Does Educating Patients About the Early Palliative Care Study Increase Preferences for Outpatient Palliative Cancer Care? Findings From Project EMPOWER

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Objectives: Randomized controlled trials, especially the Early Palliative Care Study (Temel et al., 2010), have shown that early outpatient palliative cancer care can improve quality of life for patients with advanced cancer or serious symptoms. However, fear and misconceptions drive avoidance of palliative care. Drawing from an empowerment perspective, we examined whether educating patients about evidence from the Early Palliative Care Study would increase preferences for palliative care. Method: A sample of 598 patients with prostate, breast, lung, colon/rectal, skin, and other cancer diagnoses completed an Internet-mediated experiment using a between-group prepost design. Intervention participants received a summary of the Early Palliative Care Study; controls received no intervention. Participants completed baseline and posttest assessments of preferences of palliative care. Analyses controlled for age, gender, education, cancer type, presence of metastases, time since diagnosis, and baseline preferences. Results: As hypothesized, the intervention had a favorable impact on participants' preferences for outpatient palliative cancer care relative to controls (d = 1.01, p < .001), while controlling for covariates. Intervention participants came to view palliative care as more efficacious (d =(0.79, p < .001) and less scary (d = 0.60, p < .001) and exhibited stronger behavioral intentions to utilize outpatient palliative care if referred (d = 0.60, p < .001). Findings were comparable in patients with metastatic disease, those with less education, and those experiencing financial strain. Conclusions: Educating patients about the Early Palliative Care Study increases preferences for early outpatient palliative care. This research has implications for future studies aimed at improving quality of life in cancer by increasing palliative care utilization.

Keywords: palliative care, psychoeducation, quality of life, decision making, dissemination

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Timely dissemination of medical evidence is fundamental for public health and important for increasing utilization of care that can improve quality of life. Over 14 million people are diagnosed with cancer each year worldwide, claiming 8 million

lives (Stewart & Wild, 2015), and compromising physical and emotional quality of life. Perhaps 60-90% have significant physical symptoms and side effects, such as fatigue, nausea, pain, diarrhea, or loss of appetite, and 25-40% have significant symptoms of depression or anxiety (Jacobsen & Andrykowski, 2015; Teunissen et al., 2007). Palliative care offers an interdisciplinary team-based approach to supporting quality of life in the context of a serious illness (Ferrell et al., 2017; Haley, Larson, Kasl-Godley, Neimeyer, & Kwilosz, 2003; Kasl-Godley, King, & Quill, 2014). Several randomized controlled trials (RCTs) have documented the benefits of palliative care (see Ferrell et al., 2017), with the Early Palliative Care Study (Temel et al., 2010) showing that patients with lung cancer who received early outpatient palliative care had better quality of life and lived several weeks longer than controls. Nonetheless, as we review, several misconceptions about the nature of palliative care and its evidence base have undermined uptake of palliative care (Institute of Medicine [IOM], 2014). Drawing upon an empowerment perspective (Zimmerman, 1995), the goal of the present study was to examine whether educating

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patients about medical evidence from the Early Palliative Care Study increases their preferences for utilizing palliative care.

Palliation refers to care aimed at anticipating, preventing, and treating suffering. Although *palliative care* and *hospice care* are used synonymously in some countries, the terms carry distinct meanings in the United States and increasingly elsewhere. Namely, hospice care in the United States is a Medicare benefit for patients who are no longer pursuing curative treatments and believed to have <6 months to live (though see Harrison & Connor, 2016). In contrast, palliative care can be provided at any point along the illness trajectory, regardless of whether a patient is being treated for cure. Palliative care can be provided through a variety of models (El Osta & Bruera, 2015), including through multidisciplinary outpatient teams of physicians, nurses, social workers, chaplains, and psychologists. These teams coordinate care, manage physical and emotional symptoms, facilitate preference-sensitive decisions, and help discuss end-of-life issues.

Several RCTs have provided evidence for outpatient palliative cancer care, particularly the Early Palliative Care Study (Temel et al., 2010). That study examined a team-based palliative care intervention integrated within standard oncology care for patients with metastatic lung cancer. Newly diagnosed patients were routed into meetings at least monthly with a specialty-trained palliative care physician or advanced practice nurse who focused on symptom management, psychosocial support, care coordination, goals of care, and decision making. Referrals were provided as needed to psychologists, psychiatrists, social workers, chaplains, and other specialists. Relative to controls, intervention participants were less depressed and had better physical functioning at 3-month follow-up and lived several weeks longer. The Early Palliative Care Study challenged long-standing perceptions that care for the seriously ill implies tradeoffs between quality and quantity of life, with implications for research (cited >3,000 times to date) and practice. For example, that study triggered the American Society of Clinical Oncology provisional clinical opinion (Smith et al., 2012) to recommend early palliative care for all patients with advanced cancer or serious symptoms, and the American College of Surgeons (2012) has incorporated palliative care into accreditation standards. As four additional high-quality RCTs of outpatient palliative cancer care (Bakitas et al., 2009, 2015; Temel et al., 2016; Zimmermann et al., 2014) have shown results consistent with the Early Palliative Care Study, in November 2016 the American Society of Clinical Oncology issued a clinical practice guideline-its strongest national recommendation-in support of palliative cancer care (Ferrell et al., 2017). We focused on educating patients about the Early Palliative Care Study given its role in this paradigmatic shift in oncology research and care.

Despite growing evidence and national recommendations, palliative care is underutilized. Although individuals are often anticipated to live greater than 9 months after the diagnosis of advanced cancer (Osta et al., 2008), palliative care is often delayed until the final 2 months of life (Hui et al., 2010; Osta et al., 2008), with most patients never utilizing palliative care (Bailey et al., 2014; Kumar et al., 2012). Palliative care is often viewed as scary (Gerhart et al., 2016; Lo, Quill, Tulsky, and the ACP-ASIM End-of-Life Care Consensus Panel, 1999; Milne, Jefford, Schofield, & Aranda, 2013); after all, it grapples with suffering, complex medical decisions, and dying. Moreover, common misonceptions amplify these fears. For example, 80% of U.S. adults report not knowing what palliative care is (IOM, 2014), and it is often incorrectly equated with "giving up" (Lo et al., 1999), hospice (Fischer, 2014; IOM, 2014), or even "death panels" (Meirick, 2013), despite that palliative care can be offered at any point in the illness trajectory and while receiving treatment.

Our effort to address misconceptions about palliative care was informed by an empowerment perspective. Empowerment perspectives have been popularized in diabetes care (e.g., Anderson & Funnell, 2010) and applied to posttreatment survivorship care in cancer (Davison & Degner, 1997; van den Berg et al., 2013), though not the palliative setting. In the context of a serious cancer diagnosis, we conceptualize empowerment as the process by which patients gain mastery over the health care decisions that affect their quality of life (adapted from Zimmerman, 1995). Accordingly, psychoeducation is a useful tool for empowering patients (Cattaneo & Chapman, 2010; Peterson, 2014; Zimmerman, 1995). Metaanalyses have documented the efficacy of psychoeducational interventions in changing preferences, behaviors, and other outcomes in cancer-specific samples (Devine, 2003; Devine & Westlake, 1995; Stacey, Samant, & Bennett, 2008), suggesting psychoeducation about palliative cancer care could also prove beneficial.

The present study, Project EMPOWER, was designed to examine the impact of psychoeducation about the Early Palliative Care Study on patients' preferences for outpatient palliative cancer care. Patients with heterogeneous cancer diagnoses completed an Internet-mediated National Institutes of Health (NIH) funded experiment using a classic between-group prepost design. Participants completed a baseline measure of preferences for palliative care, were randomized to receive a summary of the Temel et al. findings using plain language and simplified graphics (psychoeducation group) or no information (control group), and completed a posttest measure of preferences. The preference measure assessed three broad domains: emotion (fear of or comfort with palliative care consultations), cognition (belief in the efficacy of palliative care), and behavior (intentions to use palliative care if referred). Analyses controlled for key demographic and health covariates and accounted for subgroup variation. Our overarching hypothesis was that educating patients would lead them to be more likely to prefer palliative care.

