Title

Anxious, Depressed, and Planning for the Future: Advance Care Planning in Diverse Older Adults

Journal

Journal of the American Geriatrics Society, 68(11)

ISSN

0002-8614

Authors

McMahan, Ryan D
Barnes, Deborah E
Ritchie, Christine S
et al.

Publication Date

2020-11-01

DOI

10.1111/jgs.16754

Peer reviewed

BRIEF REPORT

Anxious, Depressed, and Planning for the Future: Advance Care Planning in Diverse Older Adults

Ryan D. McMahan, BS, Deborah E. Barnes, PhD, MPH,†‡§ Christine S. Ritchie, MD, MSPH,¶ Chengshi Jin, PhD,§ Ying Shi, PhD,†§ Daniel David, RN, MS, PhD,** Evan J. Walker, MD,‖ Victoria L. Tang, MD,†‡ and Rebecca L. Sudore, MD†‡*

OBJECTIVES: To determine whether depression and anxiety are associated with advance care planning (ACP) engagement or values concerning future medical care.

DESIGN: Cross-sectional.

PARTICIPANTS: English- and Spanish-speaking patients, aged 55 years and older, from a San Francisco, CA, county hospital.

MEASURES: Depression was measured by the Patient Health Questionnaire 8-item scale, and anxiety was measured by the Generalized Anxiety Disorder 7-item scale, using standardized cutoffs of 10 or more for moderate-to-severe symptoms. ACP engagement was measured using validated surveys of ACP behavior change (e.g., self-efficacy and readiness; mean five-point Likert score) and ACP actions (e.g., ask, discuss, and document wishes; 0- to 25-point scale), with higher scores representing higher engagement. In addition, we asked a question about valuing life extension ("some health situations would make life not worth living"). We used adjusted linear and logistic regression.

RESULTS: Mean age of 986 participants was 63 years, 81% were non-White, 39% had limited health literacy, 45% were Spanish speaking, 13% had depression, and 10% had anxiety. After adjustment for demographic and health status variables, participants who were depressed versus not depressed had higher ACP behavior change scores (0.2 points; 95% confidence interval (CI) = 0.06–0.38; $P = .007$), higher ACP action scores (1.5 points; 95% CI = 0.51–2.57; $P = .003$), and higher odds of not valuing life extension (odds ratio (OR) = 2.5; 95% CI = 1.5–4.3; $P < .001$). Results were similar in participants with versus without anxiety (ACP behavior change: 0.2 points; 95% CI = 0.05–0.40; $P = .01$; ACP action scores: 1.2 points; 95% CI = 0.14–2.32; $P = .028$; odds of not valuing life extension: OR = 2.3; 95% CI = 1.3–3.9; $P = .004$).

CONCLUSION: Depression and anxiety were associated with greater ACP engagement and not valuing life extension. Although the direction of association between ACP engagement and values with anxiety and depression cannot be determined in this cross-sectional study, these conditions may influence ACP preferences. Future studies should assess whether changes in anxiety or depression affect ACP preferences over time. **J Am Geriatr Soc 00:1-5, 2020.**

Keywords: advance care planning; depression; anxiety; geriatrics; mental health

From the *School of Medicine, University of California, San Francisco, San Francisco, California; †San Francisco Veterans Affairs Health Care System, San Francisco, California; ‡Department of Psychiatry, University of California, San Francisco, San Francisco, California; §Department of Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, California; ¶Division of Palliative Care and Geriatric Medicine, Department of Medicine, Massachusetts General Hospital, Boston, Massachusetts; ‖Rory Meyers College of Nursing, New York University, New York, New York; and the **Department of Medicine, University of California, San Francisco, San Francisco, California.

Address correspondence to Ryan D. McMahan, BS, Veterans Administration Medical Center, 4150 Clement St (181G), San Francisco, CA 94121. E-mail: ryan.mcmahan@ucsf.edu

This work was presented as an abstract at the American Geriatrics Society 2018 Annual Scientific Meeting in San Antonio, TX.

