Original Article

Evaluating the association of frailty with communication about aging-related concerns between older patients with advanced cancer and their oncologists

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BACKGROUND: A geriatric assessment (GA) intervention improves communication about aging-related concerns, but its effect on communication in patients with various levels of frailty is unknown. **METHODS:** This was a secondary analysis of a nationwide trial of patients aged ≥70 years with incurable cancer and impairment on 1 or more GA domains (ClinicalTrials.gov Identifier NCT02107443; principal investigator Supriya G. Mohile). Practice sites were randomized to either the GA-intervention or usual care. Frailty was assessed with a deficit accumulation index (range, 0-1), and patients were stratified as robust (0 to <0.2), prefrail (0.2 to <0.35), or frail (≥0.35). The clinic visit after the GA-intervention was audio-recorded, transcribed, and coded to evaluate the number and quality of conversations about aging-related concerns. Linear mixed models examined differences in the number and quality of conversations within and between arms. All *P* values were 2-sided. **RESULTS:** Patients (n = 541) were classified as robust (27%), prefrail (42%), or frail (31%). In the usual care arm, frail patients (vs robust ones) engaged in more aging-related conversations (adjusted mean difference, 1.73; 95% confidence interval [CI], 0.59-2.87), conversations of higher quality (difference, 1.12; 95% CI, 0.24-2.0), and more discussions about evidence-based recommendations (difference, 0.71; 95% CI, 0.04-1.38; all *P* values ≤ .01). Similarly, in the GA intervention arm, frail patients (vs robust ones) engaged in more aging-related conversations (difference, 2.49; 95% CI, 1.51-3.47), conversations of higher quality (difference, 1.31; 95% CI, 0.56-2.06), and more discussions about evidence-based recommendations (difference, 0.87; 95% CI, 0.32-1.42; all *P* values ≤ .01). Furthermore, the GA-intervention significantly improved the number and quality of conversations in all patients: robust, prefrail, and frail (all *P* values ≤ .01). **CONCLUSIONS:** Patients with higher degrees of frailty and those exposed to the GA-intervention had more and higher quality conversations about aging-related concerns with oncologists. ***Cancer* 2022;128:1101-1109**. © *2021 American Cancer Society*.

LAY SUMMARY:

- A geriatric assessment (GA) intervention improves communication about aging-related concerns, but its effect on communication in patients with various levels of frailty is unknown.
- This study conducted a secondary analysis of a nationwide trial of patients aged ≥70 years with incurable cancer and 1 or more GA domain impairments. Patients were stratified as robust, prefrail, or frail.
- The number and quality of conversations about aging-related concerns that occurred during the clinic visit after the GA-intervention were determined.
- Patients with higher degrees of frailty and those in the GA intervention arm had more and higher quality conversations about aging-related concerns with oncologists.

KEYWORDS: communication, frailty, geriatric assessment, older adults with cancer, satisfaction with communication.

INTRODUCTION

Older adults constitute a heterogeneous population, such that individuals of the same chronological age can have markedly different biological ages; this results in varied clinical outcomes.[1] This diversity in biological age has been attributed to frailty, which has been described as a state of accelerated accumulation of deficits, with the quantity of deficits

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See editorial on pages 953-955, this issue.

We acknowledge Dr. Susan Rosenthal for her editorial assistance. We also graciously thank all the SCOREboard members for their valuable contributions that resulted in the profound success of the Improving Communication in Older Cancer Patients and Their Caregivers (COACH) trial.

These data were presented at the 2018 Annual Conference of the International Society of Geriatric Oncology.

Correction added on 08 December 2021, after first online publication: Kah Poh Loh's name has been updated in this version.

