

A Process Improvement Project to Increase Utilization of Advance Care Directives in Primary
Care

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Abstract

The Patient Self-Determination Act passed in 1990 brought great attention to the need of advance care directives (ACDs) and end-of-life care (Cohen, McCannon, Edgman-Levitan, & Kormos, 2010). In the United States, only 18-36% of adults have completed an advance care directive and less than half of adults with chronic and life threatening illnesses have advance directives in place (Fischer, Sauaia, Min, & Kutner, 2012).

The purpose of this scholarly project was to increase the utilization of ACDs in a primary care clinic through staff education. The development of this program assisted healthcare staff in discussing end-of-life care planning with patients in primary care. The goal this project was to increase the rate of completion of ACDs. A Plan-Do-Study-Act (PDSA) model was used to initiate "Advanced Care Directives for Patients in Primary Care". This project was implemented using the Diffusion of Innovation Theory (Rogers, 2003). A retrospective chart review was conducted on 100 active charts to determine percentage of ACDs completion in a primary care clinic. The electronic health record program, E-MD's was used to randomly select the charts for review. Gender, race, and ACDs status were determined for all charts reviewed. An hour long education session was conducted to assist staff with initiating end-of-life care discussion with patients. Staff members were administered a survey on end-of-life care planning before and after the education session. The aggregate score from the surveys was compared using descriptive analysis. A second retrospective chart review was conducted sixty days after implementation.

Table of Contents

Abstract -----	2
Approval-----	3
Chapter 1	
Introduction-----	6
Purpose-----	7
Problem Statement-----	7
Process Objectives-----	7
Outcome Objectives-----	8
Background and Significance-----	8-9
Identified Settings-----	9
Research Based Evidence-----	9
Search Strategy-----	9
Literature Synthesis-----	10
Patients' Barriers-----	10
Provider's Barriers-----	11
Need for Education-----	12
Conceptual and Theoretical Foundation-----	14
Definition of Key Terms-----	18
Chapter 2	
Methodology-----	20
Design-----	20
Settings-----	20

Samples-----	20
Methods-----	21
Protection of Human Subjects-----	22
Instruments-----	22
Data Analysis-----	23
Data Collection-----	24
Evaluation Strategy-----	24
Results-----	24-25
Limitations-----	25-26
Discussion-----	26
References -----	28
Appendices -----	34-42

In the United States, modern medicine has contributed to people living longer. Unless a patient requests otherwise, the default treatment is life prolongation. Advanced cardiovascular life support and other life-prolonging methods usually imply high financial, physical and emotional costs (Perkins, Geppert, Gonzales, Cotez, & Hazuda, 2002). Studies have shown that individuals prefer to die at home, yet over 56% die in hospitals every year (Ruff, Jacobs, Fernandez, Bowen, & Gerber, 2011). Patients can express their wishes in planning end of life care through Advance Care Directives (ACDs) (Perkins et al., 2002). However, few individuals participate in end-of-life care planning. According to the Medicare Payment Advisory Commission, one quarter of the total Medicare budget is spent during the last year of beneficiaries' life and 40% of that is spent during the last thirty days of life (Giovanni, 2012; Rao, Anderson, Lin, & Laux, 2014; Nicholas, Langa, Iwashyna, & Weir, 2011). Advance care planning can reduce the cost of healthcare spent in end-of- life.

The geriatric population is rapidly growing in the United States. There are currently over 40 million Americans 65 years or older (Administration on Aging [AOA], 2011). This population is estimated to grow to 72.1 million by 2030 (AOA, 2011) and less than 40% of older adults have completed an advance care directive (Fischer, Sauaia, Min, & Kutner, 2012). The lack of end-of-life planning in the elder can lead to rising healthcare costs, undesired life extending treatments, and a greater number of patients dying in a hospital setting. To ensure that patients' wishes are carried out accordingly, it is important to increase the utilization of ACDs.

The Patient Self-Determination Act (PSDA) of 1990 was intended to increase attention to the need of advance care directives (ACDs) and end-of-life planning (Cohen, McCannon, Edgman-Levitan, & Kormos, 2010). The PSDA is focused on preserving patient autonomy in making end of life care decisions (Zegar & Yancy, 2011). The PSDA requires all facilities receiving

Medicare and Medicaid funding to inform patients of the right to participate in medical decision making and to have an advance care directive (Alano et al., 2010). Despite initiative to support the completion of ACDs, less than 20% of the general population has an ACDs in place (Alano et al., 2010). What role do primary care providers play in patient's completion of ACDs? Does provider education increase the completion of ACDs in primary care?

Purpose

The purpose of this scholarly project was to develop an educational tool on Advance Care Directives for staff members in a primary care clinic. The development of this project assisted providers and healthcare staff in discussing end-of-life care preferences with patients in primary care and ambulatory clinics. The goal of this project was to encourage providers to discuss ACDs with patients and to increase the utilization of ACDs in primary care.

Problem Statement and Assumptions

There is a decrease utilization of ACDs in primary care. The primary assumption of this scholarly project was that healthcare professionals in primary care are not comfortable in discussing end-of-life planning with patients. This is primarily due to lack of training in discussing end-of-life care. Educating healthcare professionals regarding end-of-life care can potentially increase the completion of ACDs. End-of-life planning education increases healthcare professional's comfort level in discussing end-of-life planning thus leading to an increase in the completion of ACDs in primary care.

Process Objectives

The process objectives were to:

- assess the clinical staff's baseline knowledge of ACDs, attitudes regarding EOL, and confidence level in EOL and ACDs

- identify the staff members' barriers in discussing end-of-life care planning with patients
- develop and implement a packet that will facilitate discussing end-of-life care
- determine the percentage of patients with ACDs in place prior to project implementation and sixty days post implementation.

Outcome Objectives

The objectives of the project were to:

- increase completion of advance care directives in primary care
- increase the knowledge of ACDs among the clinic's staff members
- educate staff members on end-of- life care options
- increase staff's knowledge and confidence on ACDs
- introduce an advance care planning video to bring awareness to advance care directives.

