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AN EVALUATION OF THE ADVANCE DIRECTIVES-LIVE ACTION
SIMULATION TRAINING (AD-LAST) PROGRAM

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ABSTRACT

AN EVALUATION OF THE ADVANCE DIRECTIVES-LIVE ACTION SIMULATION TRAINING (AD-LAST) PROGRAM

Alexandra Spinelli

Advance Care Planning (ACP) is a process that captures a patient's wishes in the case of future circumstances in which they are unable to express them. Studies show that less than one third of the general population has completed some type of formal Advance Directive (AD). There are barriers to completing ADs, and these barriers operate on multiple levels, including, patient, provider and institutional. To improve providers' capacity to help patients complete ACP, and overcome these barriers, a provider-focused intervention was conducted. The current study is an analysis of archival data collected from the Advance Directives-Live Action Simulation Training (AD-LAST) program developed and implemented at New York Presbyterian-Queens (NYP-Q). The AD-LAST workshop aimed to improve ACP and end-of-life (EOL) conversations by increasing clinician knowledge and self-efficacy in aspects of ACP and EOL. Although the intervention was independently successful in increasing clinicians' knowledge and self-efficacy on ACP, we found that these two measures were unrelated to one another, and may represent distinct dimensions of improvements in ACP.

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INTRODUCTION

The fundamental purpose of an Advance Care Plan (ACP) is to represent the wishes of the patient concerning their treatment in the face of future circumstances in which they are unable to state those wishes (Lund, Richardson & May, 2015). An ACP discussion includes the opportunity to clearly acknowledge the prospect of death, to communicate prognosis, to discuss alternative treatment plans, and to complete advance directives (ADs). ADs are best described as written statements of a person's wishes regarding medical treatment, made to ensure those wishes are carried out should the person be unable to communicate them to a doctor (American Cancer Society, 2019). An ACP may enable the individual to consider existential and relational aspects of impending loss of self at the end-of-life (EOL). ADs also permit the patient to delegate responsibility for the implementation of a patient's preferences; giving someone legal responsibility for the conduct and delivery of EOL care (Lund, Richardson & May, 2015).

It is crucial for patients to have informed knowledge about ADs because approximately 70% of patients lack decision-making capacity when EOL decisions must be made, and the evidence suggests families do a poor job of accurately predicting patients' wishes for medical treatment (Green et al., 2015). In one study assessing 686 patients who were 75 years of age or older, discussions of ADs were associated with greater patient satisfaction with the physician. For future follow-up visits the strongest predictor of patient satisfaction was having previously discussed ADs (Tierney et al., 2001).

When ACP services have been provided, patients' and their families' report higher levels of satisfaction with EOL care, as well as decreased levels of stress, anxiety, and depression, compared to the cases in which ACP-related discussions did not occur (Detering, Hancock, Reade & Silvester, 2010).

ADs are often developed in the context of palliative care. Palliative care is a clinical intervention in which the providers' goal is to improve the quality of life of patients and their families facing the problems associated with life-threatening illness. Palliative care acts through the prevention and relief of suffering by means of early identification, assessment, and treatment of pain and other problems, including physical, psychosocial and spiritual issues (Pastrana et al., 2008). In a palliative care setting, ADs, as a component of a broader ACP, help to communicate an incapacitated person's EOL wishes.

Factors Affecting Rates of AD Completion

Health Factors

A systematic review of the literature from 2011 to 2015 suggests the mean rate of establishing ADs is 26.7% (Yadav et al., 2017). Rates of completion vary, however, based on a variety of health, cultural, racial, educational, socioeconomic, and institutional factors. ACP rates remain low among patients with severe respiratory disease, such as chronic obstructive pulmonary disease (COPD) (Janssen et al., 2011; Pardon et al., 2012). Most patients with COPD experience a burden of symptoms which impacts their quality of life and EOL care (Habraken et al., 2009; Weingaertner et al., 2014). The Study to Understand Prognosis and Preferences for Outcomes and Treatments (SUPPORT) found that most patients with COPD preferred treatment focused on comfort rather than

prolonging life, and that these patients and lung cancer patients, were equally likely to prefer not to be incubated or receive CPR. Yet, patients with COPD were much more likely to receive these non-preferred therapies (Claessens et al., 2000). It was reported that COPD patients were less likely to die at home and receive palliative care services, than patients with cancer (Gore, Brophy, & Greenstone, 2000). The poorer quality of palliative care among patients with COPD results in treatments for these patients initiated in response to exacerbations, rather than being initiated by ACP (Curtis, 2008). Aside from having a chronic disease, the completion of ADs is associated with older age, literacy level, higher education, and higher income (Rao et al., 2014; Waite et al., 2013).

According to several studies, patients with COPD and patients with chronic heart failure (CHF) have reported their quality of patient-physician EOL care communication to be poor. One study indicated that physicians rarely discussed prognosis, dying, and palliative care with patients with COPD and CHF (Janssen et al., 2011). The researchers found only 5.9% of patients with COPD and 3.9% of patients with CHF discussed ADs with their physician (Janssen et al., 2011).

Cultural and Socioeconomic Factors

There are also cultural and racial/ethnic differences in the prevalence of AD completion. Individuals identifying as Caucasian are the most likely group to complete ACP documents when compared to persons of African and Hispanic origin (Degenholtz et al., 2002). These disparities can be partially accounted for by sociocultural differences in attitudes toward medical care (Degenholtz et al., 2002; Gerst & Burr, 2008; Johnson, Kuchibhatla, & Tulsky, 2008). Therefore, a curriculum with an enhanced cultural

component must be implemented in interdisciplinary education concerning EOL care (Browne et al., 2002).

Cost Factors

In the United States, the primary payer for nursing home care is Medicaid, accounting for \$47 billion (Levit et al., 2003). Thirty percent of Medicare expenditures are attributable to 5% of all health service beneficiaries who die each year. About one-third of the expenditures in the last year of life is spent in the last month (Barnato et al, 2004; Emanuel et al, 2002). Previous investigations have found that most of these costs result from life sustaining care (eg, mechanical ventilator use and resuscitation), with acute care in the final 30-days of life accounting for 78% of costs acquired in the final year of life (Yu, 2006).

The mean costs of care (in 2008 U.S. dollars) was \$1,876 for patients who reported having EOL discussions with their clinicians, compared to \$2,917 for patients who did not have EOL conversations; a cost difference of \$1,041 (35.7% lower among patients who reported EOL discussions). Additionally, analyses of Medicare data indicated cost-savings associated with EOL discussions, which reduced the use of unnecessary or unwanted care at the EOL. Patients who had higher costs of potentially unnecessary care, as a function of poor EOL communication, also had a reduced quality of life in their final week (Zhang et al., 2009).

Barriers Hindering AD Completion

Obtaining ADs is a complex task. There are barriers to completing ADs, and these barriers operate on multiple levels, including patient, provider and institutional.

Understanding these barriers can guide the development of interventions to improve ACP and completion of ADs.

On a patient level, the main impingements to completing ADs are race, education, personal income, health literacy, and health status (Hanson & Rodgman, 1996). These barriers can affect how receptive a patient is to medical care, and influence patient-provider interactions.