DOI: 10.1002/cncr.34010, **Received:** June 10, 2021; **Revised:** August 11, 2021; **Accepted:** August 17, 2021, **Published online** November 11, 2021 in Wiley Online Library (wileyonlinelibrary.com)

accumulated associated with increasing frailty.[2] In the context of cancer, frailty is particularly important. Forty to fifty percent of older adults are characterized as either prefrail or frail, and this status confers increased risk for morbidity and mortality from cancer treatments.[3-8] The geriatric assessment (GA) is a validated multidisciplinary evaluation of the functional, psychosocial, physical, and cognitive abilities of older adults as well as their comorbidities and medication use.[9-12] It captures domains not commonly measured by routine oncology assessments[13] and effectively measures the frailty status of older adults with cancer.[14] Implementing the GA along with targeted management to address specific impairments has been shown to reduce cancer treatment toxicities, improve quality of life, and improve communication about aging-related concerns.[15-18] Accordingly, an American Society of Clinical Oncology geriatric oncology guideline recommends that all older adults with cancer undergo a GA before starting chemotherapy.[14]

Patient-centered communication between health care teams and their patients is an important aspect of providing high-quality care to older adults with cancer. Patient-centered communication has been shown to improve quality of life and satisfaction with care.[19] Patients who report effective clinician-patient communication also report higher satisfaction with care, an increased likelihood of following treatment plans, and greater ease in making end-of-life decisions.[19-22] A qualitative study of frail older adults found that patients perceived good communication with their health care teams as a major factor influencing their engagement with medical decisions.[23] Furthermore, physician-patient discordances have been identified in perceptions of quality communication and/or care that may interfere with providing quality care, including health communication.[24] However, several interventions, using tailored communication guides and training for patients and oncologists, have been shown to improve patient-centered communication.[25,26]

We have recently shown that a GA-intervention improved the number and quality of communications about aging-related concerns between older patients with advanced cancer and their oncologists.[15] However, the effects of the GA-intervention on communication in patients with various levels of frailty are unknown. Thus, we aimed to assess 1) the associations of patients' frailty status with the number and quality of conversations about aging-related concerns between patients and their oncologists in each study arm and 2) the moderating effect of the GA intervention on patient-oncologist communication at various levels of patients' frailty. We hypothesized that, in older patients with advanced cancer, there is an association between patients' frailty and patient-oncologist communication; furthermore, we hypothesized that a GA-intervention would improve this communication in older patients with advanced cancer.

MATERIALS AND METHODS

Participants and Methods

We conducted an exploratory analysis using data for older patients with incurable cancer who participated in a nationwide, cluster-randomized controlled trial that evaluated the effect of a GA-intervention on communications about aging-related concerns between patients, caregivers, and oncologists (University of Rochester Cancer Center [URCC] 13070; ClinicalTrials.gov identifier NCT02107443; principal investigator Supriya G. Mohile).[15] The parent study was conducted within the URCC National Cancer Institute Community Oncology Research Program (NCORP), and 31 community oncology practice sites participated in the study between October 2014 and April 2017; 541 patients were recruited from 30 of these sites.[15] Practice sites were randomized to either usual care (17 sites) or the GA-intervention (13 sites). Patients were aged ≥70 years, had a diagnosis of an advanced solid tumor or lymphoma, were considering or receiving cancer treatment, and had an impairment in at least 1 GA domain (excluding polypharmacy; definitions of GA domains have been reported previously).[15,27-31] Patients in both arms underwent the GA. Only patients and oncologists in the GA intervention arm received a summary of the GA plus a list of GA-guided recommendations to address specific impairments (ie, GA interventions). Institutional review boards at the URCC NCORP Research Base and each of the NCORP community affiliates approved the study. All participants provided informed consent. This analysis was not preplanned at the initiation of the parent study.

Measures

Frailty

At the baseline visit, patients completed the GA. Frailty was calculated with a deficit accumulation index (DAI). The DAI is a single variable that measures the effect of multisystem physiological changes, and it is known to be predictive of adverse health outcomes and mortality. Stratifying older adults with cancer on the basis of the DAI with variables from the GA has been shown to assist clinicians in predicting future adverse outcomes.[32] The DAI was developed according to the standard procedures for creating a deficit accumulation frailty index.[7,33] The DAI was calculated from 50 individual