Method

Participants

Participants were adult patients who completed an Internetbased study. Inclusion criteria were being in oncology care, selfreporting a past or present cancer diagnosis, being ≥ 18 years old, and being able to read the English-language only content on the website. Recruitment targeted five diagnostic groups—prostate, breast, lung, colon/rectal, and skin cancer—although participants with other cancer diagnoses were welcome to participate. Most participants were recruited using the NIH ResearchMatch recruitment tool (Harris et al., 2012), which is available to investigators at over 100 research institutions and provides access to a pool of over 75,000 research volunteers with varying health histories. ResearchMatch uses a sophisticated algorithm to identify potentially eligible participants, requests updated information annually, and has shown high positive predictive values in identifying eligible patients (for a detailed review, see Harris et al., and the studies cited on their website). In addition to ResearchMatch, links to the study website were also posted with permission on health education websites, discussion forums, listservs, and social media groups relevant to the five targeted cancer diagnoses. The study website through search engines, email, or informal word of mouth. Participants indicated being referred to the study website via ResearchMatch (59.9%), discussion boards (22.1%), listservs (13.2%), and other sources (4.8%), and the recruitment method did not affect the findings. With the exception of learning about palliative care, no incentives were offered for participation. All participants completed an online informed consent document to participate.

Procedures

The study was approved by the Tulane University institutional review board (IRB) and NIH. Study procedures were modeled after the American Psychological Association guidelines for ethical Internet-mediated research (Hoerger & Currell, 2012), with the study implemented via Qualtrics. Upon accessing the study website, potential participants reviewed an electronic informed consent document, marked a checkbox to indicate consent and proceed, and completed an eligibility screener. The Tulane University IRB waives further documentation of consent, such as by signature, for low risk online studies. All data were collected from December 2014 and June 2015.

The study used a prepost between-group randomized design. Participants were randomized to intervention or control, using Qualtrics' simple randomization feature. Control participants completed the baseline assessment of preferences for palliative care, followed by a battery of additional survey measures (77 items assessing health and mental health history, treatments, symptoms, and functioning), received no intervention, and then completed a postassessment of palliative care. Intervention participants completed the baseline assessment of preferences for palliative care and battery of survey measures, then received the intervention, and then completed a postassessment of preferences for palliative care. Each participant completed the study in a single online session lasting around 15 min (Mdn = 12.3 min, interquartile range (IQR) = 9.8 to 17.2 min); we did not track time between the prepost assessment. After submitting their data, participants were given more information about our study, links to educational and mental health resources, and controls were provided with access to the intervention materials.

Intervention

The intervention provided participants with a plain-language and graphical summary of the results of the Early Palliative Care Study (Temel et al., 2010) using 489 words and three simple bar graphs (see online supplemental materials, Appendix A). The intervention was designed to be brief, comprehensible, and accurate. The materials provided background on palliative care, and described the observed benefits of palliative cancer care for physical quality of life, depression, and survival, as reported in the Temel et al. study. Information was presented using balanced framing, including qualifying remarks about uncertainty (e.g., "we don't know for certain . . .") and other nuances (e.g., "results varied a bit by survey . . ."). All statistics were drawn directly from the Temel et al. article, converted from reported effect sizes, or measured manually from figures. The materials were appropriate for those with a middle-school reading level, as the Flesch-Kincaid index was Grade 8 when removing the repeated use of the term "palliative care consultation" from the materials. For simplicity, all bar graphs consisted of two bars and were also summarized in text. The intervention was designed and implemented under the oversight of two clinical psychologists, a medical oncologist, and a family physician board certified in hospice and palliative Care Study team throughout design, implementation, and analysis to reduce the risk of experimenter bias.

Measures

Sociodemographics. Participants reported their age, gender, marital status, race, ethnicity, education level, and geographic location. They also completed a single-item rating of their perceived economic status (adapted from Soria, Stebleton, & Huesman, 2013), "Which of the following best describes your family's current financial status? (a) very financially strained, (b) lower middle class, (c) middle class, (d) upper middle class, or (e) very well off." As well, they completed a 4-item measure of financial strain (Friedman, Conwell, & Delavan, 2007), "When you think about the amount of income you have available, is it enough for each of the following expenses? (a) food and housing, (b) clothing medicine, home repairs, and transportation, (c) going out for a meal and entertainment, and (d) a week-long vacation (if health allowed)."

Health history. Participants reported on their cancer diagnoses, time since diagnosis, treatments (radiation, chemotherapy, surgery, biologic/targeted therapy, and/or hormonal therapy), disease status (distant metastases present, early stage and in active treatment with no known distant metastases, or no longer evidence of disease), and prior exposure to palliative care. The FACT-G (Functional Assessment of Cancer Therapy - General; Cella et al., 1993) 7-item physical symptom subscale ($\alpha = .86$) was used to measure the frequency of symptoms and side effects such as pain and nausea during the past week, using a response scale from 0 (not a lot) to 4 (very much). The FACT-G physical symptom subscale has shown evidence of reliability and construct validity in prior studies (Overcash, Extermann, Parr, Perry, & Balducci, 2001). Perceived health was measured with the first item of the SF-36, commonly referred to as the SF-1 (Ware & Sherbourne, 1992), which asks participants to rate their overall health from 1 (poor) to 5 (excellent). The SF-1 has been shown to predict mortality, even when accounting for objective indicators of illness burden (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006). An abbreviated 13-item version of the Midlife in the U.S. (MIDUS) Health History Checklist (Costanzo, Stawski, Ryff, Coe, & Almeida, 2012) was used to assess illness burden and has shown agreement with physician reports (Fortin, Bravo, Hudon, Vanasse, & Lapointe, 2005). Participants also reported on presence/absence of prior mental health treatment (Costanzo et al., 2012).

Palliative Care Preferences Scale (PCPS). The PCPS is a 14-item (baseline $\alpha = .87$, posttest $\alpha = .89$) de novo measure of preferences for palliative cancer care. The instructions provided

This document is copyrighted by the American Psychological Association or one of its allied publishers. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly. participants with a brief paragraph defining palliative care consultations, emphasizing that they are for patients with life-threatening illnesses or serious symptoms or side effects, involve meeting with an interdisciplinary team, and focus on addressing physical symptoms and side effects, emotional concerns, difficult decisions, or end-of-life issues. The scale assesses emotional, cognitive, and behavioral aspects of preferences. The emotion subscale (5 items, baseline $\alpha = .89$, posttest $\alpha = .92$) assess participants' anticipated fear of or comfort with attending a palliative care consultation, using items such as "If at your doctor's suggestion you attended a palliative care consultation. . . . How stressful would you find discussing difficult decisions, like whether to stop cancer treatments that are no longer working?" using a scale from 1 (not at all stressful) to 6 (extremely, extremely stressful). The cognitive subscale (5 items, baseline $\alpha = .73$, posttest $\alpha = .83$) assesses participants' beliefs about the efficacy of palliative care using items such as "If you were diagnosed with a life-threatening illness or had symptoms or side effects that were difficult to manage. . . . Do you think a palliative care consultation would help with physical quality of life?" using a scale from 1 (definitely no) to 7 (definitely *yes*). The behavioral subscale (6 items, baseline $\alpha = .93$, posttest $\alpha = .95$) assesses the extent to which participants would be willing to attend a palliative care consultation if recommended by their physician, using items such as "If your doctor suggested you go to a palliative care consultation. . . . Would you be willing to attend the consultation?" using a scale from 1 (definitely no) to 7 (definitely yes). All responses on the PCPS were coded such that higher scores reflected greater preferences for palliative care. No items beyond the 14 were administered, and an examination of itemlevel psychometrics indicated that each item warranted retention. Although the emotion subscale had fewer response options, SDs were comparable across items, so none of the subscales were underweighted in the present study. Responses were summed to yield a total score and three subscale scores. Using pre-to-post data from controls, the PCPS total score and subscales demonstrated excellent test-retest reliability (rs from .77 to .89, p < .001). The theoretical model underlying the scale was supported, as confirmatory factor analysis using the baseline data showed that a three-factor solution fit the data well (comparative fit index [CFI] = .96, standardized root mean square residual [SRMR] = .04, root mean square error of approximation [RMSEA] = .08, nonnormed fit index [NNFI] = .95). Prior studies (Gerhart et al., 2016; Morrison, Thompson, & Gill, 2012) have documented the validity of self-report measures of preferences for palliative care.

