2019

Measure Development and Validation of a Self-Efficacy Scale for Advance Care Planning

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MEASURE DEVELOPMENT AND VALIDATION OF A
SELF-EFFICACY SCALE FOR ADVANCE CARE PLANNING

BY

ALEXANDRA N. MURRAY

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN
CLINICAL PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

2019

DOCTOR OF PHILOSOPHY
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2019

ABSTRACT

A disparity exists between the medical intervention people say they want to receive at end-of-life and the care that is typically delivered. Advance care planning (ACP) involves discussing end-of-life care wishes, including relevant values and cultural beliefs, and documenting these preferences for medical providers and loved ones to minimize unwanted suffering and maximize quality of life. Numerous healthcare institutions have emphasized the importance of doing ACP prior to an imminent medical need, prompting researchers to implement awareness campaigns and interventions in earlier stages of healthcare interactions (e.g., primary care). However, motivation to follow through with ACP varies depending on numerous factors including overall readiness, understanding of the risks and benefits, and how one manages the internal experience of facing one's own mortality. One intrinsic experience that has been shown to be important for health behavior change is situation specific-confidence, or self-efficacy. This work builds on previous research that approaches ACP intervention from the theoretical framework of the Transtheoretical model (TTM) of behavior change, in which self-efficacy is a core component. **Study 1** of this dissertation sought to explore the construct of self-efficacy specific to doing ACP with qualitative work including expert interviews and focus groups with older adults in the community about their experiences. The work presented describes the efforts to understand self-efficacy as a barrier to engagement in end of life care planning. Self-efficacy was associated with interpersonal support, access to structured tools to guide discussions, and tolerance of the unpleasantness of negative emotions. Assessment of themes from focus groups and expert interviews was conducted to write items of a scale of self-efficacy to do ACP.

Study 2 of this dissertation describes the development and validation of a scale of ACP self-efficacy using a sequential approach to measure development. Qualitative and quantitative methods were utilized for item development/refinement and scale validation. Split-half validation procedures were conducted, with exploratory and confirmatory factor analyses on randomly selected subsamples. The results of several iterations of exploratory factor analyses supported a final set of 12 items loading on one factor, with high internal consistency. The final 12-item ACP self-efficacy scale was found to have good overall model fit in confirmatory analyses, assessed with χ^2 tests of significance and fit indices. Further, the developed scale was validated using previously developed TTM measures of ACP behavior change (Stage of Change, Decisional Balance) and related constructs (General Self-Efficacy, Attitudes Values & Cultural Beliefs). As expected, ACP self-efficacy varied by stage of change, with those in more progressed stages endorsing higher levels of confidence that they could complete ACP behaviors, upholding the relationships hypothesized by the TTM. Together, these two studies address the importance of self-efficacy for engagement in complex behaviors and provide a tool for future use to gain a deeper understanding and increase behavior change in this area.

Acknowledgements

I would like to express my sincere gratitude to my advisor, Dr. Mark Robbins, for inviting me to work with him all those years ago. I am thankful to have had a mentor who taught me to stay grounded, who never abandoned humor and who had unwavering confidence in me and in my future. I want to thank my committee members, Drs. Andrea Paiva, Colleen Redding, Phil Clark and Ginette Ferszt, for their guidance and support throughout the various stages of my doctoral training. I have truly appreciated their time and dedication to teaching, science, and their respective disciplines. They have made a lasting effect on me and on my career path. I also want to recognize the valued input and encouragement of the members of the Health Behavior Change lab.

Notably, this project would not have been as meaningful without the contribution of the professionals and community members who participated in this research. Doing this work and hosting these conversations helped me to grow as a researcher, increasing my confidence in the pursuit of data-driven knowledge, while also deepening my understanding of the human experience.

Thank you to my mother, Elaine, for setting my foundation. I thank her for encouraging me to roar through life, for teaching me to fiercely stand up for what I believe in, to appreciate education and self-reflection and for showing me that you are never finished growing. Thank you to my entire family and my circle of friends, mentors, and fellow cohort members who have been there through every trial and triumph.

Finally, I want to extend my deepest gratitude to my husband, Devin, for being my partner on this journey. I appreciate his endless support, willingness to learn and grow with me, and assistance in taking everything a little less seriously.

PREFACE

This dissertation was prepared in manuscript format. The two manuscripts contained within have been written with the intention of submission to the *Journal of the American Geriatrics Society*.

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MANUSCRIPT 1

Understanding Self-Efficacy as a Behavioral Component of Advance Care Planning

Potential Journal for Submission: *Journal of the American Geriatrics Society*

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Abstract

Objective: To explore the construct of self-efficacy to do advance care planning (ACP), framed within a theory of health behavior change, as it is understood by experts in the field and experienced by older adults in the community.

Design: This project utilized semi-structured key informant interviews, focus groups at senior centers in New England, and consultation with experts in the Transtheoretical model of behavior change and scale development. This investigation is presented as the formative, qualitative work in the sequential method of scale development.

Setting: All components of this investigation were conducted at hospitals, senior centers and a large university in New England. All study procedures and materials were approved by the Institutional Review Board of the University of Rhode Island.

Participants: Three providers (one geriatrician, one palliative care physician, one nurse with Hospice and community based experience) were interviewed as key informants. Ten older adults participated across two focus group discussions at two senior centers.

Measurements: Independent raters with knowledge of ACP literature and TTM-based scale construction listened to recordings of interviews and focus groups for discussion themes.

Results: Key informants discussed the importance of educating patients and loved ones about the importance of ACP, providing a structured method for completing the various steps involved, and highlighted the importance of having focused conversations on quality versus quantity of life issues. Community members discussed managing the unpleasantness of the process as well as the peace of mind that comes with completing ACP. Overall, confidence to complete ACP was connected to knowing what steps are

involved, past experience with end-of-life care for friends/loved-ones, and feeling supported by others in the process.

Conclusion: Self-efficacy to do ACP is connected to greater knowledge about the process, feeling supported by others and managing emotional discomfort. This research will be utilized for scale development of an ACP self-efficacy scale.

Key words: advance care planning, confidence, self-efficacy, quality of life

Impact Statement: We certify that this work is novel clinical research. This research project adds to the literature on measuring behavior change motivations for advance care planning, which has been identified as an important area for continued improvement for public health and quality care initiatives.

Introduction

In their comprehensive report, *Dying in America*, the Institute of Medicine¹ (IOM) called on healthcare providers and organizations to review their efforts to provide compassionate, person-centered end-of-life care that emphasizes the patient's desired quality of life. Healthcare providers are only able to provide care in line with patients' wishes if those wishes are communicated orally, in writing, or documented in the electronic health record. Advance care planning (ACP) is a process through which an individual considers and communicates their preferences and wishes for how they want to be treated during their end-of-life care.² ACP involves increasing one's awareness of medical options and engagement in numerous steps. The IOM, along with numerous other organizations such as the Coalition to Transform Advanced Care³ and the Institute for Healthcare Improvement⁴ have emphasized the benefits of engaging patients in discussions regarding quality of life preferences for end-of-life care. However, barriers persist in attempts to engage people in ACP discussions and related activities; including limited education on what is involved in ACP, fear of thoughts related to death and dying, and avoidance of stressful or emotional conversations with loved ones.⁵

With the proportion of older adults in the global population growing rapidly and the increasingly available medical technology allowing for the long-term management of complex medical issues, the costs of end-of-life care on a societal level will also continue to increase. Providing additional treatments that decrease patients' desired quality of life and result in unnecessary expenses and emotional turmoil may be understood as unethical and inefficient.^{6,7} Understanding a patient's care preferences, concerns, and the values and beliefs that drive their reasoning are important for healthcare providers to ensure that

they are providing patients and their families with the highest quality end-of-life care. It is also important that families and loved ones are made aware of the patient's care wishes and that their experience through the end-of-life care process is acknowledged and respected by the medical community.⁸ If barriers exist between patients, their loved ones, and providers in communication about ACP, confusion and tension may impact the quality of the care experience for all involved.^{9,10} The primary responsibility for broaching discussions about how people want to be cared for lies with the treatment team, but completion of ACP requires personally evaluating one's own wishes and discussing these with loved ones and medical providers. It is a deeply personal and inherently interpersonal process.