DOI: 10.1111/jgs.16754

INTRODUCTION

Advance care planning (ACP) is a process that "supports adults at any stage of health in understanding and sharing personal values, life goals, and preferences regarding future medical care."[1] ACP is an important health behavior; however, engagement in the process has been low, especially for racial/ethnic minorities.[2,3] Lack of ACP engagement can lead to medical care inconsistent with patient values and increased caregiver stress.[4]

Depression and anxiety are prevalent conditions in community-dwelling older adults, ranging from 8% to 12%,

0002-8614/20/$15.00

and are known barriers to engagement in other health behaviors, such as screening and preventative care.[5-8] Anxiety has been found to influence treatment choices for serious illness, such as preferring more aggressive treatment for prostate cancer.[9] Both have also been associated with functional decline and mortality, making ACP important in these populations.[10,11]

Despite the prevalence of depression and anxiety and their impact on health behaviors and decision-making, it is unknown whether they are associated with ACP engagement. We used baseline survey data from a randomized clinical trial of an ACP intervention to determine whether depression and anxiety were associated with ACP engagement and values related to future medical care.

METHODS

Participants

Participants were enrolled in the PREPARE Study, a randomized trial of two patient-centered ACP interventions, described in detail elsewhere.[12,13] This study was approved by the University of California, San Francisco, Institutional Review Board, and all participants provided written informed consent.

English- and Spanish-speaking participants from primary care clinics of the San Francisco Health Network were included if they were aged 55 years or older, had two or more chronic illnesses (defined by billing codes), had a primary care visit two or more times in the past year (i.e., established care), and had two or more additional outpatient, inpatient, or emergency department visits in the past year (i.e., marker of access and disease severity).

Participants were excluded if they had dementia, psychosis, blindness, or deafness, lacked a telephone, their clinician deemed them too ill to participate, or screened positive for moderate or severe cognitive impairment by the Mini-Cog.[14,15]

Measures

For dependent variables, we used the validated 82-item ACP Engagement Survey, which includes 57 behavioral change process measures (i.e., knowledge, contemplation, self-efficacy, and readiness) assessed on a five-point Likert scale and 25 dichotomous (yes/no) action measures (i.e., asking, discussing, and documenting ACP wishes).[16,17] Higher scores represent higher ACP engagement. We also asked a values question related to acceptable or unacceptable future health situations with response options of

Table 1. Patient Characteristics by Depression and Anxiety

Characteristics	Overall (N = 986)	Depression			Anxiety		
		Yes (n = 124, 13%)	No (n = 859, 87%)	*P* value	Yes (n = 103, 10%)	No (n = 883, 90%)	*P* value
Demographics							
Age, median (IQR), y	63 (8.5)	60 (6.9)	63 (8.5)	<.001	60 (7.9)	63 (8.5)	<.001
Female, No. (%)	603 (61)	90 (73)	512 (60)	.006	72 (70)	531 (88)	.05
Race/ethnicity, No. (%)							
White, non-Latino/Hispanic	189 (19)	22 (18)	167 (19)	.045	17 (16)	172 (19)	.02
Latino/Hispanic	499 (51)	64 (52)	433 (50)		51 (50)	448 (51)	
African American	178 (18)	24 (19)	153 (18)		25 (24)	153 (17)	
Asian/Pacific Islander	79 (8)	4 (3)	75 (9)		2 (2)	77 (9)	
Multiethnic/Other	41 (4)	10 (8)	31 (4)		8 (8)	33 (4)	
Prior documentation, No. (%)[a]	269 (27.3)	32 (25.8)	237 (27.6)	.68	26 (25.2)	243 (27.5)	.62
Legal forms, No. (%)	168 (17.0)	23 (18.6)	145 (16.9)	.64	15 (14.6)	153 (17.3)	.48
Documented discussions about ACP, No. (%)	145 (14.7)	20 (16.1)	124 (14.6)	.64	15 (14.6)	130 (14.7)	.97
Limited health literacy, No. (%)	387 (39)	57 (46)	525 (61)	<.001	49 (48)	535 (61)	.01
Socioeconomic status							
"Not enough finances to make ends meet," No. (%)	243 (25)	56 (46)	187 (22)	<.001	49 (49)	194 (22)	<.001
Social standing (1–10 score), mean (SD)[b]	4.9 (2.1)	4.2 (2.1)	5.1 (2.1)	<.001	4.3 (2.0)	5.1 (2.1)	<.001
Health status, poor to fair, No. (%)	504 (51)	93 (75)	410 (48)	<.001	75 (73)	429 (49)	<.001
Spirituality, fairly to extremely, No. (%)[c]	628 (64)	66 (53)	559 (66)	.007	61 (60)	567 (65)	.326
Language, Spanish, No. (%)	445 (45)	52 (12)	376 (88)	.51	44 (10)	386 (90)	.66
Education, high school or less, No. (%)	576 (39)	78 (63)	497 (58)	.29	58 (56)	518 (59)	.65

Abbreviations: ACP, advance care planning; IQR, interquartile range.

