Education to Improve Advance Care Planning Engagement in Adults

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April 29, 2024

In Partial Fulfillment of the Doctor of Nursing Practice

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Abstract

Advance care planning reflects one’s life values and goals and serves as a foundation for making future medical decisions. Patient education can improve advance care planning knowledge and positively impact vital advance care planning behaviors of self-efficacy and readiness. The aim of this pilot, quasi-experimental, evidence-based quality improvement project was to increase advanced care planning self-efficacy, readiness, and knowledge in patients aged 50 years or older at an outpatient primary care clinic. A pretest-posttest, one-group, quasi-experimental design was used in the project. Using convenience sampling, 48 participants who visited a suburban outpatient primary care clinic over 3 months completed a 12-minute video intervention covering advance directive topics and the process of filing legal documents. Participants completed a validated 11-item Advance Care Planning Engagement Survey that measured engagement scores on a Likert scale before and after watching the educational video. A Wilcoxon signed-rank test was used to calculate the difference in median engagement scores to determine the impact of the video intervention on advance care planning engagement and resulted in statistically significant results for self-efficacy ($Mdn = 1.5, p < .001$), readiness ($Mdn = 4.5, p < .001$), and knowledge ($Mdn = 3, p < .001$). Improving these behaviors can help providers appropriately time the initiation of advance care planning conversations and ensure future medical care is in accordance with the patient’s values and preferences.

Keywords: Advance care planning, self-efficacy, readiness, engagement, primary care
Improving Advance Care Planning Engagement in Adults in Primary Care

Advance care planning (ACP) is a complex social process that begins with a face-to-face conversation with a primary care provider to support patients in understanding and sharing values, life goals, and preferences regarding future medical care (Silveira, 2022). This conversation is transcribed into legal documents outlining the patient’s wishes during end-of-life (EOL) care and shared with family members to increase their knowledge of the patient’s treatment goals. The mainstay legal documents that comprise ACP include an advance directive (AD), medical power of attorney, and living will. Advance care planning should be proactive, appropriately timed, and integrated into routine care to ensure that patients receive medical care consistent with their values, goals, and preferences in the event of incapacitation (Silveira, 2022). As the ACP process is lifelong, documents should be revisited every decade or as-needed, with a new diagnosis or decline in health status, death of a family member or friend, divorce, or a change in domicile (Sabatino & Arkfeld, 2018).

Significance

As a billable procedure, ACP has been shown to improve multiple outcomes, including higher rates of AD completion, an increased likelihood that families or loved ones understand and comply with the patient’s wishes, and reduced hospitalizations (Silveira, 2022). Furthermore, ACP improves the quality of life during EOL care by reducing intensive treatments, increasing the utilization of hospice services, and increasing the likelihood that patients will die in their preferred place (Glass et al., 2021).

Advance care planning addresses the Affordable Care Act’s five performance measures known as the Quintuple Aim: reduce cost and improve patient experience and health, healthcare worker satisfaction, and health equity (Nundy et al., 2022). Firstly, ACP reduces the per capita cost of healthcare by 35% through a reduction of undesired healthcare utilization during EOL care (Nundy et al., 2022). Secondly, ACP improves the patient experience as treatment is patient-centered and goals of care are carried out 90% of the time (Martin et al., 2016). Thirdly, the quality of EOL care is improved for
seriously ill patients, demonstrated by a 16% higher 1-year survival rate in patients who participated in ACP compared to those who did not participate in ACP (Neergard et al., 2019). Also, ADs provide guidance and reduce the decisional burden on surrogate decision-makers, minimizing stress, anxiety, and depression that may come with making lifesaving or life-ending decisions. Fourthly, healthcare worker satisfaction is enhanced, reassuring providers that care is provided in accordance with the patient’s goals and values. Lastly, ACP improves health equity by allowing everyone to have a voice in their future care regardless of their background. As a healthcare system, ethically caring for patients at the end of their lives according to their wishes and values promotes positive health outcomes and prevents unwanted medical expenses.

**Local Issue**

The local problem, like many other areas, is that ACP conversations are done reactively after patients lack decisional capacity, become hospitalized, and are often pressured by the patient’s critical condition. In such cases, appointed surrogates must set aside their own emotions and make decisions that they feel are in accordance with the patient’s wishes. However, this is an arduous task and many feel that overwhelming emotions interfere with decision-making. Additionally, patients and providers may be reluctant to explore this topic as the conversation may be viewed as morbid. The provider must recognize their role in patient education, have meaningful conversations with their patients, and utilize teach-back methods to evaluate the patient’s understanding (Paterick et al., 2017). According to Rao et al. (2014), the most frequently reported reason for not having an AD was a lack of awareness or education about ACP options, further highlighting the ongoing need for education.

**Diversity Considerations**

The evidence-based quality improvement (EBQI) project site was an outpatient family practice clinic. This clinic serves the pediatric population and remains relatively uniform, with most patients being Caucasian adults aged 40 to 70 years. With a diversity score of 90%, the project site’s city is more
diverse than many other U.S. cities (Best Neighborhood, 2023). The city’s population is comprised of 75.6% Caucasian, 8.7% Hispanic, 6% African American, 1.3% Asian, 0.1% Native American, and the remaining 8.3% is specified as Other (Best Neighborhood, 2023). In the specific area of the clinic, most people identify their ethnicity as German (28.9%), while 14.4% are Irish, 9.1% are Italian, and 6.7% are Puerto Rican (Neighborhood Scout, 2023). The most common language spoken in this area is English (90.6%), while 3.1% speak Spanish (Neighborhood Scout, 2023). Due to the characteristics of the nearby population, the completion rates of the Spanish version of the project were limited. Approximately 2% of the nearby population is active in the military, which is well above the proportion of residents active in the military in other U.S. neighborhoods (Neighborhood Scout, 2023).

All project components, including the project card, patient informational letter, survey, and video intervention, were translated into Spanish to reach a more diverse patient population. The video remained culturally sensitive by presenting facts about the ACP process, remaining nonjudgmental and cognizant of differences in beliefs regarding future medical care decisions based on cultural differences.

**Problem, Purpose**

**Problem Statement**

Patients in critical condition who have not completed an AD may lack the decision-making capacity, leaving loved ones the burden of making lifesaving or life-ending medical care decisions. Proactively educating and testing patients’ knowledge of ACP topics in the primary care setting can ensure that EOL care is consistent with their values and reduces the decisional burden on surrogate decision-makers (see Appendix A). Research has shown that educational interventions increase ACP engagement scores, knowledge, and completion (Amant et al., 2019; Fink et al., 2019).

The current trigger for change at the outpatient primary care clinic was apparent following the COVID-19 pandemic. The lack of understanding about ACP topics and the under-completion of ACP documents persisted despite over one million deaths documented in the United States
Evidence suggests that only one-third of patients across the United States have completed ACP documents (Yadav et al., 2017). Currently, no system exists to initiate and guide ACP-related conversations during Medicare wellness visits. Implementing an evaluation and improvement process is crucial to prevent unethically caring for patients in the future.

Purpose

This EBQI project aimed to determine if an ACP video intervention increased ACP self-efficacy, readiness, and knowledge scores of adult patients 50 years of age or older. A video intervention was used to improve the understanding of ACP based on health literacy. Improving ACP engagement promotes ethical end-of-life care and reduces the decisional burden on loved ones.

Project Facilitators and Barriers

Project implementation was free of charge for both patients and providers; thus, the economic component of this project was a strong facilitator. Another facilitator was time, as this project consumed relatively little time for the patient and provider. Key stakeholders in this project included the providers, patients, and their families. The Centers for Medicare and Medicaid Services were strong support systems for this project as they had recently begun reimbursing for ACP conversations via CPT codes 99497 and 99498. Since adding these billing codes, providers have become shareholders and are in an optimal position to be the champions of this project’s implementation. This project was feasible to implement in primary care settings and across various healthcare and legal settings. Factors that promoted sustainability during implementation included an easily accessible website with a short educational intervention. This project is likely to be sustainable after completion as it is readily available via the internet and business cards with the QR code could be distributed across different healthcare settings.

Multiple factors made this evidence-based project challenging to implement in the primary care setting. The most prevalent barrier was related to the shortage of healthcare providers or staffing
amongst heavy patient workloads, as ACP should be an interdisciplinary process involving nurses, social workers, and providers. Another barrier unique to this project’s implementation included the patient’s beliefs and perceptions regarding future care and EOL planning, including cultural and religious beliefs. Many patients may opt not to have ACP conversations or documentation; however, providers must ensure that patients are adequately educated on the topic to make an informed decision. Lastly, a lack of the provider’s knowledge of the ACP process and completion of documents created a barrier to project implementation.

Review of Evidence

Inquiry

In adult patients 50 years or older, does an online interactive ACP video, Prep For the Next Step, improve advance care planning readiness, self-efficacy scores, and knowledge of ACP topics over 3 months at an outpatient suburban primary care clinic?

Search Strategies

A literature search was performed to identify studies on ACP and educational ACP interventions. Articles published in English from 2014 to 2023 were included. Additional inclusion criteria comprised studies that addressed the prevalence of ACP in primary care, implemented an intervention to improve ACP completion or knowledge, or analyzed stakeholders to ACP completion. The online databases PubMed, PubMed Central, Cumulative Index to Nursing and Allied Health Literature, and Cochrane Systematic Reviews were searched, and the Google Scholar search engine was also used. The keywords applied, both alone and in various combinations with Boolean phrases, included advance care planning, education, primary care, end-of-life planning, advance directive, and video.

Titles were selected based on their relevance to the subject, and after duplicates were removed, 112 abstracts were reviewed for inclusion. A total of 67 studies were excluded as they targeted the pediatric population, were published before 2014, or did not have full-text options available. Moreover,
10 studies were excluded as they lacked the strength to support an evidence-based inquiry. Thirty-five articles were included in the synthesis of evidence, delimited by the exclusion criteria (see Appendix B). Of the 35 articles, four were Level I evidence representing four systematic reviews and meta-analyses of randomized controlled trials (RCTs). Eleven were Level II evidence with two quantitative systematic reviews of non-randomized controlled trials and nine RCTs. Two were Level III evidence as non-randomized controlled trials. Ten were Level IV evidence with one systematic review of qualitative studies, seven cross-sectional studies, and two cohort studies. Four were Level V evidence and consisted of three systematic reviews of qualitative studies and one systematic review of quantitative descriptive studies. Three were Level VI evidence represented by two qualitative studies and one quantitative descriptive study, and one was Level VII evidence as an integrative review (see Appendix C).

Evidence by Themes

The review of evidence included a synthesis of the findings from the studies identified in the literature search. Six themes surfaced from the evidence as related to the inquiry (see Appendix D). The themes were (1) patient education or knowledge, (2) provider training or knowledge, (3) health literacy, (4) end-of-life care outcomes, (5) advance care planning completion, and (6) sociodemographic factors.

Patient Education or Knowledge

Fourteen studies examined the effect of patient education or knowledge on ACP topics, with 13 studies displaying that patient education improved ACP knowledge and may contribute to ACP completion. One exception to this theme’s finding was a cohort study that focused primarily on the relationship with the provider before and after ACP, displaying a positive association between having these conversations and strengthening the patient-provider relationship (van der Plas et al., 2022). Various educational resources were analyzed, including videos (Kang et al., 2020; Shu et al., 2023; Volandes et al., 2022), home visits (Corry et al., 2021), group meetings (Lum et al., 2020), patient portals (Brungardt et al., 2019), brochures (Kang et al., 2020), and ACP forms written at various reading levels.
(Gazarian et al., 2019), with every method proving to be feasible for implementation in the primary care setting (Paiva et al., 2019).

Three studies, one from each evidence Level I through III, focused on the effect of a video as a decision aid on AD preferences for life-prolonging care, willingness to have goals-of-care conversations, and knowledge of ACP topics, and most directly aligned with the theme and EBP inquiry (Kang et al., 2020; Shu et al., 2023; Volandes et al., 2022). Two studies, a systematic review of RCTs and an RCT, found that video decision aids significantly reduced patients’ preferences for life-prolonging care, cardiopulmonary resuscitation (CPR), and intubation tube placement (Kang et al., 2020; Shu et al., 2023). According to Kang et al. (2020), the use of an educational video correlated with significantly higher palliative care knowledge scores compared to a booklet ($p = .036$). Not only did the video intervention show significant positive effects on ACP, but in one RCT, the use of group visits significantly increased ACP completion by 26% ($p < .001$), ACP engagement scores by 22.5% ($p = .02$), and readiness to act towards ACP completion (Lum et al., 2020).

A qualitative descriptive study displayed that ACP home visits help reach the unique socially isolated older adult patient population (Corry et al., 2021), while a cohort study demonstrated that the use of a patient portal with portal-based messages about ACP might increase ACP completion for older adults in primary care (Brungardt et al., 2019). In a systematic review of RCTs, Martin et al. (2016) examined the effects of various ACP patient educational resources on different patient populations. Martin et al. (2016) reported an improvement in the quality of EOL care, including outcomes such as reducing unsolicited hospitalization rates by as much as 26%, increasing the number of people dying in their preferred place by as much as 40%, and an overall decrease in health care cost and utilization.

**Patient Knowledge Deficits.** Recognizing patients’ ACP knowledge deficits is imperative to tailor an educational intervention. A longitudinal study and a cross-sectional study found a common knowledge deficit on the role of living wills and the procedural knowledge of legal ACP processes,
specifi cally the designation of a healthcare agent and where to keep a living will (Kleiner et al., 2019; van Dyck et al., 2021). Increasing patients’ ACP process knowledge using a comprehensive decision aid may also assist family members in predicting patients’ wishes more accurately, as patients are more likely to have conversations with them (Green et al., 2018). The concern for the minimized usefulness of an online intervention for the older adult population has been discounted in multiple studies, indicating that older adults can benefit from a technology-based intervention (Bradley et al., 2017; Brungardt et al., 2019). Technological advancements have changed healthcare and have expanded providers’ ability to communicate with patients. One systematic review of qualitative studies found that online resources have been shown to adequately address AD and healthcare proxy processes, values, goals, and preferences for future care; thus, provider’s utilization of technology for future education is essential to improve ACP understanding (Gazarian et al., 2019).