Racial and Cultural Barriers

The social, economic, and environmental context associated with racial or ethnic groups may influence ACP, as it influences other aspects of health care. Given the history of discrimination toward the African American and Latinx communities, there is a documented mistrust towards clinicians and underutilization of health services by these groups (Suite et al., 2007). This mistrust began as early as the years of slavery, and more recent examples include the unethical sterilizations of Latinas, and the Tuskegee Syphilis experiments (Gamble, 1997; Suite et al., 2007). Historical studies of American medicine depict the discrimination and acts of violence people of color faced at the hands of white medical professionals. The long history of medical injustices against people of color by physicians harbors a “fostered mistrust” toward the health care system; leading to a deterioration in the quality of patient-provider relationships (Suite et al., 2007 pp. 880). Minority groups report less satisfaction with physician-patient relationships, discontinuity of care, and perceived poorer quality of health care (Institute of Medicine, 2002).

These historical factors and ongoing experiences of discrimination may affect completion of ADs and choices in EOL care. One study found African Americans “express a greater preference for life-sustaining therapies in the event of a terminal

illness, exhibit less comfort discussing death, greater distrust of the healthcare system, spiritual beliefs that were more likely to conflict with the goals of palliative care or hospice, and less-favorable attitudes towards hospice care than white people” (Johnson, Kuchibhatla & Tulsky, 2008 pp. 1995). None of these factors alone explained racial differences in possession of an AD or attitudes towards EOL care; instead, a combination of these beliefs and values better explain these differences (Johnson et al., 2008).

Cultural barriers in EOL care have also been examined among traditional Chinese patients. Traditional Chinese culture has a greater focus on the collective versus the individual. “Chinese collectivism is based on the underlying belief that individuals from the same in-group are interrelated and that each person’s well-being depends upon the efforts of the whole family or group” (Kolstad & Gjesvik, 2014 pp. 267). In cases where family relations are regarded as more critical than individual autonomy, the discussion of a patient’s EOL wishes may be more complex. In a patriarchal/hierarchical culture, the eldest male may be expected to make health care decisions on behalf of the family (Lee, 2009). The emphasis on the family as a whole, may conflict with the focus on personal autonomy, essential in some approaches to EOL and ACP conversations. However, in some cases, if the patient was aware of their poor prognosis, and their family had no objections to ACP, physicians were able to engage in EOL discussions with their patient (Wong et al., 2012).

Cultural factors impacting the patient also, in turn, affect physicians’ actions during ACP. One study on culture and ADs found individuals from different ethnic backgrounds may be likely to turn to their traditional norms of practice when ill, or when deciding between treatment choices (Zager & Yancy, 2011). Health care providers report

being left frustrated by what they consider to be “negative attitudes and at times hostile resistance toward ACP” by not only their patients of different cultural groups, to which the physician does not belong, but also the families involved in the decision-making process (Johnstone & Kanitsaki, 2009 pp. 408). Providers are also often frustrated by patients’ perceived inability to understand and accept their ACP options, whereas patients are often left with the same frustration by the providers lack of understanding of the presented choices (Johnstone & Kanitsaki, 2009).

Zager and Yancy (2011) suggested when providers are discussing ACPs with patients, a culturally informed approach by the physician is imperative. To lessen the disparities in ACPs between various ethnic and cultural groups, providers and policy makers should consider approaching ACPs in a manner that reflects varying cultures and beliefs. Despite research on cultural influences on ACP, cross-cultural perspectives in health policy concerning EOL care are currently lacking (Johnstone & Kanitsaki, 2009).

Socioeconomic and Educational Barriers

Socioeconomic status (SES) and education also interact to influence ACP outcomes (Carr & Luth, 2017). Older adults with low SES, low education level, and limited assets, are less likely to complete any formal or informal type of ACP (Carr, 2011; 2012).

Individuals with higher levels of education and higher SES are likely to have greater access to specialists who may provide assistance with a formal ACP, such as lawyers; better quality jobs that carry better health insurance benefits; and fuller knowledge of health behaviors and practices (Phelan, Link, & Tehranifar, 2010). Further,

individuals with more assets may be motivated to engage in EOL planning to ensure that their wealth is distributed as they desire (Carr 2011; 2012).

Prior research suggests one reason African Americans do not complete ADs is that they are less likely to own homes than white people, and are therefore less likely to engage in estate planning; “an action that typically triggers some type of formal ACP” (Carr, 2012 pp. 926). Individuals from blacks and Latinx communities are also significantly less likely than white communities to engage with their loved ones in informal ACP discussions (Carr, 2011). However, in one investigation, after sociodemographic, attitudes, and death experiences were controlled, there was no longer a statistically significant difference among race/ethnic groups. This suggests that black and Latinx communities are not opposed to having informal ACP discussions with their loved ones, but other barriers play a role and are preventing them from engaging in these formal ACP discussions (Carr, 2011).

Studies of the interactions of race and SES in the use of ADs and EOL planning suggest that both obvious and subtle differences in SES can contribute to racial differences in ACP outcomes. In the United States, those belonging to minority racial/ethnic groups in conjunction with low SES are at a greater risk for less intensive, lower quality, health care in general, including during EOL (Fiscella, Franks & Gold, 2000). For example, elderly black people, compared to white people, are less often seen by specialists (Blustein & Weiss, 1998; Kogan et al., 1993), receive less appropriate preventive care, like vaccinations, (Gornick et al., 1996) and lower-quality hospital care (Kahn et al., 1994).

White individuals were more likely than black individuals overall to have ADs, but within both of these ethnic groups, those with higher levels of educational completion, and those who owned homes, were more likely to have ADs. White people with a college degree are 1.8 times more likely to have completed ADs than whites with a high school diploma; whereas college-educated black individuals are 6.64 times more likely to have completed ADs than their counterparts (Carr, 2012). Amongst Asian and Latinx individuals, income was not a significant factor in determining who had completed some form of ACP, but education and health literacy were (Carr, 2012).

Education level is a significant predictor of AD completion (Alano et al., 2010). Previous literature has found that low education and low health literacy are associated (van der Heide, 2013). Adults with lower levels of education and health literacy are less likely to engage in different types of EOL planning, because they are reluctant to make decisions about treatments they don't fully understand (Porensky & Carpenter, 2008; Waite et al., 2013). Health literacy is an individual's ability to understand and make use of health information (Batterham et al., 2016), and affects patients' decision-making related to ADs (Sudore et al., 2007; Volandes et al., 2008; Waite et al., 2013). Health literacy is further defined as an individual's "ability to perform knowledge-based literacy tasks and the possession of literacy skills that are required in different health contexts" (Nutbeam, 2009 pp. 304).

Studies of health literacy have found that patients with low literacy rates were less likely to have an AD; and that this effect was independent of the patients' race, education level, income, and age (Waite et al., 2013). When the same study controlled for age, education, and health status, they indicated race and health literacy remained the biggest

independent predictors of whether or not African Americans had an AD, with literacy mediating only a small portion of the race-AD relationship (Waite et al., 2013).