Analytic Approach

Power calculations. We planned to recruit at least 400 participants, with a minimum of 50 across each of the five targeted cancer diagnoses. Using a α level of .05, a sample size of >392 would be needed to find a "small" effect (*d* of 0.20; Cohen, 1992) as statistically significant. Anticipating future secondary analyses examining correlational findings within diagnostic groups, a sample size of >44 per diagnosis would be needed to find a moderate correlation (*r* of .30) as statically significant. Enrollment in Internet based studies often occurs in waves (Hoerger, Quirk, & Weed, 2011), so estimates were taken as approximate targets.

Data cleaning. During enrollment, 1,741 unique visitors accessed the study website, with 1,011 viewing the screener. Among

753 submitting the screener, 689 were eligible. Study outcomes could not be analyzed for 17 participants who completed only the baseline measure of preferences, though their baseline preferences did not differ from those completing the remainder of the study (p = .86). Among those completing the study (n = 672), there were no missing data as the Javascript features embedded within Qualtrics prevent missing responses. In open-access Internet studies, invalid response rates are typically low, but responses should be screened using multiple criteria to ensure data quality (Hoerger et al., 2011). Participants' responses were screened and removed for the following reasons: responding yes/unsure to a question asking "Have you completed this survey previously?" (n = 8)removed), responding no/unsure to a question asking "Did you complete the survey carefully and honestly?" (n = 21, common among group moderators screening the study), submitting the survey from the same computer and with the same demographics (presumably the same person, n = 1), writing something in the comments section raising concerns over validity (n = 0), and completing the survey much more quickly (<5 min, suggesting careless responding, n = 2) or slowly (>4 hr, suggesting distractibility, n = 7) than others. Using these procedures, 94% of responses (n = 633) were deemed valid, comparable to elsewhere (Hoerger, Chapman, Mohile, & Duberstein, 2016). Participants were excluded from the present analyses if they indicated they had previously received palliative care (n = 35), providing an analytic sample of 598 participants.

Statistical analyses. All analyses were performed in SPSS 19.0.0.2 and checked for appropriate analytic assumptions concerning normality, linearity, homogeneity of variances, and multicollinearity. First, we examined descriptive statistics to characterize the sample. Then, *t* tests and χ^2 analyses were used to determine whether intervention participants differed from controls on any characteristic at baseline, using a α level of .05. Next, *t* tests and Pearson's *r* were used to examine whether any baseline characteristics were associated with total scores on the preference measure at baseline; all with significant univariate associations at a α level of .05 were included simultaneously in a multiple regression analysis to determine which baseline characteristics were more robustly associated with baseline preferences for palliative care.

For our primary analyses, we used a general linear model to examine between-group differences in changes in palliative care preferences. The independent variable was group assignment (intervention vs. control). The dependent variable was change from baseline to posttest on the preferences for palliative care total score. Covariates included age, gender, education, cancer type (presence/absence of prostate cancer), presence/absence of metastases, time since diagnosis, and baseline preferences. Approximately half the sample reported prostate cancer, which solely occurs in males and is characterized by relatively high survival rates and a distinct side effect profile. Metastatic status and time since diagnosis are key clinical features that affect quality of life and the perceived gravity of decisions about palliative care. Sensitivity analyses included an unadjusted model (no covariates) as well as a model controlling for the prespecified covariates plus those variables that differed by group (financial strain) or were associated with baseline preferences (presence/absence of breast cancer, chemotherapy, surgery, and perceived health). Exploratory heterogeneity analyses (Varadhan, Stuart, Louis, Segal, & Weiss, 2012) examined whether the between-group difference in change differed based on metastatic status, education level, or financial strain; the intervention may be more relevant to patients with metastatic disease or more difficult for patients with less education, and financial strain differed by group and was associated with baseline preferences. In SPSS, each general linear model was tested using the Linear Regression command, supplemented by the Univariate General Linear Model (analysis of covariance, AN-COVA) command; these commands provide equivalent significance tests while yielding a different array of descriptive statistics.

Further sensitivity analyses used the reliable change index (RCI; Jacobson & Truax, 1991) as a more conservative indicator of changes in preferences for palliative care, which focuses on the proportion of individuals experiencing change, rather than mean changes at the group-level. The RCI accounts for whether observed changes exceed what would be expected given the testretest reliability of the measure and sampling error. Similar to prior studies (Jacobson & Truax, 1991; van Vreeswijk, Spinhoven, Eurelings-Bontekoe, & Broersen, 2014), we examined whether there were between-group difference in the percentage of participants experiencing (a) any increase in preferences for palliative care, (b) a reliable increase in preferences (RCI \geq 1.96), and (c) a reliable decrease in preferences. Psychotherapy studies have traditionally referred to those in groups (a) and (b) as improved and recovered, respectively; however, we opted to use the more generic biomedical terminology of *partial response* and *complete* response, as these terms can apply to changes in nonsymptoms. We also examined between-group changes in each of the three subscales of the preference measure, again controlling for the prespecified covariates; these analyses used general linear models as in the primary analysis.

Results

Sample Characteristics

Participant characteristics are summarized in Table 1. Participants were ages 27 to 93 (M = 62.13, SD = 10.60, Mdn = 63, IQR = 57 to 69), with 57.2% male, 73.9% married (14.5%) divorced/separated, 7.5% single/never married, or 4.0% widowed), 93.3% White and non-Latino/a (1.8% Latino/a of any race, 1.3% Black or African descent, 1.8% Asian, and 1.6% other races), 70.9% with a bachelor's degree, 59.4% identifying middle class or lower, and 24.4% reporting financial strain. They were geographically distributed across 45 states (most commonly California with n = 53, FL with n = 48, and Texas with n = 34), Washington D.C., and internationally (most commonly Canada with n = 28, the United Kingdom with n = 22, and Australia with n = 7). The intervention and control groups were comparable with respect to demographics, with the exception that the intervention group had higher financial strain (28.8% vs. 19.7%, p = .01); we controlled for this in multivariate analyses.

Given the broad inclusion criteria, the sample was clinically heterogeneous. Approximately half had a history of prostate cancer (51.2%), followed by the other diagnoses targeted in recruitment breast (19.7%), skin (12.2%), lung (11.0%), and colon/rectal (9.5%) cancers—and other cancer diagnoses (13.0%). About half (56.5%) reported they no longer had detectable evidence of disease, followed by those being treated for early stage tumors (26.6%) and those with distant metastases (16.9%). The median time since diagnosis was 4 years (IQR = 1.5 to 7.0 years). Surgery was the most common treatment (67.7%), and 57.7% of the sample reported more than one treatment. On the FACT-G physical subscale, participants reported concerns about a lack of energy (64.9% indicating at least "1 (a little bit)" on the 0–4 scale), side effects (47.8%), pain (43.6%), trouble meeting family needs (30.6%), feeling ill (27.4%), spending time in bed (16.9%), and nausea (15.4%). On the SF-1, participants rated their health as poor (3.2%), fair (17.6%), good (36.3%), very good (32.9%), or excellent (10.0%). They reported an average of 1.3 (SD = 1.4) comorbid conditions, with 66.7% reporting at least one comorbidity (most commonly hypertension at 34.4%), and 37.1% reporting multimorbidity. As well, 34.9% had a history of mental health treatment.