**Provider Training or Knowledge**

Five studies employed the use of provider training to improve their knowledge of ACP (Fulmer et al., 2018; Gabbard et al., 2021; Kwak et al., 2022; Lasmarias et al., 2021; Myers et al., 2018). The main themes from professional organizations’ recommendations for ACP, outlined in a content analysis, include a provider’s professional commitment to advocating for patients’ values and goals and a responsibility to facilitate ACP (Kwak et al., 2022). Implementing ACP requires a multidisciplinary approach; however, the lack of a formal process to facilitate ACP persists, with an RCT estimating that less than 3% of Medicare beneficiaries were billed for ACP annually (Gabbard et al., 2021). Without minimum requirements or standardization of the ACP conversation from the Centers for Medicare and Medicaid Services, providers rely on their background, training, and expertise to guide these conversations (Kwak et al., 2022). Most primary care providers’ patients are 65 years or older and comprise the prime population for initiating ACP conversations. According to a random sample telephone survey by Fulmer et al. (2018), 53% of providers reported seeing patients 65 years or older
daily and only 21% reported that they discussed ACP or EOL care. Of these providers, 68% reported that
they had no ACP training and were less likely to initiate ACP conversations, perceiving these
conversations as more challenging than rewarding (Fulmer et al., 2018).

An RCT implemented a nurse-navigator pathway intervention for providers that increased ACP
completion, including the designation of a surrogate decision-maker, and improved the utilization of
ACP billing codes (Gabbard et al., 2021). Many different interventions have been used to motivate
providers to initiate these difficult conversations and were associated with positive findings; however, a
systematic review of both qualitative and quantitative studies showed a lack of evidence to support the
use of any one clinical tool for educating providers on ACP (Myers et al., 2018). In one cross-sectional
study, routine training of ACP processes and holistic implementation of ACP, which integrate the
patient’s cultural, ethnic, and religious beliefs and values into ACP discussions beyond medical
treatment, was linked to greater self-efficacy in ACP for providers (Lasmarias et al., 2021).

Understanding the provider’s barriers to initiating the ACP conversation, including a lack of time,
concerns for psychological distress, personal discomfort with death-related discussions, inexperience in
EOL issues, and the lack of formal ACP training, is crucial to improving the provider’s knowledge of ACP
topics (Myers et al., 2018).

**Health Literacy**

Health literacy is defined as a person’s ability to find, comprehend, and use information or
services to help make well-informed medical decisions (U.S. DHHS, 2022). As a Healthy People 2030
initiative, improving health literacy is a nationally recognized goal to improve health and well-being (U.S.
DHHS, 2022). Three high-quality studies, including two RCTs and a cross-sectional study, have displayed
that patients with adequate health literacy were more likely to complete an AD (Nouri et al., 2019;
Wickersham et al., 2019; Barker et al., 2021). Advance directives have been known to include medical
and legal terms that are unintelligible to patients and are written, on average, at the grade-12 level
(Mueller et al., 2010). One RCT by Sudore et al. (2016) displayed the mean reading level in the U.S. at the grade-8 level, with older adults aged 65 years or older reading, on average, at the grade-5 reading level. Inevitably, this patient population is lacking ACP completion. One RCT determined that reformed AD documents, such as the Five Wishes form, were written at the grade-8 level and were preferred over the original AD documents (Wickersham et al., 2019).

According to one RCT, patients with adequate health literacy were more likely to complete an AD overall, further contributing to disparities in ACP completion in those with low health literacy (Barker et al., 2021). Conversely, prior ACP experience was not associated with ACP knowledge; however, health literacy and sociodemographic factors were strong predictors of ACP knowledge in one cross-sectional study (Nouri et al., 2019). Providing easy-to-read ACP materials is critical, and even those who have completed ADs should be offered these tools to ensure an adequate understanding of their documented wishes (Nouri et al., 2019). Consequently, patients are likely to be more knowledgeable about ACP topics and feel empowered to complete the legal documents and inform family members about their desired medical care according to their wishes (Nouri et al., 2019).

End-of-Life Care Outcomes

High-quality EOL care addresses the patient holistically and encompasses the patient’s and their loved ones’ psychosocial, spiritual, and clinical needs (Hoare et al., 2022). Three studies, including one qualitative systematic review and two systematic reviews of RCTs, have reported that the patients’ EOL outcomes and their loved ones’ bereavement outcomes were positively impacted by ACP processes (Brinkman-Stoppelenburg et al., 2014; Malhotra et al., 2022; Yeun, 2021). In the recently published systematic reviews, satisfaction with care was increased among patients’ loved ones upon ACP completion, while their surrogate decision-makers reported reduced decisional conflict and burden (Malhotra et al., 2022; Yeun, 2021). Family members of patients who have not completed ACP are at risk
for decisional conflict that negatively impacts their quality of life, leading to anxiety and regret (Yeun, 2021).

End-of-life care outcomes can be measured by the patient’s perceived health status, quality of life, and concordance between preferred and actual care provided (Waller et al., 2017). Do-not-resuscitate orders were associated with a decreased incidence of CPR, cardiac catheterization, vasopressors, diagnostic tests, artificial hydration or nutrition, and hemodialysis (Brinkman-Stoppelenburg et al., 2014). End-of-life care outcomes for patients’ loved ones can be measured by bereavement outcomes, as well as psychological distress, such as anxiety, depression, and regret (Yeun, 2021).

**Advance Care Planning Completion**

Advance care planning is a lifelong process rather than a one-time completion. The final step of routine follow-up is the least completed step in ACP (Nelson-Brantley et al., 2020). According to the American Bar Association, clients should be encouraged to revisit their advance care plans and documents whenever any of the six Ds occur: (1) diagnosis change, (2) decline in health status, (3) death of a family or friend, (4) divorce, (5) reach a new decade, and (6) change of domicile or residential occupancy (Sabatino & Arkfeld, 2018). Screening with the six Ds during primary care visits is intended to stimulate a goals-of-care conversation between the provider and the patient, empowering the patient to update or establish ACP documents based on changes throughout their lives.

Four studies, including one non-randomized controlled trial, one cross-sectional study, one RCT, and a scoping review, focused on the use of education to improve AD completion (Brown et al., 2017; Fried et al., 2017; Nelson-Brantley et al., 2020; Yadav et al., 2017). All four studies concluded that AD completion highly depends upon timing, the patient’s willingness to discuss EOL care, and acceptance of EOL care. An ACP engagement scale, validated in one non-randomized trial, could help providers predict when the patient would be most receptive to having an ACP conversation and help guide the initiation
of these conversations (Brown et al., 2017). However, standardization of one ACP engagement scale would be useful in comparing outcomes from multiple studies. When attributing disease to ACP, AD completion is highest among those with neurologic disease and lowest in those with human immunodeficiency virus (Yadav et al., 2017). Promising evidence displays that rural primary care providers may be in an advantageous position as they are more likely to have longstanding multigenerational relationships with their patients (Yadav et al., 2017).

From 2011 to 2017, the proportion of Americans who have completed ACP has remained unchanged and the relationship between ACP participation and the surrogate’s knowledge of the patient’s preferences has become a major outcome of successful ACP completion (Fried et al., 2017; Yadav et al., 2017). Two of the most prevalent barriers to successful ACP completion include a lack of time and complexities accompanying legal requirements, such as needing two witnesses and a notarization for successful completion (Yadav et al., 2017). To overcome clinicians’ lack of time, an innovative approach utilizing nurse navigators to initiate ACP conversations and provide ACP education is being examined (Nelson-Brantley et al., 2020). Providing education and increasing awareness about the legal processes around ACP would prevent confusion when filing legal ACP documents.

**Sociodemographic Factors**

Six studies examined the effects of various sociodemographic factors on self-efficacy and ACP completion rates. Sociodemographic factors, such as race and ethnicity, were examined in one RCT, one randomized cross-sectional study, and one systematic review of RCTs and quasi-experimental studies (Jones et al., 2021; McAfee et al., 2017; Sudore et al., 2016). Many other factors were explored, such as religion and spirituality in a literature review (de Vries et al., 2019), socioeconomic status in one cross-sectional study (Nouri et al., 2020), and social isolation in another cross-sectional study (Cudjoe et al., 2020).
**Race and Ethnicity.** Significant disparities in access to quality healthcare and health outcomes exist in racial and ethnic underrepresented groups (URGs), including African Americans, Latino or Hispanic Americans, Asian Pacific Islanders, and Native Americans, translating into a higher incidence of chronic illnesses (Jones et al., 2021). Not only are chronic illnesses more prevalent in this population, but URGs are also less likely to receive hospice care and more likely to receive aggressive treatments during EOL care, which is linked to a lower quality of life and higher cost of care and resource utilization (Jones et al., 2021; Sudore et al., 2016). The non-Hispanic White population was two to three times more likely to complete ACP than URGs and had a higher self-efficacy score compared to African Americans and Hispanics, 24.17% versus 23.48% and 21.96%, respectively (McAfee et al., 2017). By 2050, a projected 40% of the U.S. adult population aged 65 years or older will be from URGs, making it imperative to successfully address and prevent health disparities that exist in this population, such as the lack of ACP (Jones et al., 2021; McAfee et al., 2017). Evidence has shown that educational interventions that are culturally sensitive, linguistically diverse, and easily accessible can have significant positive effects on ACP completion and ACP-related outcomes in the URGs (de Vries et al., 2019; Jones et al., 2021).

**Religiosity and Spirituality.** Cultural factors more prevalent in certain races or ethnicities, such as religiosity and spirituality, may also play a profound role in the lack of ACP in URGs. Religiosity and spirituality were negatively associated with ACP completion (de Vries et al., 2019). The African American, Asian-Indian Hindu, and Hispanic cultures tend to have a high religious and spiritual influence centered around family decision-making during crises, possibly accounting for an increase in aggressive treatment preferences during EOL care and a perceived decreased need for future medical planning (de Vries et al., 2019). Certain beliefs also play a role in ACP completion, such as the use of aggressive and invasive EOL care to buy time for God to heal ailments (de Vries et al., 2019). Providers must combat the disparities with an unbiased, nonjudgmental approach, focusing on improving ACP understanding and knowledge of the URGs to empower them to make informed decisions regarding their future medical
care. The health disparities in these groups are largely multifactorial, with barriers to ACP initiation and completion that include patients’ knowledge and attitudes toward planning for EOL care, access to high-quality ACP education, and certain spiritual or religious beliefs (Nouri et al., 2020).

**Socioeconomic Status.** Low socioeconomic status (SES), measured by the corroboration of education, income, and occupation, is negatively associated with ACP completion, which may be explained by the high cost of care for underinsured or uninsured patients and a lack of regular preventive medical care (Nouri et al., 2020). The recent COVID-19 pandemic shed light on the socioeconomically disadvantaged populations, mainly composed of Blacks and Latinos, that had a higher mortality rate and risk for experiencing social and economic distress compared to their counterparts with medium or high SES (Nouri et al., 2020). As ACP is primarily introduced to those in the clinical setting, community-dwelling older adults who are homebound or socially isolated may be excluded from this meaningful process (Cudjoe et al., 2020; Nouri et al., 2020). Advance care planning education strategically placed in socioeconomically disadvantaged neighborhoods or an overall expansion of accessible resources could help combat this health disparity.

**Social Isolation.** Social isolation is listed amongst the known behavioral risk factors, such as hypertension and smoking, that increase morbidity and mortality (Cudjoe et al., 2020). One in four older adults in the United States are socially isolated due to cognitive decline, depression, or functional limitations (Cudjoe et al., 2020). Furthermore, the socially isolated older patient population lacks self-efficacy to complete ACP, mainly due to the absence of a surrogate decision-maker or a healthcare provider who may serve as a patient advocate in the ACP process (Cudjoe et al., 2020). As ACP is described as a complex social process, socially isolated adults are at risk for EOL care that may be provided against their wishes (Nouri et al., 2020).
Evidence Discussion

Evidence Alignment and Strength

Reports of unawareness and lack of knowledge permeated the literature in this review. Many international and national organizations prioritize improving patients’ knowledge of ACP (American Medical Association [AMA], 2023; National Hospice and Palliative Care Organization, 2023; Office of Disease Prevention and Health Promotion, 2023; U.S. Department of Health and Human Services, 2018) as health literacy has become an influential implication of understanding and engaging in ACP (Barker et al., 2019; de Vries et al., 2019; Nouri et al., 2020). Due to the absence of clinical practice guidelines, research studies have collaboratively developed a global consensus to initiate proactive ACP conversations and regularly encourage all patients to evaluate their values and perspectives on quality of life. This consensus provides evidence-based recommendations for primary care providers to educate their patients on ACP options, regardless of age or health status (AMA, 2023; Nelson-Brantley et al., 2020).

Patients and their loved ones are affected by ACP education and completion. Patients equipped with the necessary knowledge have improved ACP readiness scores and are more likely to complete ACP documents. Additionally, the decisional burden on caregivers is minimized, and the caregiver’s psychological outcomes are improved during EOL situations (Brinkman-Stoppelenburg et al., 2014; Malhotra et al., 2022; Yeun, 2021). Strong religious affiliation, social isolation, and low socioeconomic status negatively impact ACP engagement (Cudjoe et al., 2020; de Vries et al., 2019; Jones et al., 2021; McAfee et al., 2017; Nouri et al., 2020) and could stimulate future research to reduce disparities in these populations.