[a]Prior ACP documentation includes any prior legal forms (i.e., advance directives, durable power of attorney for health care, and Physician Orders for Life Sustaining Treatment) and documented ACP discussions in the past 5 years.

[b]Social standing was assessed using a standardized question asking participants to place themselves on a ladder that represents where they stand in society; higher scores correspond to higher perceived social standing (total scores = 1–10).

[c]Degree of spirituality was assessed on a five-point Likert scale, from "not at all" to "extremely."

Table 2. Depression and Anxiety Associated with Increased ACP Engagement and Not Valuing Life Extension

Variable	Unadjusted Odds Ratio (95% Confidence Interval)	*P* value[a]	Adjusted[b] Odds Ratio (95% Confidence Interval)	*P* value[a]
Behavior change score				
Depression	0.1 (−0.06 to 0.38)	.20	0.2 (0.06 to 0.38)	.007
Anxiety	0.2 (−0.003 to 0.34)	.34	0.2 (0.05 to 0.40)	.01
Action score				
Depression	0.96 (0.004 to 1.91)	.049	1.5 (0.51 to 2.57)	.003
Anxiety	1.1 (0.06 to 2.1)	.038	1.2 (0.14 to 2.32)	.028
Values choices: not valuing life extension				
Depression	1.88 (1.2 to 3.0)	.006	2.5 (1.5 to 4.3)	<.001
Anxiety	1.8 (1.1 to 2.8)	.019	2.3 (1.3 to 3.9)	.004

Abbreviation: ACP, advance care planning.

[a]Linear regression for behavior change and action score, and logistic regression for values choices.

[b]Adjusted for age, sex, race/ethnicity, health literacy, health status, spirituality, and socioeconomic status.

"Life is always worth living" (classified as valuing life extension) or "Some health situations would make life not worth living" (classified as not valuing life extension). Based on prior validation analyses, a change in score of 0.2 is considered to be clinically meaningful.[18]

For independent variables, we assessed current symptoms of depression with the Patient Health Questionnaire 8-item scale and anxiety with the Generalized Anxiety Disorder 7-item scale. Using standardized cutoffs of 10 or more, we created dichotomous variables for moderate-to-severe symptoms.[19,20] We also assessed demographic characteristics, including age, race/ethnicity, health literacy, health status, education, language, socioeconomic status, and spirituality.[21,22] Last, prior ACP documentation of legal forms (i.e., advance directives, durable power of attorney for health care, and Physician Orders for Life Sustaining Treatment) or documented discussions (i.e., oral directives or goals-of-care conversations) was determined via chart review and included if present in the medical record within 5 years of enrollment.[22]

Analysis

We used descriptive statistics to characterize the cohort. For bivariate associations we used chi-square tests, Fisher exact tests, *t*-tests, or Mann-Whitney *U* tests. We performed logistic and linear regression, controlling for patient characteristics associated with depression and/or anxiety in bivariate analysis. To determine the influence of individual variables, we also used stepwise regression analysis. The final selected models demonstrated the best goodness of fit statistics using the Akaike information criterion.[23]

RESULTS

The median age and interquartile range of 986 participants was 63 (8.5) years, 61% were women, 45% were Spanish speaking, 81% were non-White, 39% had limited health literacy, and 51% reported fair-to-poor health. The prevalence rates of depression and anxiety were 13% and 10%, respectively (Table 1).

The participant characteristics of age, sex, race/ethnicity, health literacy, socioeconomic status, health status, and spirituality were associated with depression and anxiety ($P < .05$; Table 1). Other characteristics, such as prior ACP documentation, education, language, presence of adult children or surrogate, and marital status, were not associated with depression or anxiety and, therefore, not included in our regression models.