Baseline Preferences for Palliative Care

Intervention and control participants did not differ significantly on baseline preferences for palliative care, d = 0.11, t(596) =1.34, p = .18 (see Table 1). Women had higher baseline preferences for palliative care than men, t(596) = 4.42, d = 0.36, p < 0.36.001. Financially strained participants had lower baseline preferences (Levene's test indicating heterogeneity of variance, F =5.14, p = .02, adjusted t(210) = 2.68, d = 0.27, p = .008). Participants with prostate cancer had lower preferences (t(596)), d = 0.29, p < .001), whereas those with breast cancer had higher preferences (t(596), d = 0.28, p = .005). Those treated with chemotherapy (t(596), d = 0.32, p < .001) or surgery (t(596), d =0.18, p = .03) had higher baseline preferences. Better perceived health was associated with higher baseline preferences, r = .14, p < .001. None of the other variables in Table 1 were associated with baseline preferences for palliative care. Upon entering each of the significant predictors into a simultaneous regression model, female gender (β = .23, p = .01), lack of financial strain $(\beta = -.13, p = .002)$, better perceived health ($\beta = .13, p = .003$) were associated with higher baseline preferences, but the other predictors were no longer significant (see online supplemental materials, Table B1).

Changes in Preferences for Palliative Care

As hypothesized, the intervention had a favorable impact on participants' preferences for palliative care (see Figure 1). The between-group difference in change was approximately 1 SD in magnitude and statistically significant, d = 1.01, F(1, 589) =150.51, p < .001, while controlling for the covariates of age, gender, education, diagnosis (prostate vs. other), presence/absence of metastases, time since diagnosis, and baseline preferences. Among those covariates, only baseline preferences were associated with the magnitude of change, such that lower baseline preferences were associated with a higher increase in preferences, $\beta = -.08$, p = .03 (see online supplemental materials, Table B2). From baseline (raw M = 68.29, SD = 10.76) to posttest (raw M = 67.62, SD = 11.04), preference scores gravitated downward for controls, d = 0.16, t(288) = 2.85, p = .005. In contrast, from baseline (raw M = 67.04, SD = 11.87) to posttest (raw M = 71.72, SD = 13.14), preferences for palliative care increased by about 3/4 SD among intervention participants, d = 0.76, t(308) = 13.09, p < .001.

Table 1	
Participant	Characteristics

Variable	$\begin{array}{l} \text{Control} \\ (n = 289) \end{array}$	Intervention $(n = 309)$	Test statistic	р	
Age, years	61.72 (10.16)	62.50 (11.00)	t(596) = .90	.37	
Gender, female	127 (43.9%)	129 (41.7%)	$\chi^2(1) = .29$.59	
Marital status, married	214 (74.0%)	228 (73.8%)	$\chi^2(1) = .01$.94	
Race/ethnicity, White non-Latino/a	271 (93.8%)	287 (92.9%)	$\chi^2(1) = .19$.66	
Education, bachelors or higher	203 (70.2%)	221 (71.5%)	$\chi^2(1) = .12$.73	
Perceived economic status	3.31 (.85)	3.27 (.94)	t(596) = .68	.50	
Financial strain, present	57 (19.7%)	89 (28.8%)	$\chi^2(1) = 6.67$.01	
Geographic location ^a			$\chi^2(4) = 7.08$.13	
Northeastern U.S.	29 (10.0%)	49 (15.9%)			
Midwestern U.S.	57 (19.7%)	60 (19.4%)			
Southern U.S.	97 (33.6%)	102 (33.0%)			
Western U.S.	81 (24.6%)	56 (18.1%)			
International	35 (12.1%)	42 (13.6%)			
Cancer diagnosis ^b					
Prostate	146 (50.5%)	160 (51.8%)	$\chi^2(1) = .10$.76	
Breast	58 (20.1%)	60 (19.4%)	$\chi^2(1) = .04$.84	
Lung	32 (11.1%)	34 (11.0%)	$\chi^2(1) = .00$.98	
Colon/rectal	33 (11.4%)	24 (7.8%)	$\chi^2(1) = 2.31$.13	
Skin	34 (11.8%)	39 (12.6%)	$\chi^2(1) = .10$.75	
Other	31 (10.7%)	47 (15.2%)	$\chi^2(1) = 2.65$.10	
Disease status			$\chi^2(2) = .66$.72	
Distant metastases	46 (15.9%)	55 (17.8%)			
Early stage, in active treatment	75 (26.0%)	84 (27.2%)			
No longer evidence of disease	168 (58.1%)	170 (55.0%)			
Time since diagnosis			$\chi^2(4) = 2.14$.71	
1.0 year or less	51 (17.6%)	61 (19.7%)			
1.1 to 3.0 years	94 (32.5%)	91 (29.4%)			
3.1 to 5.0 years	63 (21.8%)	60 (19.4%)			
5.1 to 10 years	44 (15.2%)	57 (18.4%)			
>10 years	37 (12.8%)	40 (12.9%)			
Treatments ^b					
Surgery	200 (69.2%)	205 (66.3%)	$\chi^2(1) = .56$.46	
Radiation therapy	135 (46.7%)	137 (44.3%)	$\chi^2(1) = .34$.56	
Chemotherapy	108 (37.4%)	100 (32.4%)	$\chi^2(1) = 1.65$.20	
Hormonal therapy	89 (30.8%)	91 (29.4%)	$\chi^2(1) = .13$.72	
Biologic/targeted therapy	24 (8.3%)	26 (8.4%)	$\chi^2(1) = .00$.96	
None	23 (8.0%)	17 (5.5%)	$\chi^2(1) = 1.44$.23	
FACT-G physical symptom burden	4.53 (5.12)	4.98 (5.54)	t(596) = 1.04	.30	
SF-1 perceived health	3.34 (.95)	3.25 (1.00)	t(596) = 1.17	.24	
Illness burden	1.32 (1.27)	1.38 (1.49)	t(596) = .50	.62	
Mental health treatment history	105 (36.3%)	104 (33.7%)	$\chi^2(1) = .47$.49	
Baseline preferences for palliative care	68.29 (10.76)	67.04 (11.87)	t(596) = 1.34	.18	

Note. FACT-G = Functional Assessment of Cancer; SF = Short Form.

^a Regions based on U.S. Census categories. ^b Sums surpassed 100% because of overlap. The most common comorbid cancer diagnoses were prostate and skin cancer (n = 26, 4.3%). The most common combination therapy was surgery with chemotherapy (n = 166, 27.8%).

Findings were comparable in sensitivity analyses of models using different covariates. The between-group difference in change was comparable in an unadjusted model (no covariates), d = 1.02, Levene's test F = 54.59, p < .001, adjusted t(526) = 12.51, p < .001. As well, findings were similar when controlling for the prespecified covariates (age, gender, education, prostate cancer diagnosis, metastases, time since diagnosis, and baseline preferences) and additional demographic and health variables that differed by group (financial strain) or were associated with baseline preferences (presence/absence of breast cancer, chemotherapy, surgery, perceived health), d = 1.00, F(1, 584) = 150.36, p < .001(see Table A2 of the online supplemental materials). In that model, lower baseline preferences were associated with higher increases in preferences, $\beta = -.09$, p = .02, and none of the other covariates were significant. Overall, findings were robust in that the intervention effect could not be attributed to plausible confounders.

Findings were also comparable in exploratory heterogeneity analyses of key subgroups. Experimental condition did not interact with metastatic status (p = .51), education level (p = .99), nor financial strain (p = .77) in accounting for changes in preferences for palliative care. Namely, effect sizes were comparable for patients with distant metastases (d = 1.01, F(1, 123) = 32.47, p < .001) and those without (d = 0.97, F(1, 494) = 116.88, p < .001), patients with a bachelor's degree (d = 1.00, F(1, 436) = 110.09, p < .001) and those with less education (d = 0.96, F(1, 181) = 42.87, p < .001), and in the presence (d = 0.75, F(1, 138) = 18.79, p < .001) or absence (d = 1.06, F(1, 444) = 126.68, p < .001) of financial strain.