Five studies provide direct evidence on the utilization of an educational ACP video support aid for adults over the age of 65 years, revealing that educational videos may improve knowledge of patient preferences for goals of care, stimulate goals-of-care conversations in the primary care setting, and
improve ACP knowledge scores (Gazarian et al., 2019; Kang et al., 2020; Martin et al., 2016; Shu et al., 2023; Volandes et al., 2022). The five studies providing direct evidence are strong, with two Level I (Martin et al., 2016; Shu et al., 2023), one Level II (Kang et al., 2020), one Level III (Volandes et al., 2022), and one Level V study (Gazarian et al., 2019), with most studies published between 2019 and 2023. Compared to a pamphlet or website, videos require less reading and literacy skills from the subjects (Shu et al., 2023).

Indirect evidence from nine studies on improving patient education or knowledge have slightly different interventions but support this evidence-based intervention (Bradley et al., 2017; Green et al., 2018; Brungardt et al., 2019; Kleiner et al., 2019; Paiva et al., 2019; Lum et al., 2020; Corry et al., 2021; van Dyck et al., 2021; van der Plas et al., 2022). The nine studies that provide indirect evidence are moderately strong and include four Level II (Bradley et al., 2017; Green et al., 2018; Paiva et al., 2019; Lum et al., 2020), three Level IV (Brungardt et al., 2019; van Dyck et al., 2021; van der Plas et al., 2022), and two Level VI studies (Kleiner et al., 2019; Corry et al., 2021), all published between 2017 and 2022. The interactive Prep For the Next Step video provides a cost-effective and time-saving intervention feasible for implementation in the primary care setting to improve ACP readiness and self-efficacy.

**Weaknesses**

Five studies incorporated subjects outside or excluded subjects within the target population’s age, such as ages 48 to 68 years (Bradley et al., 2017), ages 71 to 80 years (Kleiner et al., 2019), ages more than or equal to 20 years (Kang et al., 2020), and ages more than 75 years (van der Plas et al., 2022). This may skew results and further weaken the support of this evidence-based inquiry. Five studies were conducted in other countries with potentially ungeneralizable results, including Australia (Bradley et al., 2017), Switzerland (Kleiner et al., 2019), Ireland (Corry et al., 2021), and the Netherlands (van der Plas et al., 2022). Biases were reported in nine of the studies, including performance (Yeun, 2021), recall (Cudjoe et al., 2020), selection (Green et al., 2018; Kang et al., 2020; Lasmarías et al., 2021; Lum et al.,
2020), enrollment (Sudore et al., 2016), sampling (Corry et al., 2021), publication (Shu et al., 2023), and gender (Lasmarías et al., 2021) biases. Lastly, the lack of validated tools to measure outcomes was evident in one study (Kang et al., 2020). In virtually all studies, the lack of consistency in tools used to measure outcomes made it difficult to compare findings.

**Limitations and Gaps**

While this review highlighted many tools to promote ACP knowledge, limited evidence was found regarding ACP conversations in adults below 65 years old, those without terminal or chronic illnesses, and the surrogate’s knowledge of desired medical care. Moreover, the knowledge of ACP topics is difficult to measure as few validated tools are available, and many social, religious, spiritual, and cultural implications affect ACP engagement. Gaps in evidence, knowledge, and population were apparent in this literature review. The gap in evidence can be attributed to the lack of studies on ACP conversations in the younger population and adults without chronic illnesses and the absence of standardized clinical practice guidelines on ACP. Lastly, a knowledge gap exists in which the primary care providers may not have the knowledge or expertise to initiate ACP conversations.

**Theory**

The social support theory (SST), a borrowed nursing theory from social epidemiology that originated from the stress theory (Cassel, 1974), served as a foundation for this evidence-based inquiry. The purpose of this middle-range theory is to describe the effect of social support on physical or psychological health and well-being (Frechman et al., 2020; Vaux, 1988). Conceptually, this project improved the patient’s readiness and self-efficacy for ACP engagement and ACP knowledge via an educational video. The video subsequently improved health literacy, with the main concept of patient education aligned with the SST. The SST’s contribution to nursing was evidenced in numerous articles demonstrating social support’s impact on health status, behavior, and the use of health services (Reblin & Uchino, 2008). Applying the SST and the associated emotional, instrumental, informational, and
appraisal support have strong connections to ACP. The four types of support have been shown to improve physical and psychological health outcomes at the end of life for patients, their family, and their loved ones (Boerner et al., 2013; Donovan & Greenwell, 2021; Silveira, 2022).

The theoretical concepts of instrumental and informational support align directly with the inquiry’s concepts of patient education, ACP documents, and health literacy. These concepts promote personal competence and positive coping methods when making medical decisions regarding EOL care (see Appendix E). Providers promote personal competence through beneficent and autonomous EOL care that aligns with individualized personal values and wishes (Akdeniz et al., 2021). The remaining theoretical concepts of appraisal and emotional support, as well as social capital and social inclusion, stimulate further research to quantitatively increase the completion of ADs by improving ACP engagement scores.

Methods

Institutional Review Board Approval, Site Approval, Ethical Issues, Funding

The primary Institutional Review Board (IRB) for the project approval was the University of Missouri-Kansas City (UMKC) IRB. The UMKC IRB deemed this project a quality improvement activity. The project site approval was obtained from an outpatient primary care clinic before project implementation.

The intervention in the EBQI project involved minimal risk to participants, with a favorable risk-benefit ratio. The risks and benefits were shared equally as this project involved a single cohort with a pretest and posttest design. The participants were considered a vulnerable population as some had limited health literacy or were economically or educationally disadvantaged. An electronic patient informational letter was provided before participation to ensure the patient understood that their role as a participant was voluntary, the various risks and benefits, the study’s goals, the type of data collected, and the confidentiality pledge. The goal was to distribute the survey and video intervention to
every patient aged 50 years or older via a QR code on a business card at the end of the office visit over 3 months. The inclusivity of the EBQI supported the ethics of not withholding quality care; participants were offered to participate by age and convenience sampling.

The project team leader ensured participant anonymity, privacy, and confidentiality by using a QR code that took participants to a Research and Electronic Data Capture (REDCap) webpage. The REDCap database is an online secure data collection tool designed to meet the Health and Insurance Portability and Accountability Act’s standards for privacy and confidentiality. Implementing this project had scientific value and validity as it sought to improve ACP engagement at a local clinic. The project was cost-effective, with a total cost of $324.50 for printing double-sided project business cards, translating the video into Spanish, and utilizing the Camtasia video software (see Appendix F). No funding was sought as the project team leader covered the cost.

Setting and Participants

The participants were patients 50 years of age or older at an outpatient primary care clinic visiting the clinic between October 2, 2023, and December 29, 2023. The clinic posted the project card on the organization’s website to promote completion rates. Also, the project team leader distributed approximately 20 project cards to nurse practitioners (NPs) at the annual Advanced Practice Nurses of the Ozarks (APNO) conference. All individuals meeting the age criteria, regardless of ACP completion and health status, could participate in this EBQI project. Exclusion criteria comprised those who speak another language besides English or Spanish and are younger than 50 years old. Convenience sampling was used as participants were selected for inclusion based on their in-person visit to the clinic within a 3-month time period, making this sample more easily accessible for the project team leader. Utilizing convenience sampling allowed the project team leader to efficiently gather basic data and analyze trends. However, the sample may not have been representative of the entire patient population. Although 90 participants volunteered to participate in the project, only 48 participants spent a minimum
of 700 seconds (11 minutes and 40 seconds) on the educational video, six of which completed the Spanish version of the project.

**EBP Intervention**

The intervention was an ACP educational video aimed to increase ACP readiness, self-efficacy, and knowledge scores and empower patients to autonomously plan for their future medical care. The video, which was 12 minutes and 19 seconds long, contained the process of completing ACP documents, including healthcare power of attorney, AD, and living will. Advance directive topics, such as AD risks and benefits, including CPR, intubation and mechanical ventilation, and artificial hydration and nutrition, were individually highlighted in the video to ensure the patient adequately understood the implications of each topic. A validated 11-item ACP engagement survey determined the change in scores directly pre- and post-intervention. The team involved in this project included six providers at the outpatient primary care clinic, medical assistants, nurses, and the project team leader. To measure the video’s effect on ACP engagement scores, participants must have taken the ACP engagement survey before and immediately after watching the video.

**Pre-implementation**

The project site and UMKC IRB approvals were obtained on August 11, 2023 (see Appendices G and H). The educational video was created by the project team leader using the Camtasia video editing software and was completed on September 30, 2023. The video’s playtime was limited to less than 15 minutes to increase participants’ likelihood of completing the project. The pre-implementation survey was compiled by September 15, 2023, and encompassed a patient informational letter followed by six demographic questions, including gender identity, race or ethnicity, age group, marital status, highest degree completed, and prior completion of any ACP document.

The pre- and post-implementation questionnaires were placed in REDCap, with the video embedded in between these surveys. This REDCap survey had an associated QR code printed on a 3.5-
inch by 2-inch card and distributed to patients in the clinic setting. The surveys and videos were translated into Spanish to reach a more diverse patient population. One side of the business card had a QR code for the project in English, while the other had a QR code for the project in Spanish. The week before project implementation, the project team leader held a luncheon for clinical staff to answer any questions and review the project’s protocol in the clinic.

**Implementation**

From October 2, 2023, to December 29, 2023, participants were recruited from an outpatient primary care clinic. The intervention was offered to all patients aged 50 years or older visiting the clinic during the implementation period (see Appendix I). Six providers at this clinic distributed the project cards to eligible English or Spanish-speaking patients (see Appendix J). The providers handed the project cards to the patients at the end of their visit, and a standardized script was provided for the provider to recite that briefly stated the project’s purpose statement and instructed the patient to scan the QR code with their phone when they get home from the office visit (see Appendix K). For Spanish-speaking patients, the provider used the interpreter during the encounter to introduce the project to the patient.

The participant was directed to a REDCap link after scanning the QR code. Then, the participant completed an electronic patient informational letter with a pledge to confidentiality before starting the study, reiterating that project participation was voluntary, disclosing the risks and benefits of the project, and clearly stating the project’s goals (see Appendix L). The participants completed the pre-implementation survey and watched a 12-minute and 19-second video, then completed the post-intervention survey (see Appendix M). After completing the post-intervention survey, ACP documents, such as AD, medical durable power of attorney, and living will, were provided in the patient’s corresponding language to further support the completion of these documents.
**Post-implementation**

After the 3-month intervention period concluded, the project team leader analyzed and interpreted the survey results and prepared to present the project’s findings. The intended short-term outcome was that ACP engagement scores improved post-intervention. Potential long-term outcomes could include increased ACP conversations, increased provider documentation of ACP conversations, and documents revisited at least every decade (see Appendix N).

**Change Process, EBP Model**

The organizational change process, transtheoretical model of health behavior change, supported this project’s implementation as ACP is an ongoing process. The patients’ readiness and self-efficacy were measured to determine the stages of pre-contemplation, contemplation, preparation, action, and maintenance of ACP engagement. This framework can help guide the provider’s ACP conversation with the patient, help the patient take steps to complete ACP documents, and maintain these documents by revisiting them at least every 10 years. The Iowa model of evidence-based practice is widely used as a nursing-based framework for pilot testing before full change implementation. This project was stimulated by a knowledge-based trigger of ACP prompting a synthesis of research and involved piloting a practice change in one clinic, requiring ongoing evaluation, and disseminating beyond the pilot after completion.

**Project Design**

This project had a pretest-posttest quasi-experimental design involving one group. The single cohort completed a validated ACP engagement survey before and after an educational video. The primary outcome was to evaluate whether the video affected ACP engagement within the cohort. The impact of the EBP intervention was measured by the change in median ACP engagement scores before and after the intervention. One flaw of pretest-posttest designs is that confounding variables may influence these measurements and may be influenced by the placebo effect. The pretest occurred
immediately before the educational video, with the posttest immediately afterward to minimize any bias that may transpire between the pretest and posttest.

Validity

The project’s use of a previously validated tool to measure ACP engagement outcomes promoted internal validity. The project’s design and protocol addressed threats to internal validity, such as selection bias and confounders. A single cohort pretest-posttest study design eliminated selection bias, and confounding variables were minimized by having the pre- and post-survey directly before and immediately after the intervention. To decrease the attrition rate and reduce the threat of maturation, the intervention was limited to an 11-item survey before and after a 12-minute and 19-second video intervention.

This EBQI project promoted the intervention's external validity, or the transferability, to other outpatient primary care clinics through the participant’s characteristics, the project’s setting, and timing. Including patients on six providers’ schedules and translating the project into Spanish increased the sample size and diversified the sample. The project was implemented at an outpatient suburban primary care clinic with patients of all genders, ethnicities, and educational backgrounds. The providers’ schedules over 3 months, from October through December, dictated the project’s potential participants and eliminated selection bias by the project team leader. The timing of the intervention during the fall and winter months may have captured subjects when they were more willing to engage in ACP as they may have been spending more time with family during the holidays. Compromised health during the peak of cold and flu season may have improved project completion rates.

Outcomes

The primary outcome of the EBP intervention was improved ACP engagement scores, including ACP self-efficacy, readiness, and knowledge scores. The change in median scores before and after the video intervention was analyzed (see Appendix O). The project team leader tested the impact of an
educational ACP video intervention on ACP engagement scores in adults aged 50 years or older. The ACP educational video intervention was anticipated to significantly increase ACP engagement scores, improving the quality of medical care and care satisfaction.