Health literacy barriers hinder patients from completing ADs as well as interfere with whether physicians will initiate discussions about them. When physicians do discuss EOL treatment options during ACP, it may be challenging for patients with low health literacy rates to understand (Volandes et al., 2008). Low rates of health literacy disproportionately affects African American and Hispanic groups, people of low SES, and older adults (Melhado & Bushy, 2011; Volandes et al., 2008; Waite et al., 2013). These patients might need additional educational aids and resources to assist in the decision-making process. This suggests health literacy is not only a barrier for AD completion, but also works as a barrier for communication between healthcare providers and their patients (de Vries et al., 2019).

Making decisions about EOL care is a complex decision-making task. Among older adults who had already completed some form of ADs, most were highly educated and did not feel ADs, specifically living wills, to be too long or complex for them to figure out independently (Stelter, Elliott, & Bruno, 1992). The adults who did not complete any type of AD, but expressed a desire to do so, tended to be less educated than the adults who did, and indicated they needed assistance from family to complete the ADs for them. 61% of the adults who did not complete any ADs independently, expressed a desire that their physicians would have initiated discussions with them about ADs (Stelter et al, 1992).

In addition to the relationship between education and AD completion, there is also a connection between education and preference for life-sustaining treatment. In situations

involving brain death, those with a high school diploma were less likely to want life-sustaining treatments than those with less education (23% vs 58%) (Bayer et al., 2006). This suggests the concept that educated patients may be better able to consider the alternative details and consequences of life-sustaining treatments discussed during ACP and EOL conversations.

Institutional Barriers

At times the barriers to ACP are out of the hands of both the patient and provider, and exists on a larger scale, namely in institutional policies and priorities. There is evidence that there is a major difference between hospital policy and patient preferences (Waite et al., 2013). The default policy in the majority of healthcare institutions is to pursue aggressive treatment (where symptoms are advanced), but when surveyed, most people want to limit the aggressiveness of medical treatment they are receiving during EOL care (Yung et al., 2010).

Socioeconomic and racial/ethnic disparities in health care are not necessarily recognized by existing policies, and lead to further disparities in health care delivery, outcomes, and quality (Fiscella et al., 2000). Under existing quality assessment, health maintenance organizations (HMOs) may inadvertently engage in “reverse targeting” (the distribution of resources to those at lower risk, while neglecting those at high risk) because this leads to favorable Health Plan Employer Data and Information Set [HEDIS] ratings (Woolhandler & Himmelstein, 1988). This data helps demonstrate that there are critical disparities between health care delivery measures and health care quality measures.

Staffing Barriers

There are two main operational barriers that regard staffing which can stand in the way of a person's EOL wishes. First and foremost, clinician availability can affect the opportunities to initiate conversations regarding ACP. In addition, staffing can also mediate with whether ACPs are actionized. Assuming the patient is comfortable with their ACP, clinicians must be readily available to successfully carry out EOL wishes should the need arise (Lund, Richardson & May, 2015). Previous studies have shown that clinicians are lacking both in hospital palliative care programs and in nursing homes. National guidelines, such as the Joint Commission's standards, require that palliative care teams have at least one physician, an advanced practice or registered nurse, a social worker, and a chaplain (The Joint Commission's Advanced Certification Program for Palliative Care, 2011). As many as 75% of hospitals were short staffed and did not meet these standards for a complete, funded team, of professionals (Spetz et al., 2016).

These staffing difficulties are reflected in patients' reports as well. Patients experiencing their EOL in institutions (e.g., hospitals, nursing homes) have reported inadequate care, poor physician communication, and insufficient emotional support from the staff (Teno et al., 2004). In particular, those in nursing homes have felt that physicians are "missing in action" and have expressed a desire for more and better trained staff (Shield et al., 2005 pp. 1652). Operational barriers such as these exacerbate difficulties in carrying out EOL wishes, but also mean that present staff are less likely to have the time available to initiate conversations regarding ACP.

Training and Interdisciplinary Teams Barriers

Physicians may be under-prepared for ACP discussions due to lack of training. Studies show that many individual physicians are uncomfortable discussing EOL issues with patients and providing palliative care to dying patients and their families (Seoane et al., 2012). This could be due to the lack of palliative care programs given in graduate medical education, leaving clinicians feeling inexperienced in this area. "Without a boost for palliative care education and training, there will be only one palliative physician for every 26,000 seriously ill patients by 2030" (The National Palliative Care Organization, 2019).

However, as evidence increases on the benefits of proper palliative care, the number of physicians training in palliative medicine is growing. There are more than 6,500 board-certified physicians that specialize in palliative medicine in the United States, as well as over 100 accredited fellowship programs for this medical subspecialty (LeBlanc & El-Jawahri, 2015). Additionally, there are over 18,000 board-certified palliative care professionals (non-physicians) in the United States (The Hospice and Palliative Nurses Association, 2018). However, the patient demand for palliative care services has also increased drastically, and will likely exceed the amount of certified providers (Quill & Abernethy, 2013).

Interdisciplinary teams may help with the growing demand for palliative care services, and help healthcare professionals facilitate EOL conversations with patients. Crucial components that help make an effective interdisciplinary team are: the goal of "shared decision making, responsibility, and leadership" in facilitating discussions and supporting family members and patients (Hui et al., 2018 pp. 361).

One study found effective interdisciplinary teams may lead to adequate pain management for patients reporting acute pain. This researcher hypothesized that this may be due to the constant interactions between the interdisciplinary team members, which allowed them to coordinate personal perceptions of the patient's pain, and review pain management treatment plans together (Glowacki, 2015).

In order to create an adequate interdisciplinary team, members from all fields must be familiar with palliative care and ACP. In a 2001 survey done by the National Association of Social Workers, 62% of social workers stated that geriatric knowledge was required in their work. Yet, less than 3% had a concentration in aging and less than 2% had taken any courses in gerontology during their graduate school education (Damron-Rodriguez & Lubben, 1997). More recently, according to the Statistics of Social Work Education in the United States, there are 37 different accredited bachelor certificate programs offered in aging/gerontology to students; and still, students report being more likely to specialize in other areas like child welfare and school social work (CSWE, 2017). One literature review found United States medical schools have very little palliative care training within their curriculum (Aldridge et al., 2016). For example, one study in the review found discrepancies in goals of care between hospital residents and their patients and patients' families (Kamel, Paniagua, & Uppalapati, 2015). This suggests clinicians need training directed at overcoming the many communication barriers.

Emotional Barriers

The process of ACP requires emotion regulation efforts from patients, their families, and the providers as well. Physicians may not engage a patient in ACP because

of the emotional unpredictability, uncontrollability and threat associated with ACP (Lund, Richardson & May, 2015). As a consequence, patients may not receive the care they desire.

From a patient's perspective, emotion regulation and knowledge about illness and ACP have a bidirectional relationship. When patients had more insight on the severity of their disease, their anxiety levels decreased and there was an increase in overall satisfaction with care, as well as an increase in AD discussions (Green et al., 2015). However, even when patients are provided with education on ADs, they delay the actual completion of forms (Sachs, Stocking & Miles, 1992).

