSS program to create two programs. A follow-up course with the participants is recommended to support the needs of clinical support staff and to

encourage continued engagement in DSME. Additionally, a follow-up course would provide the necessary setting to evaluate the long-term impact of the DECSS program. If results of the program indicate that community health workers are not impactful in DSME, the DECSS program may need to consider removing them from the target audience at this time until the development of a more appropriate program is possible.

Another challenge raised in the evaluation was the course agenda. The course agenda did not coincide with the actual schedule planned due in large part to participant's tardiness. Emphasis should be made via e-mail correspondence on the importance of punctuality to allow for all the content to be reviewed in the program. Presenters may want to review the content for each module presented and overestimate time needed for presenting, skill training, and Q & A. This would possible prevent participants from feeling rushed and ensure all major points of the training are reinforced.

Finally, the name of the program came under debate. The program title, 'Diabetes Education for Clinical Support Staff (DECSS)' was used as well as 'Diabetes Education Course for Clinical Support Staff (DECCSS)' in some instances. Both names are an acceptable representation of the course. I would suggest the program developers choose one title for uniformity to help promote ease of recall for online searches and course recognition.

Recommendations for Future Evaluations

The AADE developed the post-assessment survey that the DECSS program utilized for gauging baseline pre-course knowledge. The developers of the DECSS program discussed how the post-test does not touch upon the main key points of diabetes self-care. The DECSS program may want to engage in discussion with the AADE on

redesigning the post-assessment or having a new instrument pilot tested. If this is not possible, the DECSS program may want to consider developing a separate evaluation instrument for the course. The 30 questions pre-assessment may be too laborious and a deterrent for participants. Shortening the assessment may be a plausible option.

It is recommended that all evaluators be present the day of the program to allow for better understanding of the flow of the program. It is beneficial to hear the initial first hand accounts of the program. Additionally, the post course evaluation activities should be completed without the program developers in the room. This will create an atmosphere where the participants can express their opinions candidly and eliminate bias.

This was the first pilot of the DECSS program. This evaluation explored the short-term outcomes of the program, however due to time-constraints there was no follow-up performed. One of the long-term goals of the program is continued engagement and involvement of clinical support staff in teaching DSME. Conducting a follow-up course for participants would be ideal to foster engagement and continued DSME teaching. However, if this is not realistic the use of a follow-up assessment sent via e-mail or a webinar meeting should be pondered. Creating instruments to measure the impact of the DECSS program on patients and in the community would validate the programs mission.

Personal Account of the Evaluation Process

Dyal et al. (1995) stated that, 'program evaluation is an essential organizational practice in public health.' Furthermore, the CDC states that effective program evaluation is defined as a systematic way to improve and account for public health actions by involving procedures that are useful, feasible, ethical, and accurate; and it complements

program management by gathering necessary information for improving and accounting for program effectiveness (CDC, 1999). Throughout this process of evaluation, the preceding ideals have proven accurate. The comprehensive approach to evaluation is necessary to fairly assess a program, dispel myths, and deflate preconceived notions. It was a search for what is truthful about clinical support and diabetes education. Data and personal accounts become supporting or opposing facts to the evaluator's beliefs. For example, it was uncertain how participants would receive this program. The program developers understood the importance of clinical support staff in patient care and education, along with the support of numerous studies; however it was questionable whether the target audience would embrace this truth and if they would be willing teach DSME. The developers even contemplated whether participants would be vested enough in the program to attend a Saturday event. Through the process of evaluation it was identified that the participants were excited about teaching DSME, willing to learn and engaged in the training. The participants reported that they would not be able to come if the program was on a weekday because of their work schedule. The level of engagement witnessed through attendance on a weekend and active participation in-group discussion showed dedication to education and improving the health of the patient. Preceding this evaluation, these 'beliefs' would have stood as opinion, however due to the process of evaluation we were better able to understand the target audience, their needs, and desires for education. Through evaluation, a stronger basis for supporting educational efforts for this group has been established.

There are several takeaways regarding research design and data. A larger 'n' is vital to drawing conclusions on the population and for showing the significance of data.

A change in 1 participant's scores could have major effects on the results, specifically percentages, due to the small denominator. It will be interesting to see if the further courses produce similar results. Also, the mixed methodology research design was an approach most accurate for this type of evaluation. The quantitative data plus qualitative feedback from the participants was critical to drawing conclusions on program improvement. Qualitative data supported the quantitative data or refuted it and vice versa. The qualitative data gave a bird's eye view into the 'why' of the quantitative result and how to improve it. For example, the scores of certain individuals pre-assessment were not as high as others. The qualitative feedback revealed that this happened because the community health workers did not feel comfortable with the pre-course materials. Although, this was already an assumption, the evaluation process was able to prove it true.

Throughout the program participants appeared very at ease in the course, with the program developers, the other participants and in the learning environment. The atmosphere was very welcoming to questions and the participants were very candid in their responses when providing feedback about the course. This level of comfort encouraged participants to feel free to state their likes and dislikes about how the day went even though the developers were heavily involved in the feedback session. Although it was beneficial for the program to gather information firsthand, a portion of the evaluation should be completed without the stakeholders in the room to ensure there is no bias or leading questions in discussion. Valuable elements can be gained from evaluating in and outside the presence of those that developed the program. Also, there was a challenge in evaluating a program that I aided in developing. I took the role of an

evaluator of this program causing me to be impartial in the process however it would be more favorable to have the program evaluated by someone with no prior involvement with the DECSS program. This will eliminate any possible bias in the evaluation.