items as described and validated in older adults with cancer by Cohen et al.[32] These items included the following: marital status, instrumental activities of daily living, activities of daily living, performance status, fall history, number of regularly taken medications, comorbidity, cognition, nutrition, level of social activity and social support, level of physical activity, depression, anxiety, and basic laboratory values. Items were coded and scored according to the methodology used and validated in older adults with cancer by Cohen et al. For items with binary answers, patients received a score of 0 if the abnormal value was absent and 1 if the abnormal item was present. For items with graded responses, patients received a score of 0 if the condition was absent, 1 if the condition was intermediate, and 2 if the condition was the most adverse. Scores of the individual items were summed, and the DAI was calculated as the ratio of the actual deficit score to the potential deficit score, with final scores ranging from 0 to 1 and with higher scores indicating more deficits and, therefore, greater frailty.[32] Patients were then stratified into 3 groups based on their DAI scores according to previously described and validated cutoffs: robust (0 to <0.2), prefrail (0.2 to <0.35), and frail (≥0.35).[32]

Number and quality of conversations about aging-related concerns

In both the usual care and GA intervention arms, an oncology clinic visit within 4 weeks of completing the GA was audio-recorded and transcribed. The audio recording occurred after patients and oncologists in the GA intervention arm had received the GA-guided intervention. The content analysis methodology of the audio-recorded visits has been previously reported.[15] Conversations were quantified into the number of conversations about aging-related concerns and categorized into different groups that were a priori developed to evaluate the quality of conversations[15,34]: the number of aging-related concerns that were acknowledged (concerns further explored without implementation of any care processes) and addressed (concerns appropriately addressed via evidence-based management; eg, referral to physical therapy for falls or recommendation for the use of a pill box for medication management).[15,35] The more frequently that aging-related concerns were acknowledged and addressed, the higher the quality of the conversation.[15]

Statistical Analyses

Descriptive statistics were used to examine sociodemographic factors, clinical information, and the number and quality of conversations between patients and oncologists. χ^2 tests and analyses of variance were used to compare demographic and clinical factors as well as the number and quality of conversations about aging-related concerns among robust, prefrail, and frail patients. The statistical analysis plan for the parent study, including the sample size calculation, was previously published.[15] To account for the cluster-randomized study design, separate linear mixed models were conducted to examine the difference in the number and quality of patient-oncologist conversations within arms (robust, prefrail, and frail patients) and between arms (usual care vs GA-intervention for each frailty group).[15,36] Models included the study arm and frailty status as fixed effects and practice sites as a random effect independent of residual error; estimation was performed with restricted maximum likelihood. To examine interaction effects, an interaction term between 3 levels of frailty and the study arm was added to the model. Within- and between-arm comparisons were obtained with the SAS procedure PROC MIXED and the LSMESTIMATE statement. All analyses were conducted with SAS version 9.4 and JMP Pro 15 (SAS Institute, Inc, Cary, North Carolina). All P values were from 2-sided tests, and the results were deemed statistically significant at $P < .05$.

RESULTS

Description of the Sample: Demographics, Frailty, and Conversations About Aging-Related Concerns

All 541 patients in the primary study were included (Fig. 1)[15]; 27% were classified as robust, 42% were classified as prefrail, and 31% were classified as frail. Patients' demographics and clinical variables, stratified by the frailty status, are shown in Table 1. There were no significant differences across the frailty strata except for gender (Table 1). There was also no significant difference in the mean frailty scores of patients across the study arms (0.31 for usual care [SD, 0.16] vs 0.30 for GA-intervention [SD, 0.15]; $P = .71$; Fig. 2).

In all patients, regardless of the arm, as frailty scores increased (robust < prefrail < frail), there was a linear increase in the average number of conversations per patient about aging-related concerns (5.2 [SD, 3.5] vs 6.2 [SD, 4.0] vs 7.3 [SD, 4.2]; $P < .001$) and in the number of concerns that were acknowledged (3.0 [SD, 2.5] vs 3.5 [SD, 2.7] vs 4.1 [SD, 3.0]; $P < .001$) and addressed (2.0 [SD, 2.2] vs 2.2 [SD, 2.3] vs 2.6 [SD, 2.6]; $P = .040$; Table 1).