A patient's health status may affect when they decide they are ready, both physically and emotionally, to engage in ACP with their provider. Health status refers to the health level (good or poor health) of a "person, population or group in a specific area when compared to other groups in the same area, or with national data" (Segen's Medical Dictionary, 2011). Understanding the effects of health status on ACP requires a comprehension of the barriers that may hinder an individual or group of people from being health conscious. Outcomes of health status are closely intertwined, and difficult to isolate from barriers previously mentioned, such as race and SES (Fiscella, Franks & Gold, 2000). Poor health status is associated with lower life expectancy. Low SES, acting through the agents of: poor housing, nutrition, low education, low economic opportunity, and greater environmental risks, increases ones' risk for poor health (Lantz et al., 1998; Sorlie, Backlund, & Keller, 1995).

Health status and individual beliefs about the causes of illness may influence patient response to ACP. Specifically, patients report concerns both about being a burden

to family members as well as feelings of guilt about having caused their illness (Ganzini et al., 2002). Psychological or spiritual distress are not well researched areas of dying, and the responses vary.

EOL patients may express distress by reporting feeling overwhelmingly hopeless, feeling a loss sense of self, and experiencing oneself as a burden on others. Many patients identify feeling like a burden to others as a negative or unwanted experience with death, rather than focusing on the severity of their own symptoms or pain (Chochinov, 2006). One study analyzed family members of patients who have died and expressed wishes for a fast death. An overwhelming majority (58% - 94%) of these families indicated in these cases their loved ones wanted a quick death because they were distressed about being a burden to others (Ganzini et al., 2002; Morita et al., 2004).

When individuals, correctly or not, view themselves as responsible for their own health decline, their guilt may influence their ability to tolerate or engage in EOL conversations. One study found patients who blamed themselves for their chronic illness had difficulty forming an understanding of their diagnosis, which in turn impacts communication with their physicians. Self-blame emerged during the interview process, with participants blaming their life choices for their chronic illnesses. Patients made meaning of their illness through the emotional impact it had on them, and felt as if “maybe I did this to myself” (O’Hare et al., 2018 pp. 1025). It is unclear from past research if feelings of guilt inhibit the patients’ ability to actively engage in treatment planning.

EOL discussions are challenging even for the most experienced physician. Medical decision-making has evolved from a “paternalistic” approach, to one that is

family and patient centered (Seoane et al., 2012). When clinicians are not feeling comfortable leading EOL discussions, miscommunication can occur among providers, leading to healthcare workers not understanding their role, poorer quality of care for the patient, and unnecessary and unwanted treatments happening, such as resuscitation in some cases (Deep, Griffith, & Wilson, 2008).

Physicians reported having difficulty with initiating the challenging discussions that surround EOL care due to an overall lack of understanding about physician-patient appropriateness (Morrison et al., 1994). However, patients have frequently reported to prefer human contact over computer-communication, when seeking information on EOL care. Patients prefer interacting with healthcare professionals, family members, or friends, and view doctors and nurses as the most trusted sources (Neumann et al., 2011). This preference for interpersonal contact is important to note within the context of the rise of online AD education and communication tools.

Medical professionals occasionally hold back from initiating discussions on AD because of prognostic uncertainty. If the trajectory of a patient's condition is unclear, such as in patients with CHF, clinicians are more unsure about the timing of when to begin EOL conversations (Lund, Richardson & May, 2015). These physicians express concern that the process of ACP during EOL care will increase patient's knowledge about their terminal conditions, which they believe will raise their anxiety and diminish their hope (Helft, 2005; Knauft et al., 2005). Many physicians also avoid discussing ADs because they worry the conversation will cause iatrogenic harm by leading to the patient's psychological distress (Green et al., 2015). However, studies suggest that after trained interdisciplinary teams engage with their patients in ACP, there was no decrease

in hope, no increase in hopelessness, and there was a decrease in anxiety and an increase in overall satisfaction of care when patients received ACP facilitation (Green et al., 2015).

Among Chinese patients with advanced cancer, patients more knowledgeable about their disease had more engagement in AD discussion, and 63% of these patients completed some type of formal AD. Patients' insight about their poor prognosis was the most significant factor on whether or not they engaged in discussion and completed ADs (Wong et al., 2012).

Another area that hinders clinicians is the difficult conversations between supervisors and residents. Some of these difficult conversations between health care workers, including students, are about performance and climate in the workplace, such as when colleagues make mistakes or display disrespectful behaviors (Williams, King, & Edlington, 2016). Studies have shown when clinicians and clinical supervisors avoid difficult conversations in the hospital setting it can result in serious negative consequences, especially when working with a palliative care patient. The Silence Kills Study identified a range of categories of conversations that are especially difficult and essential for people in health care (Maxfield, 2005). These conversations correlated strongly with medical errors, patient safety, quality of care, staff commitment, employee satisfaction, discretionary effort, and turnover (Williams et al., 2016). In these cases, physicians are facing their own emotional barriers when discussing EOL care planning between each other, in addition to the fears and beliefs they have about how their patients will respond to such conversations.

Gaps

In summation, research shows physicians' lack of understanding on appropriateness of EOL conversations, and lack of knowledge of ADs, both serve as barriers to ACP discussions that are physician-initiated (Morrison et al., 1994). In addition to the overall lack of understanding on EOL communication, there is also limited research available concerning cultural sensitivity and ADs (Zager & Yancy, 2011). Consequently, there are already many barriers working against minority groups (SES, education, attitudes towards healthcare), that are further exacerbated by lack of physician knowledge of ACP, which leaves many minority patients without the opportunity to have open communication on ADs in most formal settings.

While many education workshops measure aspects of EOL care to potentially benefit both patients and physicians involved, patient outcomes such as “symptom management, quality of care at EOL, and quality of dying” have not been measured to the same degree as knowledge, self-efficacy, and satisfaction, in studies of ACP interventions (Weathers, 2016 pp. 106). Additionally, some health care workers have identified that training alone is not enough to be an effective interdisciplinary team member when discussing ACP, and reported that nothing could prepare them for the difficult EOL conversations, other than the real experience itself (Barrere & Durkin, 2014). Nonetheless, it is important to analyze interventions that will significantly increase ACP and improve EOL care for patients.

Interventions to Improve ACP

Interventions to improve ACP have the potential to significantly improve the quality of EOL care. Interventions help overcome the barriers that undermine

engagement in ACP, EOL conversations, and patient completion of ADs. The majority of programs target clinicians (Browne, et al., 2002; Edmondson, 2003; Rushton et al., 2009; Barrere & Durkin, 2014; Williams, King & Edlington, 2016; Childers et al, 2018; Torke et al., 2004; Seoane et al., 2012), although some interventions are directed toward patients and their families (Fischer et al., 1998; Wong et al., 2012; Green et al., 2015; Grimes, 2012; Detering et al., 2010). With the exception of one study which used only qualitative data collection (Barrere & Durkin, 2014), all interventions made use of both quantitative and qualitative data. The two primary outcomes that have been assessed across the majority of interventions are clinician knowledge and self-efficacy.

Knowledge and Self-efficacy Interventions

Lack of ACP knowledge amongst health professionals is a major barrier to provide optimal EOL care. Anecdotal evidence suggests within interventions aimed to improve EOL and ACP knowledge, improvements in knowledge was related to improvements of self-efficacy. However, the researchers did not empirically test this effect.