This evaluation was completed without the assistance of a team of evaluators. A wealth of knowledge was gained from completing this project individually however evaluation is an in depth process that truly requires multiple perspectives. It is a lengthy process that needs constant attention and if something is missed, it is more likely to be noticed by a team of evaluators rather than by one person. The CMPH program team evaluation project was a meaningful experience to compare this project too.
An appreciation for evaluation has been gained as a result of this experience. It is pleasing to see public health programs proven effective in meeting their objectives. Fortunately, this evaluation favors the DECSS program but there will be cases where the evaluation may be less favorable for others. Regardless, evaluation truly is a necessary process for all public health programs to ensure that time and resources are spent on programs that are effective in meeting their goals, improving health, and making a difference.

Summary

Based on the pilot outcomes of the Diabetes Education for Clinical Support Staff Program that were investigated in this evaluation study, the program was shown to be effective in increasing participant knowledge, attitudes, and beliefs about providing diabetes education, increasing skills to teach patients, family members, and the community about diabetes care, and increasing self efficacy in their ability to improve diabetes control in patients. Findings from this study have led to recommendations for

changes to the program delivery. A next step would be to conduct follow-up studies on the long-term impact of the program and the role and influence of clinical support staff in teaching DSME. The linkage between the program and the health goal may ignite further efforts to educate this population not only in DSME but other medical education interventions. In conclusion, this initial evaluation suggests there is a strong benefit in using the DECSS program to educate clinical support staff and community health workers, with the ultimate goal of improving the quality of life and health of individuals with diabetes.

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APPENDIX

APPENDIX A: PRE-ASSESSMENT/POST-ASSESSMENT (PRE-TEST/POST-TEST)

Name: _____

1. Which of the following types of diabetes is caused by insulin resistance and a drop in the amount of insulin produced by the pancreas?
   a. ○ Pre-diabetes
   b. ○ Type 1 diabetes
   c. ○ Type 2 diabetes
   d. ○ Gestational diabetes

2. True or false? Only children have Type 1 Diabetes
   a. ○ True
   b. ○ False

3. True or false? Type 2 diabetes is most common in patients with a European American heritage.
   a. ○ True
   b. ○ False

4. Complete the following sentence. When diabetes is present prior to a pregnancy, it is called:
   a. ○ Pre-diabetes
   b. ○ Pre-gestational diabetes
   c. ○ Gestational diabetes
   d. ○ Placental diabetes

5. Which of the following is NOT a symptom of uncontrolled hyperglycemia?
   a. ○ Weight gain
   b. ○ Frequent urination
   c. ○ Frequent thirst
   d. ○ Extreme tiredness

6. Which of the following is NOT a common source for clinical practice guidelines for diabetes?
   a. ○ American Diabetes Association
   b. ○ American Association of Clinical Endocrinologists
   c. ○ National Guidelines Clearinghouse
   d. ○ All of the above are common sources of clinical practice guidelines for diabetes

7. Fill in the blank. To guard against hypoglycemia, the American Diabetes Association currently suggests a goal A1C of less than ____ for most adult patients with diabetes.
   a. ○ 6%
   b. ○ 7%
   c. ○ 8%
   d. ○ 10%

8. True or False? All patients with diabetes should have the same blood sugar goals.
   a. ○ True
   b. ○ False

9. True or false? Most patients with diabetes should have a blood pressure goal of under 130/80 mmHg.
   a. ○ True
   b. ○ False

10. True or false? The recommended LDL cholesterol goal for most patients with diabetes is under 50 mg/dl.
   a. ○ True
   b. ○ False

11. What is the effect of exercise on blood sugar?
   a. ○ It lowers blood sugar levels.
   b. ○ It raises blood sugar levels.
   c. ○ It has no effect on blood sugar levels.

12. True or false? Weight loss and exercise decrease insulin resistance in patients with type 2 diabetes.

a. ○ True
b. ○ False

13. Which of the following contains very little to no carbohydrates?
    a. ○ Vegetables
    b. ○ Meat, fish, poultry, eggs, nuts, cheese
    c. ○ Milk and yogurt
    d. ○ Fruit

14. Which of the following meal planning methods balances the amount of insulin injected with the amount of carbohydrate eaten?
    a. ○ Diabetic diet
    b. ○ Consistent carbohydrate
    c. ○ Carb counting
    d. ○ Fat gram counting

15. For patients with diabetes, which of the following is NOT an important consideration on a food label?
    a. ○ Grams of sugar
    b. ○ Serving size
    c. ○ Total carbohydrate
    d. ○ Dietary fiber

16. Which of the following is not an appropriate recommendation for health meal planning for patients with diabetes?
    a. ○ Pay attention to serving sizes
    b. ○ Limit soda and juice drinks
    c. ○ Take your lunch to work or school
    d. ○ It's OK to skip meals

17. Fill in the blank. The Surgeon General of the US and American Diabetes Association recommend that most people should aim for ____ minutes of moderate intensity activity per week.
    a. ○ 90
    b. ○ 120
    c. ○ 150
    d. ○ 180

18. Which of the following is NOT a source of 15 grams of carbohydrate?
    a. ○ 3 or 4 glucose tablets
    b. ○ 4 ounces of diet soda
    c. ○ 8 ounces of milk
    d. ○ 1 small box of raisins

19. Regarding physical activity, overweight or obese patients with diabetes who are currently sedentary should:
    a. ○ Increase activity levels slowly
    b. ○ Consider beginning with walking, cycling or water exercise
    c. ○ Seek medical clearance
    d. ○ All of the above