Background and Significance of Problem

The Patient Self-Determination Act passed in 1990 brought great attention to the need for advance care directives (ACDs) and end-of- life planning (Cohen, McCannon, Edgman-Levitan, & Kormos, 2010). In the United States, 18-36% of adults have completed an advance care directive. Less than half of adults with chronic and life threatening illness have completed an advance directive (Fischer, Sauaia, Min, & Kutner, 2012). In 2012, the National Hospice and Palliative Care Association, conducted a study to determine the percentage of members of the American Association for Retired Persons, in North Carolina, with an ACDs (Yang, Hardwick, Tiano, & Pettis, 2010). The study concluded that over 47% of members had an ACDs. No studies have been conducted to determine the percentage of ACDs among the general population, in North Carolina. Nationally over 45% of Medicare beneficiaries die in hospitals and acute care

settings (Lakdawalla et al., 2011). However, studies show that more than 70% of the population prefer to die at home (Cassel & Demel, 2001). The discrepancy between patients' wishes and the current end-of-life statistics is multi-factorial. There are many patient barriers and provider barriers that influence end-of-life planning.

Inadequate utilization of ACDs has great impact on patients and on the cost of healthcare. One-quarter of Medicare outlays are spent on the last year of life and more than 40% of this is spent in the last 30 days of a beneficiary's life (Lakdawalla, Jena, Goldman, & Agus, 2011). Advance directives are associated with lower levels of Medicare spending, decreased in-hospital death, and greater use of hospice services in end-of-life (Rao, Anderson, Lin, & Laux. 2014) Internal Medicine Medical Group (IMMG), like many other practices in Gastonia and North Carolina, has a low rate of ACDs utilization (Gaston County Health Department, 2012). According to providers and nursing staff, less than 10% of the clinic's patients have completed an ACD. The estimated rate of ACDs utilization at IMMG is well below the state and national average.

Identified Practice Setting

Internal Medicine Medical Group has been in practice for over 50 years. The office currently has 3 physicians, 2 nurse practitioners, 1 physician assistant, 4 certified medical assistants, 1 registered nurse, 4 lab technicians and 17 non-clinical staff members. The clinic provides a variety of primary care services including stress tests, echocardiograms, nuclear studies, and nerve conduction studies. There are approximately 1200-1500 patient visits per month. In an effort to increase the completion of ACDs among patients, a Plan-Do-Study-Act model was implemented, to educate providers and staff in initiating end-of-life care discussions with all patients.

Research Based Evidence

Search Strategy

An extensive Literature Review was conducted to explore the importance, benefits and process of completing advance care directives in primary care. Keywords were derived from the clinical question: Does provider education increase the completion of advance care directives in primary care? The search engines PUBMED and CINAHL were used to search key terms advance care directives, primary care, education, living will, healthcare proxy, healthcare power of attorney, patient counseling, outpatient, and do not resuscitate orders. The articles were limited to English language and within the past five years. The search yielded 478 articles. All articles pertaining to inpatient care, a specific diagnosis or subgroup were eliminated. There were 52 remaining articles of which 29 were relevant to the clinical question. The articles were further divided based on strength of evidence and quality of study. A total of 25 articles were synthesized for this literature review.

Literature Synthesis

Patients' Barriers to Discussing ACDs

The end-of-life care discussion has been a controversial topic for many decades. Advance care planning is a complex process and a difficult conversation to initiate. Patients have a multitude of barriers to discussing end of life care and completing advance care directives. The five major barriers stem from lack of information and education regarding ACDs (Hinders, 2012; Puente et al., 2014). The majority of patients state that they had never heard of ACDs, needed more information, or no one had ever discussed ACDs with them (Hinders, 2012). Other barriers include: a) acknowledging one's mortality, most individuals including providers find it uncomfortable to think about death; b) perceived irrelevance, patients think they are healthy and

others know their wishes; c) diffusion of responsibility, where patients await for providers to initiate the conversation while providers wait for patients; and d) timing, which is crucial because ACDs often occur too late, resulting in rushed decisions that are not thoroughly discussed (Samsi & Manthorpe, 2010; Scott et al., 2013; Levi et al., 2010). A study conducted to assess the factors that influence completion of advance care directives in older adults directly interviewed 200 adults aged 65 years and older (Alano et al., 2010). The results identified personal request by a healthcare provider as one of the primary reasons patients completed an ACDs (Alano et al., 2010). Primary care providers often have a long standing, trusting relationship with their patients. This relationship can serve as a foundation in discussing end-of-life planning. However, many providers are not comfortable discussing end-of-life care.

Providers' Barriers to Discussing ACDs

There are many inadequacies to healthcare professionals' educational preparation in discussing end-of-life care (Giovanni, 2012). The lack of provider education and preparation further complicates the difficult discussion. There are several provider barriers identified in initiating end-of-life care discussions and completing ACDs (Hinders, 2012; Puente et al., 2014; Scott, Mitchell, Raymond, & Daly, 2013). Providers' lack of understanding, inaccurate beliefs regarding appropriateness of discussion, time constraints, compensation concerns and unease with discussion were the main barriers identified by providers (Hinders, 2012; Puente et al., 2014; Scott et al., 2013). Patients' initial responses can be negative and require a stepped approach using facilitative language (Scott et al., 2013). This may be difficult to accommodate for providers in a high paced environment. The provider must assess the patient's readiness to discuss end-of-life care. Having an established relationship with the patient is crucial in determining their readiness. This is often not the case for patients that see multiple providers. A

systematic approach to initiating and holding end-of-life care conversations may decrease some of these barriers, (Hinders, 2012; Levi, Dellasega, Whitehead, & Green, 2010; Scott et al., 2013).

There are also legal barriers that affect the completion of ACDs. These include patients' literacy level and healthcare agent restrictions such as domestic partners which require notarization of the document in most states, and varying interpretation of ACDs from state to state (Hinders, 2012). Women and individuals with higher education and strong family support are more likely to complete ACDs (Puente et al. 2014; Rao et al., 2014; and Ruff, Jacobs, Fernandez, Bowen, & Gerber, 2011). Men, minorities, and individuals of lower social economics are less likely to complete an ACDs (Fischer et al., 2012; Puente et al., 2014; Rao et al. 2014; Ruff et al., 2011). Additionally, awareness and education of ACDs as well as a long term relationship with primary providers increased the likelihood of completing ACDs (Puente et al., 2014).

Many of the provider, patient, and legal barriers are complex. Providers may feel powerless in addressing all the barriers that may arise in completing ACDs with their patients. However, provider and patient education are often the first step in overcoming some of these barriers and increasing the completion of ACDs.