One intervention that used experiential methods, specifically role-play, was successful in increasing both clinician knowledge and self-efficacy in the areas of delivering bad news to patients, discussing Do Not Resuscitate (DNR) orders, and discussing ADs (Seoane et al., 2012). At the end of the training, participants' overall satisfaction with the course was also assessed, and "more than 90% of house officers either strongly agreed or agreed that the course met all of its objectives, was a worthwhile experience that improved their confidence in discussing EOL issues, and improved their comfort with the legal and ethical aspects of EOL care" (Seoane et al., 2012 pp. 315).

Similarly, an intervention using a role-play component through a similarly structured training, improved clinicians' ratings of self-efficacy in their knowledge on EOL care topics, including their ability to convey bad diagnosis or prognosis, to discuss ADs, and to assess and discuss pain management plans with their patients (Torke et al., 2004).

Some interventions have been directed toward improving the knowledge of future medical professionals in order to better prepare them for EOL patients. The End-of-Life-Nursing Education Consortium (ELNEC) was an educational program given to select graduate nursing students (Barrere & Durkin, 2014). Prior to beginning the training, all participants must have already cared for a dying patient within their first year of clinical practice. The main barrier ELNEC was designed to help nursing students overcome was lack of EOL care knowledge. The training itself was also meant to highlight some of the issues new nurses will face, in comparison to nurses with more experience with death and working with palliative care patients. No quantitative data evaluations of changes in knowledge or self-efficacy were employed. Instead, developers employed qualitative interviews and surveys to obtain feedback. The nursing students reported that ELNEC was helpful to the overall learning process of EOL care, but not sufficient as a tool alone, since participants were still new to being a nurses, and felt more education was needed. In addition, participants felt as if nothing could fully prepare them for EOL care and death apart from working with palliative care patients directly. New nurses found it difficult to balance compassion towards their patients and patient families, while still fulfilling the appropriate role they were trained to do. However, after the intervention, participants felt that they understood the importance of their role better, and felt

emotionally rewarded when their EOL patients and patient families acknowledged their efforts (Barrere & Durkin, 2014).

Improving palliative care knowledge amongst clinical professionals who are non-physician providers, such as social workers, is also important because they may find themselves on an interdisciplinary team at some point in their career. One intervention directed towards educating social work students in geriatrics emphasized the role of interdisciplinary team practice and cultural competency (Browne et al., 2002). This intervention was focused on providing students with training across: culturally competent, interdisciplinary team, and elder and family-directed practices, as well as, specific knowledge and skills on EOL planning, client-centered strategies and approaches, and community services and resources (specific to the area of training). Participants were given a pre- and post-test to evaluate knowledge gathered from the intervention, which proved to be successful in increasing knowledge across domains. This workshop also helped emphasize the role each member of an interdisciplinary team plays. Importantly, this was the only knowledge-based workshop in the present literature review, amongst those that were provider-directed, that had a clear emphasis on cultural competency (Browne et al., 2002).

Interventions designed to increase knowledge of ACP have also been directed toward patients themselves. Some patient-directed workshops aim at increasing knowledge, in hopes that patients will engage in ACP with their providers (Fischer et al., 1998; Wong et al., 2012; Green et al., 2015). One intervention sought to improve patient knowledge of ADs by participating in a face-to-face interview, in which patients were asked to decide treatment preferences in 20 different illness scenarios (Fischer et al.,

1998). Another type of intervention design included providing some patients with a web-based educational curriculum on ACP. This online workshop provided patients in the intervention group with educational tools, by using *Making Your Wishes Known: Planning Your Medical Future* (MYWK), which is an online aid that provides education about conditions that commonly lead to loss of decisional capacity, and the treatment options typically used to sustain life. Patients' increase in knowledge about EOL decision making was significantly greater after receiving the MYWK aid (Green et al., 2015).

Communication and Emotion Regulation Interventions

Some provider-directed interventions addressed the barriers of emotion regulation and communication skills. In the “Being-With-Dying,” (BWD) program, the intervention “addresses the need for healthcare professionals to develop knowledge, skills, and practices in the psychosocial, ethical, and spiritual aspects of dying” (Rushton et al., 2009 pp. 406). The curriculum aimed at improving emotion-regulation by teaching practices, such as mindfulness, council (a form of improved open-communication), sand tray (a process that enhances insight through self-exploration), yoga, and meditation that help clinicians monitor their own emotions better. These practices helped to make physicians resilient, capable of reducing stress, and able to cultivate emotional balance when working with EOL patients. Some of the core components of the workshop include exploration of pain, suffering, peri-death phenomena, care of the caregiver, and cross-cultural issues related to dying. The researchers concluded that the intervention had a positive impact on improving clinician emotion-regulation. Approximately 75% of participants agreed that the program helped to improve their listening skills with their

patients and patient families, as well as with their interdisciplinary colleagues (Rushton et al., 2009).

The “Mapping the Future Program,” addressed communication and emotion-regulation barriers that impacts physician’s initiation of EOL conversations (Childers & Arnold, 2018). The training measured the rate of documentation of goal-of-care (GOC) discussions had with at-risk inpatients, between physicians who had participated in the intervention program and those who had not. For the physicians who participated in the intervention, they self-identified improvement in several skill areas, primarily delivering bad news and responding to emotion from the patient. These physicians agreed that they would be more likely to initiate GOC discussions with their patients.

Patient-directed communication interventions have also used workshops to measure patient and patient family satisfaction with their EOL care. “If patient satisfaction is the primary goal of patient-centered medicine, then medical scripts should be constructed to address patient’s concerns...” (Grimes, 2012 pp. 75). Grimes (2012) looked at the barriers typically implemented by the physicians, that hinder patients from further ACP and feeling as if they received poor care. Through a self-report multidimensional health questionnaire, patients were asked to answer questions that helped researchers assess various emotional and psychological features of patients, and if they correlate with health behaviors. Physician interruptions of their patients during conversations appeared to be a greater concern to patients, and affected their overall satisfaction, compared to physician attentiveness. This intervention aimed to train physicians using medical scripts in order to limit such interruptions during patient-centered communication. One intervention examined the impact of ACP conversations on

patients and their families. Patients that communicated some type of ACPs with their physicians felt their EOL wishes were known and respected (Detering et al., 2010). This intervention also measured patients' family's satisfaction of care, stress levels, anxiety, and depression after the patient passed away. For families who had patients that engaged in ACP with their physicians, reported feeling more satisfied with care, and less stress, anxiety, and depression. Countries outside of the U.S. are working on improving patient-physician relationships and creating a more patient-centered standard of care as well. Laws regarding EOL care have been approved, such as the 'Provisions for informed consent and advance directives' law in Italy, which addresses patient autonomy, consensus and quality communication (Di Paolo, Gori, Papi & Turillazzi, 2019).