20. True or false? Resistance exercises with low resistance and high repetitions might be considered appropriate for patients with heart disease.
    a. ○ True
    b. ○ False

21. True or false? Medications typically have a better effect when patients with diabetes are also following a healthy eating and activity plan.
    a. ○ True
    b. ○ False

22. True or false? Because of the common gastrointestinal side effects, Metformin is often prescribed at a low dose then increased gradually.
    a. ○ True
    b. ○ False

23. True or false? Welchol, a cholesterol-lowering drug, also raises blood sugar levels in patients with type 2 diabetes.
    a. ○ True
    b. ○ False

24. Insulin can be used as a treatment option for which of the following types of diabetes?
    a. ○ Type 1 diabetes

b. ○ Type 2 diabetes
c. ○ Gestational diabetes
d. ○ All of the above

25. For patients with diabetes, you should ask they bring their medications in to the clinician's visit so that you can:
a. ○ Check the types of medication they are taking
b. ○ Check the expiration dates
c. ○ Help them create a medication list if they don't have one
d. ○ All of the above

26. When patients have problems paying for their diabetes medications, you should NOT encourage them to:
a. ○ Ask their clinician for generic medications
b. ○ Buy a 3-month supply from a prescription program if they can afford it
c. ○ Skip medications if they are feeling fine
d. ○ Seek a patient assistance program

27. True or false? When a patient is experiencing a severe hypoglycemic emergency, they may need an injection of glucagon
a. ○ True
b. ○ False

28. If your patient does not have a sick day plan, you should:
a. ○ Refer them to a clinician to create a set of sick day guidelines
b. ○ Suggest they create a sick day toolbox
c. ○ Suggest they clear fluids such as a juice, soda, or sports drinks on hand if the patient has problems with vomiting or diarrhea
d. ○ All of the above

29. True or false? Complications of diabetes can be minimized, delayed, or prevented with proper diabetes control.
a. ○ True
b. ○ False

30. True or false? Telling people what to do will make them change their behaviors.
a. ○ True
b. ○ False

APPENDIX B: DECSS PROGRAM EVALUATION

PROGRAM EVALUATION

Name (Optional): _____

Job Title: _____

Years of Experience: _____

Is English Your Primary Language: Yes____ No____

As a learner, please assist in the evaluation of this presentation. Please circle the number beside each statement that best reflects the extent of your agreement. Thank you

	Strongly Disagree				Strongly Agree
Content					
1. The content was interesting to me…….……	1	2	3	4	5
2. The content extended my knowledge of the topic…….……	1	2	3	4	5
3. The content was consistent with the objectives……..……	1	2	3	4	5
4. The content was related to my job……..……	1	2	3	4	5
5. Objectives were consistent with purpose/goals of activity……	1	2	3	4	5

Please discuss ways to improve content:

_____

Comments on Module Content (1-6):

_____

	Strongly Disagree				Strongly Agree
Presenter Effectiveness: Amparo Gonzalez, RN, CDE, FAADE					
1. The presentation was clear and to the point……	1	2	3	4	5
2. The presenters demonstrated mastery of the topic……..	1	2	3	4	5
3. The method used to present the material held my attention……	1	2	3	4	5
4. The presenter was responsive to participant concerns……..…	1	2	3	4	5

Please discuss ways to improve presenter effectiveness:

_____

Presenter Effectiveness: Britt Rotberg, MS, RD, LD	Strongly Disagree				Strongly Agree
1. The presentation was clear and to the point……	1	2	3	4	5
2. The presenters demonstrated mastery of the topic……...	1	2	3	4	5
3. The method used to present the material held my attention…….……	1	2	3	4	5
4. The presenter was responsive to participant concerns…….…….	1	2	3	4	5

Please discuss ways to improve presenter effectiveness:

_____

Presenter Effectiveness: Jessica Delos Reyes, RD, LD	Strongly Disagree				Strongly Agree
1. The presentation was clear and to the point……	1	2	3	4	5
2. The presenters demonstrated mastery of the topic…….....	1	2	3	4	5
3. The method used to present the material held my attention…….……	1	2	3	4	5
4. The presenter was responsive to participant concerns……..…	1	2	3	4	5

Please discuss ways to improve presenter effectiveness:

_____

Instructional Methods	Strongly Disagree				Strongly Agree
1. The online instructional material was well organized……	1	2	3	4	5
2. The face-to-face instructional material was well organized……	1	2	3	4	5
3. The handout materials given are likely to be used as future reference…	1	2	3	4	5
4. The teaching strategies were appropriate for the activity……	1	2	3	4	5

Comments:

_____

Program Satisfaction	Strongly Disagree				Strongly Agree
1. Overall, I am satisfied with the DECSS Program…….	1	2	3	4	5
2. The location for this program was to my satisfaction…….…….……	1	2	3	4	5
3. I was satisfied with the food and refreshments provided during the program.	1	2	3	4	5
4. The flow of the program was conducive to learning……..	1	2	3	4	5
5. The parking arrangements were satisfactory…….	1	2	3	4	5
6. The communication from Emory regarding the DECSS program was timely	1	2	3	4	5
7. The communication from Emory regarding the DECSS program was sufficient……..	1	2	3	4	5
8. The tech support or completing the pre-test survey and modules was adequate…	1	2	3	4	5

Comments:

SKILLS EVALUATION

Prior to taking this course, how confident were you in your ability to do the following:

	Not at All Confident		Confident		Very Confident
Use the Plate Method	1	2	3	4	5
Use Exercise Bands	1	2	3	4	5
Use a Glucose Meter	1	2	3	4	5
Draw Up Insulin	1	2	3	4	5

Comments:

After taking this course, how confident are you in your ability to do the following:

	Not at All Confident		Confident		Very Confident
Use the Plate Method	1	2	3	4	5
Use Exercise Bands	1	2	3	4	5
Use a Glucose Meter	1	2	3	4	5
Draw Up Insulin	1	2	3	4	5

Comments:

APPENDIX C: DECSS WRITTEN EVALUATION RESULTS

	CONTENT				
	The content was interesting to me	The content extended my knowledge of the topic	The content was consistent with the objectives	The content was related to my job	Objectives were consistent with purpose/goals of activity
LPN	5	5	5	5	5
Teacher	5	5	5	3	3
Case Manager	5	5	5	5	5
LPN	5	5	5	5	5
LPN	5	5	5	5	5
RN	5	5	5	5	5
Community Health Educator	5	5	5	5	5
Teacher	5	5	5	4	5
Student, Doctoral	5	5	5	1	5
N/A	5	5	5	2	5
	5	5	5	3	4
RN, BSN	5	5	5	5	5
Nurse Assistant - MA	5	5	5	5	4
MA	3	5	5	5	5
GROUP MEAN	4.86	5.00	5.00	4.14	4.71
Percentage of Answers - GROUP					
5	93%	100%	100%	64%	79%
4	0%	0%	0%	7%	14%
3	7%	0%	0%	14%	7%
2	0%	0%	0%	7%	0%

Additional Comments:

- "Loved the modules. Very informative and used layman's language."
- "Quite Good"
- "Content information was a lot, little time!"
- "Increase time for this class. Maybe 2 days."

- "The content extended my knowledge of the topic. Especially the workout exercises."
- "Increase number of days to allow students to digest content."

	FACULTY PRESENTER - Amparo Gonzalez, RN, CDE, FAADE			
	The presenter was clear and to the point	The presenter demonstrated mastery of the topic	The method used to present the material held my attention	The presenter was responsive to participant concerns
LPN	5	5	5	5
Teacher	4	4	4	4
Case Manager	5	5	5	5
LPN	5	5	5	5
LPN	5	5	5	5
RN	5	5	5	5
Community Health Educator	5	5	5	5
Teacher	5	5	5	5
Student, Doctoral	5	5	5	5
N/A	4	4	4	4
	5	5	5	5
RN, BSN	5	5	5	5
Nurse Assistant - MA	5	5	5	5
MA	5	5	4	5
GROUP MEAN	4.86	4.86	4.79	4.86
Percentage of Answers - GROUP				
5	86%	86%	79%	86%
4	14%	14%	21%	14%
3	0%	0%	0%	0%
2	0%	0%	0%	0%

Additional Comments:

- "More time. Great presenter. Great Demonstration"

	FACULTY PRESENTER EFFECTIVENESS - Britt Rotberg, MS, RD, LD			
	The presenter was clear and to the point	The presenter demonstrated mastery of the topic	The method used to present the material held my attention	The presenter was responsive to participant concerns
LPN	5	5	5	5
Teacher	4	4	4	4
Case Manager	5	5	5	5
LPN	5	5	5	5
LPN	5	5	5	5
RN	5	5	5	5
Community Health Educator	5	5	5	5
Teacher	5	5	5	5
Student, Doctoral	5	5	5	5
N/A	4	5	4	4
	5	5	5	5
RN, BSN	5	5	5	5
Nurse Assistant - MA	5	5	5	5
MA	5	5	5	5
GROUP MEAN	4.86	4.93	4.86	4.86
Percentage of Answers - GROUP				
5	86%	93%	86%	86%
4	14%	7%	14%	14%
3	0%	0%	0%	0%
2	0%	0%	0%	0%
1	0%	0%	0%	0%

Additional Comments:

- More time should be allocated. Presenter was great. Used tools very effectively."

	FACULTY PRESENTER EFFECTIVENESS-Jessica Delos Reyes, RD LD			
	The presenter was clear and to the point	The presenter demonstrated mastery of the topic	The method used to present the material held my attention	The presenter was responsive to participant concerns
LPN	5	5	5	5
Teacher	4	4	4	4
Case Manager	5	5	5	5
LPN	5	5	5	5
LPN	5	5	5	5
RN	5	5	5	5
Community Health Educator	5	5	5	5
Teacher	5	5	5	5
Student, Doctoral	5	5	5	5
N/A	4	4	5	4
	5	5	5	5
RN, BSN	5	5	5	5
Nurse Assistant - MA	5	5	5	5
MA	5	5	5	5
GROUP MEAN	4.86	4.86	4.93	4.86
Percentage of Answers - GROUP				
5	86%	86%	93%	86%
4	14%	14%	7%	14%
3	0%	0%	0%	0%
2	0%	0%	0%	0%
1	0%	0%	0%	0%

Additional Comments:

- "Great Presenter. Used tools very effectively. Maybe allocate more time.