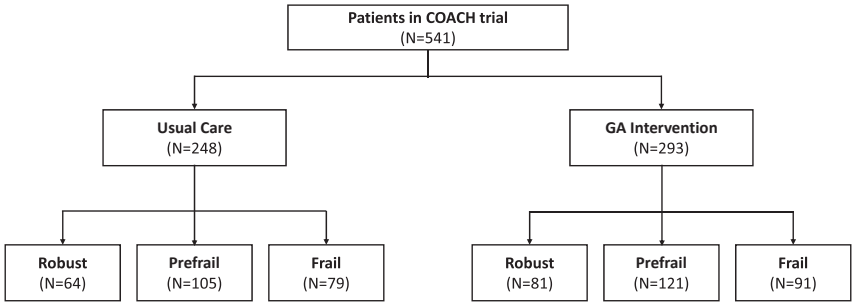

Figure 1. Consolidated Standards of Reporting Trials flow diagram. GA indicates geriatric assessment, COACH, Improving Communication in Older Cancer Patients and Their Caregivers.

TABLE 1. Distribution of Demographic and Clinical Variables

Variable	All Participants (n = 541)	Robust (n = 145)	Prefrail (n = 226)	Frail (n = 170)	*P*
Age, mean (range), y	76.6 (70-96)	76.1 (70-93)	76.3 (70-92)	77.3 (70-96)	
Age, No. (%)					
70-79 y	401 (74.3)	109 (75.7)	173 (76.5)	119 (70.0)	.50
80-89 y	127 (23.5)	32 (22.2)	47 (20.8)	48 (28.2)	
≥90 y	12 (2.2)	3 (2.1)	6 (2.7)	3 (1.8)	
Gender, No. (%)					
Male	276 (51.1)	87 (60.4)	115 (50.9)	74 (43.5)	.01
Female	264 (48.9)	57 (39.6)	111 (49.1)	96 (56.5)	
Race, No. (%)					
White	482 (89.3)	131 (91.0)	204 (90.3)	147 (86.5)	.37
Non-White	58 (10.7)	13 (9.0)	22 (9.7)	23 (13.5)	
Education, No. (%)					
High school or below	261 (48.3)	58 (40.3)	116 (51.3)	87 (51.2)	.20
Some college or above	279 (51.7)	86 (59.7)	110 (48.7)	83 (48.8)	
Cancer type, No. (%)					
Gastrointestinal	138 (22.6)	30 (20.7)	68 (30.1)	40 (23.7)	.16
Lung	140 (25.9)	34 (23.4)	58 (25.7)	48 (28.4)	
Other	262 (48.5)	81 (55.9)	100 (44.2)	81 (47.9)	
Cancer stage, No. (%)					
III	47 (8.7)	14 (9.7)	19 (8.4)	14 (8.3)	.99
IV	480 (88.7)	128 (88.3)	201 (88.9)	151 (89.3)	
Other	13 (2.4)	3 (2.0)	6 (2.7)	4 (2.4)	
Communication, mean (range)					
No. of conversations	6.3 (0-18)	5.2 (0-15)	6.2 (0-16)	7.3 (0-18)	<.01
No. of concerns acknowledged	3.6 (0-16)	3.0 (0-11)	3.5 (0-12)	4.1 (0-16)	<.01
No. of concerns addressed	2.3 (0.12)	2.0 (0-7)	2.2 (0-11)	2.6 (0-12)	.04

One participant did not provide any demographic data.

Number of Conversations About Aging-Related Concerns

In usual care, an average of 1.73 more conversations per patient about aging-related concerns (95% confidence interval [CI], 0.59-2.87; $P = .003$) occurred in frail patients versus robust patients (Table 2 and Fig. 3). In the GA-intervention, an average of 1.31 more conversations about aging-related concerns (95% CI, 0.37-2.25; $P = .007$) occurred in prefrail patients versus robust patients, and 2.49 more conversations (95% CI, 1.51-3.47; $P < .001$) occurred in frail patients versus robust patients (Table 2 and Fig. 3).