Figure 1. Psychoeducation increases preferences for palliative cancer care. Adults with a history of cancer (N = 598) completed a measure of preferences for palliative care, were randomized to intervention versus control, and completed the preferences measure a second time. Intervention participants received a plain-language and graphical summary of the Early Palliative Care Study (Temel et al., 2010), and controls received no information. Bars shown mean increases in preferences with 95% confidence intervals. The test of the between-group difference in change was statistically significant (d = 1.01, F(1, 589) = 150.51, p < .001), while controlling for age, gender, education, cancer type, presence of metastases, time since diagnosis, and baseline preferences.

The pattern of findings was the same in sensitivity analyses examining individual-level changes. Specifically, 75.1% of intervention participants had at least a "partial response"—any increase in preferences for palliative care from baseline to posttest—relative to 31.5% for controls, a 43.6% absolute advantage, Z = 10.7, p < .001. Similarly, 23.6% of intervention participants had a "complete response"—a reliable increase in preferences when accounting for the variability and test-retest unreliability of the measure—relative to 1.7% for controls, a 21.9% absolute advantage, Z = 7.6, p < .001. Reliable decreases in preferences for palliative care were rare in either group, 0.3% for intervention participants versus 2.1% for controls. In summary, the intervention effect remained in sensitivity analyses using a more conservative outcome indicator.

Subscale-Level Changes in Preferences for Palliative Care

In support of our secondary hypothesis, the intervention had a favorable impact on emotional, cognitive, and behavioral aspects of preferences for palliative care (see Table 2). Effect sizes were d = 0.60 for the emotional and behavioral subscales, while greater for the cognitive subscale at d = 0.79 [0.71, 0.87]. Findings were comparable in unadjusted models as well as when controlling for additional covariates (all ps < .001).

Discussion

Fear and misunderstanding often drive avoidance of palliative care (Fischer, 2014; Gerhart et al., 2016; IOM, 2014; Lo et al., 1999; Milne et al., 2013), reducing quality of life for the millions of patients with serious cancer diagnoses. Drawing from an empowerment perspective (Zimmerman, 1995), we hypothesized and found that educating patients about the Early Palliative Care Study (Temel et al., 2010) increases preferences for utilizing outpatient palliative care. Although the study was powered to detect a small effect, the actual effect of the intervention was "large" (Cohen, 1992) by conventional standards, with an effect size of about 1 *SD*

in magnitude for the between-group difference in change in preferences for palliative care (see Figure 1). In the intervention group, about 3/4 experienced some increase in preferences for palliative care, with 1/4 experiencing a reliable increase (Jacobson & Truax, 1991) or what we termed a "complete response" to the intervention. Findings were based on a randomized design, involving a large sample of patients with heterogeneous cancer diagnoses, and observed effects were robust across the cognitive, emotional, and behavioral subscales of the preference measure (see Table 2) as well as sensitivity and subgroup analyses that accounted for demographic and health characteristics. Given the level of public misunderstanding about palliative care, apparently even limited information can shift preferences, which underscores the importance of communicating medical evidence to patients (Alston et al., 2012; Carman et al., 2016). This research has implications for future studies aimed at improving quality of life in cancer by increasing palliative care utilization.

Our findings showed that learning about the Early Palliative Care Study increased participants' preferences for palliative care across each of three fundamental processes-cognition, emotion, and behavior. Cognitively, the intervention led patients to view palliative care as being more efficacious. Health information is often misunderstood (Pinguart & Duberstein, 2004), so it was reassuring that the information provided was able to penetrate. Emotionally, participants came to expect palliative care consultations to be less stressful than initially imagined. Research examining the accuracy of predicted emotional reactions, commonly referred to as affective forecasting (Gilbert et al., 1998; Hoerger, 2012), has shown that when people imagine future stressful scenarios-perhaps including meeting with a palliative care teamthey are biased toward overestimating the intensity and duration of negative emotions the situation would evoke if actually experienced. It was encouraging that learning about the evidence for palliative care helped to mitigate potentially biased affective forecasts. Ultimately, the cognitive and emotional changes experienced in response to the intervention translated into increased behavioral intentions to utilize palliative cancer care if referred. Behavioral intentions are an important proximal target in empow-

Table 2

Impact of the Intervention on Preferences for Palliative Cancer Care by Subscale

Preference subscale	С		ntrol	Intervention		Difference in change	
	Time	М	(SD)	М	(SD)	Cohen's d	р
Emotional	Baseline	20.28	(5.76)	20.18	(5.50)		
	Posttest	20.80	(6.01)	22.36	(5.54)		
	Change	.53	(2.43)	2.18	(3.00)	.60	<.001
Cognitive	Baseline	14.28	(3.14)	14.06	(3.43)		
	Posttest	13.94	(3.45)	15.48	(3.81)		
	Change	34	(1.68)	1.42	(2.70)	.79	<.001
Behavioral	Baseline	33.73	(6.35)	32.80	(7.26)		
	Posttest	32.88	(7.00)	33.87	(7.66)		
	Change	86	(2.70)	1.07	(3.56)	.60	<.001

Note. N = 598. Means and *SDs* are unadjusted for covariates. The possible range of values were as follows: emotional subscale (5–30), cognitive subscale (3–21), behavioral subscale (6–42). Cohen's *d* and *p* values are adjusted for the covariates of age, gender, education, diagnosis, presence of metastases, time since diagnosis, and baseline preferences.

ering patients toward improved quality of life through increased utilization of palliative care.

In sensitivity and subgroup analyses, findings were comparable when accounting for demographic and health characteristics. Several demographic and health variables were associated with baseline preferences for palliative care, with multivariate analyses indicating that participants who were male, financially strained, or lower in perceived health were less likely to prefer palliative care. Psychoeducation could be particularly important for these subgroups, as they could benefit similarly, or perhaps more (e.g., Nipp et al., 2016), from early outpatient palliative care. As well, heterogeneity analyses showed that the observed intervention effects were comparable among patients with distant metastases, for whom this educational information is potentially most relevant, as well as for patients with financial strain or less education who might experience more challenges around medical decision making. Analyses accounted for these and other variables to mitigate alternative explanations of the results.

The limitations of the intervention are worth noting. The educational materials summarized one (Temel et al., 2010) of the five major RCTs on outpatient palliative cancer care (Bakitas et al., 2009, 2015; Temel et al., 2016; Zimmermann et al., 2014). At the time of initiating the investigation, the latter three RCTs were ongoing, and we focused on the 2010 Early Palliative Care Study given its perceived impact on the field at that time (American College of Surgeons, 2012; Smith et al., 2012). A meta-analysis of these five studies is not yet available; a recent meta-analysis (Kavalieratos et al., 2016) summarized the benefit of palliative interventions across treatment settings but lacked analyses specific to outpatient palliative cancer care. Summaries of meta-analyses or other reviews could provide patients with more accurate estimates of intervention effects than summaries of single studies but summaries of cumulative evidence may require deeper cognitive processing (Petty & Cacioppo, 1986) and could overburden patients who prefer less health information. Future studies could compare the effects of cumulative versus single-study summaries. An additional critique is that any educational intervention risks providing a biased interpretation of evidence. However, this risk is likely no greater than that observed in the unstructured conversations about palliative care that clinicians have with their patients each day. At the very least, our intervention presented information in a carefully considered, standardized format, and we attempted to minimize bias by qualifying statements of efficacy with those of uncertainty. As well, there were limitations of some key components of the intervention. For example, the materials used a reading level potentially too high for low-literacy participants, and other formats such as video-based interventions could be helpful. Similarly, we defined palliative care while assessing baseline preferences, and a stand-alone psychoeducational intervention would need to embed that description within the intervention itself.