Advance care planning initiatives must acknowledge barriers that may discourage patients from engaging in care planning and seek to bolster confidence that ACP is feasible and worthwhile. Confidence in one's own ability to make effortful, meaningful change – particularly when confronted with emotional, social, or physical barriers to do so – is referred to as self-efficacy.¹¹ Behavior change researchers across theoretical approaches have identified self-efficacy as a critical component of explaining and intervening upon individuals' motivations and readiness to change a specific behavior.¹²⁻¹⁵ Enhancing self-efficacy has been shown to improve situation-specific performance by increasing the effort put forth toward initiating or persisting in behavior change.¹⁶

Researchers and practitioners have increasingly emphasized the application of health behavior models to ACP initiatives.¹⁷⁻¹⁹ Through a series of qualitative and quantitative studies, prominent behavior change and gerontology researchers have conceptualized ACP as a set of separate yet interrelated steps including completing a

living will, communicating wishes regarding life-sustaining treatment with a healthcare proxy or agent, and discussing quality versus quantity of life issues with family members and health care providers.¹⁷ Themes that emerged from interviews and focus groups with older adults focused on ACP experiences mapped onto constructs outlined in the Transtheoretical Model of behavior change (TTM), such as one's readiness to engage in ACP.¹⁷ These findings suggested that the TTM might be a good fit for interventions aimed at increasing ACP behaviors. Follow-up measure development studies by Fried and colleagues validated TTM-based scales of Stage of Change, Decisional Balance, and Processes of Change for ACP with older adults in primary care settings.^{20,21} Further, ongoing interventions have been designed to utilize individuals' TTM based survey responses to provide tailored feedback over the course of several months, in order to address motivations to engage in ACP.¹⁸

The TTM is a highly researched and well-supported model of intentional behavior change that has been applied to interventions for end-of-life care planning and dozens of behaviors across settings, racial/ethnic populations, and cultures.^{21,22} The TTM frames an individual's readiness to change a behavior (Stage of Change) as associated with their perceived confidence to make a change (Self-Efficacy), the perceived benefits and negative consequences of making a change (Decisional Balance), and the use of cognitive/behavioral activities that facilitate change (Processes). Stage of Change is defined conceptually as a continuum through which an individual can move forward or regress in stages; however, it is typically measured as a categorical variable. At a given point in time an individual would be in one of the stages of change for a specified behavior. These stages and typical associated time frames are Precontemplation (not

thinking of changing in the next 6 months), Contemplation (thinking about changing in the next 6 months), Preparation (thinking about changing in the next 30 days), Action (made a change in the last 6 months), and Maintenance (made the change more than 6 months ago).

The TTM is an integrative theory of behavior change and the key constructs have been shown to be predictive of behavior change and have been found to be useful for intervening on behaviors that may be particularly resistant to change (e.g., smoking, domestic violence).²³⁻²⁵ Identifying important processes of change for a specific behavior and aligning interventions to address barriers and resistance could help people feel more confident and willing to make changes.^{24,26} The integration of constructs makes the TTM a powerful theory for conceptualizing and designing interventions for changing complex behaviors, including planning for end-of-life care. The construct of situational self-efficacy has been shown to be important for behavior change interventions across numerous age groups and cultural contexts, including exercise behaviors in older adults in the U.S.²⁷ and smoking in Korean adolescents.²⁸ Self-efficacy has also been shown to be important for interventions that address complex sets of behaviors, such as achievement in schools²⁹ and integrated service delivery in higher education.³⁰

To the knowledge of various experts in the field of ACP and behavior change and following a thorough literature review, no scales assessing ACP self-efficacy have been developed and validated. The current project aimed to apply a well-established theory of behavior change to the exploratory phase of a measurement development project for a scale of ACP Self-Efficacy. Using the previously developed measures of engagement in ACP grounded in the TTM as a foundation and the extensive work across behavior

change theories which identify self-efficacy as an important construct, this work added to this research area by engaging experts and potential stakeholders (i.e., older adults in the community) in exploration of how confidence to do ACP may impact participation and to assess how a validated measure of ACP self-efficacy may support research and patient care in this area. Exploring the construct of self-efficacy to do ACP within the framework of the TTM addresses a gap in the literature by focusing on the situation-specific confidence that likely impacts engagement in an important public health area.¹

Methods

Sample

Expert Interviews. The present study utilized purposeful sampling in order to assemble professionals in the areas of end-of-life care, gerontology, and palliative care that have clinical, research, policy-making, and community-based experience with ACP.^{31,32} Several experts who have extensive experience with theory-driven construct exploration and measure development were approached in order to frame discussion guides for interviews and focus groups. Snowball sampling was used such that experts were asked to recommend another expert that would then be approached for further key informant interviews.³³

Focus Groups. Engaging the population of interest in this research area necessitated inviting older adults to share their thoughts, feelings and experiences with advance care planning.³⁴ Over and above individual interviews, focus group settings allow for the potential for normalization of a common experience and may encourage sharing of personal experiences.^{35,36} Older adults who were participating in ACP education initiatives at several senior centers across the state of Rhode Island, provided through the

Care Transformation Collaborative (CTC) of Rhode Island, were invited to participate in one-time, 30-60 minute group discussions about ACP following a CTC presentation. The participant pool was limited to individuals over the age of 50 who spoke English.

Procedures

Expert Interviews. Key informants were approached via email with an invitation to participate in a one-time interview at the location of their choice or over the phone. They were sent an informed consent form to review via email before the interview and signed either electronically or in-person. Informed consent included a request to audiotape conversations for future review by the student researcher and research team. Interviews were semi-structured with questions related to experiences with ACP in their work and factors they believed to be important for patients and families' engagement and overall confidence to engage in ACP (Table 1). Participants were asked explicitly about barriers to ACP participation and completion, and how they have engaged patients who were less confident about completing the process.

Focus Groups. Focus group participants were invited to participate in a one-time group discussion on ACP at their local senior center. One group of participants was invited by the student researcher at the conclusion of the presentation by the CTC of Rhode Island on ACP. The second group of participants was assembled with support from an employee at a senior center that had previously hosted the CTC of Rhode Island for a presentation on ACP. All participants reviewed informed consent, were informed of the opportunity to ask questions of the student researcher and supervising professor in person or via phone or email, and consented to have their discussion audiotaped. Group discussions were guided by questions the research team prepared to assess experience with ACP (e.g.,

thoughts, actions), factors that influence confidence to talk about end-of-life care with loved ones and healthcare providers, and contributors to follow-through with required steps to document their wishes (Table 2).