	INSTRUCTIONAL METHODS			
	The online instruction materials was well organized	The face-to-face instructional material was well organized	The handout materials given are likely to be used as future reference	The teaching strategies were appropriate for the activity
LPN	5	5	5	5
Teacher	5	4	4	4
Case Manager	5	5	5	5
LPN	5	5	5	5
LPN	5	5	5	5
RN	5	5	5	5
Community Health Educator	5	5	5	5
Teacher	5	5	5	5
Student, Doctoral	5	5	5	5
N/A	4	5	4	4
	4	5	5	5
RN, BSN	3	5	5	5
Nurse Assistant - MA	4	5	5	5
MA	4	5	5	5
GROUP MEAN	4.57	4.93	4.86	4.86
Percentage of Answers - GROUP				
5	64%	93%	86%	86%
4	29%	7%	14%	14%
3	7%	0%	0%	0%
2	0%	0%	0%	0%
1	0%	0%	0%	0%

Additional Comments:

- 'Great'

	PROGRAM SATISFACTION							
	Overall, I am satisfied with the DECSS Program	The location for this program was to my satisfaction	I was satisfied with the food and refreshment provided during the program	The flow of the program was conducive to learning	The parking arrangements were satisfactory	The communication from Emory regarding the DECSS program was timely	The communication from Emory regarding the DECSS program was sufficient	The technology support for completing the pre-test survey and modules was adequate
LPN	5	4	5	5	5	5	5	5
Teacher		5	4	3		5	5	5
Case Manager	5	5	5	5	5	5	5	5
LPN	5	5	5	5	5	5	5	5
LPN	5	5	5	4	5	5	5	5
RN	5	5	5	5	5	5	5	5
Community Health Educator	5	5	5	5	5	5	5	5
Teacher	5	3	5	5	5	5	5	5
Student, Doctoral	5	5	5	5	5	5	5	5
N/A	4	3	4	4	4	4	4	4
	5	4	4	5	5	5	5	5
RN, BSN	5	5	5	5	5	5	5	5
Nurse Assistant - MA	5	5	5	5	5	5	5	5
MA	5	3	5	4	5	5	5	5
GROUP MEAN	4.92	4.43	4.79	4.64	4.92	4.93	4.93	4.93
Percentage of Answers - GROUP								
5	92%	64%	79%	71%	92%	93%	93%	93%

4	8%	14%	21%	21%	8%	7%	7%	7%
3	0%	21%	0%	7%	0%	0%	0%	0%
2	0%	0%	0%	0%	0%	0%	0%	0%
1	0%	0%	0%	0%	0%	0%	0%	0%

Additional Comments:

- "Very good and organized program. Should be offered in colleges and high schools."
- "This program has impacted the way I view being able to assist clients with diabetes. I feel confident with the resources, knowledge, and skills to present the materials to my clients. I look forward to sharing the 7 Self-care behaviors with consumers."

Skill Training Comments:

- "This program and training is very well organized, informative and should be offered to many people."
- "I knew very little beforehand. I have a learned a lot. Thank You."
- "Today I feel very confident with all the skills listed above."
- "This has been a very informative and interacting workshop. I was definitely taught new skills that are applicable for helping my consumer manage and control their diabetes."

Overall Comments:

- "Enjoyed the class, although so much information was presented in little time! Thank you for providing it!"
- "Friendly presenters. They did a fabulous job."
- "The ladies did a wonderful job today. The class was involved which made learning more fun."
- "Awesome Job Ladies"
- "I think all of the presenters did an awesome job. I feel much more confident at being a better support team member for my patients and co-workers. I look forward to sharing what I have learned with our patients. The time was well spent."

APPENDIX D: ORAL FEEDBACK EVALUATION INTRODUCTION

A 15-20 minutes feedback session took place immediately after the program was finished. This informal session was important to the stakeholders and to the evaluator in garnering initial thoughts and feelings regarding the program. Questions were developed prior to the session to guide the discussion.

Moderator A: Amparo Gonzalez
Moderator B: Jessie Delos Reyes
Moderator C: Britt Rotberg

Evaluation Script:

Moderator B: "Thank you for participating in the DECSS Program. I will be evaluating the DECSS Program for my thesis project and would like to take some time to garner further feedback on your thoughts of the program, what you liked about the program and what suggestions you may have to improve training. You are experts in your field and we want to ensure that the program meets your needs in caring for your patients. I encourage you to be candid with your feedback. If you feel uncomfortable voicing your opinions, there is a sheet of paper in front of you to write down your thoughts.

We want to touch upon the delivery of the material. We chose an online component to familiarize you with the basic diabetes information and focus more time in the face-to-face program to touch upon each module concept and be able to provide you with a skill that you could use to teach your patients.

Questions to aid in feedback discussion:

(1) Was this information appropriate for online or face-to-face learning?
(2) Something that would not have been available to you online that was available to you in the course was hands-on skill training. How did this work for you?
(3) What could have been done better online vs. in person?
(4) Going forward, do you feel this program should be continued as it was presented today, solely online, or solely face-to-face?
(5) Should this program be marketed to a different audience?

APPENDIX E: ORAL FEDBACK EVALUATION DICTATION

Moderator A: Amparo Gonzalez
Moderator B: Jessie Delos Reyes
Moderator C: Britt Rotberg
CHW denotes Community Health Worker
CP denotes Clinical Participant

Moderator A: Tell us what you think. Was the information we gave you too much? You had an online portion before the face-to-face program today. Was the online piece appropriate?

General class responses: Yes

Moderator A: Be specific if you can. What did you like about it?

Participant A (CP): I liked it. It was very basic, well organized, and it wasn't too much information too fast. It built up. It was gradual, informative and not too complicated.

Moderator A: Did anyone find it too complicated?

Participant B (CHW): It wasn't too complicated. It was just overwhelming for me at the time because I didn't know much about diabetes beforehand.

Moderator A: That is important to know. Did the people that had a medical background find it easier than the ones that did not?