Need for Provider and Patient Education

Advance care planning has become a public concern. Despite the acceptance of ACDs guidelines and the advocacy of many national organizations, ACDs have a low rate of completion (Tilden et al., 2011). There is great discrepancy among providers' knowledge, attitude and interpretation of ACDs (Cartwright, Montgomery, Rhee, Zwar, & Banbury, 2014; Ehlenbach & Randall, 2011; Mirarchi, Costello, Puller, Cooney, & Kottkamp, 2012; Puente et al., 2014; Ryan & Jezewski, 2012). In Australia, a random sample of 650 general practitioners

and 350 medical specialists were surveyed to evaluate knowledge and self-reported practices in implementing ACDs (Cartwright et al., 2014). The responding providers' understanding of the uses and legal requirements of ACDs varied widely (Cartwright et al., 2014). The need for a common, universal interpretation of ACDs and Do Not Resuscitate (DNR) orders is vital (Cartwright et al., 2014; Ehlenbach & Randall, 2011; Mirarchi et al., 2012). This can be achieved through education for healthcare professionals. Tilden et al. (2011) recommend that healthcare educational programs include ACDs training, interprofessional training activities on end-of life care conversations, and testing of these skills by academic program accrediting bodies.

There is a great need to educate healthcare professionals on end-of-life planning. Both providers and nurses have noted favorable outcomes in the increase of ACDs after receiving ACDs education (Colville & Kennedy, 2013; Durbin, Fish, Bachman, & Smith, 2010; Levi et al., 2013). Tung et al. (2011) noted 17.6% increase in ACDs completion among patients of providers that received ACDs education. Third year medical students in California reported an increase comfort in discussing end of life care after using an interactive online educational aid (Levi et al., 2013). These results are limited to medical students and cannot be generalized to experienced healthcare professionals. However, ACDs education among providers increased the utilization of ACDs in both studies.

The lack of patient education accounts for one of the greatest barriers in completing ACDs. A common problem is that the general population is unaware of their role in making healthcare decisions and of ACDs (Hinders, 2012; Puente et al., 2014). End-of life care education is fundamental for patients to make informed decisions regarding their end-of life care preferences. Patient education on end-of-life care planning increases the completion of ACDs (Durbin et al., 2010; Tamayo-Velazquez et al., 2010). El-Jawahri et al. (2010) conducted a study to determine

if the use of an end-of-life care educational video would impact end-of-life care decisions among cancer patients. Of the 23 participants that viewed the video, 21 participants selected a preference of comfort care, remaining 2 participants elected basic care or were undecided, and none of the participants that viewed the video elected CPR (El-Jawahri et al., 2010). Out of the participants that did not view the video, 25.9% preferred CPR and life-prolonging care (El-Jawahri et al., 2010). Patients that are educated regarding end-of-life care treatments are better prepared to make end-of-life care decisions. Patients that received informational material and had repeated conversations with primary providers had greater completion of ACDs (Tamayo-Velazquez et al., 2010). The use of open-ended questions, discussing ACDs over several clinical visits, initiation of the conversation by primary provider, and the use of interactive teaching materials all increased end-of-life care planning (Durbin et al., 2010; Hinders, 2012; Tamayo-Velazquez et al., 2010). Furthermore, the type of ACDs education may have an impact on the effectiveness of the intervention. Durbin et al. (2010) and Tamayo-Velazquez et al. (2010) noted that combined written, verbal, and video education had the greatest increase in ACDs completion, compared to only written education. Providers and healthcare professionals must also be able to assess the patient's readiness to discuss ACDs and should maintain the conversation throughout subsequent visits (Scott et al., 2013). It is important for the healthcare provider to establish the patients' goals for end-of-life and together develop a plan to meet these goals.

Conceptual and Theoretical Foundation

This project was guided by the Diffusion of Innovations theory by Everett Rogers (2003). The Diffusion of Innovations theory centers on how a new idea is adopted by a culture or system.

Rogers (2003) focuses on four main elements that influence the adaption of a new idea: the innovation, the channel of communication, time, and the social system.

An innovation is a perceived new idea or objective that is presented to a group of potential adopters (Rogers, 2003). First, the idea must establish a **Relative Advantage**, in other words, the innovation should be perceived as superior to the previous method by the stakeholders (Rogers, 2003). The degree of relative advantage can be measured as a financial, social, or other type of incentive; and directly affects the rate of diffusion (Rogers, 2003). The innovation of increasing the utilization of ACDs in primary care can be perceived as an innovation with minimal relative advantage. The providers and clinical staff (the adopters) will have no financial or social gain from implementing this innovation. However, increasing ACDs utilization increases Medicare compliance and can lead to higher patient satisfaction; resulting in a relative advantage to the primary care clinic (Washington State National Association, 2005-2014).

Compatibility is the second attribute of an innovation. It refers to how compatible the innovation is with the existing values and practices of the adopters (Rogers, 2003). The idea must be compatible with existing values and practices of the stakeholders to be accepted (Rogers, 2003). IMMG takes prides in providing well rounded healthcare services. The innovation of increasing ACDs is consistent with providing complete and holistic healthcare. Discussing end-of-life care and ACDs with patients is compatible with the values of the practice. Clinical staff and providers embrace ideas that improve the quality of patient care.

The **complexity** of the innovation is important for adaptability. Innovations that are simple and do not require new set of skills adopt more rapidly (Rogers, 2003). The incorporation of advanced care directives into primary care will require clinical staff and providers to develop a new set of skills. Staff will have to learn how to introduce the subject of end-of-life planning to

patients in a way that is both compassionate and tactful. Education is required in order to adapt these new set of skills to providers. The complexity of this innovation may decrease the rate of adaptability within the practice. The investigator simplified the innovation by providing a step-wise approach to ACDs and education on discussing end-of-life planning.

Triability refers to the degree to which innovation can be trialed (Rogers, 2003).

Innovations that are trialed in a step-wise manner are often more successful. The results must also be visible to others. The goal of the innovation needs to be observable to the adopters (Rogers, 2003). The innovation of increasing the utilization of ACDs was trialed over a period of two months, at the end of two months a retrospective chart review was completed. The chart review provided observable, measurable results to the staff members and stakeholders.

The diffusion process occurs through communication channels. The innovation is conveyed from one source to another via communication channels (Rogers, 2003). The source is considered the individual or institution that originates the message (Rogers, 2003).