To date and to our knowledge, only one patient-directed intervention measured AD completion amongst EOL patients (Wong et al., 2012). This patient cohort study assessed 191 Chinese patients all with an advanced cancer diagnosis. Despite the barriers that hinder many physicians in engaging in ACP with traditional Chinese patients, this study found it feasible to discuss the importance of ADs with advanced cancer patients, as long as the patient had clear insight about their poor prognosis and increased knowledge of ACP. Of the 191 patients who received the workshop on ADs and ACP discussions with their physicians, 120 (63%) filled out some form of AD.

Interdisciplinary Interventions

Difficulties with communication amongst interdisciplinary team members is another barrier that has been addressed. One intervention used self-report measures and archival data to assess overall interdisciplinary team effectiveness within an operating room (Edmondson, 2003). The study examined ease of speaking up amongst the different

team members. Interdisciplinary teams with better reported communication learned how to use the different resources and technology better and more efficiently. Both quantitative and qualitative data indicated hierarchical boundaries in interdisciplinary teams that could inhibit communication in some settings. Improving overall interdisciplinary team communication could start with training team leaders in facilitating open-conversation amongst their team members. “Effective team leaders emphasized helping patients or being on the leading edge of innovation to motivate the (interdisciplinary) team and acted in ways that downplayed power difference, noting their own fallibility or elevating others’ importance” (Edmondson, 2003 pp. 1444).

In the “Spotlight on Conversations Workshops,” researchers created role-play scenarios where participants had the chance to be the supervisor, the student, and an observer (Williams, King, & Edlington, 2016). The goal of the workshop was to improve difficult conversations amongst peers, rather than with patients. This is a barrier clinicians have reported facing, which hinders their overall communication with co-workers and could negatively affect patient care. Feedback from participants showed this workshop was effective in improving difficult conversations, and individuals found what they learned to have a wider application. Participants’ felt confident in engaging in difficult conversations with students, peers, and other hospital colleagues (Williams et al., 2016).

Policy Interventions

Professionals are advocating for policy changes, pushing to diminish the structural barriers to EOL planning in health care. Insufficient staffing is a barrier present in many clinical institutions, and past studies conducted to improve ACP have focused on

appointing a specific facilitator to initiate discussions on AD, when large teams are not an option (e.g., Lund, Richardson & May, 2015). The Palliative Care and Hospice Education and Training Act (PCHETA), is a federal act passed by Congress proposed by the Committee on Energy and Commerce (Palliative Care and Hospice Education and Training Act of 2019). PCHETA addresses the structural barriers in palliative care by providing incentive awards, establishing a National Awareness Campaign and centers for training in palliative care education. In addition, this act aims to support palliative care research by collaborating with the National Institutes of Health (NIH), and overall increase staffing of hospital faculty workers that focus on palliative care (The National Palliative Care Organization, 2019; Spetz et al., 2016). An increase in the size of palliative care programs would facilitate interdisciplinary team education programs. From these studies there is reason to believe that such an intervention would increase the success rate of AD completion if staffing issues are not a barrier in the process.

Limitations in Current Interventions

There remain significant gaps in the existing literature. Whereas many proposed interventions have the potential to improve EOL care, various barriers ultimately limit them. More systematic evaluations and psychometrically sound assessments of knowledge acquisition and self-efficacy are needed. Further, only a limited number of interventions have focused on increasing knowledge to decrease health disparities during ACP and EOL planning (Browne et al., 2002). The existing intervention aimed at improving cultural competency in the context of EOL communication was targeted at social worker students. More work is needed to improve capacity for effective patient-

provider conversations across racial and ethnic groups. This is critical for urban hospitals serving diverse patient groups.

Further, difficulties in interprofessional communication have been demonstrated to undermine both clinical practice and the uptake of new knowledge. There is a lack of consensus among professionals in the way “quality of care” is defined and understood, making clinicians’ specific responsibilities unclear to them and undermining coordination of care (Grimshaw et al., 2012; Davies et al., 2007).

A limited number of interventions focused on improving interprofessional communication (Edmondson, 2003; Williams et al., 2016). Interprofessional programs are lacking, but essential, as there are multiple barriers to ACP, which may be addressed differently by various professional groups. Providers may benefit from the explicit sharing of the emotional and practical burdens of ACP planning. Patients may benefit from having more, rather than fewer, providers with whom they may discuss ACP and EOL care with.

Therefore, the aim of this study was to test an application of existing and freely available interventions to improve knowledge of ACP and enhance patient-provider communication in the context of EOL care. The intervention was conducted in a format designed to support interprofessional collaboration. In this pilot study, we focus initially on outcomes of knowledge acquisition and self-efficacy. We test differences in scores from pre-test and post intervention across a variety of domains related to EOL care. We compare differences in outcomes among physicians and nurses as well.

AD-LAST

The current study is an analysis of archival consumer data collected from the Advance Directives-Live Action Simulation Training (AD-LAST) program conducted at New York Presbyterian-Queens (NYP-Q). AD- LAST incorporated several standard programs, SPIKES (Buckman, 2005), NURSE (Back et al., 2005), FICA (Puchalski, 2000), and “Ask-tell-ask” (UCSF Center for Excellence in Primary Care, 2014). This was to improve provider competency in patient-provider communication, emotion regulation, and interprofessional communication in all facets of EOL communication.

The AD-LAST program was implemented as an interdisciplinary communication workshop on EOL care, combining small group instructional methods with active clinical simulation. The purpose of AD-LAST is to give interdisciplinary health-professionals the opportunity to train together to become better communicators. We examined provider satisfaction, increases in knowledge and self-efficacy, and the relations between gains in knowledge and gains in self-efficacy.

METHODS

Participants

Participants included 163 clinicians from multiple disciplines: 102 physicians (MD or DO), 5 nurse practitioners (NPs), 13 physician assistants (PAs), 23 registered nurses (RNs), 7 social workers, and 13 other allied healthcare professionals (Table 1). The sample was comprised of 100 women (62%), and 62 men (38%). The mean age of participants was 35 years old, with participants' ages ranging from 22 to 64 years old. Additionally, the sample was ethnically diverse (Table 2). Participants identified a wide range of years of experience. About 20% of participants practiced for less than a year, whereas about 18% self-reported over 20 years of experience.

Interdisciplinary professionals were recruited throughout the hospital. The intervention was given in a small-group, one-day training. The intervention's training goal was teaching effective clinical communication skills around serious illness and end-of-life planning. The AD-LAST intervention included both a psychoeducational and experiential component. The experiential component included simulated patient/family scenarios. The psychoeducational component also included an area on cultural aspects influencing EOL conversations, as well as teaching information on the patient and family barriers, provider-communication, and supporting interdisciplinary team collaboration.

The AD-LAST workshop focused on providing clinicians with communication tools that will allow them to better communicate bad news to their patients, provide emotional support to patients, assess spiritual concerns, and encourage open exploration. To improve the deliverance of bad news, clinicians were provided with exercises from the SPIKES program (Setting, Perception, Invitation, Knowledge, Empathize, Summarize

& Strategize) to ensure that they are effectively and considerately communicating with patients (Buckman, 2005). SPIKES emphasized that medical professionals should stay away from speaking in overly complicated medical terms to increase the average patients' overall understanding of their condition. Expression of empathy was also something strongly encouraged when discussing serious matters.