General class response: Yes, right.

Entire class: yes, right

Moderator A: That's why we debated. This is our first course of its kind. We didn't want you to show up for your first course without having read any material. Maybe we can come up with other resources with some basic information.

Moderator A: What was hard?

Participant B (CHW): Terms. What is diabetes?

Moderator A: So maybe a medical terminology guide would help.

Participant B (CHW): Yes

Moderator A: Tell me about the online portion

Participant C (CHW): I don't have a medical background but I found when I did it slowly I was able to understand it better. I had time. Doing 2 sessions at a time helped.

Moderator A: Did you do the whole course online?

Participant C (CHW): Pretty much.

Moderator A: Wow, you didn't even have to do that. Do you think the first two modules helped? We think that it gives you some background. Do you think we should have you do more? If you do more you will know more and help the information stick with you. What do you think?

Participant D (CP): Two is fine

Moderator A: Were the two modules overwhelming? How long did it take you to do each module?

General class responses: 2 days. A day. 30 minutes

Participant B (CP): To be honest, in the beginning I focused then I kind of went through the rest of it faster.

Moderator A: Now I want all of you to go back and look at them again. You are going to learn even more now.

Participant B (CHW): I printed out the notes and I was able to read it first and it helped out.

Moderator A: That's a great idea. You read them then went through them. Now everyone has a copy. That's why we printed the entire modules out for you. We definitely have different levels of people here but we want to make sure this is the first level and we want to make sure we are able to bring you in and not lose you.

Participant D (CP): I work in healthcare but even though I work in healthcare we leave it to the dietitians to enlighten us. To educate and help the patients. For people that have not been in diabetes this is a good first step.

Moderator A: This is valuable because she's a RN. Now we know that people that have not been in diabetes will need this as a good first step. We work with Natkia but we said, "Try this, do this, and work on this, then when you have a good handle on it then you can move to the other course." Tell me about today. What do you think about today? Appropriate length? Too much? We know it's a lot of information. It really is for two days but we weren't sure if you would want to spend two days with us on a weekend.

Participant E (CP): I think the timing was appropriate but I think for those not in the healthcare field that this may be overwhelming but b/c we have a background; we may

not work in diabetes regularly but we work in healthcare and know some of the diseases diabetes causes. We know how to draw up insulin. We know those things. But for those that are not in the healthcare field, they may find it may be too much.

Moderator B: So do you think we should have a separate course? One for people in healthcare and one for non-clinicians?

Participant A: Yes

Participant F (CP): Wasn't this designed for non-clinicians?

Moderator A: This was designed for Level 1. Our first intent was for MAs. Medical assistants that have had 6 months training in health and work in health. But we started getting calls that people wanted into this course, that they are going to sneak in and try and come to the course.

We hear we should separate it but I'm thinking that those that don't have the health background are going to have to work harder. If you really want to do this, what I suggest is that you go back and go on the online course, pace yourself and learn more. We would love to do this on a weekday but we need to get this done. We do have two groups, the clinicians and the non-clinicians. We'll have to think more about how we handle that. I'm thinking about doing one in Spanish too

Participant B (CHW): Today I liked the way you explained the material and used the tools. It makes it practical and in a language where I can explain it to someone else. The visual aids were great.

Moderator A: What could have been done online versus in person or could we have done more today in person?

Participant G (CHW): I think it is better in person. Some people are at a higher level but in person session was good. Some ladies did not show up b/c they were intimidated with the online process and some needed more time. Some did not feel comfortable with the background and had to read the whole thing.

Participant E (CP): I thought the online was appropriate for today. I was a little disappointed that it said only do the first two modules b/c I thought it was great. I wanted to do all 6. The information was pertinent

Moderator A: You held back. Well that's good that you did the first two and now if people feel with the information they can keep on going because some of you were at a higher level. Should we continue with only the first two?

Participant E (CP) and General class responses: Yes. Continue with both.

Moderator A: We like that you wanted more but we didn't want you to not come today if you completed all the modules at home.

Moderator A: For those that did not feel comfortable may we can work with them to figure out what we can give them to help them through. Was it the English and language or the concepts? We want you to tell them to read the whole thing and then you can put it all together when you come.

Moderator B: Did the online communication encourage you to complete the work?

General class response: Yes.

Participant E (CP): Yes, the emails keep you engaged. It's almost like a scare tactic. When I got an email that someone else completed and that we should let you know when we completed its like peer pressure and it encourages you to complete it.

Moderator B: Going forward do you think this program should continue the way that it is? Online plus face-to-face? Online only? Or Face-to-face only?

Participant H (CP): Just the way it is.

Participant I (CP/CHW): We like the combination.

Moderator A: Is there someone that this course would be good for? Should it be marketed to a different audience or is there someone that you think we should invite to this program?

Participant J (CHW): Family members or patients.

Moderator A: Family members and patients need to go to a different diabetes class. I do these trainings all over the world. I train diabetes educators. In Latin American they bring family members and patients. Patients are extremely strong advocates outside the use. Here in the U.S. our healthcare system is a little better. I don't think we should have patients in this class because we are not peers. We cannot have a patient in the room because we are training on how to teach the patient. We cannot have this conversation if they were here with us. We talk about how we should get them to do these things. I feel strongly about that. We come together to learn and then we will bring the patients together to learn.

Moderator B: Would you have been able to come to this program on a weekday or is a weekend better?

General class responses: Definitely could not come if it was not on a weekday. Weekend is better.

Moderator B: And the time?