Participants

Expert Interviews. Three expert interviews were conducted, two in-person and one via phone. The participants included a physician who led a palliative care team at a local hospital who regularly supported patients in quality of life discussions and end-of-life care decision-making; a physician with a clinical and research focus in gerontology who regularly works with older adults and families to determine decision-making capacity to engage in ACP and also engages in local and national discussions on ACP policies; and a registered nurse with experience treating patients and discussing ACP at various stages of treatment on healthcare teams within palliative, intensive care, and community settings with older adults and families.

Focus Groups. Two semi-structured focus groups were conducted at senior centers in Rhode Island. Ten adults (Group 1: N=3, Group 2: N=7) over the age of 50 consented to participate in group discussions about the process of ACP, what might influence their confidence to do ACP if they made it a goal for themselves, and what might get in the way of them doing ACP. Focus groups lasted between 30 and 60 minutes. Participants reviewed and signed informed consent and were compensated with \$5 gift cards to a national coffee and breakfast chain.

Data Analysis

Theoretical thematic analysis was used when listening to key informant and focus group recordings. This type of analysis is concerned with the reported experiences and

the meanings of these experiences for the participants *and* it acknowledges that the data collection and analysis is guided by a theoretical structure.³⁷ Theory-driven qualitative methods requires staying “open-minded yet mindful of the preconceptions (including theoretical leanings) one has entering a field of study.”³² Two raters with knowledge of literature on TTM based behavior change initiatives and ACP listened to audio-recordings of two expert interviews (one was not audiotaped as it was held via phone) and the two focus groups. Raters both utilized the guiding theoretical framework of the TTM and approached data independently to identify patterns within and across individual interviews and group discussions.

Raters listened to conversations for emergent themes related to self-efficacy to participate in three ACP behaviors: completing a living will, documenting a choice of healthcare agent, and discussing quality versus quantity of life issues with loved ones. Raters focused on issues that were raised often by multiple participants and whether certain issues appeared to be strongly related to confidence for one or more participants. After listening to all recordings, raters discussed concepts that they identified from the stakeholders’ perspectives, how themes related to the literature on ACP and how participants framed the construct of personal self-efficacy to engage in ACP. Debriefing discussions among the research team designed to aid in writing items that captured elements of the ACP self-efficacy construct.

Results

Overview of Themes

Expert Interviews. The Key Informant interviews yielded several themes related to the general lack of education on the importance of ACP and the fear that most people feel

when prompted with ACP questions and discussions by loved ones or providers. Themes related to the goals of care conversations included normalizing the process of discussing quality of life as it relates to medical care decisions. All three experts identified the impact of fear, denial, and procrastination to completing ACP – particularly in engagement in conversations between patients and their loved ones. A central theme was the importance of family members and loved ones in the process of care planning. Participants discussed the fear of upsetting loved ones as a common barrier for their patients. One participant noted that they regularly tell patients “one of the best gifts you can give to your family is the gift of preparedness.” Participants discussed the benefits of recent initiatives (e.g., the CTC of Rhode Island) and published guides such as The Conversation Project that assist in structuring these conversations.³⁸ As end-of-life care discussions appear to be universally difficult and fear-inducing, conversation guides and education initiatives benefit patients and providers by normalizing the discomfort they may feel and offering a step-by-step process to follow.

Key informants also universally discussed the need for ACP to include discussions with loved ones about quality versus quantity of life, stressing that an advance directive/living will is not sufficient. Although certain medical forms may outline interventions that patients would or would not want, complex scenarios often arise and surrogate decision-makers must be well versed in a patient’s values and wishes in order to make an informed decision. For example, if long-term quality of life may be salvaged with temporary usage of a respirator, a patients’ healthcare agent must weigh this with their loved one’s stated wish to not be kept alive with the assistance of machines. One participant reported that, in her work as a palliative care physician, she

has found the discussions with loved ones about quality versus quantity of life to be the most important component of ACP.

Focus Groups. Across the two focus groups, themes emerged related to the lack of understanding and education about what is involved in ACP (e.g., mistaking ACP for having completed a will or trust). Participants endorsed denial of mortality and the desire to avoid unpleasantness as barriers to doing ACP (e.g., “you think you’re going to live forever...”). Participants also discussed the importance of being able to communicate wishes to their loved ones and the benefits of having people to hold you accountable to complete ACP. If they felt like they could not talk about their wishes or their experiences with anyone, either because they received negative feedback or they did not have anyone they felt this close to, they were less likely to follow through in doing so.

Overwhelmingly participants noted that witnessing or personally experiencing a dire medical situation that necessitated discussions of end-of-life care wishes underscored the importance of ACP. Until confronted with what might happen if ACP is not completed (i.e., witnessing suffering not consistent with someone’s beliefs on quality versus quantity of life), participants noted denial of the necessity to do ACP sooner rather than later. Numerous participants talked about wanting to ensure that their wishes were adhered to so as to maximize quality of life and minimize suffering. Several participants discussed having multiple conversations with their adult children to reinforce these wishes. Confidence to do ACP appeared to be related to many things including feeling supported by others (e.g., family, friends, doctors) in the process, recognizing the necessity to follow through regardless of emotional discomfort, and having experience discussing end-of-life for themselves or for others.

Discussion

The information gathered and analyzed in this study formed the foundation for a measure development project to identify key components of the construct of self-efficacy to do ACP. In order to compose a list of items to be tested using sequential measure development, exploration of a measured construct must be grounded in the voices and experiences of potential stakeholders.^{39,34} The utilization of a well-established theoretical model of behavior change as a framework for this line of research allows for guided analysis of themes identified in interviews and focus group discussions about the topic.³⁷ A theory-driven and thoughtfully developed and validated measure of confidence to engage in care planning behaviors, including completing a living will, documenting a healthcare proxy, and discussing quality versus quantity of life issues, could add to the clinical and research aims of addressing this public health issue.

Older adults who participated in the current study discussed how naïve they felt about the need for and the steps involved in doing ACP before having been confronted with a situation that prompted them to consider it. Several participants wished that there were wider education initiatives to communicate the importance of ACP to younger generations. ACP interventions have historically focused on ensuring that an advance directive has been completed, including completion of a living will and appointment of a durable power of attorney for health care (i.e., an individual who will be responsible for medical decisions; surrogate decision maker).^{2,40} However, these documents are not sufficient in outlining how an individual may feel about complex situations that were not covered on check-box forms. More recently, additional interpersonal behaviors such as having discussions with medical providers and family members have been identified as

important components.^{17,41} Discussing quality versus quantity of life was found to be vital.¹⁷ These discussions include consideration of situations in which a person would prefer not to receive medical intervention because they believe it would diminish their ability to live a life that brings them joy and comfort. Engaging patients and loved ones in discussions about advance care planning can be challenging due to the discomfort in discussing death or ‘states worse than death.’⁴² Patients may feel less confident broaching these topics with loved ones, including those they may name as surrogates or health care agents, if they believe these conversations may upset them.²⁰ Patients may consider situations that would be worse than death and times when living with a diminished quality of life would be more important than living as long as possible.²¹ When patients and families are able to discuss options and learn the downsides that life-sustaining measures entail (including potential unnecessary suffering), many endorse that the burdens outweigh the benefits and would choose to discontinue or decline life support.⁴³