Several additional limitations of the study design and sample also warrant consideration. Patient stakeholders were not included in the study team, and stakeholders are increasingly recognized for their importance in increasing the disseminability of interventions (Forsythe et al., 2016). As well, participants were mainly White and non-Latino/a, and most were college educated; economic status was only assessed using two items. Given disparities in palliative care utilization (Johnson, 2013), more research involving racially, ethnically, and socioeconomically diverse participants would be valuable. Several resources are available to facilitate recruitment of diverse participants (Ramo, Hall, & Prochaska, 2010; Sugden & Moulson, 2015), and a more comprehensive assessments of economic status should be considered. Additionally, given the broad eligibility criteria, the sample included patients with heterogeneous cancer diagnoses and some long-term cancer survivors. The broad eligibility criteria allowed all interested patients with cancer to benefit from gaining information on palliative care. Instead of imposing rigid eligibility criteria, we controlled for important demographic and health characteristics, conducted varying sensitivity analyses, and conducted heterogeneity analyses showing that the intervention effect was comparable in the subgroup of patients with distant metastases for whom the intervention might be timelier.

While acknowledging these limitations, the study also had several strengths. The research question was timely given changing practice standards emphasizing palliative cancer care (American College of Surgeons, 2012; Ferrell et al., 2017; Haley et al., 2003; Kasl-Godley et al., 2014; Smith et al., 2012), the Patient-Centered Outcomes Research Institute's (PCORI; 2017) investment of \$50 million in palliative care research, and the increasing recognition of the importance of communication and dissemination research (Rabin & Glasgow, 2015). Additionally, the sample was sizable, geographically dispersed, and mainly composed of older adults, many with multimorbidity, metastatic disease, significant symptom burden, or financial strain. These factors are often barriers to participation in clinicbased research, illustrating an advantage of using Research-Match (Harris et al., 2012) or other patient-powered research networks. The internal validity of the study was also a strength. For example, the inclusion of a control group meant that observed changes in the psychoeducational intervention group could not be attributed to mere response shift. As well, the likelihood of residual confounding was minimized because the intervention and control groups were comparable on most characteristics, and analyses controlled for relevant covariates.

Findings have implications for research aimed at increasing palliative care utilization. Our study suggests that informed patients more often prefer palliative care, but we described the medical evidence using one format, and many creative solutions exist. As emphasized in new initiatives of the National Cancer Institute (NIH, 2016), other forms of technology (e.g., EHR, mobile apps, smartphone-compatible websites) could also be useful for disseminating medical evidence. In contrast to technology-mediated interventions, it is worth testing whether it is advantageous for clinicians to communicate the medical evidence for palliative care directly to patients, drawing on the therapeutic relationship to increase engagement, check understanding, and allay fears (Epstein et al., 2017; Gramling et al., 2016; Hargraves, LeBlanc, Shah, & Montori, 2016; Rodenbach et al., in press). With these possibilities in mind, the key translational question is whether psychoeducational interventions can ultimately increase utilization of palliative care services that can enhance quality of life. This study targeted proximal changes in preferences and did not assess long-term maintenance. Building on the principles of integrated care, psychoeducation may need to be paired with timely referrals or warm hand-offs to palliative care clinicians (e.g., see D'Ambruoso et al., in press; Vogel & Hall, in press) to avoid lost gains (e.g., forgetting, reversion of preferences in response to countervailing communication). This may be difficult in regions with limited availability of palliative care specialists though the dissemination of primary palliative care is a promising trend (Quill & Abernethy, 2013). Thus, our investigation suggests several potentially fruitful lines of research aimed at increasing understanding and utilization of palliative care.

In summary, this investigation showed that educating patients about the Early Palliative Care Study increased preferences for palliative cancer care. Findings have implications for future research aimed at improving quality of life by increasing utilization of palliative cancer care.

References

- Alston, C., Paget, L., Halvorson, G., Novelli, B., Guest, J., McCabe, P., & Okun, S. (2012). *Communicating with patients on health care evidence*. Discussion Paper. Washington, DC: Institute of Medicine. Retrieved from http://www.iom.edu/evidence
- American College of Surgeons. (2012). Cancer Program Standards, version 1.2.1: Ensuring patient-centered care. Retrieved from https://www .facs.org/quality-programs/cancer/coc/standards
- Anderson, R. M., & Funnell, M. M. (2010). Patient empowerment: Myths and misconceptions. *Patient Education and Counseling*, 79, 277–282. http://dx.doi.org/10.1016/j.pec.2009.07.025
- Bailey, F. A., Williams, B. R., Woodby, L. L., Goode, P. S., Redden, D. T., Houston, T. K., . . . Burgio, K. L. (2014). Intervention to improve care at life's end in inpatient settings: The BEACON trial. *Journal of General Internal Medicine*, 29, 836–843. http://dx.doi.org/10.1007/s11606-013-2724-6
- Bakitas, M., Lyons, K. D., Hegel, M. T., Balan, S., Brokaw, F. C., Seville, J., . . . Ahles, T. A. (2009). Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: The Project ENABLE II randomized controlled trial. *Journal of the American Medical Association*, 302, 741–749. http://dx.doi.org/10.1001/jama.2009 .1198
- Bakitas, M. A., Tosteson, T. D., Li, Z., Lyons, K. D., Hull, J. G., Li, Z., . . . Ahles, T. A. (2015). Early versus delayed initiation of concurrent palliative oncology care: Patient outcomes in the ENABLE III randomized controlled trial. *Journal of Clinical Oncology*, *33*, 1438–1445. http://dx .doi.org/10.1200/JCO.2014.58.6362
- Carman, K. L., Maurer, M., Mangrum, R., Yang, M., Ginsburg, M., Sofaer, S., . . . Siegel, J. (2016). Understanding an informed public's views on the role of evidence in making health care decisions. *Health Affairs*, 35, 566–574. http://dx.doi.org/10.1377/hlthaff.2015.1112
- Cattaneo, L. B., & Chapman, A. R. (2010). The process of empowerment: A model for use in research and practice. *American Psychologist, 65,* 646–659. http://dx.doi.org/10.1037/a0018854
- Cella, D. F., Tulsky, D. S., Gray, G., Sarafian, B., Linn, E., Bonomi, A., . . . Harris, J. (1993). The Functional Assessment of Cancer Therapy Scale: Development and validation of the general measure. *Journal of Clinical Oncology*, 11, 570–579.
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159. http://dx.doi.org/10.1037/0033-2909.112.1.155
- Costanzo, E. S., Stawski, R. S., Ryff, C. D., Coe, C. L., & Almeida, D. M. (2012). Cancer survivors' responses to daily stressors: Implications for quality of life. *Health Psychology*, 31, 360–370. http://dx.doi.org/10 .1037/a0027018
- D'Ambruoso, S. F., Coscarelli, A., Hurvitz, S., Wenger, N., Coniglio, D., Donaldson, D., . . Walling, A. M. (in press). Use of a shared mental model by a team composed of oncology, palliative care, and supportive care clinicians to facilitate shared decision making in a patient with advanced cancer. *Journal of Oncology Practice/American Society of Clinical Oncology*.