As frailty scores increased, so too did the adjusted mean difference in the number of conversations per patient about aging-related concerns in the GA intervention arm versus the usual care arm (Table 2 and Fig. 3). In robust patients, an average of 3.27 more conversations about aging-related concerns (95% CI, 1.68-4.86; $P < .001$) occurred in the GA intervention arm versus the usual care arm. In prefrail patients, there were on average 3.75 more conversations (95% CI, 2.32-5.18; $P < .001$). In frail patients, there were on average 4.03 more conversations (95% CI, 2.50-5.56; $P < .001$). However, the interaction between frailty status and study arm was not statistically significant ($P = .61$).

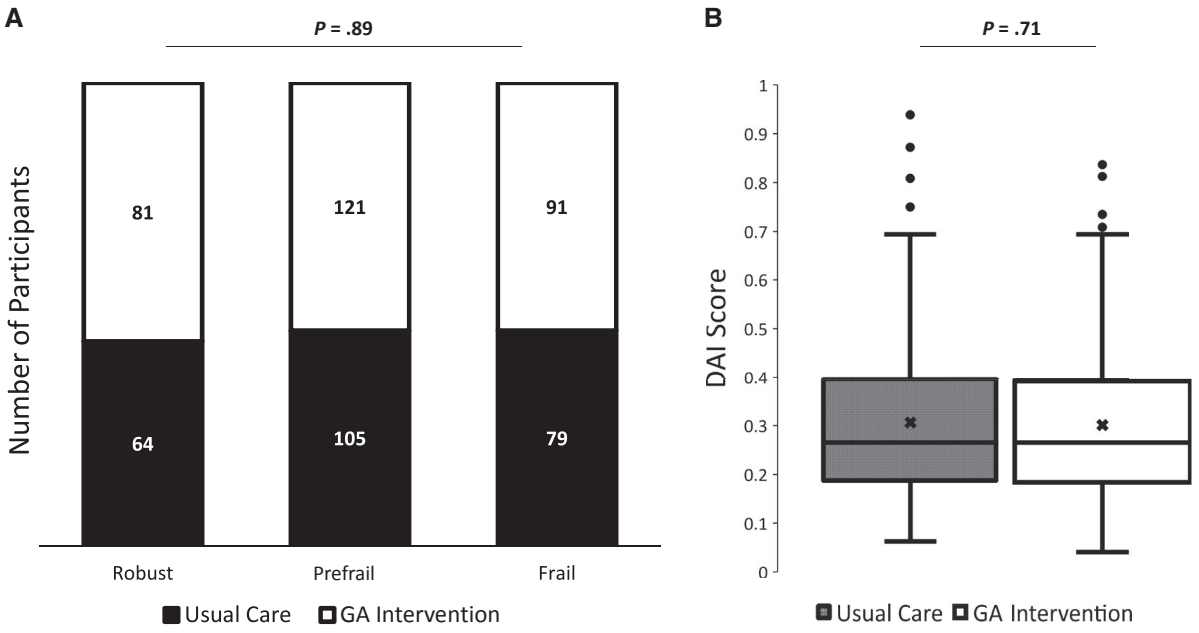

Figure 2. Distribution of DAI scores: (A) proportions of robust, prefrail, and frail participants in usual care and GA intervention arms and (B) distribution of DAI scores in all patients in usual care and GA intervention arms. DAI indicates deficit accumulation index; GA, geriatric assessment.

Quality of Conversations About Aging-Related Concerns

We next assessed whether patients' frailty status was associated with the quality of conversations as viewed through the number of concerns acknowledged and addressed by patients' oncologists (Table 2 and Fig. 3). In usual care settings, there were on average 1.12 more conversations about aging-related concerns that were acknowledged (95% CI, 0.24-2.00; $P = .015$) and 0.71 more conversations that were addressed by oncologists (95% CI, 0.04-1.38; $P = .038$) in frail patients versus robust patients. In the GA intervention arm, there were on average 1.31 more conversations that were acknowledged (95% CI, 0.56-2.06; $P < .001$) and 0.87 more conversations that were addressed (95% CI, 0.32-1.42; $P = .002$) in frail patients versus robust patients.