Adhering to a dying patient’s wishes regarding their desired quality of life may vary depending on whether they would, for example, prefer to be kept alert even if they experience pain or prefer to forego life-sustaining treatments in the form of feeding tubes or intubation. Individuals may choose to decline all life-sustaining treatments or interventions if they feel they are ready to die when it is their time, if they believe the burdens would be too great, or if they believe that the use of these treatments would cause extreme stress for their loved ones.^{43,44} Having ACP discussions, including situations where an individual would prefer to forego life-sustaining treatment, could be an emotional process for patients and families. Some patients may avoid these ACP discussions with family members in order to minimize the stress they predict their loved

ones will experience.¹⁷ However, it has been shown that not having these discussions could actually increase stress for family members if they become involved in treatment discussions.^{8,10}

Attitudes toward quality versus quantity of life and care preferences vary based on life stage and health context. Comfort for end of life care discussions and decisions likely varies depending on experiences with death and consideration of options. Although older adults may be more willing to discuss these topics, they have not been shown to have higher rates of actually making end-of-life care plans and may prioritize living in the moment (i.e., ‘cross that bridge when necessary’) over engaging in uncomfortable and anxiety-provoking conversations with loved ones or HCPs.⁵ It would be unethical for health care providers to avoid conversations about ACP and assume then that patients will discuss ACP when they are ready or wait until they feel completely comfortable with these topics. Providers may also feel uncomfortable, unprepared or not have enough time for ACP during patients’ regular appointments. Community initiatives may be helpful in these instances to bring ACP materials to older adults and their loved ones sooner rather than later.

Outlining care preferences consistent with patients’ values in order to maximize quality of life throughout health care decision-making should be the goal of health care providers who seek to do no harm for their patients and health care organizations who provide support for their consumers. Acknowledgement and assessment of one’s confidence to carry through with ACP once it is made a goal may be helpful for providers and family members alike. The Consumer’s Toolkit for Health Care Advance Planning⁴⁵ and the Starter Kit by The Conversation Project³⁸ provide advice for patients who might

encounter resistance or defensiveness from their loved ones when they initiate ACP conversations. Although these may be helpful suggestions for many patients, the existing tools do not acknowledge that patients and family members may be at varying levels of readiness, degrees of confidence, and may perceive fewer benefits to having these conversations sooner rather than later. The application of the TTM to ACP allows for a well-rounded approach to behavior change, framed by a model that does take into account these factors and has the flexibility to include other constructs related to the research area (e.g., how acceptable one finds a health state,⁴⁶ values and beliefs that are involved in decision-making²⁰).

Using the previously developed measures of ACP constructs grounded in the TTM (e.g., readiness, decisional balance) as a foundation and the extensive work across behavior change theories which identify self-efficacy as an important construct, this line of research will add to the literature on engagement in ACP. This work demonstrated a need for a measure of self-efficacy to do several key care planning behaviors, which can fill a gap in the assessment and intervention base on ACP engagement. Follow-up work to the current project will include writing a new scale that ascertains situation-specific confidence to participate in ACP, grounded in the TTM and informed by stakeholders in the patient and provider populations as discussed here, and validating this scale with an independent sample of older adults in the United States.

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Table 1. *Key Informant Interview Discussion Guide.*

<p>What is your experience with advance care planning in your work?</p> <ul style="list-style-type: none"> • What is the setting and stage of care that you typically work with patients and families? • What is your comfort level and competence in this area?
<p>From your clinical perspective, what are the things that seem to get in the way of people doing ACP?</p> <ul style="list-style-type: none"> • Specifically I'm interested in what appears to get in the way of patients completing a living will, identifying and documenting a healthcare proxy/agent, and having conversations with loved ones (and providers) regarding quantity versus quality of life issues.
<p>What are the issues that you've seen people really grapple with?</p>
<p>If you were in charge of ACP broadly in society, what would you do differently in order to address this?</p>

Table 2. *Focus Group Discussion Guide.*

Have you heard about advance care planning? If so, what information have you heard about what's involved?
What messages (good or bad) have you heard about completing advance care planning sooner rather than later?
What types of situations may make it difficult to NOT complete advance care planning sooner rather than later?
What are situations that would challenge your confidence that you could complete advance care planning if you decide to make this a goal?
Based on what you've learned here today or previous experiences with advance care planning for yourself or anyone else, what are some situations that may help you to feel more confident that you could complete advance care planning sooner rather than later?

MANUSCRIPT 2

Development and Validation of a Measure of Self-Efficacy for Advance Care Planning

Potential Journal for Submission: *Journal of the American Geriatrics Society*

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Abstract

Objective: To develop a measure of self-efficacy, a key construct of the Transtheoretical Model (TTM) of behavior change, as it applies to advance care planning (ACP) and to examine the association of the measured construct with other relevant measures as hypothesized by the TTM.

Design: Sequential scale development was used to develop the measure of self-efficacy and validate it with an independent sample, building on formative qualitative work that explored the construct of ACP self-efficacy and was used to write scale items. ACP was defined as completing three behaviors: completing a living will, documenting a healthcare agent and discussing quality versus quantity of life issues.

Setting: Participants were recruited online using a targeted survey sampling company.

Participants: Scale development was based on responses of 310 people aged 50 or older. Recruitment quotas were placed to ensure a census-based, nationally representative sample across categories of gender, age, region and education.

Measurements: The full sample was randomly split into two subsamples used for exploratory and confirmatory factor analyses respectively. Item selection and refinement was conducted quantitatively by examining factor loadings and qualitatively by reviewing item content across seven iterations with the exploratory sample. Scale structure was confirmed using confirmatory factor analysis, examining chi-square tests of significance, fit indices and mean square error approximations. External validation of the scale was conducted using ANOVAs to assess the relationship of self-efficacy to constructs outlined in the TTM (stage of change, decisional balance).

Results: Scale items demonstrated high factor loadings (.60-.85) and excellent internal consistency ($\alpha = .95$). Confirmatory analyses confirmed good model fit of a twelve-item ACP Self-Efficacy Scale relative to three ACP behaviors (CFI = .89, RMSEA = .13).

Conclusion: With a growing majority of Americans choosing to die in hospitals or care centers, planning for end-of-life care is becoming increasingly important for healthcare providers and has been shown to increase compassionate and cost-effective care. ACP is emotionally challenging and requires many steps, which can be discouraging. Self-efficacy has been shown to be an important construct to include in behavior change interventions and this work provides a scale of situation specific confidence for ACP.

Key words: advance care planning, self-efficacy, confidence, behavior change, scale development

Impact Statement: We certify that this work is novel clinical research. This research project adds to the literature with the development of a scale of self-efficacy to do advance care planning. Self-efficacy has been shown to be an important construct for health behavior change. Healthcare institutions have underscored the need for additional efforts to engage patients in advance care planning, documenting preferences grounded in people's wishes and values, to increase compassionate, ethical end-of-life care provision.