The workshop further highlighted the importance of building an empathic therapeutic alliance through another acronym, NURSE (Naming, Understanding, Respect, Support, Explore) (Back et al., 2005). In order to verbalize empathy, clinicians were told to name the emotions they are seeing the patient experience. This tool encourages exploration of any emotions or questions that may come up in order to allow the patient to feel like there is an open communication line between them and the clinician.

AD-LAST also included the FICA (Faith, Influence, Community, Address) program, which provided guidance for conceptualizing and communicating about the role of cultural and spiritual factors in EOL care (Puchalski, 2000). Clinicians are encouraged to ask patients how their beliefs interact with how they handle their health. The lessons also focus on understanding the patient's support system. FICA reminds providers that after learning about a patient's beliefs, the clinician should remain respectful and allow the patient to express how they would like their healthcare providers to address and accommodate their beliefs with regards to their medical care.

The fourth communication tool given during this workshop is known as the "ask-tell-ask" method. This way of interacting with patients offers open, collaborative, communication that moves toward patient-centered healthcare. Dialogue between

patients and providers begin with the provider asking questions to identify what patients know, think, and feel about their health condition, what they experience as barriers to improved care, and what information they need. (UCSF Center for Excellence in Primary Care, 2014).

Measures

Before and after the intervention, participants were asked to complete a series of questionnaires in order to measure key study variables, including experience with aspects of EOL care and ACP; knowledge about ADs and communicating ACP; self-efficacy about conducting ACP and having difficult conversations with patients; and interest level of EOL care and ACP.

The AD-LAST knowledge pre-test and post-tests were identical and consisted of fifteen items, with two dimensions: overall knowledge of ACP and knowledge about effective communication approaches. All questions were scored either 1 (correct) or 0 (incorrect). Two domains for this measure (i.e., Knowledge about ACP, and Knowledge about Communication/Relationships) were calculated reflecting the content of the items. The questions about communication and relationships were embedded within hypothetical case scenarios, some of which included a cultural component.

The self-efficacy pre-and post-questionnaires asked participants to rate their performance or skill level in dimensions of ACP, including discussing and completing ADs, assessing patient decision-making capacity, discussing bad news with a patient or family member, discussing “do not resuscitate” orders, conducting patient/family goal-setting meetings, identifying cultural barriers impacting decision making, managing

conflicts over medical decisions, and working with an interdisciplinary team. All self-efficacy questions began with “Rate your performance skill level in...”

After the one-day training was completed, participants were asked to complete a program evaluation. This evaluation questionnaire was used to measure clinician satisfaction of the workshop. The program evaluation consisted of five yes/no questions, asking participants if they felt the workshop met the following educational objectives: learning basic concepts about ADs; collaborate with and learn from interdisciplinary team members; learn about cultural factors affecting ADs; learn communication skills for patients and families on discussing ADs. Participants were then asked to rate the program and workshop presenters. Lastly, participants had the option to write in any additional thoughts and feelings they had about the workshop.

Analytic plan

Preliminary factor analyses using (Proc Factor) SAS 9.4 using iterated principal factors analyses with varimax rotation to examine dimensions of self-efficacy. Repeated measures ANOVAs were used to measure changes from pre-test to post-test in knowledge, and self-efficacy across domains. Descriptive statistics were employed to evaluate consumer satisfaction data from the training.

RESULTS

Preliminary analyses

Factor analyses (SAS 9.4, using iterated principal factor analysis) revealed the self-efficacy questions comprised a single factor, as there was only one factor with an eigen value greater than 1 (eigen value = 4.49) which accounted for 56% of the variance. All items loaded above .5 on this factor. Consequently we used the average of all items to create a self-efficacy scale with an alpha of .89.

Analyses of differences among professional groups was limited to comparisons between nurses ($n = 23$) and physicians ($n = 96$), as these groups had the largest number of members. At baseline, there were no significant differences between nurses and physicians in total knowledge ($F(1,128) = .22, p = .80$), or in self-efficacy ($F(1,127) = .09, p = .77$).

Changes in Knowledge from pre-test to post-test

When calculating improvements in knowledge scores, two dimensions were identified (Table 3). The first domain “ACP Knowledge” consisted of straightforward items, while the second domain “Communication /Relationships” gave hypothetical scenarios, some of which included a cultural component. Results on knowledge questions revealed that on average, participants had an average of 77% correct responses prior to participating in the workshop, and 86.5% post workshop participation.

In the full sample, repeated measures ANOVA indicated there was a significant increase from pre-test to post-test in total knowledge ($F(1,159) = 114.47, p < .001$), as well as in the dimensions of ACP Knowledge ($F(1,159) = 70.78, p < .001$), and Communication/Relationships ($F(1,159) = 67.15, p < .001$). The mean score in

knowledge for all interdisciplinary professionals improved from baseline ($M = 11.53$, $sd = 2.05$) to post-test ($M = 12.97$, $sd = 1.24$) out of a maximum score of 15.

There were also no significant differences between nurses and physicians in changes from pre-test-to-post in the total knowledge, ACP Knowledge or Communication/Relationships ($F(1,126) = 0.09$, $p = .76$).

Self-efficacy

Repeated measures ANOVA showed a significant increase in pre- to post-test self-efficacy ($F(1, 153) = 274.06$, $p = .001$). The mean score in self-efficacy for all interdisciplinary professionals improved from baseline ($M = 2.56$, $sd = .57$) to post-test ($M = 3.27$, $sd = .53$) (Table 4). Across the group as a whole, paired t-tests indicated significant improvements from pre-test to post-test in self-efficacy across all questions. Specific to the goals of the program, there were significant improvements in self-efficacy concerning identifying cultural issues affecting decision making and working in interdisciplinary teams (Table 5).

A MANOVA with differences between pre-test and post-test on each self-efficacy item serving as outcomes and professional group (contrasting physicians to nurses), indicated a significant interaction of Professional Group X Self-efficacy domains (Wilks' Lambda 0.88, $F(5,114) = 3.07$, $p = 0.012$), indicating significant differences by professional group across specific domains of self-efficacy. Univariate analyses indicated four domains of self-efficacy for which nurses demonstrated greater improvements in than physicians: discussing bad news with a patient or family member ($F(1,118) = 17.68$, $p < .001$), discussing DNRs ($F(1,118) = 7.81$, $p < .01$), conducting patient/family goal-

setting meetings ($F(1,118) = 5.89, p < .02$), and managing conflicts over medical decisions ($F(1,118) = 4.20, p = .04$).

Relations of changes in knowledge to changes in self-efficacy

Despite improvements in knowledge and self-efficacy, Pearson correlational analyses indicated that knowledge and self-efficacy are unrelated. Specifically, increases in knowledge did not predict improvements in self-efficacy scores across all participants. Measures of knowledge at baseline did not correlate with measures of self-efficacy at baseline ($r = 0.07, p < .36$). Baseline knowledge did not predict post-workshop self-efficacy scores ($r = -0.002, p < .98$). Post-workshop measures of knowledge and self-efficacy were also unrelated ($r = 0.01, p < .87$). Over time, improvements from pre- to post-test in knowledge did not predict improvements in pre- to post-test in self-efficacy ($r = 0.13, p < .10$) (Table 6).