Communication channels include interpersonal communication and media communication (Rogers, 2003). Diffusion of ACDs utilization occurred primarily through interpersonal communication and group education. During the implementation phase the investigator communicated via e-mail, written, and interpersonal communication.

The time of diffusion is essential to the viability of an innovation (Rogers, 2003). First, time is involved in the process in which an individual becomes aware of the innovation, forms an opinion towards the innovation, decides to engage or reject the innovation, implements the innovation, and evaluates the innovation (Rogers, 2003). Clinical staff at IMMG were introduced to the innovation of ACDs utilization through an e-mailed invitation to an ACDs education session. At this time, many of the staff (adopters) formed an opinion regarding ACDs.

This opinion was further developed during the presentation ACDs and education session. During this period, the adopters decided to either engage or reject the innovation. The degree of acceptance or rejection of the innovation was further measured during the outcome evaluation and retrospective chart review.

Individuals' innovativeness is categorized by Rogers (2003) into five categories: innovators, early adopters, early majority, late majority, and laggards. Innovators are the first 2.5% of a social system to adopt an innovation (Rogers, 2003). They are venturesome individuals with an interest in new ideas and concepts (Rogers, 2003). Early adopters are traditionally changes agents integrated into the social system; they account for 13.5% of the population (Rogers, 2003). Most individuals fall into the early or late majority category (Rogers, 2003). Several characteristics are common among each category. Rogers (2003) generalizes that early adopters have higher formal education, higher social status, are more empathetic, less dogmatic, better able to deal with abstractions, less fatalistic, and have a more favorable attitude towards science, change, and risk than late adopters (Rogers, 2003). Approximately 16% of individuals in a social system are laggards and the last to adapt to innovations (Rogers, 2003). They are traditional in nature and use the past as reference (Rogers, 2003). Each characteristic influences an individual's innovativeness and adoption. At IMMG, providers are more likely to be early adopters due to their higher level of formal education, social status, and favorable attitude towards science. However, individual characteristics are more complex and difficult to predict. Some of the providers have been in the practice for over 40 years and may be more traditional, slowing their rate of adopting an innovation. The clinical staff has a wide range of experience, formal education, and personality characteristics; resulting in varying degree of innovativeness. More of these individuals were early or late majority.

The social system is composed of the interrelated units that are joined through a common goal (Rogers, 2003). Most systems consist of a positional hierarchy that determines the social structure of the system (Rogers, 2003). There are also interpersonal networks within a social system that define the structure of communication (Rogers, 2003). The structure and culture of a social system can facilitate or impede diffusion (Rogers, 2003). IMMG is a hierachal system in which change is initiated among the medical director and office manager then trickled down to the clinical and administrative staff. Therefore, this project was discussed in detail and approved by the medical director and office manager prior to implementation. Their approval and support is vital to the diffusion of this innovation.

In summary, the proposed idea to increase ACDs through staff education is the innovation. Internal Medicine Medical Group staff members' are the social system through which the innovation was diffused. The concept of end-of-life planning was communicated through interpersonal communication. This innovation required staff members to develop a new set of skills in initiating end-of-life planning discussions with patients. Simplicity and facilitation of this innovation has been created through step-wise education. Additionally, the formal structure and social structure of the practice determined the diffusion of the innovation.

Definition of Key Terms

Advance care planning is defined as a process of communication between an individual and a healthcare professional to reflect, discuss, and plan for healthcare decisions for a time when the individual is unable to make decisions (International Society of Advance Care Planning and End of Life Care, 2011). This term is often used interchangeably with end-of-life planning. An advance care directive is a legal document with written instructions that communicate an individual's wishes regarding medical treatment (American Cancer Society, 2013). End-of-life

care is the support provided to an individual leading up to death (National Institute of Health, 2014). The goals of the latter are to provide comfort and maintain quality of life. A living will is a legal document that expresses an individual's medical care preferences when he or she is no longer able to communicate (Mayo Clinic, 2015). Usually an individual known as a healthcare power of attorney, healthcare agent, healthcare representative or healthcare proxy is named as the designated person to make decisions for the patient (Mayo Clinic, 2015). Do Not Resuscitate (DNR) orders are a legal form completed by healthcare providers, expressing a patient's desire to not have cardiopulmonary resuscitation (Mayo Clinic, 2015). Medical Orders for Scope of Treatment (MOST) are a standardized set of medical orders that reflects a patient's preference regarding life prolonging treatments (North Carolina Institute of Medicine, 2013)

Chapter 2: Methodology

Design

The Plan-Do-Study-Act (PDSA) model was used to initiate "Advanced Care Directives for Patients in Primary Care" (Institute for Healthcare Improvement [IHI], 2015a). This design was chosen to evaluate the process of change. The PDSA cycle is designed for testing change by formulating a plan, implementing the plan, observing the consequences, and determining what modifications are needed (IHI, 2015b). ACDs education was provided to all participants and a Pre/Post survey was used to determine the effectiveness of staff education. In addition, a retrospective and prospective chart review were completed to determine the effectiveness of the project.

Settings

Internal Medicine Medical Group provides primary care to patients 18 years of age and older. The majority of the patients are from Gaston County and the surrounding area. Gaston County is primarily a suburban community with a population of 209,420 residents (United States Census Bureau, 2015). Over 17% of the population lives below poverty level and less than 77% of residents have a high school degree (Gaston County Health Department, 2012). Over 50% of patients in the practice are 65 years or older with variety of chronic illnesses. There is currently no data available for the rate ACDs completion in the county or state.

Sample

The sample used was a convenience sample based on the healthcare professionals employed at Internal Medicine Medical Group and patients from the practice. The charts reviewed for data collection were randomly selected from an internal practice patient population. Individuals that participated in the education portion of this project were employees from the practice. The

participants were between 23-70 years of age, mostly females. There were three physicians, one family nurse practitioner and one physician assistant. The remainder of staff consisted of nurses, certified medical assistants, laboratory technicians, and administrative staff. The experience level of the providers varied from five years to forty years. Overall, 67% of employees participated in the training session.

Methods

A chart review of 100 charts was conducted to determine the percent of patients with an Advance Care Directive document in place prior to staff education. Gender and race were collected. The charts were randomly selected using the e-MD's electronic health. First, a crystal reports was performed using e-MD's. Deceased and inactive patients were excluded. This produced a list of all active medical record numbers. The list was downloaded into a Microsoft Excel file. In excel the "RAND" function was used to randomly assign the charts. The first 100 charts were selected for review. Gender, race and status of ACDs was obtained from each chart and entered into a Microsoft Excel spreadsheet. The medical record numbers were then removed and no protected health information was reported. The document has been secured on a password protected personal laptop and stored in a locked drawer within a locked office.