Introduction

The Institute of Medicine¹ (IOM) has summarized the disparity between what many people say they want out of their end of life care and what services are delivered in acute care settings.² The IOM called on healthcare providers and policy makers to focus on delivery of effective, supportive, high quality care planning initiatives that reflect the values and preferences of the people they serve. To be successful, these efforts must acknowledge the multifaceted nature of exploring and documenting one's preferences and wishes for their end-of life care; a process referred to as advance care planning (ACP). Experiences with ACP vary based on personal values and family dynamics, but typically the process is emotionally charged and requires numerous steps. Motivation to engage in ACP can vary based on access to information about end-of-life care planning, interpersonal drivers of behavior change (e.g., encouragement from medical doctors or loved ones), and one's own sense of confidence in their ability to persist through emotional discomfort when discussing end-of-life and care options. Concern for other's well-being, expectations about the process, personal experiences and stories about how others have experienced end-of-life care may influence engagement in the process.³ Engagement depends on intrinsic (e.g., sense of personal control, dignity beliefs) and extrinsic (e.g., influence from society or one's family) factors.⁴ Advance care planning has also been conceptualized as a set of health behaviors that can be addressed with initiatives grounded in well-researched, theoretical frameworks of behavior change.⁵ Taken together, past research on engagement in ACP and motivation of behavior change suggests that future programs must focus on identification of the relevant barriers and attempt to meet the individual where they are in terms of personal self-efficacy to

complete ACP. This study builds on previous work outlining ACP as a set of health behaviors and reviewing the importance of addressing self-efficacy in regards to motivation to complete them.⁵⁻⁷ The objective of this work is to develop a validated scale of ACP self-efficacy.

Advance Care Planning

Completion of end-of-life care planning requires a process of evaluating one's own wishes and discussing these with loved ones and medical providers. Effective interventions must acknowledge barriers that often discourage patients and their loved ones from engaging in care planning and seek to bolster education about why ACP is feasible and worthwhile.⁸ Historically, ACP interventions have mainly focused on ensuring that an advance directive (AD) has been completed, including completion of a living will and appointment of a durable power of attorney for health care (i.e., an individual who will be responsible for medical decisions; surrogate decision maker).^{9,10} More recently, additional interpersonal behaviors such as having discussions with medical providers and family members have been identified as important for ACP.^{5,11}

Discussing quality versus quantity of life has been found to be a vital component of ACP⁵ (corroborated in Murray, unpublished data, 2019). These discussions include consideration of situations in which a person would prefer *not* to receive medical intervention because they believe it would diminish their ability to live a life that brings them joy and comfort. Patients may consider situations that would be worse than death and times when living with a certain quality of life would be more important than living as long as possible.^{6,12} When patients and families are able to discuss options and learn what life-sustaining measures entail including potential unnecessary suffering, many

endorse that the burdens outweigh the benefits and choose to discontinue or decline life support.¹³ These decisions may shift over time depending on factors such as the availability of new treatment options or the limitation of options should new health problems develop.

Having ACP discussions, including situations where an individual would prefer to forego life-sustaining treatment, could be an emotional process for patients and families. Some patients may avoid these ACP discussions with family members in order to minimize the stress they predict their loved ones will experience.⁵ However, it has been shown that *not* having these discussions could actually increase stress for family members if they become involved in treatment discussions. Patients nearing the end of life, along with their loved ones, have endorsed feeling less stressed and more satisfied with their care when there is open communication and understanding about care plans that are grounded in the patients' values.^{14,15} Individuals may feel less confident broaching these topics with loved ones, including those they may name as surrogates or health care agents, if they believe these conversations may upset them.⁷ When patients and caregivers have a clear understanding of the prognosis, they are more likely to have completed some advance care planning, such as do not resuscitate orders.¹⁶ Similarly, when patients with advanced cancer report believing their life expectancy to be longer than what their physicians have communicated, they are less likely to complete do not resuscitate orders, even though researchers have found that DNRs significantly reduce care that may be more aggressive, costly, and harmful to these patients' quality of life.^{17,18} ACP should not be a process that is reserved for those with advanced cancer diagnoses and, in fact, large healthcare organizations such as the Institute of Medicine¹

and Institute for Healthcare Improvement¹⁹ have encouraged providers to have discussions with patients about their values and wishes for end of life care sooner rather than later.

Application of a Theory of Behavior Change

Through a series of qualitative and quantitative studies, prominent researchers have conceptualized ACP as a set of separate yet interrelated components included completing a living will, communicating wishes regarding life-sustaining treatment, discussing quality versus quantity of life issues with family members and health care providers, and identifying a healthcare agent or surrogate decision maker.⁵ In a series of studies utilizing interviews and focus groups, experiences that older adults shared with researchers involved in ACP mapped onto constructs outlined in the TTM; for example, processes of change, readiness and decisional balance.⁵⁻⁷ These findings suggested that the TTM might be a good fit for interventions aimed at increasing ACP behaviors.

The TTM is a highly researched and well-supported model of intentional behavior change that has been applied to interventions for dozens of behaviors, including ACP, across settings, racial/ethnic populations, and cultures.^{20,6} The TTM frames an individual's readiness to change a behavior (Stage of Change) as associated with their perceived confidence to make a change (Self-Efficacy), the perceived benefits and negative consequences of making a change (Decisional Balance), and the use of cognitive/behavioral activities that facilitate change (Processes).²¹ Stage of Change is defined conceptually as a continuum through which an individual can move forward or regress in stages; however, it is measured as a categorical variable. At a given point in time an individual would be in one of the stages of change for a specified behavior. These

stages are Precontemplation (not thinking of changing in the next 6 months), Contemplation (thinking about changing in the next 6 months), Preparation (thinking about changing in the next 30 days), Action (made a change in the last 6 months), and Maintenance (made the change more than 6 months ago).

The TTM is an integrative theory of important behavior change constructs which have been shown to be predictive of behavior change and have been found to be useful for intervening on a series of health-related behaviors, especially those that may be particularly resistant to change (e.g., smoking, domestic violence).²¹⁻²³ Identifying important processes of change for a specific behavior and aligning interventions to address barriers/resistance could help people feel more confident and willing to make changes.^{23,24} The integration of constructs makes the TTM a powerful theory for conceptualizing and designing interventions for behavior change. The construct of situational self-efficacy, specifically, has been shown to be important for behavior change interventions across numerous age groups and cultural contexts, including exercise behaviors in older adults in the U.S.²⁵ and smoking in Korean adolescents.²⁶ Self-efficacy has also been shown to be important for interventions that address complex sets of behaviors, such as achievement in schools²⁷ and integrated service delivery in higher education.²⁸

Self-Efficacy

Confidence in one's own ability to make effortful, meaningful change – particularly when confronted with emotional, social, or physical barriers to do so – is referred to as self-efficacy.²⁹ Also understood as situation-specific mastery, personal self-efficacy is a cognitive experience that is related to one's past experiences, abilities and

skills, as well as expectations about future success or failure.^{26,30} Researchers across theoretical approaches to behavior change have identified self-efficacy as a critical component of explaining and intervening upon individuals' motivations and readiness to change a specific behavior.^{21,30,31} Enhancing self-efficacy has been shown to improve situation-specific performance by increasing the effort put forth toward initiating or persisting in behavior change.³⁰ Interventions that aim to motivate individuals to start, stop, or continue to engage in any specific behavior could be improved by acknowledging the potential barriers that may discourage progress and confidence to persist despite the barriers.