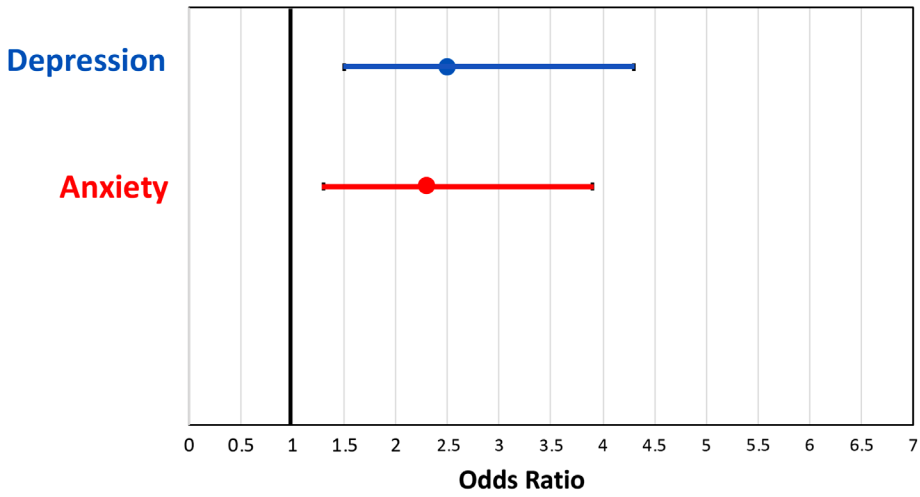

Figure 1. Adjusted odds for valuing less life extension. Adjusted for age, sex, race/ethnicity, health literacy, health status, spirituality, and socioeconomic status.

Overall, study participants reported moderate levels of ACP engagement at baseline based on mean behavior change scores of 2.5 (±0.8) on a five-point Likert scale and low action scores of 7.8 (±5.1) of possible 25-point total. In unadjusted analysis, depression and anxiety were associated with higher action scores, but not behavior change (Table 2). After adjusting for age, sex, race/ethnicity, health literacy, socioeconomic status, health status, and spirituality, depression was associated with a higher ACP behavior change score (0.2 points; 95% confidence interval (CI) = 0.06–0.38; $P = .007$) and a higher ACP action score (1.5 points; 95% CI = 0.51–2.57; $P = .003$) compared with those without depression. Similarly, after adjustment, anxiety was associated with higher behavior change scores (0.2 points; 95% CI = 0.05–0.40; $P = .01$) and higher action scores (1.2 points; 95% CI = 0.14–2.32; $P = .028$) compared with those without anxiety. In stepwise regressions, the addition of the spirituality variable was the largest driver of the change in statistical significance for both depression and anxiety models.

Regarding values-based choices for future medical care, participants who were depressed or anxious were more likely to not value life extension (Table 2). In adjusted logistic regression, participants with depression had 2.5 times the odds (95% CI = 1.5–4.3; $P < .001$) of not valuing life extension, whereas those with anxiety had 2.3 times the odds (95% CI = 1.3–3.9; $P = .004$) of not valuing life extension than those without those conditions (Figure 1).

DISCUSSION

In this study of diverse older adults, depression and anxiety were associated with higher ACP engagement for behavior change (e.g., readiness and self-efficacy) and action (e.g., discussing or documenting wishes). Additionally, individuals with these mental health conditions had higher odds of reporting care preferences aligned with not valuing life extension.

These results suggest that individuals with depression and anxiety are already engaging in the ACP process. The change in engagement scores, through prior validation analyses, are considered to be clinically meaningful.[18] Although we cannot determine causality in this cross-sectional study, perhaps patients with depression and anxiety are more motivated to engage in ACP because they have made clear decisions about their medical care in some circumstances. Our analysis also revealed that after adjusting for higher levels of spirituality, the association between depression and anxiety and ACP engagement strengthened. This may be consistent with prior literature showing that spirituality is linked to resiliency and coping in older adults dealing with chronic disease and may allow patients to passively engage in ACP by "turning a health situation over to God."[24,25] However, it may also be true that engaging in ACP may result in increased anxiety and depression that is not mitigated by spirituality.