All staff were given the opportunity to volunteer in an end-of-life care education session provided by the investigator. Participants received an end-of-life care packet. The packet included: advance care directives forms, Do Not Resuscitate forms, Medical Orders for Scope of Treatment forms (MOST), and the Five Wishes document. Additionally, a video that discusses end-of-life care planning produced by Advance Care Planning was provided to the clinic, to assist staff members in discussing advance care directives with patients. Individuals that choose to participate completed an informed consent and a pre and post education anonymous survey.

Only aggregate data from the surveys will be reported. Attendance to the education program was not reported to employees' direct supervisor, did not influence evaluation of job performance, and anonymity was maintained.

A second retrospective chart review was conducted 2 months post staff education. Again 100 of active charts for previous two months were reviewed and selected using the previous method of randomization. All lab appointments, bone density test, and stress test were excluded, as well as no shows and cancellations. Patient names were not collected during either chart review. Additionally the "Goals of Care" video by ACP Decisions was played in the patient waiting area during the two months (ACP Decisions, 2013).

Protection of Human Subjects

Human subjects in the study included Internal Medicine Medical Group staff members and patients whose charts were reviewed. All data collected were stripped of protected health information and identifying data. Participation in staff education was voluntary and anonymity was maintained throughout the study. All participants were given an informed consent. All participants reserve the right to discontinue their participation from the study. This project underwent approval from East Carolina University and Medical Center Institutional Review Board (Appendix A).

Instruments

All staff members were administered the Knowledge-Attitudinal-Experimental-Survey on Advance Directives (KAESAD) prior to and post ACDs education (M. Jezewski, personal communication, February 11, 2015). The KAESAD was developed by Dr. Mary Jezewski to evaluate the knowledge and perception of advance directives among healthcare staff. This is a proprietary survey; therefore she provided a copy of the instrument along with a permission to

use statement (Appendix B). This questionnaire used a correlation study among four states, representing four distinct geographical areas of the United States (M. Jezewski, personal communication, February 11, 2015). A stratified random sample of 4,000 Oncology Nurses Society members were surveyed, from theses 4,000 members, 40 members from each state were selected for the survey (M. Jezewski, personal communication, February 11, 2015). The reliability and content validity of the instrument were established through a pilot test/retest and expert panel (M. Jezewski, personal communication, February 11, 2015). The panel consisted of experts in end-of-life care from the nursing, medicine, law, and bioethics disciplines (M. Jezewski, personal communication, February 11, 2015). The principal components of the survey are: a) general knowledge about ACD, b) knowledge of Patient Self-Determination Act, c) knowledge of individual state laws, d) attitudes towards ACD and end-of-life issues, e) experience with ACD, f) experience related to end-of-life issues, g) confidence assisting patients with ACD, and h) demographic data. Dr. Jezewski was contacted via e-mail for permission to use the KAESAD survey.

The survey consisted of more than fifty questions. To increase the rate of completion among staff members an adapted form of the survey was administered to participants. The number of questions used from each section can be found in Table 1.

The "Goals of Care" video was developed by ACP Decisions (2013). This is a non-profit organization composed of a group of clinicians. The goal of the organization is empower patients and healthcare professionals through end-of-life planning support videos (ACP Decisions, 2013). The video chosen for this project gives an overview of the goals of end-of-life planning. The ACP Decisions (2013) organization was contacted via e-mail and a video was purchased for the purpose of this project.

Data Collection

The data was collected over a period of two months. The charts were randomly selected using the above method. All charts from terminated and deceased patients were excluded. Data collected include gender, race, and status of ACDs (Appendix C). Age and diagnosis were excluded from the data collection. The results collected from both surveys were entered into a Microsoft Excel document.

Data Analysis

The responses from each survey were entered into tables for comparison. The questions were divided into the categories of knowledge, attitude, and experience. All knowledge questions were answered as true, false, or “don’t know” (see Table 2). The results for the attitude category are shown in Table 3. This category was evaluated using closed-ended ordinal questions with a 4-point bipolar scale. The experience category consisted of either yes/no responses or a 5-point bipolar scale (see Tables 4-6).

Evaluation Strategies

Participant's knowledge of advance care directives was evaluated using the KAESAD instrument (Jezewski, 2015). The survey was administered pre-education and post-education to each participant. The aggregate scores were compared to analyze the effectiveness of the teaching exercise. The number of pre-education ACDs completed at IMMG was determined prior to implementation, through a retrospective chart review. The effectiveness of the staff education was determined two months post implementation by a post-education chart review .

Results

The pre-education chart review yielded two ACDs out of 100 charts reviewed. The patients were both caucasian, one male and one female. Both charts contained a copy of a living will and

Do Not Resuscitate orders. Ninety six percent of the patients in the charts reviewed were caucasian and 53% were males. According to these statistics the majority of the patients at IMMG are caucasian males and there was only a 2% completion rate of ACDs.

During the implementation of ACDs education, 19 out of 28 current employees attended the education sessions. There was a 73% return rate on the pre-education survey and 68% return rate on the post-education survey. In the pre-education survey 59% of participants answered the knowledge questions correctly, compared to 84% in the post-education survey, shown in figures 1 and 2. In the attitudes category, 63% of responses in the pre-survey, showed a favorable attitude towards ACDs and end-of-life planning (see Figures 4,5). There were two pre-surveys submitted with missing data in this section. The post survey resulted in 74% of respondents showing a favorable attitude. The experience category was divided into three sections: ACD experience, confidence level with ACDs, and professional experience with end-of-life planning. There was a two week interval between the pre-survey and the post-survey. There was 22% increase in the respondents' experience with ACDs during the two week time frame. The overall confidence level with ACDs increased 60% among participants post education (Figure 3). There were six questions that explored individual perception of professional experience with end-of-life care. The majority of participants provided favorable responses to end-of-life care experiences, in both the pre-survey and post-survey results.