Moderator A: We did not want it to early on a Saturday and we did not want you out too late

Moderator B: Was this too much information. Too many slides?

Participant B (CHW): Maybe a follow-up course?

Moderator A: Feel free to call or e-mail us. We are creating a curriculum and will invite you to come back to train you on to teach a curriculum. You will be invited back.

Moderator C: Is there a module that was confusing or most overwhelming?

Participant K (CHW): The medication one and one about all the standards and how you want the blood sugar. That was a confusing portion but then again we know we can go back online and check

Moderator A: Any suggestions on how to make it easier for you? There were slides skipped. Go back and look at those slides. Was it necessary?

Participant E (CP): It was necessary; we have to know the names of medications.

Participant B (CHW): Is that necessary even if you're not in healthcare.

Participant E (CP): Yes, as a community health advocate you need to know if they are taking things correctly or the names of what meds go with diabetes.

Moderator A: 50% of the prescriptions in this country are not taken correctly

Participant E (CP): Sometime they complain of side effects. You want to know are these things normal. You have a basic idea of what happens and you know the names of the medications. Basic knowledge is good if you are teaching.

Moderator A, B, C: Thank you so much for your time. We had a great time.

General class response: This was great. We enjoyed it.

APPENDIX F: DECSS QUALITATIVE DATA FROM COURSE IMPROVEMENT ACTIVITY

Participants provided feedback on things that they believe we should consider changing or improving upon for the next course; and those that we should continue to keep in the program.

Method: Provide two pieces of paper, one with blue flag and the other with green. Participants wrote down items that we should consider or change for the next course on the blue note and items that should be kept for the next program on the green note.

Blue Notes: Things to consider or change for next time:

1. Me personally don't like online stuff, so for me it would be to cut that part out and just keep the face-to-face instruction.
2. Administering Insulin: The class participants are not all licensed clinicians. Too overwhelming for them.
3. More time.
4. Time / Breakdown of topics
5. More time.
6. Allow those that want to complete the entire online before face-to-face.
7. So much wonderful information crammed into 6 hours. Would like more detailed teaching.
8. A bigger room. You could show a DVD if time persists. To save on your budget, I wouldn't mind paying for the course.
9. Improve the pace off the presentations. Create another class for non-clinicians would be great.
10. Call us again. We will definitely spread the word about Diabetes.
11. Online can be more interactive.
12. More time face-to-face. Maybe follow-up session.

Green Notes: Things to keep in the program:

1. Keep the hands on visuals.
2. Sick Day Management, Carb Counting, Insulin types, how to adjust insulin
3. Visual Aids and demonstrations.
4. Classroom setting, Visuals/demonstrations/activities, group activities
5. Visual aids and free exercise band!
6. Enjoyed amount of info. Hands on instructions. Module (book), breakfast, lunch, free parking
7. Book, Food. Keep the open question and answer session at the end.
8. Visual aids and hands on. The giveaways.

9. The course was very informative. This has been the best workshop I've been to that was for non-clinicians. We often feel left out.
10. Keep on providing current face-to-face of the course. Thanks for keeping up with the time. The food was great. Keep up with customer service skills.
11. You guys are great. You did a good job. I would love to come again.
12. Activities are awesome. =)
13. Weekend schedule. Keep both online and face-to-face models.
14. Keep the teaching aids.

APPENDIX G: AGENDA

BLACK FONT: Indicates planned timing for the agenda
RED FONT: Indicates agenda revisions made throughout the program due to time constraints
Saturday, January 28th 2012 FOB Room 103

9:00 am - 9:15 am Participants are Late 9:20 am – 9:40 am	Welcome Introduction and Ice Breaker
9:15 am – 9:30 am 9:40am – 10:00 am	Review of Modules 1: Fundamentals Module 2: Using Clinical Practice Guidelines to Reduce Risks
9:30 am – 10:15 am 10:00 am – 10:45 am	Module 3: Healthy Eating Skill Training: Carbohydrate Counting
10:15 am – 10:30 pm 10:45 am – 11:00am	**Break**
10:30 am – 11:00am 11:00am – 11:30am	Module 4: Being Active
11:00 pm – 12:00 pm 11:30am – 12:15pm	Module 4: Monitoring Module 5: Taking Medication
12:00 pm – 12:30 pm 12:15 pm - 12:45 pm	**Lunch**
12:30 pm – 12:45 pm 12:50 pm – 1:05 pm	Module 6: Reducing Risks
12:45 pm – 1:15 pm 1:10 pm – 1:30 pm	Skill Training: Monitoring and Insulin
1:15 pm – 2:00 pm 1:30 pm – 2:15 pm	Post-test
2:00 pm – 2:30 pm 2:25 pm = 2:50 pm	Evaluation
2:30 pm – 3:00 pm 2:50 pm – 3:00 pm	Final Thought and Certification Handout