- Davison, B. J., & Degner, L. F. (1997). Empowerment of men newly diagnosed with prostate cancer. *Cancer Nursing*, 20, 187–196. http://dx .doi.org/10.1097/00002820-199706000-00004
- DeSalvo, K. B., Bloser, N., Reynolds, K., He, J., & Muntner, P. (2006). Mortality prediction with a single general self-rated health question: A meta-analysis. *Journal of General Internal Medicine*, 21, 267–275. http://dx.doi.org/10.1111/j.1525-1497.2005.00291.x
- Devine, E. C. (2003). Meta-analysis of the effect of psychoeducational interventions on pain in adults with cancer. *Oncology Nursing Forum*, 30, 75–89. http://dx.doi.org/10.1188/03.ONF.75-89
- Devine, E. C., & Westlake, S. K. (1995). The effects of psychoeducational care provided to adults with cancer: Meta-analysis of 116 studies. *Oncology Nursing Forum*, 22, 1369–1381.
- El Osta, B., & Bruera, E. (2015). Models of palliative care delivery. In E. Bruera, I. Higginson, C. F. von Gunten, & T. Morita (Eds.), *Textbook of pall medicine* (pp. 275–286). Boca Raton, FL: CRC Press.
- Epstein, R. M., Duberstein, P. R., Fenton, J. J., Fiscella, K., Hoerger, M., Tancredi, D. J., . . . Kravitz, R. L. (2017). Effect of a patient-centered communication intervention on oncologist-patient communication, quality of life and healthcare utilization in advanced cancer: The VOICE randomized clinical trial. *Journal of the American Medical Association Oncology*, *3*, 92–100.
- Ferrell, B. R., Temel, J. S., Temin, S., Alesi, E. R., Balboni, T. A., Basch, E. M., . . . Smith, T. J. (2017). Integration of palliative care into standard oncology care: American Society of Clinical Oncology Clinical Practice Guideline update. *Journal of Clinical Oncology*, 35, 96–112.
- Fischer, S. (2014). Earlier palliative care for oncology patients: Walking a fine line. *Journal of Palliative Medicine*, 17, 1194–1195. http://dx.doi .org/10.1089/jpm.2014.9399
- Forsythe, L. P., Ellis, L. E., Edmundson, L., Sabharwal, R., Rein, A., Konopka, K., & Frank, L. (2016). Patient and stakeholder engagement in the PCORI pilot projects: Description and lessons learned. *Journal of General Internal Medicine*, 31, 13–21. http://dx.doi.org/10.1007/ s11606-015-3450-z
- Fortin, M., Bravo, G., Hudon, C., Vanasse, A., & Lapointe, L. (2005). Prevalence of multimorbidity among adults seen in family practice. *Annals of Family Medicine*, *3*, 223–228. http://dx.doi.org/10.1370/afm .272
- Friedman, B., Conwell, Y., & Delavan, R. L. (2007). Correlates of late-life major depression: A comparison of urban and rural primary care patients. *The American Journal of Geriatric Psychiatry*, 15, 28–41. http:// dx.doi.org/10.1097/01.JGP.0000224732.74767.ad
- Gerhart, J., Asvat, Y., Lattie, E., O'Mahony, S., Duberstein, P., & Hoerger, M. (2016). Distress, delay of gratification and preference for palliative care in men with prostate cancer. *Psycho-Oncology*, 25, 91–96. http:// dx.doi.org/10.1002/pon.3822
- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 75, 617–638. http://dx.doi.org/10.1037/0022-3514.75.3.617
- Gramling, R., Fiscella, K., Xing, G., Hoerger, M., Duberstein, P., Plumb, S., . . . Epstein, R. M. (2016). Differences of opinion or inadequate communication? Determinants of patient-oncologist prognostic discordance in advanced cancer. *Journal of the American Medical Association Oncology*, 2, 1421–1426.
- Haley, W. E., Larson, D. G., Kasl-Godley, J., Neimeyer, R. A., & Kwilosz, D. M. (2003). Roles for psychologists in end-of-life care: Emerging models of practice. *Professional Psychology: Research and Practice*, 34, 626–633. http://dx.doi.org/10.1037/0735-7028.34.6.626
- Hargraves, I., LeBlanc, A., Shah, N. D., & Montori, V. M. (2016). Shared decision making: The need for patient-clinician conversation, not just information. *Health Affairs*, 35, 627–629. http://dx.doi.org/10.1377/ hlthaff.2015.1354

- Harris, P. A., Scott, K. W., Lebo, L., Hassan, N., Lightner, C., & Pulley, J. (2012). ResearchMatch: A national registry to recruit volunteers for clinical research. Academic Medicine: Journal of the Association of American Medical Colleges, 87, 66–73. http://dx.doi.org/10.1097/ACM .0b013e31823ab7d2
- Harrison, K. L., & Connor, S. R. (2016). First medicare demonstration of concurrent provision of curative and hospice services for end-of-life care. *American Journal of Public Health*, 106, 1405–1408. http://dx.doi .org/10.2105/AJPH.2016.303238
- Hoerger, M. (2012). Coping strategies and immune neglect in affective forecasting: Direct evidence and key moderators. *Judgment and Decision Making*, 7, 86–96.
- Hoerger, M., Chapman, B. P., Mohile, S. G., & Duberstein, P. R. (2016). Development and psychometric evaluation of the Decisional Engagement Scale (DES-10): A patient-reported psychosocial survey for quality cancer care. *Psychological Assessment*, 28, 1087–1100. http://dx.doi .org/10.1037/pas0000294
- Hoerger, M., & Currell, C. (2012). Ethical issues in internet research. In S. Knapp, M. Gottlieb, M. Handelsman, & L. VandeCreek (Eds.), APA handbook of ethics in psychology: Volume 2. Practice, teaching, and research (pp. 385–400). Washington, DC: American Psychological Association.
- Hoerger, M., Quirk, S. W., & Weed, N. C. (2011). Development and validation of the Delaying Gratification Inventory. *Psychological As*sessment, 23, 725–738. http://dx.doi.org/10.1037/a0023286
- Hui, D., Elsayem, A., De la Cruz, M., Berger, A., Zhukovsky, D. S., Palla, S., . . . Bruera, E. (2010). Availability and integration of palliative care at US cancer centers. *Journal of the American Medical Association*, 303, 1054–1061. http://dx.doi.org/10.1001/jama.2010.258
- Institute of Medicine (IOM). (2014). *Dying in America: Improving quality and honoring individual preferences near the end of life*. Washington, DC: National Academies Press.
- Jacobsen, P. B., & Andrykowski, M. A. (2015). Tertiary prevention in cancer care: Understanding and addressing the psychological dimensions of cancer during the active treatment period. *American Psycholo*gist, 70, 134–145. http://dx.doi.org/10.1037/a0036513
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, 59, 12–19. http://dx.doi .org/10.1037/0022-006X.59.1.12
- Johnson, K. S. (2013). Racial and ethnic disparities in palliative care. Journal of Palliative Medicine, 16, 1329–1334. http://dx.doi.org/10 .1089/jpm.2013.9468
- Kasl-Godley, J. E., King, D. A., & Quill, T. E. (2014). Opportunities for psychologists in palliative care: Working with patients and families across the disease continuum. *American Psychologist*, 69, 364–376. http://dx.doi.org/10.1037/a0036735
- Kavalieratos, D., Corbelli, J., Zhang, D., Dionne-Odom, J. N., Ernecoff, N. C., Hanmer, J., . . Schenker, Y. (2016). Association between palliative care and patient and caregiver outcomes: A systematic review and meta-analysis. *Journal of the American Medical Association*, 316, 2104–2114. http://dx.doi.org/10.1001/jama.2016.16840
- Kumar, P., Casarett, D., Corcoran, A., Desai, K., Li, Q., Chen, J., ... Mao, J. J. (2012). Utilization of supportive and palliative care services among oncology outpatients at one academic cancer center: Determinants of use and barriers to access. *Journal of Palliative Medicine*, 15, 923–930. http://dx.doi.org/10.1089/jpm.2011.0217
- Lo, B., Quill, T., Tulsky, J., & the ACP-ASIM End-of-Life Care Consensus Panel. (1999). Discussing palliative care with patients. *Annals of Internal Medicine*, 130, 744–749. http://dx.doi.org/10.7326/0003-4819-130-9-199905040-00015
- Meirick, P. C. (2013). Motivated misperception? Party, education, partisan news, and belief in "death panels". *Journalism & Mass Communication Quarterly*, 90, 39–57. http://dx.doi.org/10.1177/1077699012468696