After the two month implementation period, 100 of charts active within the past two months were reviewed to assess completion of ACDs post project implementation. There were 3,758 visits during this time frame. Of the 100 charts reviewed, 58% were males and 42 females. There were five African Americans and the remainder were caucasians. There were seven patients with an ACDs in place, two males, five females, and all caucasians. The ACDs included

three living wills, one DNR, two MOST forms, and one desire for natural death declaration completed after the education session. Post staff education there was a three and half fold increase in the rate of ACDs completion. As a result of this project, the EHR at IMMG was revised to include a mandatory field that requires documentation of ACDs for all patients.

Limitations

There are several limitations within the study. First, this is a PSDA project that was implemented in one primary care clinic. Therefore, it consisted of a small sample size. There were only nineteen participants in the education session. The sample size is not reflective of the general population. This compromises generalizability of the results. Second, the sample was a convenience sample, resulting in a questionable degree of generalizability. A linked pre-survey and post-survey would have provided greater statistical significance. Finally, the participants were employees of the clinic resulting in a possible bias.

Discussion

Healthcare professionals traditionally have been trained to treat diseases and preserve life. Healthcare professional training programs and curriculums provide little to no education in end-of-life care. Most healthcare providers are not properly trained to discuss the concepts of death with their patients.

Furthermore, modernization in medicine has provided many avenues in achieving life perseveration. However, by prolonging life the healthcare industry may have succumbed to sacrificing the quality of life over quantity of life. The advances in modern medicine coupled with the lack of provider preparation on end-of-life issues, has set the stage for patients receiving undesired, costly, medical treatment.

There are many multi-factorial barriers that exist in discussing end-of-life planning. Lack of education is the most common thread among these barriers. Primary care providers are in the ideal position to begin breaking down the barriers in discussing end-of-life planning.

The utilization of ACDs in primary care can be increased through provider education. A PDSA model guided by the Diffusion of Innovation theoretical framework can be effective in implementing an educational program that will increase end-of-life planning among patients in primary care.

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Table 1*Adapted KAESAD Survey Questions*

	KAESAD # of items	Cronbach Alpha	Project Adapted # of items
Knowledge	10	0.58	10
PSDA	20	0.58	7
Attitudes	20	0.59	9
Confidence	30	0.95	8
Experience	7	0.95	5

Note. Adapted KAESAD survey (personal conversation, Jezewski, 2015).

Table 2*Knowledge Questions Survey Results*

Question	Correct	Pre-survey	Pre-survey	Don't	Post-survey	Post-survey	Don't
Number	Response	True	False	Know	True	False	Know
1	T	14	0	0	13	0	0
2	T	11	2	2	13	0	0
3	F	5	6	3	4	7	2
4	T	13	0	1	13	0	0
5	T	12	0	2	12	0	1
6	F	12	1	1	10	2	1
7	F	12	1	1	10	2	1
8	T	11	1	2	11	2	0
9	F	10	2	2	10	2	1
10	T	12	0	2	13	0	0
11	T	9	0	5	12	1	0
12	T	9	0	5	13	0	0
13	T	6	2	6	12	1	0
14	T	5	3	6	10	2	1
15	T	4	3	7	7	4	2
16	F	2	3	9	2	9	2
17	T	7	2	3	12	0	1

Note. Participants' responses to Knowledge questions adapted from KAESAD survey (Jezewski, 2015).

Table 3*ACD Attitude Survey Response*

Pre-Survey					Post-Survey				
<u>Question #</u>	<u>S-Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>S-Agree</u>	<u>S-Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>S-Agree</u>	
1	2	3	2	6*	1	0	4	8	
2	3	1	3	6*	2	1	3	7	
3	2	3	3	3*	5	3	4	1	
4	2	1	4	5*	1	3	4	5	
5	1	0	4	7*	1	2	2	8	
6	4	4	2	2*	6	1	4	1	
7	1	0	6	5*	1	2	4	6	
8	1	2	2	7*	1	2	4	6	
9	2	1	2	8*	1	0	3	8	

Note. S-Disagree= strongly disagree

S-Agree= strongly agree

*Missing data in 2 of the pre-surveys

Participants' responses to Attitudes section of adapted KAESAD survey (Jezewski, 2015).

Table 4*Experience Survey Response*

<u>Question #</u>	Pre-Survey		Post-Survey	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
1	4	10	6	7
2	2	12	0	13
3	2	12	1	12
4	2	12	2	11
5	0	13	0	13

Note. Participants' responses to experience section of adapted KAESAD survey (Jezewski, 2015).

Table 5*ACD Confidence Level*

Question #	Pre-Survey					Post-Survey				
	1	2	3	4	5	1	2	3	4	5
1	5	4	2	1	0	3	2	5	0	2
2	5	1	4	2	0	3	4	2	1	3
3	7	0	3	2	0	2	2	6	0	2
4	7	0	3	2	0	2	3	5	1	2
5	7	0	3	2	0	1	3	7	0	2
6	6	0	3	2	0	2	3	5	0	3
7	7	0	3	2	0	1	2	6	0	3
8	8	1	2	1	0	2	4	4	1	1

Note. Scale range= not confident-very confident
Participants' responses to level of confidence, adapted from KAESAD survey (Jezewski, 2015).

Missing data in 2 pre-surveys and 1 post survey

Table 6*EOL Professional Experience Response*

Question #	Pre-Survey				Post-Survey			
	1	2	3	4	1	2	3	4
1	5	2	3	2	4	3	4	2
2	0	3	4	6	2	1	4	6
3	2	1	3	1	1	1	4	7
4	1	1	5	6	1	1	5	6
5	2	2	3	5	3	2	3	5
6	7	3	2	1	8	4	1	0

Note. Scale range disagree-agree= 1-4

Missing data in 2 pre-surveys

Participants' EOL care experience responses from adapted KAESAD survey (Jezewski, 2015).