It is concerning that individuals with depression and anxiety had higher odds of not valuing life extension. However, those with depression or anxiety do not appear to have documented these preferences at a different rate than those without these conditions. The connection between depression, anxiety, and not valuing life extension has long been acknowledged in the literature with regard to suicide;[26] however, other studies have found variable effects on decision-making. For example, older men with anxiety choose more aggressive therapy for prostate cancer,[27] and psychiatric distress has been associated with more aggressive pharmacological therapies for pain.[28] Although values are person dependent, the challenge for clinicians may be how to decipher whether these wishes represent true informed choices, uninfluenced by psychiatric disease. Mental health screening may need to be a part of the ACP process, although, despite recommendations for universal screening in the primary care setting, screening rarely occurs.[29,30] However, screening may be necessary to assure that stated values are not unduly affected by untreated mental health conditions.

This study has some limitations. Although the sample was diverse, all participants were recruited from one safety-net system in one area of the country, which may limit generalizability. This study may be subject to self-selection bias for study enrollment and social desirability bias, leading to underestimated depression and anxiety and overestimated ACP engagement. We measured only current anxiety and depression symptoms in this population and did not have information on whether participants had a current or previous psychiatric diagnosis or were receiving treatment; therefore, this study may be missing well-controlled or asymptomatic individuals. Lastly, the values question was not formally tested for association with future decisions.

In conclusion, in this cross-sectional study, depression and anxiety were associated with higher ACP engagement and higher odds of not valuing life extension. Although not valuing life extension may represent true wishes of some older adults with anxiety and depression, these conditions should be carefully screened for and treated. In addition, clinicians may need to consider patients' wishes in light of depression and anxiety, and reassess patients' wishes over their treatment and disease trajectory to ensure consistent wishes over time.

ACKNOWLEDGMENTS

Financial Disclosure: Dr. Sudore is funded in part by a National Institutes of Health, National Institute on Aging K24AG054415 award.

Conflict of Interest: All authors report no personal or financial conflicts of interest.

Author Contributions: Ryan McMahan and Dr. Sudore designed the study in collaboration with Drs. Barnes and Ritchie. Biostatistical analysis was conducted by Ryan McMahan, Chengshi Jin, and Ying Shi. Authors Walker, David, and Tang provided expert content review and analysis. All authors sufficiently contributed to this article in accordance with the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" and have given their permission for publication.

Sponsor's Role: The funding organizations had no role in the design and conduct of the study or in the preparation, review, or approval of the manuscript.

REFERENCES

1. Sudore RL, Lum HD, You JJ, et al. Defining advance care planning for adults: a consensus definition from a multidisciplinary Delphi panel. J Pain Symptom Manage. 2017;53(5):821-832.e821.