- Milne, D., Jefford, M., Schofield, P., & Aranda, S. (2013). Appropriate, timely referral to palliative care services: A name change will not help. *Journal of Clinical Oncology*, 31, 2055. http://dx.doi.org/10.1200/JCO .2012.48.4493
- Morrison, L. J., Thompson, B. M., & Gill, A. C. (2012). A required third-year medical student palliative care curriculum impacts knowledge and attitudes. *Journal of Palliative Medicine*, 15, 784–789. http://dx.doi .org/10.1089/jpm.2011.0482
- National Institutes of Health (NIH). (2016). PAR-16-249: Innovative approaches to studying cancer communication in the new media environment (R01). Retrieved from http://grants.nih.gov/grants/guide/ pa-files/PAR-16-249.html
- Nipp, R. D., Greer, J. A., El-Jawahri, A., Traeger, L., Gallagher, E. R., Park, E. R., . . . Temel, J. S. (2016). Age and gender moderate the impact of early palliative care in metastatic non-small cell lung cancer. *The Oncologist*, 21, 119–126. http://dx.doi.org/10.1634/theoncologist.2015-0232
- Osta, B. E., Palmer, J. L., Paraskevopoulos, T., Pei, B.-L., Roberts, L. E., Poulter, V. A., . . . Bruera, E. (2008). Interval between first palliative care consult and death in patients diagnosed with advanced cancer at a comprehensive cancer center. *Journal of Palliative Medicine*, 11, 51–57. http://dx.doi.org/10.1089/jpm.2007.0103
- Overcash, J., Extermann, M., Parr, J., Perry, J., & Balducci, L. (2001). Validity and reliability of the FACT-G Scale for use in the older person with cancer. *American Journal of Clinical Oncology*, 24, 591–596. http://dx.doi.org/10.1097/00000421-200112000-00013
- Patient-Centered Outcomes Research Institute (PCORI). (2017). *Community-based palliative care delivery*. Retrieved from http://www .pcori.org/funding-opportunities/announcement/community-basedpalliative-care-delivery-adult-patients-advanced
- Peterson, N. A. (2014). Empowerment theory: Clarifying the nature of higher-order multidimensional constructs. *American Journal of Community Psychology*, 53, 96–108. http://dx.doi.org/10.1007/s10464-013-9624-0
- Petty, R., & Cacioppo, J. (1986). The elaboration likelihood model of persuasion. In R. E. Petty & J. T. Cacioppo (Eds.), *Communication and persuasion* (pp. 1–24). New York, NY: Springer. http://dx.doi.org/10 .1007/978-1-4612-4964-1_1
- Pinquart, M., & Duberstein, P. R. (2004). Information needs and decisionmaking processes in older cancer patients. *Critical Reviews in Oncology*/ *Hematology*, 51, 69–80. http://dx.doi.org/10.1016/j.critrevonc.2004.04 .002
- Quill, T. E., & Abernethy, A. P. (2013). Generalist plus specialist palliative care—Creating a more sustainable model. *The New England Journal of Medicine*, 368, 1173–1175. http://dx.doi.org/10.1056/NEJMp1215620
- Rabin, B., & Glasgow, R. E. (2015). An implementation science perspective on psychological science and cancer: What is known and opportunities for research, policy, and practice. *American Psychologist*, 70, 211–220. http://dx.doi.org/10.1037/a0036107
- Ramo, D. E., Hall, S. M., & Prochaska, J. J. (2010). Reaching young adult smokers through the internet: Comparison of three recruitment mechanisms. *Nicotine & Tobacco Research*, *12*, 768–775. http://dx.doi.org/10 .1093/ntr/ntq086
- Rodenbach, R. A., Brandes, K., Butow, P. N., Walczak, A., Duberstein, P. R., Kravitz, R. L., . . . Epstein, R. M. (in press). A combined communication coaching and question prompt list intervention for patients with advanced cancer: Effects on questions asked about end of life issues. *Journal of Clinical Oncology*.
- Smith, T. J., Temin, S., Alesi, E. R., Abernethy, A. P., Balboni, T. A., Basch, E. M., . . . Peppercorn, J. M. (2012). American Society of Clinical Oncology provisional clinical opinion: The integration of palliative care into standard oncology care. *Journal of Clinical Oncology*, 30, 880– 887. http://dx.doi.org/10.1200/JCO.2011.38.5161

- Soria, K. M., Stebleton, M. J., & Huesman, R. L., Jr. (2013). Class counts: Exploring differences in academic and social integration between working-class and middle/upper-class students at large, public research universities. *Journal of College Student Retention: Research, Theory* and Practice, 15, 215–242. http://dx.doi.org/10.2190/CS.15.2.e
- Stacey, D., Samant, R., & Bennett, C. (2008). Decision making in oncology: A review of patient decision aids to support patient participation. *CA: A Cancer Journal for Clinicians*, 58, 293–304. http://dx.doi.org/10 .3322/CA.2008.0006
- Stewart, B., & Wild, C. (2015). World cancer report 2014. France: IARC.
- Sugden, N. A., & Moulson, M. C. (2015). Recruitment strategies should not be randomly selected: Empirically improving recruitment success and diversity in developmental psychology research. *Frontiers in Psychology*, *6*, 523. http://dx.doi.org/10.3389/fpsyg.2015.00523
- Temel, J. S., Greer, J. A., El-Jawahri, A., Pirl, W. F., Park, E. R., Jackson, V. A., . . . Ryan, D. P. (2016). Effects of early integrated palliative care in patients with lung and GI cancer: A randomized clinical trial. *Journal* of Clinical Oncology, JCO2016705046.
- Temel, J. S., Greer, J. A., Muzikansky, A., Gallagher, E. R., Admane, S., Jackson, V. A., . . . Lynch, T. J. (2010). Early palliative care for patients with metastatic non-small-cell lung cancer. *The New England Journal of Medicine*, 363, 733–742. http://dx.doi.org/10.1056/NEJMoa1000678
- Teunissen, S. C., Wesker, W., Kruitwagen, C., de Haes, H. C., Voest, E. E., & de Graeff, A. (2007). Symptom prevalence in patients with incurable cancer: A systematic review. *Journal of Pain and Symptom Management*, 34, 94–104. http://dx.doi.org/10.1016/j.jpainsymman.2006.10.015
- van den Berg, S. W., van Amstel, F. K. P., Ottevanger, P. B., Gielissen, M. F., & Prins, J. B. (2013). The cancer empowerment questionnaire: Psychological empowerment in breast cancer survivors. *Journal of Psychosocial Oncology*, *31*, 565–583. http://dx.doi.org/10.1080/07347332 .2013.825361

- Varadhan, R., Stuart, E., Louis, T., Segal, J., & Weiss, C. (2012). Standards in addressing heterogeneity of treatment effectiveness. Retrieved from http://pcori.org/assets/Standards-in-Addressing-Heterogeneity-of-Treatment-Effectiveness-in-Observational-and-Experimental-Patient-Centered-Outcomes-Research.pdf
- Vogel, A. L., & Hall, K. L. (in press). Creating the conditions for implementing team principles in cancer care. *Journal of Oncology Practice/ American Society of Clinical Oncology*.
- van Vreeswijk, M., Spinhoven, P., Eurelings-Bontekoe, E., & Broersen, J. (2014). Changes in symptom severity, schemas and modes in heterogeneous psychiatric patient groups following short-term schema cognitivebehavioural group therapy: A naturalistic pre-treatment and posttreatment design in an outpatient clinic. *Clinical Psychology & Psychotherapy*, 21, 29–38. http://dx.doi.org/10.1002/cpp.1813
- Ware, J. E., Jr., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care*, 30, 473–483. http://dx.doi.org/10.1097/00005650-199206000-00002
- Zimmerman, M. A. (1995). Psychological empowerment: Issues and illustrations. American Journal of Community Psychology, 23, 581–599. http://dx.doi.org/10.1007/BF02506983
- Zimmermann, C., Swami, N., Krzyzanowska, M., Hannon, B., Leighl, N., Oza, A., . . . Lo, C. (2014). Early palliative care for patients with advanced cancer: A cluster-randomised controlled trial. *The Lancet, 383*, 1721–1730. http://dx.doi.org/10.1016/S0140-6736(13)62416-2

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