APPENDIX H: CDC FRAMEWORK FOR EVALUATION

Figure 1. Steps in CDC Program Evaluation

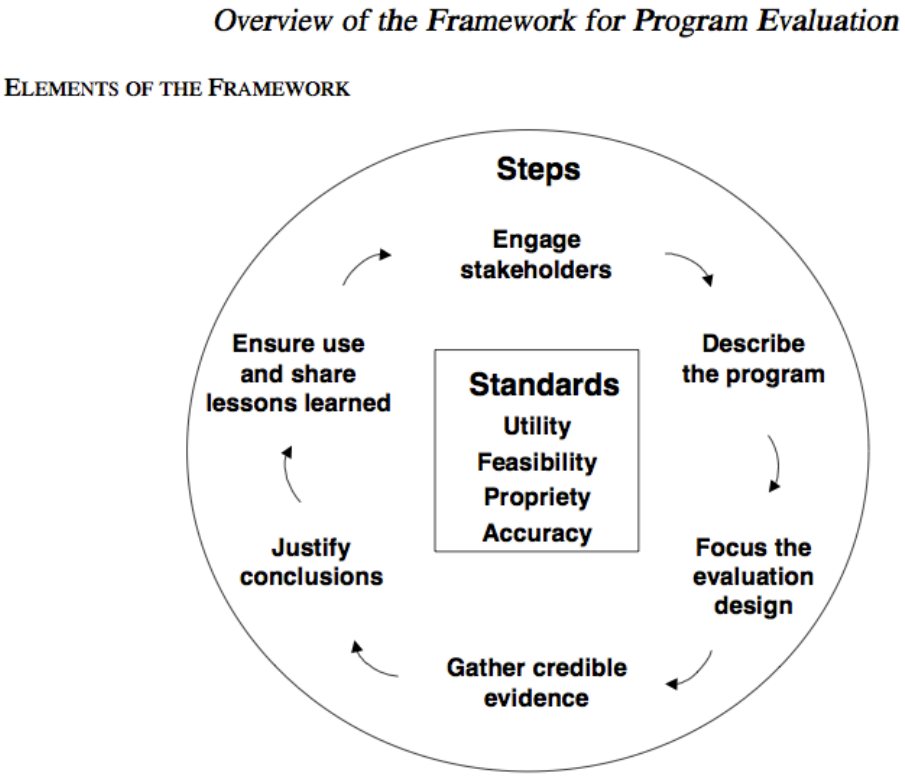

Figure 1: Centers for Disease Control, 1999 Retrieved on February 4, 2012.

- Step 1: Engage Stakeholders
- Step 2: Describe the program
- Step 3: Focus the evaluation design
- Step 4: Gather credible evidence
- Step 5: Justify conclusions.
- Step 6: Ensure use and share lessons learned.

The next portion of the framework is the assessing the quality of evaluation activities and they are organized in the following groups of standards:

- Standard 1: Utility

- Standard 2: Feasibility
- Standard 3: Propriety
- Standard 4: Accuracy

Step 1: Engage Stakeholders. The first step in the evaluation process begins with engaging stakeholders. The stakeholders include those involved in the program operations, those served by the program, and the primary users of the evaluation. Stakeholders must be engaged to aid in understanding the program further, identifying their perspective on the evaluation and ensure that the appropriate questions are being answered in the evaluation. Additionally, engagement leads to many benefits, such as the development of relevant evaluation questions. Stakeholders hold valuable knowledge based on their interests and experience, which can increase quality, scope and depth for the questions. When the questions are thoughtful and well informed given the range of perspectives that went into developing them, they are more likely to yield findings that are useful, relevant and credible (Group, 1999). Seeking the opinions, interests, concerns and priorities of stakeholders early in the evaluation process will give way for improvement in program effectiveness. Furthermore, stakeholder involvement will ensure transparency, and foster relationships and collaboration.

Step 2: Describe the Program. In order to evaluate the program it is imperative to describe the program in sufficient detail where the mission and objectives of the program are clearly understood. Areas discussed in this section include identifying the program need, expected effects, activities, resources, stage, context, and logic model. (CDC, 1999) The description also enables comparisons with similar programs to connect program components to their effects (CDC, 1999)

Step 3: Focus the Evaluation Design. Focusing the evaluation design involves planning where the evaluation is headed and what steps will be taken to get there. The evaluation must be focused to ensure that time and resources are used efficiently. The items to consider when focusing an evaluation include its purpose, users, uses, questions, methods, and agreements. By focusing the evaluation it will also ensure that the standards of useful, feasible, ethical, and accurate are being met (CDC, 1999)

Step 4: Gather Credible Evidence. Credible evidence strengthens the evaluation discussion, conclusions, and recommendations. Credible evidence must be trustworthy and relevant to answering the evaluation questions. The following aspects of evidence gathering can affect credibility: Indicators, sources, quality, quantity, and logistics. (CDC, 1999).

Step 5: Justify Conclusions. 'Evaluation conclusions are justified when they are linked to evidence gathered and judges against agreed-upon values or standards set by the stakeholders' (CDC, 1999). Stakeholders must agree that the conclusions are justified in order to use the evaluation results confidently. Justifying conclusions include the elements of standards, analysis/synthesis, interpretation, judgment, and recommendations (CDC, 1999)

Step 6: Ensure Use and Share Lessons Learned. This final step ensures that the evaluation achieved its purpose of being useful. Deliberate effort needs to be put into place to ensure that the findings are used and disseminated appropriately. The 5 elements to ensure use of the evaluation are design, preparation, feedback, follow-up, and dissemination. (CDC, 1999).

The evaluation standards assess the quality of the program activities and answer the question 'is the evaluation will be effective?' They are divided into the following four groups:

1. *Utility Standards* ensure that an evaluation will serve the information needs of intended users.
2. *Feasibility standards* ensure that an evaluation will be realistic, prudent, diplomatic and frugal.
3. *Propriety standards* ensure that an evaluation will be conducted legally, ethically and with due regard for the welfare of those involved in the evaluation, as well as those affected by its results.
4. *Accuracy standards* ensure that an evaluation will reveal and convey technically adequate information about the features that determine worth or merit of the program being evaluated (CDC, 2011)