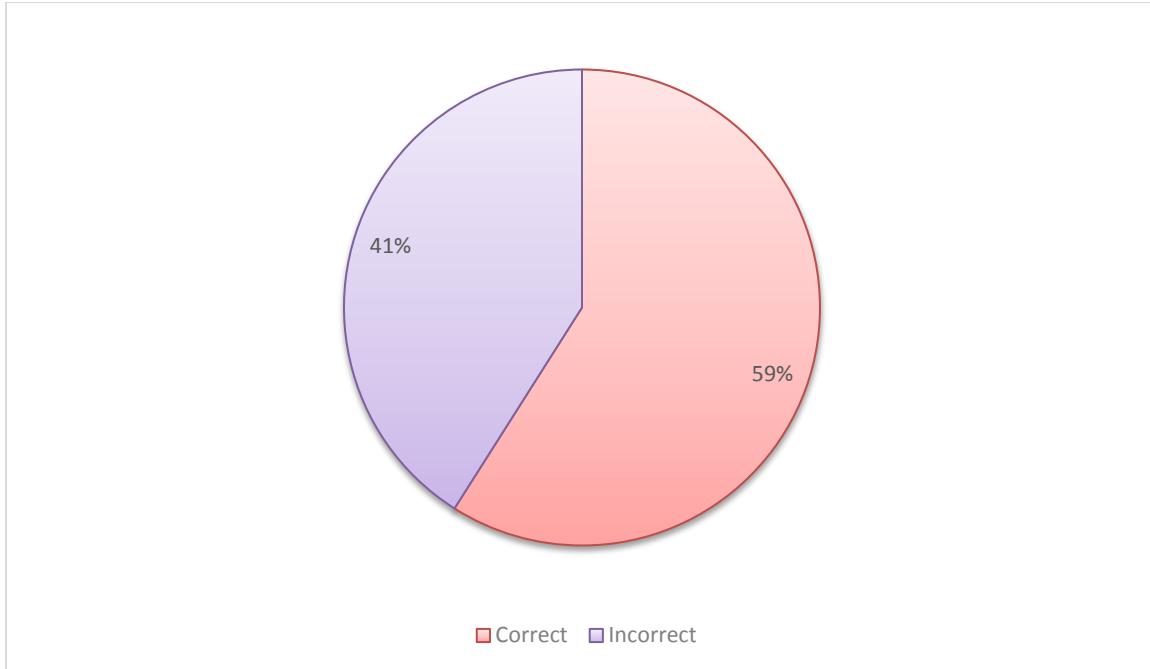


Figure 1. Percentage of KAESAD survey knowledge questions answered correctly pre-education (Jezewski, 2015).

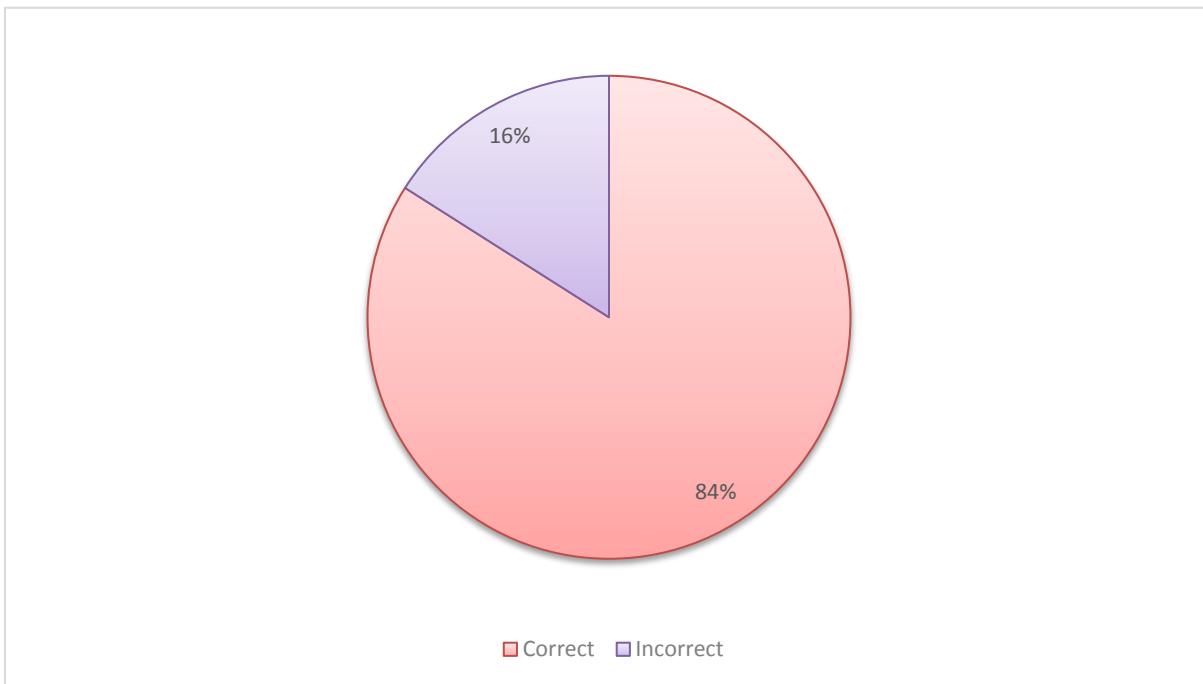


Figure 2. Percentage of KAESAD survey knowledge questions answered correctly post-education (Jezewski, 2015).