TTM-Based Measures for ACP

Collaborations between experts in ACP and TTM-based behavior change initiatives yielded the development of measures of Stage (i.e., readiness to make a change), Decisional Balance (i.e., the pros and cons of making a change), and Processes of Change (i.e., cognitive and behavioral strategies to support making a change) for ACP.^{5,6} These researchers also uncovered in qualitative work that certain belief systems and attitudes toward end-of-life care planning were important in driving engagement. This led to the development of a scale of Attitudes, Values and Cultural Beliefs (AVCB) that measures the extent to which values such as religious beliefs or the desire to live mindfully might impede engagement in ACP.⁷ The AVCB scale is not a proxy for self-efficacy, as it does not measure an individual's confidence that they can participate in ACP; rather, it highlights specific attitudinal barriers that may be important for researchers and clinicians to address before an individual may acknowledge that ACP may be right for them.

Self-efficacy has been highlighted as a key variable in population-based initiatives and individual interventions aimed at changing complex behaviors.^{27,28,32} When applied to a specific situation, the construct of self-efficacy refers to how confident an individual feels they can engage in a particular behavior even when they are faced with certain barriers. Developing a validated measure of self-efficacy for ACP will address a gap in the literature that conceptualizes ACP as a set of health behaviors (i.e., completing a living will, identifying a healthcare agent, discussing quality versus quantity of life issues) by focusing on the situation-specific factors that threaten people's confidence to engage. The purpose of the current study was to build on previous work to develop and validate a scale of ACP self-efficacy and to examine the associations between the measured construct and other variables within the framework of the TTM (e.g., stage of change, decisional balance, processes of change).

Methods

Design

A sequential method of measure development was utilized to develop a scale of ACP self-efficacy.³³ Item development and scale structure was supported by input from experts and community members (described in detail elsewhere, Murray 2019), followed by recruitment of an independent sample for testing of the scale structure via exploratory, confirmatory and external validation analyses.

Item Development and Refinement

Initial item development was grounded in a comprehensive review of TTM measures of self-efficacy for other behaviors (e.g., smoking,²⁶ school achievement,²⁷

integrated service delivery in higher education²⁸) and from literature on the process of ACP across settings.^{5,9-11,14} Experts in the areas of scale development and behavior change interventions were consulted throughout all stages of measure development. Detailed methods of formative work used to write scale items are outlined elsewhere (Murray, unpublished manuscript, 2019). This process included interviewing experts in clinical, research and policy making efforts to support ACP; conducting focus groups with older adults in the community; and reviewing themes and revising written items with feedback from experts on scale development.

Recruitment & Survey Administration

All materials, surveys and procedures were approved by the Institutional Review Board at the University of Rhode Island. The survey was administered using Qualtrics online survey software. Participants were invited to participate and accessed the survey via an online link provided by a targeted survey population and panel recruitment company. All adults in the United States over the age of 50 who could read and write in English were eligible to participate. Specific quotas were added to ensure a census-balanced sample with adequate representation of individuals across age ranges, genders and geographic regions in the United States.

Individuals were first asked to review informed consent and were directed to survey questions upon agreement. Data were extracted from Qualtrics into SPSS for exploratory analyses and to EQS for confirmatory analyses. To protect confidentiality, no identifying information was distributed to the researcher from Cint and none of the participants' responses to survey questions were accessible to Cint.

Sample

Participants ($N = 310$) for the measure development survey were invited to participate through an online survey and panel recruitment company. Eligible participants were adults 50 years old or older who could read and write in English. Quotas were utilized to ensure a nationally representative sample (25% each from Northeast, South, West, and Midwest regions), even representation across men, and a balanced age range for adults over the age of 50 (50-64yo, 40%; 65-75, 40%; 76-99, 20%).

Measures

ACP Self-Efficacy. A total of 35 items were written to represent self-efficacy to do ACP; defined as completing a living will, documenting a healthcare agent, and discussing quality versus quantity of life issues with loved ones. Participants rated how confident they felt that they could do ACP even if the proposed statement were true for them. Responses were given on a five-point scale (1, “Not at all confident”; 2, “A little confident”; 3, “Somewhat confident”; 4, “Quite confident”; 5, “Completely confident”). If an item did not feel relevant (e.g., “You have not discussed advance care planning with religious or spiritual leaders”), participants were asked to rate this item with a score of 1 (“Not at all confident”) to standardize this response pattern across the sample.

TTM Measures. Previously developed TTM-based measures of Stage, Decisional Balance and Processes of Change for ACP were included in the final survey.^{6,7} Stage of Change was measured with two to three questions for each behavior to assess readiness to complete a living will, document a choice of healthcare agent, and discuss quality versus quantity of life issues with loved ones.⁷ Participants were asked if they have completed each behavior and, if completed, whether it was done in the past six months (Action) or

before (Maintenance); if not completed, whether they were thinking about doing so in the next 30 days (Preparation) or next six months (Contemplation). If they were not planning to complete the behavior in the next six months, they were staged in Precontemplation. Decisional Balance (i.e., Pros and Cons) for ACP was measured with a 12-item scale in which participants were asked to rate the importance of each item (e.g., *Doing advance care planning would simplify how decisions would be made if I were very ill*) in their decision whether or not to participate in ACP, from 1, “Not at all important,” to 5, “Extremely important.”⁷ Use of social and cognitive-behavioral strategies that support engagement in ACP, called Processes of Change within the TTM, were measured using a 9-item measure (e.g., *I can count on my loved ones to help me with advance care planning*).⁷ Participants were asked to rate how frequently they used each of the processes in the past month on a five-point scale from 1, “Almost never” to 5, “Almost always.”

Related Constructs. Along with the developed TTM based Self-Efficacy Scale for ACP, theoretically related constructs were also measured for validity testing and further field development. The Attitudes, Values and Cultural Beliefs (AVCB) scale is an 8-item measure of the strength to which an individual endorses various medical misperceptions about participating in ACP, such as beliefs that “I will always be able to make my own treatment decisions.”⁷ A measure of the Acceptability of Health States (AHS) was included to assess attitudes towards quality of life and states worse than death.^{8,12} The three conditions in the AHS measure represent mental and physical states (being bedbound, severe cognitive impairment, enduring severe pain) with reliably diminished quality of life for many people. In previous work, these items were measured on a binary

scale of whether these states would be “acceptable” or “unacceptable.” The scale for these items was changed to a continuous scale to increase the possibility of variability in responding and to allow for more formal statistical analyses to assess their relationship with the other measures.

Validity Assessment. Predictive validity was assessed by testing the relationships between domains that have a basis in the relevant literature; namely the typical pattern that would be hypothesized to emerge across stage of change for constructs in the Transtheoretical Model as seen in previous studies with an increase in self-efficacy across stages.²⁰ In order to empirically demonstrate the validity of the construct being measured with the developed scale, scores on the developed measure were compared to independent measures in domains that are similar and should have a positive correlation (convergent validity) and domains that are dissimilar or should theoretically not be related (divergent validity).³⁴ The General Self-Efficacy Scale that measures one’s overall confidence to solve problems when faced with perceived barriers was utilized to test convergent validity.³⁵ Divergent validity was assessed via correlations between scores on the constructed ACP Self-Efficacy scale with the short-form of the Marlowe-Crowne Social Desirability Scale.³⁶

Data Analysis

The sample was randomly split and the first half ($N=168$) was used for the exploratory phase using factor analysis with Varimax rotation on item correlation matrices. Assumptions of normality were tested on the exploratory sample. The number of retained components was based on the minimum average partial procedure (MAP), parallel analysis, and examination of item content.³⁷

Item selection and retention was an iterative process that involved quantitative and qualitative analysis. Factor loadings were examined and those with $<.40$ were removed; no item loadings were greater than .90. Inter-item correlations were assessed for multicollinearity. Item pairs with correlations $>.70$ were assessed for qualitative breadth of construct and to avoid redundancy. Seven iterations of exploratory analyses were performed and involved evaluations of factor loadings and item content as well as discussion of theoretical subcomponents of self-efficacy and literature review. Cronbach's alpha was examined to determine the internal consistency of the scale in the exploratory sample.