We further assessed the adjusted mean difference in the number of conversations per patient about aging-related concerns in the GA intervention arm versus the usual care arm in each frailty category (Table 2 and Fig. 3). In robust patients, there were on average 2.08 more conversations that were acknowledged (95% CI, 1.04-3.12; $P < .001$) and 2.03 more conversations that were addressed (95% CI, 0.87-3.19; $P = .001$) in patients who received the GA-intervention versus usual care. In prefrail patients, there were on average 1.87 more conversations that were acknowledged (95% CI, 0.97-2.77; $P < .001$) and 2.13 more conversations that were addressed (95% CI, 1.05-3.21; $P = .005$). In frail patients, there were on average 2.27 more conversations acknowledged (95% CI, 1.29-3.25; $P < .001$) and 2.19 more conversations that were addressed (95% CI, 1.07-3.31; $P < .001$). The interaction term between frailty status and study arm was not statistically significant for the number of conversations acknowledged ($P = .71$) or addressed ($P = .94$).

DISCUSSION

In this study, we found a linear relationship between frailty and communication; moreover, a GA-intervention improved communication about aging-related concerns in robust, prefrail, and frail patients. Classifying patients according to their level of frailty with the DAI has been found to be helpful in stratifying patients on the basis of their risk of future adverse health outcomes.[37] In this population of older adults with advanced cancer, we showed that 27% of patients were classified as robust, 42% were classified as prefrail, and 31% were classified as frail. This balance across all 3 frailty categories allowed for the adequate evaluation of patients' frailty status with respect

TABLE 2. Adjusted Mean Difference in the Number and Quality of Conversations About Aging-Related Concerns in Prefrail and Frail Patients Versus Robust Patients and in Usual Care Patients Versus GA Intervention Patients

	Adjusted Mean Difference in Prefrail and Frail Patients vs Robust Patients				Adjusted Mean Difference in GA Intervention vs Usual Care in Robust, Prefrail, and Frail Patients		
	Usual Care		GA Intervention				
	Difference (95% CI)	*P*	Difference (95% CI)	*P*	Difference (95% CI)	*P*	*P* of Interaction (Frailty Status × Study Arm)
No. of conversations							
Robust	Reference	—	Reference	—	3.27 (1.68 to 4.86)	.0002	.6111
Prefrail	0.83 (−0.21 to 1.87)	.1197	1.31 (0.37 to 2.25)	.0067	3.75 (2.32 to 5.18)	.0001	
Frail	1.73 (0.59 to 2.87)	.0031	2.49 (1.51 to 3.47)	<.0001	4.03 (2.50 to 5.56)	.0001	
No. of concerns acknowledged							
Robust	Reference	—	Reference	—	2.08 (1.04 to 3.12)	.0002	.7397
Prefrail	0.79 (−0.03 to 1.61)	.0624	0.58 (−0.13 to 1.29)	.1077	1.87 (0.97 to 2.77)	.0002	
Frail	1.12 (0.24 to 2.00)	.0145	1.31 (0.56 to 2.06)	.0006	2.27 (1.29 to 3.25)	<.0001	
No. of concerns addressed							
Robust	Reference	—	Reference	—	2.03 (0.87 to 3.19)	.0013	.9403
Prefrail	0.2 (−0.41 to 0.81)	.5232	0.3 (−0.23 to 0.83)	.2634	2.13 (1.05 to 3.21)	.0005	
Frail	0.71 (0.04 to 1.38)	.0382	0.87 (0.32 to 1.42)	.0021	2.19 (1.07 to 3.31)	.0005	

Abbreviations: CI, confidence interval; GA, geriatric assessment.
Models included the study arm, frailty status, and interaction term between frailty status and study arm as fixed effects and the practice site as a random effect independent of residual error.