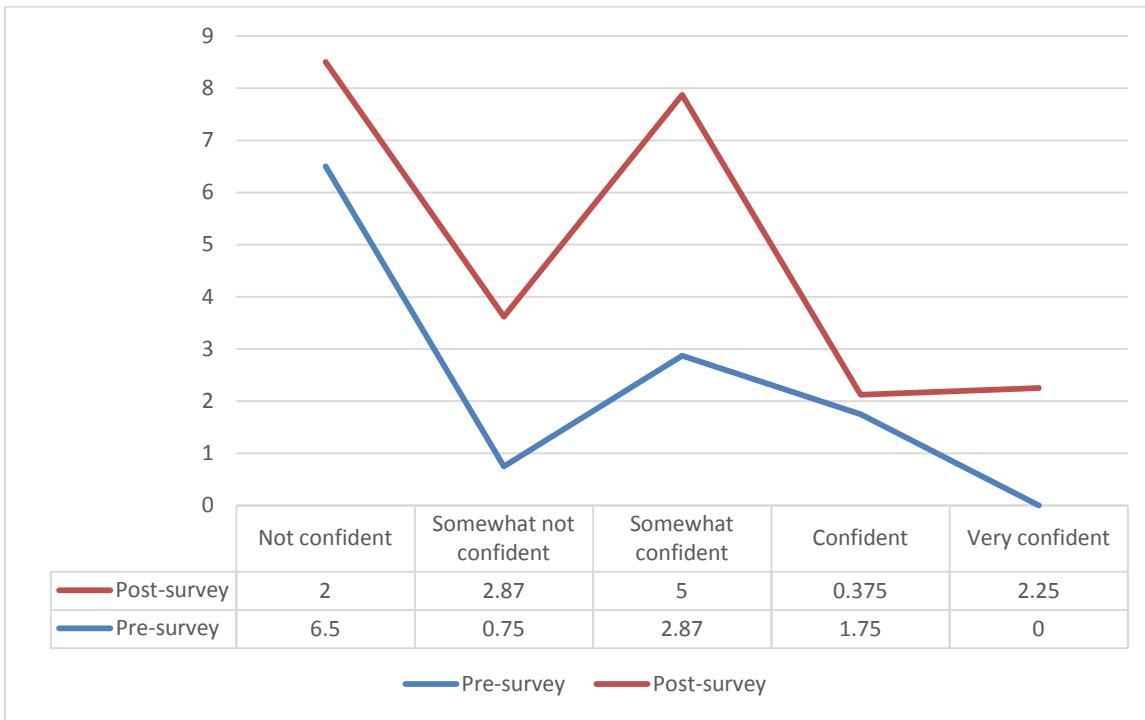


Figure 3. Participants' Level of Confidence per adapted KAESAD survey (Jezewski, 2015).

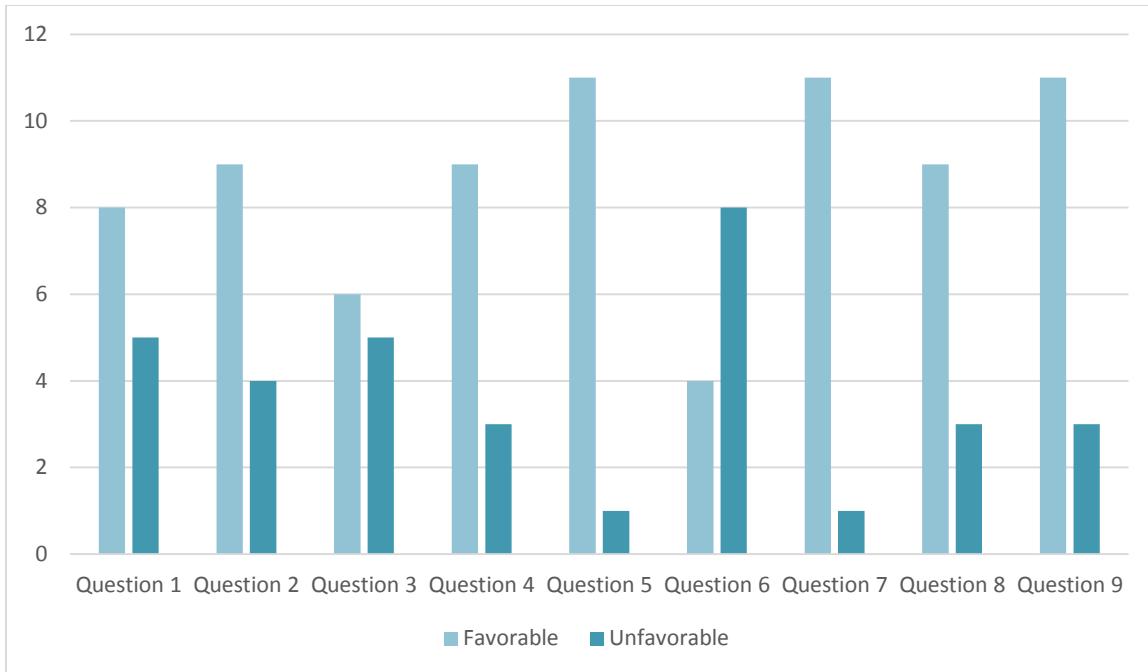


Figure 4. Participant's Attitudes on ACD and EOL per KAESAD survey, pre-education (Jezewski, 2015).

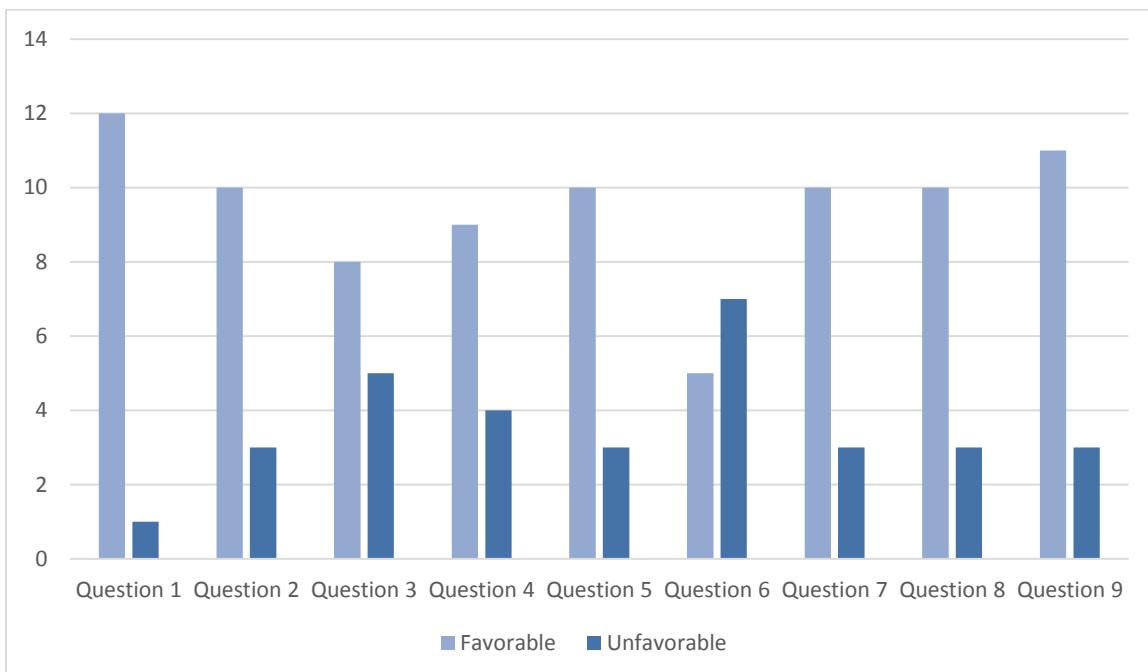


Figure 5. Participants' Attitudes on ACD and EOL per KAESAD survey, post education (Jezewski, 2015).