Confirmatory factor analysis (CFA) was performed using the second half of the measure development sample ($N=142$) to evaluate the fit between the hypothesized model and the sample data.^{38,39} Confirmatory factor analysis was utilized as this test accounts for the presence of measurement error, in contrast to principal components analysis that assumes no measurement error, which provides a better estimate of the true variance accounted for by the scale items in the measurement of the underlying variable.³⁸ Model fit and factor loadings were evaluated for final item selection, which included determination of item clarity, breadth of concept and minimization of redundancy. Along with χ^2 significance tests, the comparative fit index (CFI) and root mean-square error of approximation (RMSEA) were used to assess overall model fit.^{40,41} Good overall fit is typically indicated by CFI values greater than .90, with values greater than .95 being ideal.^{42,43} RMSEA values less than .10 are seen as acceptable or evidence of mediocre fit, with values $<.08$ indicating good fit and $<.05$ indicating very good fit. The scale's internal consistency was assessed further with Cronbach's alpha.

Finally, external validation analyses were conducted with the full sample ($N = 310$); the relationships between self-efficacy, decisional balance and stage of change for ACP were evaluated. The pattern of these construct relationships were compared to patterns seen in other TTM-based behavior change research areas. Raw scores on TTM measures were converted to T-scores for external validation. A MANOVA followed by a series of ANOVAs were used to evaluate the relationship between self-efficacy, pros and cons by stage of change. Post-hoc analyses were evaluated to determine significant differences in construct endorsement across Stages of Change.

Results

Item development and refinement

Following formative efforts of conducting a thorough literature review, reviewing related projects with experts in ACP and TTM-based scale development, and conducting interviews with experts in the field and focus groups with older adults in the community, a total of 35 items were written encompassing individual self-efficacy to complete ACP. Further description of this work can be found elsewhere (Murray, unpublished data, 2019).

Survey Sample

Through Cint behavior systems, eligible adults over the age of 50 were invited to participate in a 15-minute online survey. Of the 354 eligible participants who followed the invitation link, 41 declined to participate following informed consent and 3 individuals' responses were missing data or were under the age of 50; thus they were not included in data analyses, yielding a final sample of 310. Participants had an average age of 66.4 ($SD=9.75$). Approximately half of the participants were women (51%), 48% men

and 2 individuals identified as transgender. Descriptive characteristics of the full sample are outlined in Table 1. The number of participants within stage groups varied greatly with half of the sample being in the maintenance phase across the three behaviors, having already completed ACP more than six months prior to the survey (Table 2).

The full sample was split randomly using SPSS to yield independent samples for exploratory ($N=168$) and confirmatory ($N=142$) factor analyses. Demographic variables such as gender, age, and education did not vary significantly between the two subsamples.

Exploratory analyses

The original 35 self-efficacy items were included in an exploratory factor analysis using SPSS with the first half of the total sample. Minimum average partial procedures and parallel analysis originally suggested six and three factors respectively, one item was removed after the first step. Through an additional 6 factor analyses, the remaining 34 items were reduced to 12 with MAP and parallel analyses each suggesting one factor in the seventh iteration. The final analysis demonstrated that all item loadings were $>.5$, ranging from .515-.902. The internal consistency for the self-efficacy scale was high, with a Cronbach's alpha value of .95.

Confirmatory analyses

The final 12 self-efficacy items identified in the exploratory phase were included in confirmatory factor analyses using the second half of the split subsample (Figure 1). For all variables entered into the confirmatory model test, skewness was below $|1.0|$ and kurtosis was below $|2.0|$, supporting assumptions of normality. The largest standardized residuals between scale item variables were below $|.2|$, indicating that the relationships

between variables was explained adequately by the model. Confirmatory analyses with one factor restricted indicated moderate to good fit, $\chi^2(54) = 182.07, p < .0001$; CFI = .890, RMSEA of .130 [90% CI (.109, .150)]. RMSEA of less than .10 are typically accepted as evidence of adequate fit with values greater than .10 indicating that residual error is accounting for a fair amount of variance.^{38,42} However, given the emotionally and behaviorally complex nature of the measured construct of self-efficacy to do three distinct ACP behaviors, the fit of the developed items is seen as acceptable for this initial phase of measure development. Internal consistency within the confirmatory sample remained strong, $\alpha = .94$. Item loadings ranged from .60 to .85. No items were removed following CFA, yielding a final 12-item ACP self-efficacy measure.

External Validation

To test the validity of the ACP self-efficacy measure, ANOVAs were conducted to test how self-efficacy varied across stages of change for each of the three ACP behaviors, all were significant. Confidence to complete a living will ($F(4, 305) = 2.520, p = .041, \eta^2 = .032$), document a healthcare agent ($F(4) = 3.236, p = .013, \eta^2 = .041$), and discuss quality versus quantity of life issues with loved ones ($F(4) = 3.261, p = .012, \eta^2 = .041$) significantly differed by stage of change (Table 3). Effect sizes were small to medium. Post-hoc analyses indicated that self-efficacy to complete a living will was higher for those in maintenance than those in precontemplation; those in action for documenting a healthcare agent were more confident than those in precontemplation; and those in action and maintenance were significantly more confident regarding discussions of quality versus quantity of life issues than for those in precontemplation. There were not enough

participants in the preparation stage of change to identify differences in self-efficacy between these individuals and those in pre-action or post-action stages.

For further validation of the construct of ACP self-efficacy, the developed scale was compared with constructs that are theoretically similar for convergent validity. General self-efficacy was found to be significantly correlated with ACP self-efficacy ($r=.26, p<.001$). Social desirability was not found to be associated with ACP self-efficacy.

Further Validation of Associated Constructs

Self-efficacy was significantly associated with related constructs, including previously developed TTM-based measures of decisional balance and attitudes, values and cultural beliefs (AVCB) associated with ACP. The developed self-efficacy scale was compared across stages to decisional balance (Figure 2). Overall, greater ACP self-efficacy was associated with greater endorsement of Pros ($r = .454, p <.0001$). Interestingly, greater self-efficacy was also associated with greater endorsement of Cons of doing ACP ($r = .266, p <.0001$). For living will, participants who were in contemplation ($M=25.60$), preparation ($M=28.50$) and maintenance ($M=25.64$) endorsed more Pros of completing a living will than those in precontemplation ($M=21.71$). For completion of healthcare agent, participants in contemplation ($M=25.81$) and maintenance ($M= 25.69$) endorsed more Pros than those in precontemplation ($M=22.39$). For quality of life discussions, participants in maintenance ($M=26.15$) endorsed more Pros than those in precontemplation ($M=21.35$).