to patient-oncologist conversations about aging-related concerns. The prevalence of frailty reported here is consistent with findings from a systematic review of older adults with cancer, which reported that the median prevalences of robust, prefrail, and frail patients were 32% (range, 11%-78%), 42% (range, 6%-86%), and 43% (range, 13%-79%), respectively.[8]

In usual care settings, we showed that patients and oncologists had more conversations about aging-related concerns with patients who were categorized as frail versus robust. We also showed that frail patients had better quality conversations with their oncologists. This finding indicates that frail patients and their oncologists were more likely to have aging-related conversations regarding areas such as functional status and/or nutritional status, and it was more likely for oncologists to adequately address these concerns with a referral to a physical therapist and/or nutritionist. Surprisingly, in usual care, there were no significant differences in the number of conversations about aging-related concerns in prefrail patients versus robust patients. Furthermore, the majority of concerns in both arms were not addressed during the clinic visit. Because of the influence that frailty can have on treatment decisions and prognosis,[2-7] oncologists should have more frequent discussions about aging-related concerns with prefrail and frail older patients with advanced cancer; such discussions would likely lead to better clinical outcomes. The GA can aid oncologists in identifying prefrail individuals who might benefit from these aging-related conversations.

We found a positive linear trend relationship in the number and quality of conversations about aging-related concerns of patients and their oncologists by frailty category in the GA intervention arm. Patients with the highest level of frailty had the most discussions about aging-related concerns, and these conversations were acknowledged and addressed more by oncologists for frail patients versus robust patients. The presence of frailty increases the risk of poor cancer treatment outcomes[3-5] and should be considered during shared decision-making processes. A GA-intervention could facilitate these discussions in prefrail and frail patients. Oncologists' acknowledgment of an aging-related concern provides a communication opportunity for future discussions and an open forum in which patient-oncologist rapport and trust can be built; this can yield a greater likelihood that the aging-related concern will be appropriately addressed. This process creates a greater opportunity for oncologists to intervene and address aging-related concerns that are commonly missed during clinical encounters. Future work should evaluate