2. Fried TR, Bullock K, Iannone L, O'Leary JR. Understanding advance care planning as a process of health behavior change. J Am Geriatr Soc. 2009;57(9):1547-1555.
3. Krakauer EL, Crenner C, Fox K. Barriers to optimum end-of-life care for minority patients. J Am Geriatr Soc. 2002;50(1):182-190.
4. Vig EK, Starks H, Taylor JS, Hopley EK, Fryer-Edwards K. Surviving surrogate decision-making: what helps and hampers the experience of making medical decisions for others. J Gen Intern Med. 2007;22(9):1274-1279.
5. Djernes JK. Prevalence and predictors of depression in populations of elderly: a review. Acta Psychiatr Scand. 2006;113(5):372-387.
6. Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. Lancet. 2007;370(9590):851-858.
7. Druss BG, Rosenheck RA. Mental disorders and access to medical care in the United States. Am J Psychiatry. 1998;155(12):1775-1777.
8. Xiong GL, Iosif AM, Bermudes RA, McCarron RM, Hales RE. Preventive medical services use among community mental health patients with severe mental illness:the influence of gender and insurance coverage. Prim Care Companion J Clin Psychiatry. 2010;12(5).
9. Dale W, Bilir P, Han M, Meltzer D. The role of anxiety in prostate carcinoma: a structured review of the literature. Cancer. 2005;104(3):467-478.
10. Hoppe S, Rainfray M, Fonck M, et al. Functional decline in older patients with cancer receiving first-line chemotherapy. J Clin Oncol. 2013;31(31):3877-3882.
11. Covinsky KE, Fortinsky RH, Palmer RM, Kresevic DM, Landefeld CS. Relation between symptoms of depression and health status outcomes in acutely ill hospitalized older persons. Ann Intern Med. 1997;126(6):417-425.
12. Sudore RL, Barnes DE, Le GM, et al. Improving advance care planning for English-speaking and Spanish-speaking older adults: study protocol for the PREPARE randomised controlled trial. BMJ Open. 2016;6(7):e011705.
13. Sudore RL, Boscardin J, Feuz MA, McMahan RD, Katen MT, Barnes DE. Effect of the PREPARE website vs an easy-to-read advance directive on advance care planning documentation and engagement among veterans: a randomized clinical trial. JAMA Intern Med. 2017;177(8):1102-1109.
14. Borson S, Scanlan JM, Chen P, Ganguli M. The Mini-Cog as a screen for dementia: validation in a population-based sample. J Am Geriatr Soc. 2003;51(10):1451-1454.
15. Milne A, Culverwell A, Guss R, Tuppen J, Whelton R. Screening for dementia in primary care: a review of the use, efficacy and quality of measures. Int Psychogeriatr. 2008;20(5):911-926.
16. Sudore RL, Stewart AL, Knight SJ, et al. Development and validation of a questionnaire to detect behavior change in multiple advance care planning behaviors. PLoS One. 2013;8(9):e72465.
17. Sudore RL, Heyland DK, Barnes DE, et al. Measuring advance care planning: optimizing the advance care planning engagement survey. J Pain Symptom Manage. 2017;53(4):669-681.
18. Shi Y, Barnes DE, Boscardin J, et al. Brief English and Spanish survey detects change in response to advance care planning interventions. J Pain Symptom Manage. 2019;58(6):1068-1074.
19. Kroenke K, Spitzer RL, Williams JB, Monahan PO, Lowe B. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. Ann Intern Med. 2007;146(5):317-325.
20. Kroenke K, Strine TW, Spitzer RL, Williams JB, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. J Affect Disord. 2009;114(1–3):163-173.
21. Sarkar U, Schillinger D, Lopez A, Sudore R. Validation of self-reported health literacy questions among diverse English and Spanish-speaking populations. J Gen Intern Med. 2011;26(3):265-271.
22. Sudore RL, Schillinger D, Katen MT, et al. Engaging diverse English- and Spanish-speaking older adults in advance care planning: the PREPARE randomized clinical trial. JAMA Intern Med. 2018;178(12):1616-1625.
23. Burnham KP, Anderson DR. Multimodel inference: understanding AIC and BIC in model selection. Sociol Methods Res. 2004;33(2):261-304.
24. Manning LK. Navigating hardships in old age: exploring the relationship between spirituality and resilience in later life. Qual Health Res. 2013;23(4):568-575.
25. Koenig HG. An 83-year-old woman with chronic illness and strong religious beliefs. JAMA. 2002;288(4):487-493.
26. Too LS, Spittal MJ, Bugeja L, Reifels L, Butterworth P, Pirkis J. The association between mental disorders and suicide: a systematic review and meta-analysis of record linkage studies. J Affect Disord. 2019;259:302-313.
27. Dale W, Hemmerich J, Bylow K, Mohile S, Mullaney M, Stadler WM. Patient anxiety about prostate cancer independently predicts early initiation of androgen deprivation therapy for biochemical cancer recurrence in older men: a prospective cohort study. J Clin Oncol. 2009;27(10):1557-1563.
28. Pessin H, Rosenfeld B, Breitbart W. Assessing psychological distress near the end of life. Am Behav Sci. 2002;46(3):357-372.
29. Siu AL, US Preventive Services Task Force (USPSTF), Bibbins-Domingo K, et al. Screening for depression in adults: US Preventive Services Task Force recommendation statement. JAMA. 2016;315(4):380-387.
30. Kato E, Borsky AE, Zuvekas SH, Soni A, Ngo-Metzger Q. Missed opportunities for depression screening and treatment in the United States. J Am Board Fam Med. 2018;31(3):389-397.