Self-efficacy and AVCB were negatively correlated, such that those with greater confidence that they could complete ACP endorsed lower importance of AVCB, ($r = -$

.125, $p < .05$). Participants in action for living will ($M = 19.00$) and those in maintenance for documenting a healthcare agent ($M = 15.16$) and discussing quality of life issues ($M = 13.90$) endorsed less importance of AVCB than those in precontemplation for the three behaviors ($M = 21.71; 17.60; 18.29$) [LW: $F(4, 304) = 3.73, p < .01$; HA: $F(4, 304) = 2.52, p < .05$; QvQ:]. This finding reflects that those who identify or agree with medical misconceptions about end-of life care planning (e.g., “If you fill out a document such as a living will, the doctors are more likely to “pull the plug” too soon”) are less likely to have completed ACP behaviors.

Further, this research also served to provide initial validation for a continuous measure of Acceptability of Health States (AHS) that was previously measured utilizing a dichotomous yes/no response.⁸ In this sample ($N = 310$), AHS ($M = 7.77, SD = 2.92$) was associated with the developed measure of ACP self-efficacy such that higher confidence to do ACP was correlated with greater acceptability of difficult health states (e.g., being bedbound) ($r = .125, p < .05$). This construct is relevant when reviewing quality versus quantity of life issues and treatment preferences.

Discussion

A scale of ACP self-efficacy, grounded in the Transtheoretical model of behavior change, was developed based on thorough literature review of advance care planning and behavior change, formative qualitative work, and psychometric analyses which demonstrated both high reliability and validity. As hypothesized and consistent with other TTM based measures, the developed self-efficacy scale showed variation across stages of change for the three ACP behaviors.²⁰ This project adds to the literature base that addresses ACP as a set of health behaviors by emphasizing the role of self-efficacy to

complete these emotionally and logistically complex behaviors and provides a scale that can be used in assessment and intervention efforts designed to increase ACP.

Bandura noted that it is imperative to specify the context/behavior in question when constructing scales of self-efficacy to optimize the explanatory and predictive utility of the measure.⁴⁴ Given the complexity of the behaviors addressed within this line of research, isolating the construct of self-efficacy to do several behaviors and persist through barriers proved challenging when writing and revising scale items. However, results of this work suggest that the developed scale did indeed explain a portion of the overall variance for completing ACP, which underscores the importance of including self-efficacy in TTM-based interventions to increase engagement in these behaviors. In this study, participants were asked to respond on a 5-point confidence scale based on their perceived capability to complete ACP even if faced with specific barriers. Recognizing self-efficacy as a contributor to ACP motivation and engagement can assist future researchers more effectively tailor interventions. Within this study, self-efficacy was found to account for a small-to-moderate amount of variance (based on partial eta squared) across the three ACP behaviors, partially indicative of the complicated nature of this issue and the number of other factors involved in completing these behaviors. As part of a larger program, assessment of self-efficacy and addressing low confidence in this area could increase overall effectiveness of interventions.

The model fit for the developed self-efficacy scale was good, particularly given the complexity of the construct of situational self-efficacy as it relates to three behaviorally and emotionally multifaceted behaviors.^{40,42} Notably, the number of participants within stages varied greatly, limiting the power to evaluate differences found

between stage groups during validation procedures. Results presented here must also be taken within the context of strong theoretical foundation for self-efficacy as a central component of TTM based behavior change research.^{45,46} The conceptual nature of the underlying factor, backed by strong theory, and the formative work of discussing self-efficacy to do ACP with stakeholders in healthcare and community settings, lend additional credence to the value of the constructed scale for future use. Further, this project also served as follow-up validation of the TTM-based measures of ACP decisional-balance, stage of change, and AVCB and introduced a continuous measure of acceptability of health states for use in future studies.

Much of the previous research on advance care planning has been conducted with older adults, primarily those with terminal illnesses such as advanced cancer. However, as population-based initiatives to increase ACP engagement expand, younger adults will be asked to consider their views on death and planning for end-of-life care earlier in their interactions with medical professionals or in community programs. Depending on past experiences with death, young adults (e.g., undergraduate students) have been found to vary in their wishes related to medical intervention.⁴⁷ Also, unlike care provision for patients managing terminal diagnoses, primary care providers and those in acute care settings are typically unable to spend extended time with patients to answer questions and assess motivation that may be multifaceted. Recently, brief/tailored ACP interventions have been developed and applied in primary care⁴⁸ and emergency departments⁴⁹ with promising feasibility. Healthcare providers and institutions will need to continually adapt interventions to meet the individual needs of the patients they serve while being mindful of population-based healthcare costs. This work serves to address a gap in the literature

on motivating the public to engage in care planning by evaluating the impact of situation-specific confidence and presenting a new validated measure of ACP self-efficacy.

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Table 1. *Demographic Characteristics, Total Sample (N=310).*

Variable	Participants, N (%)
Gender	
Female	158 (51)
Male	148 (47.7)
Transgender	2 (.6)
Race/Ethnicity	
African American or Black	13 (4.2)
American Indian or Alaskan Native	1 (.3)
Asian or Asian-American	7 (2.3)
Hispanic/Latino	2 (.6)
Native Hawaiian or Other Pacific Islander	0 (0)
White	277 (89.4)
More than one race	3 (1)
Other	1 (.3)
Relationship	
Married	170 (54.8)
Separated	5 (1.6)
Divorced	50 (16.1)
Widowed	45 (14.5)
Single (Never Married)	24 (7.7)
Living with a partner	14 (4.5)
Education	
Some high school or less	2 (.6)
High School Diploma	45 (14.5)
Some college	85 (27.4)
Associates	39 (12.6)
Bachelor's	88 (28.4)
Master's	38 (12.3)
Doctorate/PhD	11 (3.5)

Table 2. *Frequencies across ACP Stage of Change.*

ACP Staging	Stage of Change, N(%)					
	PC	C	PR	A	M	Total
Living Will	55 (17.7)	85 (27.4)	6 (1.9)	10 (3.2)	154 (49.7)	310 (100)
Healthcare Agent	48 (15.5)	39 (12.6)	7 (2.3)	58 (18.7)	158 (51)	310 (100)
Quality vs. Quantity	67 (21.6)	69 (22.3)	6 (1.9)	13 (4.2)	155 (50)	310 (100)

PC = precontemplation, C = contemplation, PR = preparation, A = action, M = maintenance.

Table 3. *Self-Efficacy T-scores by ACP Stage of Change.*

ACP Behavior	Stage of change, Mean (N)				
	PC	C	PR	A	M
Living Will	46.80 (55)	49.36 (85)	51.52 (6)	54.13 (10)	51.17 (154)*
Healthcare Agent	46.92 (67)	49.87 (69)	52.13 (6)	56.20 (13)*	50.78 (155)
Quality vs. Quantity discussions	46.09 (48)	48.46 (39)	47.22 (7)	52.07 (58)*	50.93 (158)*

T-scores ($M=50$, $sd=10$); PC = precontemplation, C = contemplation, PR = preparation, A = action, M = maintenance.

* Reported values significantly ($p < .05$) greater than precontemplation stage values for respective behavior.

Figure 1. *Confirmatory factor analyses for ACP Self-Efficacy Scale.*

CFI = comparative fit index. RMSEA = root mean square error of approximation.

Figure 2. *Self-efficacy and decisional balance by stage of change.*

a.

b.

c.

(a.) completing a living will, (b.) documenting a healthcare agent, and (c.) discussing quality versus quantity of life issues with loved ones.