**Measurement Instrument**

The instrument used to measure the project’s outcomes was the validated 9-item Advance Care Planning Engagement Survey, which included six ACP readiness questions and three ACP self-efficacy questions (Sudore et al., 2017). In addition, two questions on ACP knowledge were retained from a prior 34-item survey version. Therefore, an 11-item validated ACP engagement survey was used, encompassing three ACP self-efficacy items (questions 1-3), six ACP readiness items (questions 4-9), and two ACP knowledge items (questions 10-11). These questions originated from a validated 82-item ACP engagement survey (Cronbach’s alpha, 0.97) that was successfully reduced to a nine-item survey while maintaining high internal consistency (Cronbach’s alpha, 0.89), construct validity (mean 5-point score, 3.11; Pearson correlation coefficient, 0.89; p < .001), and criterion validity (Sudore et al., 2013). Cronbach’s alpha for self-efficacy, readiness, and knowledge questions were 0.83, 0.92, and 0.84, respectively (Sudore et al., 2017). The 82-item version was field-tested to examine the reliability of the questions in the ACP Engagement Survey by administering the survey at baseline and one week later to older residents (n = 50; mean age, 69.3 years) and young, healthy subjects (n = 20; mean age, 23.2 years) for discriminant validity analysis (Sudore et al., 2013). The survey was free to use and had high test-retest reliability (process measures intraclass correlation, 0.70; action measures, 0.87), signifying internal validity as the instrument’s measurements were stable and reliable over time (Sudore et al., 2013).

A Likert scale from 1 to 5 measured the ACP engagement scores for self-efficacy and knowledge: (1) not at all, (2) a little, (3) somewhat, (4) fairly, (5) extremely. A different Likert scale was used to measure ACP readiness: (1) I have never thought about it, (2) I have thought about it but I’m not ready to
do it, (3) I am thinking about doing it in the next 6 months, (4) I am definitely planning on doing it in the next 30 days, (5) I already did it. A Likert scale is classified as ordinal data with numbers that represent categories in hierarchal order to determine the significance of the data. However, Sudore et al. (2017) treated the Likert scale as interval data and reported mean Likert scores when applying the original tool.

The provider’s role in instructing the patient to scan the QR code via the participant’s phone when the patient gets home was imperative to project completion. The project team leader distributed the same script amongst the providers. The patient was directed to complete the pre-intervention survey, watch the ACP video, and complete the post-intervention survey. To be included in data analysis, the participants must have watched the entire video or spent at least 11 minutes and 40 seconds on the educational video section before completing the post-intervention survey. Elsevier granted permission to use and translate this instrument into Spanish via the Copyright Clearance Center’s RightsLink service (see Appendix P).

Quality of Data

This project was designed to have 80% power to detect a difference between pre- and post-intervention ACP engagement scores of 0.5 by paired sample t-test (alpha 0.05, one-sided). A-priori power analysis using the G*Power application was conducted to determine the number of participants needed (Faul et al., 2007). A sample size of 27 participants was necessary to achieve these parameters.

Over 3 months, the baseline and post-intervention ACP engagement scores on a Likert scale of 1 to 5 measured the patient’s self-efficacy, readiness, and knowledge of ACP via the ACP Engagement Survey. Due to the novelty of the validated survey, this survey had not yet been used extensively in research and benchmark ACP engagement data was scarce. The average 9-item ACP engagement score of 288 patients with chronic kidney disease was 38 out of 45 (Aldous et al., 2020). One prospective study utilized the 55-item ACP Engagement Survey to determine baseline ACP data in 89 primary care patients
and reported the mean Likert scales for knowledge, self-efficacy, and readiness to be 3.1, 3.9, and 2.5, respectively (Howard et al., 2020).

Before the project implementation, the project team leader held a luncheon for clinical staff to review the project’s purpose and procedures at the clinic on September 19, 2023. During the 3-month implementation period, the project team leader visited the clinic five times to promote project completion, observe the efficiency of distributing business cards at the end of office visits, and restock project cards as needed. The REDCap survey completion data was reviewed weekly throughout the intervention (see Appendix Q). Project cards were 13 cents each, and the cost did not exceed the projected $62.50 for 500 project cards.

**Statistical Analysis**

As the aggregated ACP scores for self-efficacy (questions 1-3), readiness (questions 4-9), and knowledge (questions 10-11) were interval data, the appropriate statistical test would be the paired samples t-test. However, the assumptions for a paired samples t-test were not met. Therefore, the Wilcoxon signed-rank test was used to analyze one cohort’s change in median pre- and post-intervention scores. This statistical analysis is a non-parametric alternative to the dependent t-test and assumes that the paired samples are random and independent and that both variables are at least on an ordinal scale (Statistics Solutions, 2021). With the Wilcoxon signed-rank test, the appropriate method to determine the central tendency is by examining the difference in the median scores. The ACP engagement scores were analyzed using the Social Sciences (SPSS) software (IBM Corp., 2022).

The demographic data collected in the project included gender identity, race or ethnicity, age group, marital status, highest degree completed, and having preexisting ACP documents. Descriptive statistics, including frequencies and percentages, were utilized to analyze the demographic data. These six demographics were chosen as they have been shown to affect ACP engagement and completion in various ways (Perkins et al., 2004; van Dyck et al., 2021; Choi et al., 2022).
Results

Setting and Participants

Throughout the 3-month implementation period from October 2, 2023, through December 29, 2023, 84 participants aged 50 years or older completed the pre-intervention survey in English, while six completed the pre-intervention survey in Spanish. Of these 90 participants, 47% did not watch the video in its entirety. Participants who spent less than 11 minutes and 40 seconds on the educational video were excluded from the project. Therefore, the data analysis was based on 48 project participants. Of these participants, 37.5% were male and 62.5% were female, 79% were between 50 and 80 years old; most (77%) were currently married, and almost 80% had at least a bachelor’s degree (see Appendix R). Additionally, a majority of the participants were White (70.8%), followed by Hispanic or Latino (14.6%), Black or African American (6.3%), Asian (6.3%), and American Indian or Alaskan Native (2.1%). Of note, 43.8% of the participants had no ACP document completed and 18.8% were unsure if they had previous ACP documents completed (see Appendix R).

Intervention Course, Actual

The actual intervention course differed slightly from the proposed protocol. The main components of the intervention involved introducing the project to the project team, promoting a practice change before and during the implementation period, and visiting the clinic to promote adherence to the protocol throughout the implementation phase. After a mandatory staff meeting, the project team leader introduced the study to the project team via a PowerPoint presentation on September 19, 2023. The project team members consisted of six providers, six medical assistants, and one registered nurse. One provider worked part-time and did not hand out project cards, thus five providers participated sharing the study with patients. Preparing the project team two weeks before project implementation helped familiarize clinical staff with the protocol.
The first week of the implementation period was a trial week, consisting of polling the project team about the best way to implement the project into the clinic’s workflow. During the first week, the project cards were kept at the medical assistants’ and registered nurse’s desks and distributed to eligible patients upon rooming and obtaining vitals, regardless of the reason for the visit. After trialing this method, the project team’s consensus was to keep stacks of project cards within the exam rooms, readily available for providers to distribute to patients who met the criteria. Due to the sensitive nature of ACP conversations, the project team also decided to hand out project cards only during annual physicals or Medicare wellness visits where ACP discussions were more appropriate. After implementing these changes, staff could remember to screen patients for project participation, and the completion rate increased from six participants in the first week to 25 participants in the second week. Updating the project team on these changes to the project’s protocol after the first week was imperative to the project’s success.

Lastly, the project team leader promoted project completion by visiting the clinic every 2 to 3 weeks to hand out project cards to patients upon check-in and ensure exam rooms were adequately equipped with the project cards. The highest participation rates were on the days when the project team leader visited the clinic to facilitate handing out project cards. As the implementation phase progressed, participation rates decreased each month, with 48 participants in October, 20 participants in November, and 19 participants in December. In late November and again in mid-December, the project’s participation rates dropped to an average of two per week. This gradual decline in participation may be attributed to the holiday season approaching and the clinic closures around the holidays.

**Outcome Data by Sub-Topic**

**Self-Efficacy**

As the assumption of normality for a paired samples t-test was violated as assessed by Shapiro-Wilk’s test for the difference in self-efficacy scores ($W = 0.844, p < .001$), the Wilcoxon signed-rank test
was conducted. Out of the 48 project participants, the post-intervention scores elicited an increase in 26 participants, whereas 17 participants saw no improvement and five participants showed a decrease in self-efficacy scores after watching the ACP video (see Appendix S). A statistically significant median increase was seen in ACP self-efficacy ($Mdn = 1.5$) from pre-intervention ($Mdn = 12.0$) to post-intervention ($Mdn = 14.0$), $z = 4.440$, $p < .001$.

**Readiness**

As the assumption of normality for a paired samples t-test was violated as assessed by Shapiro-Wilk’s test for the difference in readiness scores ($W = 0.925$, $p = .004$), the Wilcoxon signed-rank test was conducted. Out of the 48 project participants, the post-intervention scores elicited an increase in 30 participants, whereas 12 participants saw no improvement, and six participants elicited a decrease in readiness scores after watching the ACP video (see Appendix S). A statistically significant median increase was seen in ACP readiness ($Mdn = 4.5$) from pre-intervention ($Mdn = 16.0$) to post-intervention ($Mdn = 23.5$), $z = 4.686$, $p < .001$.

**Knowledge**

As the assumption of normality for a matched pairs t-test was violated as assessed by Shapiro-Wilk’s test for the difference in knowledge scores ($W = 0.908$, $p = .001$), the Wilcoxon signed-rank test was conducted. Out of the 48 project participants, the post-intervention scores elicited an increase in 35 participants, whereas 12 participants saw no improvement, and one participant elicited a decrease in knowledge scores after watching the ACP video (see Appendix S). A statistically significant median increase was seen in ACP knowledge ($Mdn = 3.0$) from pre-intervention ($Mdn = 6.0$) to post-intervention ($Mdn = 10.0$), $z = 5.213$, $p < .001$. 
Discussion

Successes

The leading success in this EBQI project was the participants’ statistically significant increase in ACP scores for self-efficacy, readiness, and knowledge after watching an ACP educational video. Also, an a priori power analysis estimated that 27 participants were needed for a sufficient sample size to achieve 80% power. The sample size of 48 participants exceeded this estimation and likely contributed to the statistically significant findings. These findings could be valuable for similar projects in the future.

Study Strengths

The project site’s staff and leadership supported this intervention and improved participation by distributing project cards and promoting the project on the clinic’s social media platforms. The clinic’s organizational culture also focused on patient education, paramount to the project’s success. The project cards were portable and allowed the participants to complete the project on a computer at home for optimal viewing. The project team leader observed that supportive staff distributed project cards successfully in the clinic. However, some opportunities to reach more patients were missed due to the staff forgetting to distribute the project cards during office visits. After sharing the project cards, about 50% of those who completed the project did not watch the entire video. Due to the high participation rate, the project leader could exclude these participants from the statistical analysis while maintaining power. Data regarding ACP engagement in adults younger than age 65 is sparse. This project can assist in closing the gap in evidence regarding ACP engagement in middle-aged adults, given that the majority (47.9%) of the participants were between ages 50 and 60.

Results Compared to Evidence in the Literature

The results of this project coincide with previous studies that reported an overall improvement in ACP engagement scores after watching an educational ACP video (Gazarian et al., 2019; Kang et al., 2020; Martin et al., 2016; Shu et al., 2023; Volandes et al., 2022). When including all 90 participants that
participated in the project, regardless of the amount of time spent on the video, about 40% of the White population did not have any ACP document completed, which is comparable to the national average of 33.3% not having completed an ACP document (Yadav et al., 2017). Moreover, 4% of White participants were unsure if they had any documents completed, 24% had one document completed, 14% had two documents completed, and 18% had all three documents completed. Only four African American and seven Hispanic participants completed this project. Of the African American participants, 75% reported that they had no documents completed, and 25% reported that they were unsure. Of the Hispanic participants, about 86% were not sure if they had any document completed, and about 14% had one document completed.

Although this project lacked participants from URGs, the project’s demographic results are similar to McAfee et al. (2017), displaying that the non-Hispanic White population was two to three times more likely to complete ACP than URGs. McAfee et al. (2017) found that self-efficacy scores were higher in Whites than in Hispanic and African American populations. This project aligns with McAfee et al.’s (2017) findings, indicating that mean pre-intervention self-efficacy scores for White, African American, and Hispanic participants were 13, 6.5, and 7.6, respectively. This project further highlights the racial disparities in ACP completion and self-efficacy found in McAfee et al. (2017).

**Limitations**

**Internal Validity Effects**

The confounding variable in this project may include previous experiences with ACP and prior completion of the ACP documents. Participants who have already completed these documents may report higher pre-intervention scores and skew the median score differences. Age may also be a confounding variable, with a higher age correlating to an increase in ACP completion. Attrition bias and response bias posed a threat to the internal validity of the project. The attrition rate from pre- to post-intervention was 26% and approximately 17% did not watch the entire video.
External Validity Effects

This project aimed to incorporate a diverse patient population through translating the project into Spanish; however, 70.8% were White, and only 14.6% were Hispanic or Latino. Additionally, only about 21% of the participants were over the age of 70. This could impact the validity of the transfer of the intervention to URGs and the older adult population. Although the sample was not representative of the U.S. population, the project’s findings are transferable to other suburban Midwest clinics with comparable limited racial diversity and a majority of middle-aged adult patients. Despite the project site being in a large suburban city, the video intervention may be transferrable and applicable to rural patient populations due to the project's portability via a QR code.

This project’s findings may be transferable to other suburban primary care clinics with a specific demographic, including a majority of patients being White and between the ages of 50-70. Although this project helped close a knowledge gap regarding ACP engagement in middle-aged adults, allowing for project completion within the clinic after the appointment could have increased participation in older adults 70 years of age and older. The underrepresentation of older adults and those in URGs decreases the transferability of results to this population. Implementation of the Spanish version of the project at a clinic with a large Hispanic/Latino patient population could further investigate the effect of an ACP video cross-culturally.