Participant satisfaction

Overall, participants were highly satisfied with the course. More than 96% of interdisciplinary professionals agreed the course accomplished the workshop objectives, provided them with new information improving knowledge on ACP, is pertinent to improving their practice, and agreed the course will change how they manage their patients in general.

Sample comments from participants included: “One thing I learned today was new tools that will help improve communication between [myself] and patients and [their families, and] how to explore [patient] feelings [to] determine what they really need;” “One thing I want to work on is addressing emotion a little more...”

DISCUSSION

AD-LAST was an educational intervention, employing both didactic and experiential components, designed to teach effective clinical communication skills for interdisciplinary health professionals, specifically focusing on ACP and EOL conversations. The program deployed existing packaged interventions, including components focused on enhancing skills in recognizing cultural issues in EOL care. The program was implemented in multidisciplinary groups to overcome interprofessional communication barriers. The AD-LAST intervention yielded a significant increase in individual ACP and EOL knowledge across interdisciplinary health professionals, consistent with previous studies that reported increases in knowledge (Torke et al., 2004; Browne et al., 2002; Rushton et al., 2009; Barrere & Durkin, 2014; Childers & Arnold, 2018). AD-LAST was successful increasing self-efficacy across interdisciplinary professionals, consistent with past research (Torke et al., 2004; Seoane et al., 2012; Rushton et al., 2009; Barrere & Durkin, 2014; Browne et al., 2002; Childers & Arnold, 2018). AD-LAST participants demonstrated improvements in self-efficacy in cultural communication and interprofessional communication, two areas of specific importance mentioned in the literature.

There were no differences between physicians and nurses in knowledge acquisition; however, nurses demonstrated more improvement in self-efficacy than physicians did. Although the AD-LAST workshop proved to be a successful tool in improving interdisciplinary professionals' knowledge and self-efficacy of ACP, there was no relationship of gains in knowledge to improvements in self-efficacy. Research on this relationship in clinical settings is limited. Consistent with our results, a study of nurses

treating heart failure revealed no significant correlation between self-efficacy and knowledge (Shinnick & Woo, 2014). One explanation for our findings could be that self-efficacy is often understood as an aspect of human behavior and motivation (Bandura, 1995); and therefore involves different psychological processes than those involved in knowledge acquisition. Self-efficacy has been thought of as a version of affective self-esteem that is task-specific (Lunenburg, 2011). Knowledge alone may not produce the motivation and confidence needed to change behavior. Further research is needed to understand the effects of both knowledge acquisition and self-efficacy on actual behavior change, including completion of ACP communication with patients. The AD-LAST workshop has promising outcomes and is doable and effective, even in a busy practice.

LIMITATIONS

Consistent assessments of the effects of EOL conversations on the patient, family, and provider on satisfaction levels are needed. Assessments of hard outcomes, including AD completion are also vital. This was a main limitation of AD-LAST, and was also consistent in the gaps of the literature. The use of stepped wedge, or other types of intervention designs, would permit more controlled comparisons between groups, and potentially allow more clinicians to eventually participate in the intervention. More research is needed on intervention design, since it is unclear traditional educational approaches will lead to better knowledge acquisition and optimal patient care (Grimshaw et al., 2012).

While AD-LAST found significant results in its capability of increasing clinician self-efficacy, increasing knowledge of ACP and EOL material, and increasing the ability to communicate effectively within an interprofessional context, it is unclear whether the intervention actually facilitated better EOL conversations and increased the rates of AD completion. In addition, the workshop's sample was rather limited to mainly nurses and physicians. Future versions of it should encourage the attendance of other disciplines to increase cohesiveness between professionals of different backgrounds. A brief version of the workshop that is more suitable for a busy practice is in development.

APPENDICES

Table 1
Participant discipline breakdown.

Discipline	Frequency	Percent
MD	96	58.90
RN	23	14.11
PA	13	7.98
Social Worker	7	4.29
NP	5	3.07
DO	5	3.07
Speech-Language Pathologist	5	3.07
Patient Advocate	3	1.84
Research Coordinator	1	.61
Patient Navigator	1	.61
Registered Dietitian	1	.61
Psychologist (PhD)	1	.61
MD-DO	1	.61
MA-SLP	1	.61

Table 2
Participant demographic characteristics.

Variable	N (%)
<i>Gender</i>	
Men	38.27
Women	61.73

<i>Ethnicity</i>	
White non hispanic	34.97
Hispanic	3.68
Black	11.04
Black/Hispanic	1.23
Asian (East or South Asian)	42.33
Pacific Islander	.61
Other	6.13

Table 3
Improvements in knowledge.

Domain	F-value	Means (SD) at pre-test	Means (SD) at post-test
ACP Information	$F = 70.78, p < .001$		
Hypothetical Scenarios	$F = 67.15, p < .001$		
Total Knowledge	$F = 114.47, p < .001$	$M = 11.53 (2.05)$	$M = 12.97 (1.24)$

Note. Means out of a maximum score of 15.

Table 4
Improvements in self-efficacy.

F-value	Means (SD) at pre-test	Means (SD) at post-test
$F = 274.06, p < .001$	$M = 2.56 (.57)$	$M = 3.27 (.53)$

Note. Means out of a maximum score of 4.

Table 5
Self-efficacy paired t-test values.

Subtopic	T-score	Means (SD) at pre-test	Means (SD) at post-test	Mean Difference
Discussing and completing of ADs	$t = -13.29$	2.57 (.74)	3.33 (.59)	+.76
Assessing patient decision making capacity	$t = -8.59$	2.67 (.76)	3.23 (.69)	+.56
Discussing bad news with a patient or family member	$t = -13.43$	2.52 (.78)	3.30 (.64)	+.78
Discussing DNR	$t = -10.27$	2.72 (.81)	3.35 (.64)	+.63
Conducting patient and family meetings	$t = -14.64$	2.26 (.81)	3.23 (.71)	+.97
Identifying cultural issues affecting decision making	$t = -11.92$	2.36 (.70)	3.15 (.73)	+.79
Managing conflict over medical decisions	$t = -11.76$	2.26 (.72)	3.12 (.70)	+.86
Working in interdisciplinary teams	$t = -8.55$	3.04 (.65)	3.49 (.61)	+.45

Note. All p 's <.001.

Table 6
 Knowledge and self-efficacy correlations

	Baseline Self-Efficacy	Post-test Self-Efficacy	Changes in Self-Efficacy
Baseline Knowledge	$r = \mathbf{0.07}$, $p = \mathbf{.36}$	$r = \mathbf{-.002}$, $p = \mathbf{.98}$	$r = \mathbf{-.11}$ $p = \mathbf{.18}$
Post-test Knowledge	$r = \mathbf{.01}$, $p = \mathbf{.92}$	$r = \mathbf{.01}$, $p = \mathbf{.87}$	$r = \mathbf{.00}$ $p = \mathbf{1.00}$
Changes in Knowledge	$r = \mathbf{-.09}$ $p = \mathbf{.24}$	$r = \mathbf{.01}$ $p = \mathbf{.87}$	$r = \mathbf{.13}$, $p = \mathbf{.10}$

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