Sustainability

To promote the sustainability of the Prep For the Next Step project at the primary care clinic, the QR code will be placed on a business card and distributed during each annual physical for adults at least 50 years of age. Project cards will be stationed in each exam room to reinforce providers’ compliance with distributing project materials. The QR code may also be placed on an electronic platform or included in the after-visit summary. The ability to distribute the QR code in different ways allows the provider to reach a more widespread, diverse patient population. The primary care clinic may
opt to distribute the QR code electronically to eliminate costs altogether or pay a low cost to print the business cards, further increasing the project's sustainability in the clinic setting. The most significant barrier to future intervention sustainability is the failure of providers to address ACP at every annual physical for middle-aged and older adults.

To emphasize the importance of addressing ACP at every annual wellness visit, the provider must be familiar with ACP topics and the process of filing these documents, which may include minimal continuing education for providers at the clinic. The 11-item ACP Engagement Survey is a quick way for providers to screen patients’ ACP self-efficacy, readiness, and knowledge at baseline and after watching an educational video to assess the patient’s readiness for these difficult conversations. After ACP completion, the project team leader recommends that patients are annually screened for the six Ds to ensure documents are valid and reflect the patient’s most up-to-date wishes regarding future healthcare.

Minimization of Limitations

Throughout project implementation, all participants received identical scripted introductions to the project and were provided with the same educational materials via a QR code, except for the Spanish video, which had a different QR code and a slightly longer video. The consistency of the educational intervention with a pre- and post-intervention survey minimized the impact of confounding variables. The pre-intervention survey established the patient’s baseline ACP self-efficacy, readiness, and knowledge so that the project team leader could successfully interpret the impact of the educational video on ACP engagement. The healthcare providers who distributed the project cards had well-established relationships with project participants. The participants could complete the project on a phone via a QR code or a computer via a weblink, making the project convenient and easily accessible.

The effect of an educational video on ACP engagement was measurable, owing to a high participation rate, which offset the attrition rate. Therefore, the project concluded that the Prep For the
Next Step video increased ACP engagement scores, including ACP self-efficacy, readiness, and knowledge. The project’s results primarily reflect Caucasian’s increase in ACP engagement pre-and post-intervention. Although the project was designed to promote cultural inclusivity by translating the project into Spanish, the project lacked participants from URGs. Future project applications in URGs will be needed to reflect how various cultures and patients from different racial backgrounds interpret and react to the educational video.

**Interpretation**

**Expected and Actual Outcomes**

The project findings aligned with the expected outcome of increased ACP engagement in the target population. Participants were receptive to the project, as demonstrated by a high participation rate. The project team leader anticipated that older adults would be more likely to engage in the project as they are more likely to partake in the ACP process than middle-aged adults. Most participants were between the ages of 50 and 70; therefore, the data overrepresented middle-aged adults and underrepresented adults over the age of 80. The difference between the expected and actual outcome of age and increased ACP engagement could be attributed to the project’s electronic platform and limited use of technology in older adults. Also, the actual cost of the project was the same as the expected cost.

**Intervention Effectiveness**

Using an educational video effectively increases ACP engagement, backed by a large sample size and high-quality data. A large sample size allowed the project team leader to exclude low-quality data in the data analysis, such as participants who only watched part of the video. The remaining high-quality data was sufficient to maintain power and detect a statistically significant difference before and after an intervention. The educational video was easy to administer and was written at the sixth-grade level to tailor to those with low health literacy. The project required less than 15 minutes of the participant’s
time and less than two minutes of the provider’s time. The NP’s rapport with the clinic staff and trusting relationships with her patients minimized potential barriers during the implementation phase, such as patients’ or providers' low participation rates. The privately owned suburban primary care clinic was most effective for project implementation as the project was prioritized during annual physical exams and helped the clinic meet Medicare’s ACP quality performance benchmarks.

**Intervention Revision**

The project team leader could have utilized a different software to upload the video intervention to ensure participants could not skip or fast forward the video. To improve attrition rates, the video and the survey could have been shortened from 12 to less than 10 minutes and from 11 to four questions, respectively. Implementation of the project during the holiday season may have decreased participation rates further, and implementing this project during the spring and summer seasons could have increased the sample size.

**Expected and Actual Impact on Health System, Costs, and Policy**

The expected impact of increased ACP knowledge in adults over 50 years was a higher number of filed ACP documents or documented ACP conversations within the primary care clinic. However, the actual number of filed ACP documents may not be immediately apparent. Also, the EBQI project positively impacted the primary care clinic by leading the provider to start the ACP conversation and providing patients with educational resources during their annual wellness visits. The ACP survey assesses the patient’s self-efficacy, readiness, and knowledge to engage in ACP, guiding the provider to stimulate these conversations. The estimated study cost was $324.50, and the actual cost for the project was $330. Due to the project's accessibility via a QR code, this project could be economically sustainable for the clinic. No funding was used for this project.
Conclusions

Practical Usefulness

Overall, this EBP intervention is practical to implement in the primary care setting and may help improve ACP engagement. Education on ACP documents and AD topics via a short video further combats disparities of ACP completion based on health literacy, particularly among Spanish-speaking individuals. Future implementation of this project in a clinic with primarily Spanish-speaking patients would provide more data on the usefulness of this intervention in diverse patient populations.

Further Study of Intervention

Further implementation of this project could quantitatively analyze ACP documentation completion within six months of project completion. An interactive video-based, linguistically diverse patient education tool will improve the patient’s ACP self-efficacy, readiness, and knowledge while preventing disparities in ACP completion. This intervention can empower patients of all education, social, and racial and ethnic backgrounds to engage in ACP and discuss EOL care. This intervention has the potential to be implemented in various inpatient and outpatient settings, and it may be particularly useful in settings that have a terminally or chronically ill patient population, such as in cancer clinics or dialysis centers.

Dissemination

The project’s findings will be disseminated through submission and possible publication in the *Journal of the American Association of Nurse Practitioners*. The project’s results were presented at the annual APNO conference to increase the uptake and use of the ACP Engagement Survey in clinical practice. In the studies reviewed, most older adults who have not had conversations about ACP reported being unaware of the importance of completing ACP or lacking knowledge on this topic. The implications for practice include improving ACP readiness, self-efficacy, and knowledge to empower patients to
complete ACP documents and ensure patients are cared for according to their wishes in the event of incapacitation.
References


Bradley, S. L., Tieman, J. J., Woodman, R. J., & Phillips, P. A. (2017). Which online format is most effective for assisting Baby Boomers to complete advance directives? A randomised controlled trial of
email prompting versus online education module. *BMC palliative care*, 16(1), 43.

https://doi.org/10.1186/s12904-017-0225-9


https://doi.org/10.1177/0269216314526272


IBM Corp. (2022). IBM SPSS Statistics for Windows (Version 29.0) [Computer software]. IBM Corp.


# Appendix A

## Definition of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Advance care planning</td>
<td>The process of helping patients explore, discuss, articulate, and document their preferences for future medical care if they are unable to make their own decisions (Lagay, 2000).</td>
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<tr>
<td>Healthcare power of attorney</td>
<td>A legal document that gives someone the authority to make medical decisions for another person (U.S. DHHS, 2023a).</td>
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<tr>
<td>Advance directive</td>
<td>A legal document stating a person’s wishes about receiving medical care if that person is no longer able to make medical decisions because of a serious illness or injury (U.S. DHHS, 2023a).</td>
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<tr>
<td>Living will</td>
<td>A legal document that expresses a person’s wishes regarding future life-sustaining medical interventions and end-of-life care when they lack the capacity to make health care decisions (U.S. DHHS, 2023a).</td>
</tr>
<tr>
<td>Clinical incapacity</td>
<td>The medical judgment of a qualified health care provider who determines that a person is unable to understand their medical condition or the benefits and risks of proposed treatment and its alternatives and/or make or communicate appropriate medical decisions (Sabatino, 2023).</td>
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<tr>
<td>Health literacy</td>
<td>The degree to which individuals can find, understand, and use information and services to inform health-related decisions and actions for themselves and others (U.S. DHHS, 2023b).</td>
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<tr>
<td>Self-efficacy</td>
<td>One’s ability in their belief to exert control over one’s own motivation, behavior, and social environment (Carey &amp; Forsyth, 2009).</td>
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</tbody>
</table>
Appendix B

Adapted PRISMA Diagram

Records identified through database searching (n = 1,164)

Additional records identified through Google Scholar (n = 10)

Abstracts screened after duplicates removed (n = 112)

Records excluded d/t lack of relevance & lack of full-text options (n = 67)

Full-text articles assessed for eligibility (n = 45)

Full-text articles excluded, due to lack of strength (n = 10)

Studies included in synthesis, quantitative & qualitative (n = 35)

Patient Education or Knowledge (n = 14)

Provider Training or Knowledge (n = 5)

Health Literacy (n = 3)

End-of-life Care Outcomes (n = 3)

ACP Completion (n = 4)

Sociodemographic Factors (n = 6)

Appendix C

Synthesis of Evidence Table

<table>
<thead>
<tr>
<th>First Author, Year, Title, Journal</th>
<th>Purpose</th>
<th>Research Design, Evidence Level &amp; Variables</th>
<th>Sample &amp; Sampling, Setting</th>
<th>Measures &amp; Reliability (if reported)</th>
<th>Results &amp; Analysis Used</th>
<th>Limitations &amp; Usefulness</th>
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<tbody>
<tr>
<td><strong>Patient Education or Knowledge</strong></td>
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<tr>
<td>Shu (2023). The effectiveness of video decision aid on advance care planning with adult patients: A systematic review and meta-analysis of randomized controlled trials. <em>Journal of Hospice and Palliative Nursing.</em></td>
<td>Examine the effect of video decision aids on adult patients’ ACP-related outcomes.</td>
<td>Meta-analysis of RCTs</td>
<td>N=14 RCTs (114,677 participants)</td>
<td>Effects of intervention on each outcome separately pooled using Review Manager 5.4</td>
<td>Video decision aids reduced preferences for life-prolonging care, CPR, &amp; intubation, while increasing patients’ willingness to have goals-of-care conversations &amp; knowledge of ACP.</td>
<td>Variability among studies. Did not contact authors to identify unpublished or ongoing studies (publication bias) &amp; effect of video decision aids over or underestimated. Limited generalizability: Only included white Americans.</td>
</tr>
</tbody>
</table>
| Van der Plas (2022). The patient’s relationship with the general practitioner before and after advance care planning: Pre/post-implementation study. *BMC Geriatrics.* | Examine association between having an ACP conversation and patient-provider trust/perception of relationship. | Cohort study | n=458 from 10 GP practices & 2 care homes | Pre & post design: Questionnaires before implementation of ACP & 14 months later | Compared to those who did not have an ACP conversation, trust remained the same or higher after ACP conversation. | Confounding variables on provider-patient relationship. No randomization of subjects to groups, so unable to claim causal relations. Large sample size makes findings generalizable, but outcomes are not as expected: Trust is not a
<table>
<thead>
<tr>
<th>Study</th>
<th>Title</th>
<th>Research Question</th>
<th>Study Design</th>
<th>Sample Size</th>
<th>Major Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volandes (2022).</td>
<td>Association of an advance care planning video and communication intervention with documentation of advance care planning among older adults. JAMA Network Open,</td>
<td>Determine if ACP video promotes ACP for elderly patients during the COVID-19 pandemic</td>
<td>Open-cohort nonrandomized controlled trial</td>
<td>n= 14,107 (pre-COVID), 12,806 (COVID wave 1), &amp; 15,106 (intervention period)</td>
<td>ACP documentation identified in 23.8% during the intervention period compared with 17.9% during pre-COVID-19 period &amp; 12.5% during wave 1</td>
</tr>
<tr>
<td>Corry (2021).</td>
<td>Successful implementation of a trans-jurisdictional, primary care, anticipatory care planning intervention for older adults at risk of functional decline: Interviews with key health professionals. BMC Health Services Research</td>
<td>Measure the effectiveness of nurse-led, person-centered ACP interventions for older adults at risk of functional decline in primary care</td>
<td>Qualitative study</td>
<td>N=16 research nurses</td>
<td>COREQ guidelines for reporting qualitative research &amp; TIDieR checklist. Semi-structured interview via Zoom with key health professionals. 1 researcher conducted all interviews to ensure consistency &amp; validity. PRISMA-7 screening tool used.</td>
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<tr>
<td>Van Dyck (2021).</td>
<td>Understanding the role of knowledge in ACP knowledge &amp; its relationship to ACP actions. Cross-sectional study.</td>
<td></td>
<td></td>
<td>n=921 participants age ≥55 (mean age 68.3) from STAMP trial</td>
<td>Measured knowledge scores</td>
</tr>
</tbody>
</table>

Outpatient setting with one of the worst death rates. Unmeasured confounders may influence outcomes & inability to track video usage. Largest pragmatic ACP trial during COVID-19 pandemic that supports video decision aids in ACP.

Sampling bias, health professionals not directly involved in feasibility trial of the intervention. Open-ended questions for differences in interpretation. Source, data, & researcher triangulation strengthened findings & increased rigor.

Excluded individuals who completed all ACP behaviors. Inability to...
### Kang (2020). Randomized controlled trial of advance care planning video decision aid for the general population.

**Journal of Pain and Symptom Management**

Evaluate efficacy of a video decision support tool versus a brochure on Ads for ACP understanding

- **Open-label, parallel-group RCT**
- **Level II evidence**
- **Probability proportion-to-size sampling**
- **n=250 healthy subjects from April 27 to May 25, 2018**
- **CPR knowledge (4 questions, range 0-4) & palliative care (2 questions, range 0-2).**
- **Willingness to CPR in terminal status: Yes, no, or not sure.**
- **Psychological distress: Hospital Anxiety & Depression Scale (14-item scale)**

Intention to document ACP higher in video group after 1 week (68.0% vs. 39.2%; \( p < 0.001 \) & \( p = 0.008 \); \( \Delta = 14.4\% \), respectively). Palliative care knowledge score increased in video group (\( p = 0.036 \)).

Pearson’s \( \chi^2 \) test & 2-sample t-test. Multivariable logistic regression analysis, obtaining odds ratios (Ors) and 95% Cis.

Only included Koreans, research assistants unblinded during group assignment (selection bias). CPR & palliative care knowledge tool not validated.

Very useful, corroborates previous studies showing ACP video is effective for supporting ACP decision-making in fairly healthy patients.

---

### Lum (2020). Effectiveness of advance care planning group visits among older adults

**Journal of Pain and Symptom Management**

Determine if Engaging in ACP Talks (ENACT) 2-hr group visits x2 improves ACP

- **RCT (computer generated)**
- **Level II evidence**
- **Convenience sampling**
- **n=110 subjects from Aug. 2017-Nov. 2019**
- **ACP readiness at baseline & 6 months: 4-item validated ACP Engagement**

New ACP documents at 6 months significantly different for ENACT (39 new documents) vs. control (5 new)

Small sample size, 20% of ENACT group did not attend a group visit. Overall recruitment rate low (13%). Possible
<table>
<thead>
<tr>
<th>Study</th>
<th>Title</th>
<th>Research Methods</th>
<th>Population</th>
<th>Intervention</th>
<th>Outcomes</th>
<th>Findings</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>in primary care. Journal of the American Geriatrics Society.</td>
<td>Documentation &amp; readiness in older adults.</td>
<td>IV: Engaging in ACP Talks (ENACT); DP: ACP readiness, &amp; engagement</td>
<td>Age ≥60 at the University of Colorado Hospital Seniors Clinic in Aurora, CO</td>
<td>Survey on 5-point Likert scale &amp; documented ACP at baseline &amp; 6 months.</td>
<td>ACP Engagement Score increased significantly (22.5%) at 6 months ($p = .02$).</td>
<td>High baseline rate of ACP documentation r/t high levels of education &amp; socioeconomic status. Aligns with EBP project: Education influences ACP engagement. Validated tools useful in EBP project.</td>
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<tr>
<td>Gazarian (2019). A systematic evaluation of advance care planning patient educational resources. Geriatric Nursing.</td>
<td>Evaluate ACP patient educational resources to assess elements (resource inclusion to health literacy)</td>
<td>Systematic evaluation of qualitative studies Purposive sampling General ACP resources cited in the Institute of Medicine’s (IOM) report on Dying in America &amp; the Agency for Healthcare Research and Quality</td>
<td>n=20 ACP resources</td>
<td>PEMAT score, Flesch-Kincaid reading ease &amp; grade level, type of resource, requirements for use, cost, languages available, &amp; categories (AD, living will, etc.).</td>
<td>Average understandability of 20 ACP educational tools was 86%. Average actionability 90%. Only 2 had a reading level of less than 6th grade. Many resources not referenced in published literature. Not a comprehensive list. Usable list of resources based on readiness scores.</td>
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<tr>
<td>Kleiner (2019). Advance care planning dispositions: The test hypothesis of an association between increased.</td>
<td>Qualitative study of subjects from population-based longitudinal study</td>
<td>N=1701 Swiss people aged 71-80 years old living at home.</td>
<td>Self-administered anonymous 4-page paper questionnaire on legal dispositions for ACP, filing rates for Ads (14%), healthcare proxy</td>
<td>50% didn’t know about legal dispositions for ACP, filing rates for Ads (14%), healthcare proxy</td>
<td>Causality unable to be determined.</td>
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<td>Relationship between knowledge and perception. BMC Geriatrics.</td>
<td>Knowledge of ACP dispositions and a more positive perception of them. (Lausanne cohort 65+ [Lc65+]) since 2004.</td>
<td>Level VI evidence IV: Level of ACP knowledge; DV: Perception.</td>
<td>Simple random sampling Lived in Lausanne, Switzerland since 2004.</td>
<td>knowledge &amp; use/perception of DPOA, AD, &amp; designation of health care proxy Content validity assessed within the same team.</td>
<td>(11%), DPOA (6%). Level of knowledge about dispositions associated with a more positive perception of them. Bivariable &amp; 15 multivariable regression analyses (Pearson's-Chi square test, p&lt;.05)</td>
<td>Large sample size. Incorporated only Swiss people, possibly generalizable to U.S. residents. Displays association between level of knowledge &amp; perception of ACP.</td>
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<tr>
<td>Paiva (2019). Feasibility of delivering a tailored intervention for advance care planning in primary care practice. Journal of the American Geriatrics Society.</td>
<td>Determine feasibility of providing feedback reports to increase ACP engagement in primary care. Pilot cluster RCT Level II evidence IV: Assessment &amp; feedback reports; DV: Readiness to engage in 3 ACP behaviors.</td>
<td>N= 79 participants from 2 primary care practices Convenience sampling Adults aged ≥55 scheduled for well-visit appointments</td>
<td>Patient recruitment and retention, intervention delivery, baseline characteristics, and stage of change movement. STAMP assessment repeated at a 2-month telephone call.</td>
<td>Signal for behavior change in intervention group. Data regarding movement in stage of change were examined descriptively but number &amp; proportion of subjects for each of the 3 activities examined quantitatively.</td>
<td>Single exposure to intervention, small sample size, imbalance in ACP participation at baseline. Consistent signal of intervention group participants demonstrating greater changes in readiness</td>
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<td>Green (2018). A randomized controlled trial of strategies to improve family members’ preparedness for surrogate decision-making. The American Journal of Hospice &amp; Palliative Care</td>
<td>Evaluate 2 strategies for preparing family members for surrogate decision-making. 2x2 factorial RCT Level II evidence IV: Basic ACP or Make your wish known (MYWK) alone or with family members; DV: Self-efficacy</td>
<td>n=267 patients &amp; 267 family members between August 2013-June 2016 Snowball sampling</td>
<td>Pre-post changes in family member self-efficacy Postintervention concordance: Assessed with 6 clinical vignettes [CPR, MV, surgery, HD, feeding tube, &amp; IV antibiotics] between patients &amp; family members.</td>
<td>Self-efficacy increased postintervention for MYWK (p = .13) &amp; basic ACP (p = .004), with no between-group difference. Overall adjusted concordance was higher in MYWK compared to basic ACP (85.2% vs 79.7%; p = .032), with no between-group difference. SAS version 9.4: 2-way ANOVA to test change in self-efficacy pre- to</td>
<td>Selection bias as enrollment challenges due to difficulty recruiting severely ill patients &amp; their families may limit generalizability. Participants tended to be well-educated &amp; had prior experience with ACP.</td>
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<td>Provider Training or Knowledge</td>
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<td><strong>Kwak (2022).</strong> An interprofessional approach to advance care planning. <em>The American Journal of Hospice &amp; Palliative Care</em></td>
<td><strong>Systematic review of qualitative studies.</strong>&lt;br&gt;<strong>Level IV evidence</strong>&lt;br&gt;<strong>IV: Expectations of major health professional organizations for ACP; DV: ACP interprofessional collaboration</strong>&lt;br&gt;<strong>Purposive sampling</strong>&lt;br&gt;<strong>Organizations of physicians, nurses, palliative nursing, psychosocial care professionals, chaplains</strong>&lt;br&gt;<strong>Key search words:</strong> “ACP” &amp; “competency.”&lt;br&gt;<strong>Major content themes:</strong> Advocate for patients’ values &amp; self-determination &amp; facilitate ACP. Need for standardized competency guidelines for interprofessional collaboration.&lt;br&gt;<strong>Search limited by “ACP” &amp; “competency.”</strong>&lt;br&gt;<strong>Compares &amp; contrasts published ACP expectations from professional organizations from different healthcare workers’ perspectives.</strong></td>
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<td><strong>Gabbard (2021).</strong> Effectiveness of a nurse-led multidisciplinary intervention vs usual care on advance care planning for</td>
<td><strong>RCT</strong>&lt;br&gt;<strong>Level II evidence</strong>&lt;br&gt;<strong>IV: Nurse navigator-led ACP pathway; DV: ACP</strong>&lt;br&gt;<strong>N= 759 vulnerable older adults from 8 primary care clinics in North Carolina Nov 1, 2018-Nov 1, 2019</strong>&lt;br&gt;<strong>Random sampling</strong>&lt;br&gt;<strong>Quality of EOL communication skills &amp; communication about EOL care (rated 0-10) &amp; how many ACP topics</strong>&lt;br&gt;<strong>Nurse navigator-led ACP had higher rate of ACP documentation (42.2% vs 3.7%, p &lt; .001) compared with usual care. ACP billing codes used more frequently for</strong>&lt;br&gt;<strong>Generalizability limited due to participants recruited from a single health system.</strong>&lt;br&gt;<strong>Pragmatic design, automated identification</strong></td>
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<tr>
<td>Author</td>
<td>Study Title</td>
<td>Study Design</td>
<td>Participants</td>
<td>Methods</td>
<td>Results/Findings</td>
<td>Limitations</td>
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<td>Lasmarías (2021)</td>
<td>Primary care professionals’ self-efficacy surrounding advance care planning and its link to sociodemographics, background, and perceptions.</td>
<td>Cross-sectional study</td>
<td>n=465 participants (70.04% doctors, 29.96% nurses)</td>
<td>Voluntary response sampling</td>
<td>ACP training &amp; implementation as a part of clinical routine linked to greater self-efficacy.</td>
<td>Gender bias in sample (81.47% women)</td>
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<tr>
<td>Fulmer (2018)</td>
<td>Physicians’ views on advance care planning and end-of-life care conversations.</td>
<td>Quantitative descriptive study</td>
<td>n= 736 physicians in national telephone survey from February 18 to March 7, 2016</td>
<td>Simple random sampling from AMA Physician Masterfile</td>
<td>99% agreed on importance of ACP conversations, but about 50% felt unprepared to facilitate ACP discussions.</td>
<td>Limited types of physician specialties, small sample size, insufficient capacity to analyze for geographic variations.</td>
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<tr>
<td>Myers (2018)</td>
<td>Provider tools for ACP and goals of care</td>
<td>Systematic review of quantitative</td>
<td>N=11 RCTs &amp; 33 non-RCTs (44 studies total)</td>
<td>Studies assessed using AMSTAR tool for inclusion</td>
<td>Greatest impact to integrate ACP via interprofessional team.</td>
<td>Provides insight to the clinician’s views and experiences r/t ACP.</td>
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<tr>
<td>Study</td>
<td>Design</td>
<td>Participants</td>
<td>Outcomes</td>
<td>Methodology</td>
<td>Limitations</td>
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<td>Martin (2016). The effects of advance care planning interventions on nursing home residents: A systematic review. <em>Journal of the American Medical Directors Association</em></td>
<td>Systematic review &amp; meta-analysis of RCTs</td>
<td>n=9 RCTs (2,905 participants)</td>
<td>ACP significantly increased the documentation of EOL preferences (OR = 1.95, 95% CI: 1.64, 2.32), but not satisfaction with EOL care from families’ perspectives (SMD = 0.08, 95% CI: -0.08, 0.23).</td>
<td>Databases MEDLINE, EMBASE, &amp; proceedings of the International Advance Care Planning Conference &amp; American Society of Clinical Oncology Palliative Care Symposium</td>
<td>2/9 studies scored low in overall risk of bias, moderate heterogeneity.</td>
<td>Lack of consistent outcomes to support any one clinical tool for use in ACP.</td>
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<tr>
<td>de Vries (2019). Advance care planning for older people: The influence of ethnicity, religiosity, spirituality, and health literacy. <em>Nursing Ethics</em></td>
<td>Integrative review</td>
<td>n=77 studies</td>
<td>None reported</td>
<td>Purposive sampling</td>
<td>Internet access may encourage ACP completion. Low health literacy affects older Americans disproportionately, 13% had EOL discussions with physicians (interactive literacy) due to lack of understanding of EOL terms.</td>
<td>High-quality qualitative information on EOL beliefs based on religious and cultural background.</td>
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</tr>
<tr>
<td>Nouri (2019). Health literacy matters more than experience for advance care planning knowledge among older adults. <em>Journal of the American Geriatrics Society</em></td>
<td>Determine if health literacy is associated with ACP knowledge.</td>
<td>Cross-sectional study</td>
<td>n=1400. 34% with low health literacy (LHL)</td>
<td>Health literacy measured using validated scale.</td>
<td>Mean ACP knowledge score 4.9/7. Knowledge scores lower with limited health literacy, Spanish-speaking, women, lower education level, &amp; non-white. Higher for those with ACP experience. LHL had strongest association with ACP knowledge.</td>
<td>Validated 7-item ACP knowledge questions usable.</td>
<td>Generalizability limited: Two healthcare systems in one area of the country. Studies limited, results are mixed. Cross-sectional cannot determine causality.</td>
</tr>
<tr>
<td>Wickersham (2019). Improving the adoption of advance directives in primary care practices. <em>Journal of the American Board of Family Medicine.</em></td>
<td>Compared implementation rates of 2 AD forms to see if one form was more popular.</td>
<td>RCT: 22-wk implementation period (Jan 2017-May 2017)</td>
<td>n= 2748 patient encounters from 6 primary care practices</td>
<td>Acceptance rates of OKAD (54%) vs. Five Wishes (82%).</td>
<td>Odds of accepting Five Wishes were 3.89 times greater than OKAD (95% CI 2.88 to 5.24; p &lt; .0001). χ2 statistics analyses controlling for age, gender, &amp; Charlson Comorbidity Index (CCI) intervals in models.</td>
<td>Usable, displays types of AD forms affect completion rates.</td>
<td>Shortened implementation period &amp; low number of study sites, affecting ability to measure AD completion rates &amp; widened CI intervals in models.</td>
</tr>
<tr>
<td>McAfee (2017). Predicting racial and ethnic disparities in advance care planning using the Integrated Behavioral Model. <em>OMEGA- Journal of Death and Dying</em></td>
<td>Explain &amp; predict racial or ethnic disparities in ACP behaviors.</td>
<td>Randomized cross-sectional study</td>
<td>n=386 participants</td>
<td>To establish the stability reliability of the survey: Survey administered twice within 10 days to a second convenience sample (n = 25).</td>
<td>Whites had higher self-efficacy to complete ACP than blacks. 1 in 4 completed ACP. More Hispanics completely unaware of ACP. Low health literacy= Difficulty gaining access to &amp; comprehending AD documents Pearson’s correlation coefficients,</td>
<td>Oversampled AA &amp; Hispanic races, proportional allocation to ensure the sampled represented the racial proportions of the U.S. Low response rate (25%)</td>
<td>Useful in generalizing results for AA &amp; Hispanic races.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Participants</td>
<td>Outcomes</td>
<td>Evidence Quality</td>
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<tr>
<td>Malhotra (2022). Advance care planning and caregiver outcomes: Intervention efficacy – systematic review. <em>BMJ Supportive &amp; Palliative Care.</em></td>
<td>Identify &amp; quantify the impacts of ACP interventions on caregiver outcomes.</td>
<td>n=35 RCTs</td>
<td>ACP significantly improves congruence in EOL care preferences between caregivers &amp; patients. Improved bereavement outcomes, satisfaction with care quality, reduced decisional conflict, &amp; burden</td>
<td>Up-to-date, high quality of evidence.</td>
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<tr>
<td>Yeun (2021). The effects of advance care planning on decision conflict and psychological distress: A systematic review and meta-analysis of randomized controlled trials. <em>Journal of Hospice and Palliative Care.</em></td>
<td>Examine the effects of ACP interventions on decisional conflict &amp; psychological distress.</td>
<td>n=1,548 participants from 14 RCTs</td>
<td>ACP interventions helped alleviate decision conflict, depression, anxiety.</td>
<td>Allocation concealment performed in only 1 trial &amp; blinding not possible in 9 trials, increasing risk of performance bias.</td>
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<td>Brinkman-Stoppelenburg (2014). Effects of advance care planning on end-of-life care outcomes.</td>
<td>Overview of the effects of ACP &amp; effectiveness of different types of ACP.</td>
<td>n=113 studies (95% observational)</td>
<td>ACP decreases life-sustaining treatment, increases hospice/palliative care, &amp; prevents hospitalization. Complex ACP increases</td>
<td>Not inclusive to all studies, excluded palliative care interventions. Most are in hospitals/nursing homes.</td>
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<tr>
<td>Study</td>
<td>Topic</td>
<td>Methodology</td>
<td>Key Findings</td>
<td>Limitations</td>
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<tr>
<td>Barker (2019).</td>
<td>The effect of health literacy on a brief intervention to improve advance directive completion: A randomized controlled study. <em>Journal of Primary Care &amp; Community Health</em></td>
<td>Evaluate a brief intervention to enhance AD completion &amp; assess whether the intervention effect varied according to health literacy. RCT Level II evidence</td>
<td>n= 529 subjects (50% with limited &amp; half with adequate health literacy) Randomized sampling to 15- min scripted introduction (grade 7 reading level), to the institution’s AD forms (grade 11 reading level), or to the control (blank AD forms with no explanation). AD completion rate of 21.7% &amp; was similar in the intervention vs. the control group (22.4% vs 22.2%, p = .94). Adequate health literacy: Increased AD completion compared to limited health literacy (28.4% vs 16.2%, p = .0008).</td>
<td>Large sample size, randomization, diverse outpatient population Limitations: Limited generalizability beyond 1 academic institution.</td>
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<tr>
<td>Nelson-Brantley (2020).</td>
<td>Using implementation science to further the adoption and implementation of advance care planning in rural primary care. <em>Journal of Nursing Scholarship.</em></td>
<td>Define steps of ACP &amp; analyze existing literature on facilitators &amp; barriers from providers’ perspectives using implementation science (IS) frameworks, &amp; use findings to accelerate ACP Systematic review of qualitative studies from 1937 &amp; February 2019. Level V evidence</td>
<td>n= 30 qualitative studies Purposive sampling Databases: CINAHL, Medline, PsycINFO, &amp; the Psychology and Behavioral Sciences Collection Theoretical Domains Framework (TDF) for determinant framework. For process framework, Conceptual Model of Evidence-Based Practice Implementation in Public Service</td>
<td>4 steps to ACP: Identification, conversation, documentation, &amp; follow-up Intervention mapping evaluated whether existing recommendations for ACP implementation TDF focuses on motivational aspects of the decision to adopt. Non-comprehensive search strategy in English only. Limited literature on ACP in rural primary care settings. Forms a hypothesis about ACP adoption in rural primary care. Providers in</td>
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<tr>
<td>Paper</td>
<td>Title</td>
<td>Study Design</td>
<td>Sample Size</td>
<td>Measures</td>
<td>Results</td>
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<td>Brown (2017).</td>
<td>The advance care planning readiness scale: Development and validation of a measure of willingness to discuss and acceptance of end-of-life care in gynecologic cancer patients. <em>International Journal of Gynecological cancer</em></td>
<td>Non-randomized controlled trial</td>
<td>n=135 females</td>
<td>Willingness to Discuss EOL care: Cronbach’s $\alpha = 0.77$. Acceptance of EOL care factor: Cronbach’s $\alpha = 0.71$. Test-retest reliability for modified ACPRS adequate ($r = 0.73; 95% CI: 0.60 – 0.83$). Thematic analysis, confirmatory factor analysis.</td>
<td>Advance Care Planning Readiness Scale (ACPRS) is a valid &amp; reliable 8-item scale to assess readiness of oncology patients to discuss ACP issues. Not generalizable to males, non-English speaking people, or non-Americans. Stringent psychometric scale methodology validated at varying points in cancer management. Validated scale useful in willingness &amp; acceptance of EOL care.</td>
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<td>Study</td>
<td>Methodology</td>
<td>Findings</td>
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<td>Yadav (2017).</td>
<td>Determine the proportion of US adults with a completed living will, health care power of attorney, or both.</td>
<td>Surrogates had knowledge if they correctly predicted all 3 responses.</td>
<td>Not a comprehensive review. Retrospective study of the presence of AD. Provide benchmarks for future policies and practices to help motivate patients to complete ACP.</td>
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<td></td>
<td>Quantitative systematic review of randomized &amp; non-randomized studies.</td>
<td>None reported</td>
<td>Overall completion proportion for any AD 36.7%, including 29.3% with living wills. Similar proportions with chronic illnesses (38.2%) &amp; healthy adults (32.7%) had completed ADs. Chi-square tests, Cochran’s Q &amp; ( \chi^2 ) statistic, Spearman’s rank coefficient</td>
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<td></td>
<td>Purposive sampling</td>
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<td></td>
<td>n=150 studies (795,909 U.S. adults)</td>
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<td>80.6% ages ≥65. 62.7% from nursing homes.</td>
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<td>Sociodemographic Factors</td>
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<tr>
<td>Jones (2021).</td>
<td>Summarize &amp; evaluate palliative &amp; EOL care interventions to improve outcomes for racial &amp; ethnic underrepresented populations in the U.S.</td>
<td>Quality appraised using modified Downs and Black tool for assessing risk of bias. Educational interventions have significant effects on ACP &amp; AD completion, as well as for underrepresented racial or ethnic groups. Narrative data synthesis d/t heterogeneity of studies and lack of a comparator group.</td>
<td>Limited to studies published in English, U.S.-based studies only. Formal evaluation of intervention effectiveness not possible d/t heterogeneity. Large sample size, useful, focuses on minority populations to help prevent disparities.</td>
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<td>Purposive sampling</td>
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<td></td>
<td>Databases: MEDLINE, PsychINFO, CINAHL, and EMBASE. Latino/Hispanic Americans, African Americans, Asian-Americans, &amp; Pacific Islanders</td>
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<td>N=3,107 subjects from 16 studies (5 RCTs &amp; 11 quasi-experimental)</td>
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<tr>
<td>Cudjoe (2020).</td>
<td>Compare ACP engagement of older adults who were severely socially isolated, socially isolated, or neither.</td>
<td>Participants classified in 3 groups: Severely socially isolated, socially isolated, or neither. Socially isolated older adults associated with decreased likelihood to engage in ACP (23%)</td>
<td>Limited by reliance on self-report (subject to reporting errors or recall bias), small sample size of participants.</td>
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<td>Cross-sectional study</td>
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<td>Level IV evidence</td>
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<td></td>
<td>n= 1867 older adults</td>
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<td>Random sampling</td>
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</table>

<table>
<thead>
<tr>
<th><strong>American Geriatrics Society</strong></th>
<th>socially isolated, &amp; not socially isolated.</th>
<th>IV: Degree of social isolation; DV: ACP engagement</th>
<th>Community-dwelling Medicare beneficiaries (age ≥65)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Convenience sampling</td>
<td>Primary care patients aged ≥65 years &amp; living in San Francisco Bay Area in University of California San Francisco</td>
<td>Number of documented ACP in low nSES compared to high nSES areas.</td>
</tr>
<tr>
<td></td>
<td>RCT (Computer generator block randomization by health literacy)</td>
<td>English &amp; Spanish-speaking from public hospital age ≥55 years old, ≥2 chronic medical conditions &amp; have seen a PCP ≥2 times in the last year</td>
<td>Lower nSES neighborhoods had lower odds of ACP compared to high nSES.</td>
</tr>
</tbody>
</table>

**Sudore (2016).** Improving advance care planning for English-speaking and Spanish-speaking older adults: Study protocol for the PREPARE randomized controlled trial. *BMJ Open*  

| Determine the efficacy of PREPARE to engage diverse English-speaking and Spanish-speaking older adults in a full spectrum of ACP behaviors. | RCT (Computer generator block randomization by health literacy) | n= 414 subjects from 4 primary care clinics in San Francisco Health Network | REDCap captures research data live. Validity & reliability information in English & Spanish available for each construct & measure. |
| Convenience sampling | English & Spanish-speaking from public hospital age ≥55 years old, ≥2 chronic medical conditions & have seen a PCP ≥2 times in the last year | Easy-to-use, patient-facing ACP tools, can increase documentation 25% to 35% T-tests and χ² tests. Compare outcomes between two arms longitudinally: Mixed-effects linear, Poisson for continuous measures. | Paid participation: Enrollment bias |

**Abbreviations:** AAHPPM, American Academy of Hospice and Palliative Medicine; AAPA, American Academy of Physician Assistants; ACP, advance care planning; AD, advance directive; AMA, American Medical Association; ANA, American Nursing Association; APA, American Psychological Association; APC, Association of Professional Chaplains; DV, dependents variable; EOL, end-of-life; HPNA, Hospice and Palliative Nursing Association; IV, independent variable; MDPOA, Medical Durable Power of Attorney; NACC, National Association of Catholic Chaplains; NASW, National Association of Social Workers; RCT, randomized controlled trial; SCA, Spiritual Care Association; SWHPN, Social Work Hospice & Palliative Care Network.
Appendix D

Synthesis of Evidence Grid

<table>
<thead>
<tr>
<th>Themes</th>
<th>Patient Education or Knowledge</th>
<th>Provider Training or Knowledge</th>
<th>Health Literacy</th>
<th>End-of-Life Care Outcomes</th>
<th>ACP completion</th>
<th>Sociodemographic Factors</th>
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<tr>
<td><strong>Studies</strong></td>
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<td>Malhotra, 2022</td>
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<td>Van der Plas, 2022</td>
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<td>Volandes, 2022</td>
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<td>Barker, 2021</td>
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<td>Corry, 2021</td>
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<td>Jones, 2021</td>
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<td>Lasmarias, 2021</td>
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<td>Yeun, 2021</td>
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<td>Lum, 2020</td>
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<td>Nouri, 2020</td>
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<td>Brungardt, 2019</td>
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<td>de Vries, 2019</td>
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<td>Brown, 2017</td>
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<td>Fried, 2017</td>
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<td>McAfee, 2017</td>
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<td>Yadav, 2017</td>
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<td>Martin, 2016</td>
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<td>Sudore, 2016</td>
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<td>Brinkman-</td>
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<td><strong>Total:</strong></td>
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<td>6</td>
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Appendix E

Theory to Application Diagram

*Note.* Diagram of the social support theory and the concepts advance care planning (aligns with instrumental support and emotional support), patient education (aligns with informational and appraisal support), and health literacy (improved patient education) in the research inquiry and in the social support theory.
## Appendix F

### Budget Table

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Anticipated Cost</th>
<th>Responsible for Payment</th>
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<tbody>
<tr>
<td><strong>Costs</strong></td>
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<tr>
<td>Printing business cards</td>
<td>Front side English &amp; back side Spanish</td>
<td>500</td>
<td>$0.13</td>
<td>$62.50</td>
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<tr>
<td>Translator</td>
<td>Professional medical translator to translate video into Spanish</td>
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<td>$50</td>
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<td>Camtasia</td>
<td>Video software to make advance care planning video</td>
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<td>$212</td>
<td>Paid by project team leader</td>
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<tr>
<td>Provider or Medical Assistant’s Time</td>
<td>Time to hand out business card at the end of the office visit</td>
<td>500</td>
<td>$0</td>
<td>$0</td>
<td>Volunteer by staff/approved by preceptor</td>
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<tr>
<td>Patient’s Time</td>
<td>Time required to fill out the pre &amp; post survey and watch the video</td>
<td>500</td>
<td>$0</td>
<td>$0</td>
<td>Volunteer by patient</td>
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<tr>
<td>Engagement Survey Tool</td>
<td>Validated tool online</td>
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<td>$0</td>
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<tr>
<td>Online Consent Form</td>
<td>Outlining confidentiality, purpose of the project, and what will be measured.</td>
<td></td>
<td>$0</td>
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<tr>
<td>REDCap Tool</td>
<td>Will have consent form, surveys, and videos embedded</td>
<td></td>
<td>$0</td>
<td>$0</td>
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### Return on Investment (ROI)

Having an AD was significantly associated with $673 lower hospital out-of-pocket costs during end-of-life care, compared to those that did not have one filed (Zhu & Enguidanos, 2022). Of those that have increased self-efficacy, readiness, and knowledge scores that fill out ACP documents, the predicted investment gain is $672.87 per patient. According to the ROI calculator, this translates into a 517,592.31% ROI (Calculator.net, 2023).
| Total |       |       | $324.50 | Paid in full by project team leader |
August 11, 2023

Dear Brian Galacio,

A member of the UMKC Research Compliance Office screened your QI project #2097253 entitled “A Video to Improve Advance Care Planning in Adults in Primary Care” and made the following determination:

QI Determination: The project has been determined to be a quality improvement activity not requiring IRB review.

If you have any questions regarding this determination, please feel free to contact our office at 816-235-5927, umkcirb@umkc.edu, or by replying to this notification.

Note Regarding Publications: It is appropriate to disseminate and replicate QI/program evaluation successes, including sharing the information external to an organization. This may include presentations and publications. The mere intent to publish the findings does not require IRB review as long as the publication does not refer to the activity as research.

Thank you,
UMKC Institutional Review Board
Appendix H

Faculty DNP Project Proposal Letter

July 21, 2023

UMKC DNP Student:
Corbin Haque

Congratulations. The UMKC Doctor of Nursing Practice (DNP) Faculty Team have approved your DNP project proposal, Education to Improve Advance Care Planning Engagement in Adults.

Sincerely,

Cheri Barber, DNP, RN, PPCNP-BC, FAANP
Clinical Associate Professor
DNP Program Director
UMKC School of Nursing and Health Studies barberch@umkc.edu

Lyla Lindholm, DNP, RN, ACNS-BC
Clinical Assistant Professor, DNP Faculty
MSN-DNP Program Coordinator
UMKC School of Nursing and Health Studies lindholm@umkc.edu

Debbie C. Pankau DNP, APRN, FNP-BC
Clinical Assistant Professor
DNP Project Course Faculty
UMKC School of Nursing and Health Studies pankaud@umkc.edu

Brian Galacio, DNP, MSN, RN-BC
Adjunct Faculty
DNP Project Course Faculty
UMKC School of Nursing and Health Studies b.galacio@umkc.edu

DNP Faculty Mentor: Dr. Willis-Smith
UMKC School of Nursing and Health Studies
Appendix I

Project Timeline

May/June 2023: Get project proposal approved, Completed by June 2023

July 2023: Site & IRB Approval, Completed by mid-August 2023

September 2023: Create video & ACP engagement survey online, Completed by end of October 2023

November 2023: Intervention period, data collection, 3 months, November 2023 to January 2024

Spring 2024: Data Analysis, Sit Presentation, February to end of April 2024
Appendix J

Sample Project Card

**Front**

![Prep For The Next Step]

Scan QR code with your phone

OR

Enter the Link:
https://redcap.link/ACP23

An Advance Care Planning Tool

**Back**

![Prep Para El Siguiente Paso]

Escanea el código QR con tu celular

O

Introduzca el Enlace:
https://redcap.link/PAA23

Un Instrumento de Planificación de la Atención Avanzada
## Appendix K

### Standardized Script

<table>
<thead>
<tr>
<th>Project team member script to follow at the end of appointments in patients 50 years of age and older.</th>
<th>“A nurse practitioner student is conducting a project to improve the process of advance care planning in primary care, including completing an advance directive, living will, and medical power of attorney. When you get home, please scan this QR code via your smartphone or enter this link into your computer to complete a brief survey and watch a short educational video. Your cooperation would be greatly appreciated.”</th>
</tr>
</thead>
</table>

Appendix L

Participant Informational Letter

**Project Title:** A Video to Improve Advance Care Planning Engagement in Adults in Primary Care

**Student Investigator:** Corbin Haque, BSN-DNP, FNP Student

Dear valued patient,

This letter serves to inform you of your inclusion in an evidence-based quality improvement project conducted at an outpatient primary care clinic. The goal of this project is to provide you with the necessary knowledge to engage in advance care planning (ACP) and plan for your future medical care.

Your role as a participant in this project is voluntary and you may withdraw at any time. There are no risks associated with this project. Your participation may help you and your loved ones decide on future medical care decisions and appropriately fill out documents, such as an advance directive, living will, and medical power of attorney. The data collected will include a 6-item demographics survey followed by an 11-item ACP Engagement Survey before and after a 10- to 15-minute educational video titled Prep For the Next Step.

Your participation in this survey will remain anonymous and answers will be kept confidential via a secure database. Thank you for your time; your contributions to this project are invaluable. If you wish to partake in this project, please advance to the next page.

Sincerely,

Corbin Haque, RN-BSN, UMKC Graduate Student
Appendix M

*Intervention Flow Diagram*

**Screening, Recruitment**
- Five providers screen patients before appointments: 50 years or older.
- Hand out project cards at the end of office visits (double-sided for English or Spanish)
- Recite scripted introduction to the project

**Intervention (October 2, 2023 to December 29, 2023)**
- Participants scan QR code with cellphone or enter link in computer to be directed to REDCap webpage at home.
- Complete 11-item ACP Engagement survey
  - 6 demographic, 3 self-efficacy, 6 readiness, and 2 knowledge questions
- Watch 10-15 minute video on ACP process and topics
- Complete same 11-item ACP Engagement survey.
## Appendix N

### Logic Model

**OVERARCHING GOAL:** Improve advance care planning engagement and knowledge in the outpatient healthcare setting.

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<th>INPUTS</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
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<td><strong>Mobilized Resources</strong></td>
<td><strong>Activities and Interventions</strong></td>
<td><strong>Specific processes to measure</strong></td>
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<td>• Healthcare staff (providers, nurses, medical assistants).</td>
<td>• Pretest: Validated survey on ACP engagement &amp; knowledge.</td>
<td>• Must take pretest directly before &amp; posttest directly after the video intervention.</td>
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<td>• Healthcare staff’s time</td>
<td>• Online educational video on advance care planning process and topics in English &amp; Spanish</td>
<td>• Must watch full video before being able to proceed to the posttest.</td>
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<tr>
<td>• Online educational video on advance care planning process in English &amp; Spanish</td>
<td>• Posttest: Validated survey on ACP engagement &amp; knowledge scores repeated</td>
<td>• Median change in ACP engagement &amp; knowledge scores before and after project implementation.</td>
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<td>• Center for Medicare and Medicaid (CMS) support via CPT coding</td>
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**ASSUMPTIONS** (root cause analyses, prior learning/experience)

Evidence supports the use of educational interventions to improve ACP knowledge and engagement, implementation does not require funding or extra resources, minimal time required for the patient, and no time commitment for the provider.

**EXTERNAL FACTORS** (barriers/facilitators)

- Barriers: Staff shortages, heavy patient loads, lack of formal advance care planning training for the providers, negative perception of ACP process, cultural or religious beliefs that contradict end-of-life planning
- Facilitators: Minimal time, no financial requirement, CMS reimbursement for ACP conversations, highly sustainable, easily accessible.

Adapted from University of Wisconsin Extension Program Development and Evaluation resources: [http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html](http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html)
## Appendix O

### Logical Flow of Outcomes

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<th>Primary Outcome</th>
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<th>Statistical Analysis Test</th>
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<td></td>
<td>Self-efficacy, readiness, &amp; knowledge scores</td>
<td>11-item ACP Engagement Survey</td>
<td>Cronbach’s alpha, 0.89 (0.83 for self-efficacy, 0.92 for readiness, &amp; 0.84 for knowledge questions). High test-retest reliability.</td>
<td>Yes, permission obtained from Elsevier</td>
<td>Paired sample t-test</td>
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<td>Demographics</td>
<td>Gender, race/ethnicity, age group, marital status, highest education level, ACP document completion</td>
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<td>Not applicable</td>
<td>Not Applicable</td>
<td>Descriptive for each group</td>
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11-item ACP Engagement Survey Cronbach’s alpha, 0.89 (0.83 for self-efficacy, 0.92 for readiness, & 0.84 for knowledge questions). High test-retest reliability.

Permission obtained from Elsevier

Paired sample t-test

Descriptive for each group
Appendix P

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Institution name The University of Missouri-Kansas City

Expected presentation date Apr 2014

 Portions The 9-item ACP survey

Specific Languages English, Spanish

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Publisher Tax ID 98-0397604

Total 0.00 USD

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*Note. Screenshots from the Excel spreadsheet, with data collected on six demographic variables and advance care planning self-efficacy, readiness, and knowledge scores.*
Appendix R

Statistical Analysis Tables

Inquiry: In adult patients 50 years or older, does an online interactive ACP video, Prep For the Next Step, improve advance care planning readiness, self-efficacy scores, and knowledge of ACP topics over 3 months at an outpatient suburban primary care clinic?

Table 1

Demographic Characteristics

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**Marital status**

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently married</td>
<td>37</td>
<td>77.1</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>8.3</td>
</tr>
<tr>
<td>Divorced</td>
<td>5</td>
<td>10.4</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Never married</td>
<td>1</td>
<td>2.1</td>
</tr>
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</table>

**Highest education**

<table>
<thead>
<tr>
<th>Education</th>
<th>Count</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Less than high school</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High school</td>
<td>14</td>
<td>29.2</td>
</tr>
<tr>
<td>Bachelor’s</td>
<td>24</td>
<td>50</td>
</tr>
<tr>
<td>Master’s/Doctorate’s</td>
<td>10</td>
<td>20.8</td>
</tr>
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</table>

**Pre-existing ACP documents**

<table>
<thead>
<tr>
<th>Document Type</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durable Power of Attorney (DPOA)</td>
<td>4</td>
<td>8.3</td>
</tr>
<tr>
<td>Advance Directive (AD)</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Living Will (LW) only</td>
<td>2</td>
<td>4.2</td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>43.8</td>
</tr>
<tr>
<td>Not sure</td>
<td>9</td>
<td>18.8</td>
</tr>
</tbody>
</table>

**Multiple Documents**

<table>
<thead>
<tr>
<th>Multiple Documents</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPOA + AD</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>DPOA + AD + LW</td>
<td>6</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>DPOA + LW</td>
<td>4</td>
<td>8.3</td>
</tr>
<tr>
<td>AD + LW</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### Table 2

**Advance Care Planning Engagement Survey**

<table>
<thead>
<tr>
<th>One cohort</th>
<th>Median Self-Efficacy Scores</th>
<th>Median Readiness Scores</th>
<th>Median Knowledge Scores</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention Group; n = 48</td>
<td>12</td>
<td>16</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>Post-intervention Group; n = 48</td>
<td>14</td>
<td>23.5</td>
<td>10</td>
<td>N/A</td>
</tr>
<tr>
<td>Overall Scores</td>
<td>1.5</td>
<td>4.5</td>
<td>3</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>1</td>
<td>1</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q2</td>
<td>0</td>
<td>0</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q3</td>
<td>0</td>
<td>0</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q4</td>
<td>0</td>
<td>0</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q5</td>
<td>0.5</td>
<td>0.5</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q6</td>
<td>1</td>
<td>1</td>
<td>&lt; .001</td>
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<tr>
<td>Q7</td>
<td>1</td>
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<td>&lt; .001</td>
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<tr>
<td>Q8</td>
<td>1</td>
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</tr>
<tr>
<td>Q9</td>
<td>1</td>
<td>1</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q10</td>
<td>1.5</td>
<td>1</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Q11</td>
<td>1</td>
<td>1</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

*Note.* A Wilcoxon signed-rank test was performed for each question on the survey. All ACP engagement metrics showed a statistically significant change in median ACP scores; however, questions 2, 3, and 4 showed no change in median ACP engagement scores.
Appendix S

Statistical Analysis Graphs

Figure 1

*Median ACP Engagement Clustered Bar Chart*

![Median ACP Engagement Clustered Bar Chart](image)

*Note.* The median ACP engagement scores pre-intervention and post-intervention for self-efficacy, readiness, and knowledge is from IBM SPSS Statistics for Windows [Computer software] by IBM Corp., 2022, Version 29.
**Figure 2**

*Self-Efficacy Wilcoxon Signed-Rank Test Bar Chart*

Note. The median difference in self-efficacy scores (post-intervention minus pre-intervention) is from IBM SPSS Statistics for Windows [Computer software] by IBM Corp., 2022, Version 29.
Figure 3

Readiness Wilcoxon Signed-Rank Test Bar Chart

Note. The median difference in readiness scores (post-intervention minus pre-intervention) is from IBM SPSS Statistics for Windows [Computer software] by IBM Corp., 2022, Version 29.
Figure 4
Knowledge Wilcoxon Signed-Rank Test Bar Chart

Note. The median difference in knowledge scores (post-intervention minus pre-intervention) is from IBM SPSS Statistics for Windows [Computer software] by IBM Corp., 2022, Version 29.