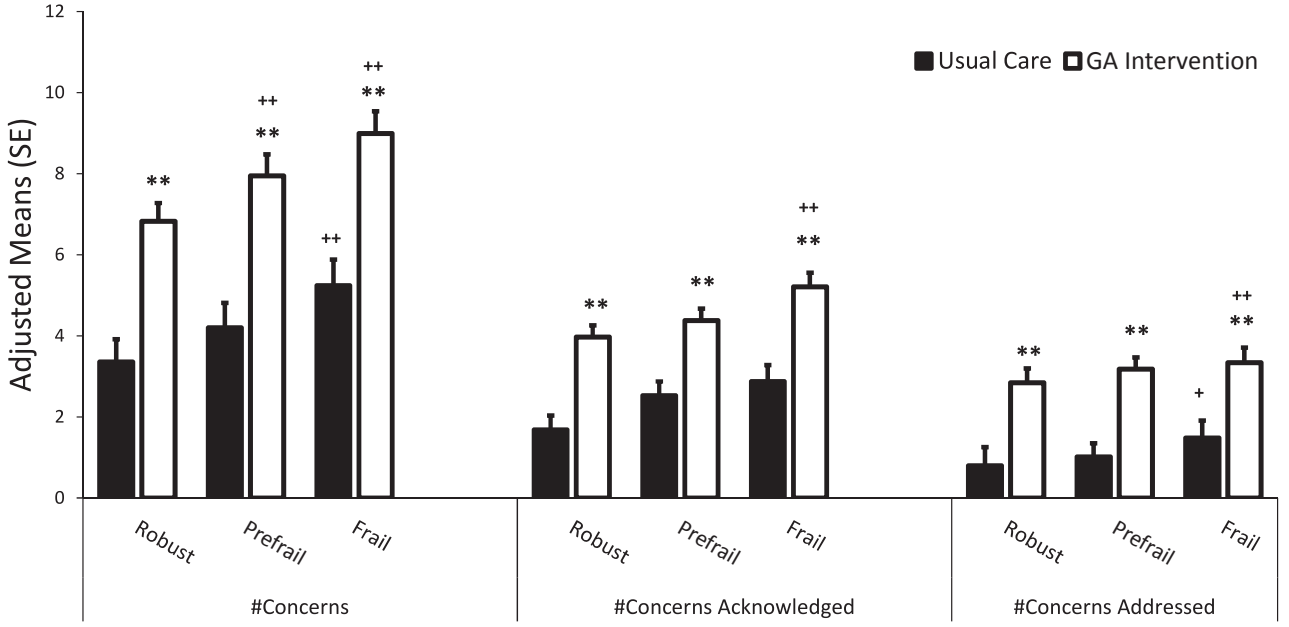

Figure 3. Effect of the GA intervention on the number of conversations about aging-related concerns between oncologists and patients in the GA intervention arm versus the usual care arm for robust, prefrail, and frail patients. $^{**}P < .01$ (usual care vs GA-intervention), $^{+}P < .05$ (prefrail or frail vs robust), and $^{++}P < .01$ (prefrail or frail vs robust). GA indicates geriatric assessment.

the effect of enhanced communication quality on the implementation of frailty-specific GA-interventions and improved health outcomes for prefrail and frail older patients with advanced cancer.

Finally, we showed that the GA-intervention increased the number and quality of conversations across all frailty levels. Effective patient-centered communication has been shown to be a critical element in patients' navigation of their cancer journey[22] and to contribute to better patient outcomes.[19] Given the importance of effective communication, an American Society of Clinical Oncology consensus guideline outlined recommendations for oncologists to develop core communication skills, effectively involve family members in discussions, and discuss clinical care decisions.[38] Furthermore, a recent scoping review found that some of the barriers to communication in primary care settings, reported by health care providers, included a lack of communication skills training and a lack of structured communication formats and guides.[39] The results from our study show that providing oncologists with a GA-intervention, which consists of a summary of the results of impairments identified by the GA as well as specific recommendations based on patients' needs, can facilitate frailty conversations, and it thus has the potential to aid physicians in overcoming a communication barrier. Moreover, we have previously shown that the GA-intervention is feasible to conduct in busy community oncology clinics and does not require specialized training.[15] The GA-intervention can help oncologists to identify prefrail and frail patients and facilitate patient-centered conversations about support services that will improve quality of life and address aging-related concerns. Future studies to gauge patients' understanding of aging-related conversations could demonstrate the role that the number and quality of these conversations might serve in promoting patient-centered communication in older adults with advanced cancer. Goals of care, patient values and preferences, and any support services that will improve quality of life, for example, might be explored. Future work should also evaluate whether certain conversations about specific GA domain impairments are better facilitated by the GA-intervention versus the usual care. Qualitative studies have shown that the term *frailty* has a negative connotation for many older adults, who characterize frailty as a terminal outcome.[39] The GA-intervention can assist oncologists in having discussions with patients without specifically using the term *frailty* by providing a holistic view of any impairments (eg, psychological, physical, and nutritional) that patients might have; conversations will be centered on specific actions that the patients can take to mitigate some of these impairments and in so doing improve their frailty status.

It is worth noting that, in all models tested, the interaction term between frailty status and study arm was not statistically significant (all *P* values > .6). The effects of the intervention and frailty were additive. Although there were more conversations observed in the GA intervention arm, in both arms, increasing frailty was associated with more and higher quality conversations about aging-related concerns at similar rates.

Our study had several important strengths. First, the sample included 541 patients 70 years of age and older with at least 1 aging-related deficit: patients who are traditionally excluded from clinical trials. Second, this study recruited patients from community oncology sites within the United States. The fact that these are the sites that typically see the majority of patients with cancer improves the generalizability of our findings. Third, this study combined a mixture of quantitative and qualitative content analyses of clinical encounters between patients and oncologists that allowed for an in-depth investigation of relationships between frailty and communication in usual care and GA intervention arms. Fourth, there was an even distribution of patients across all frailty categories, which allowed for an adequate comparison of outcomes within each frailty group. However, this study also had limitations. The study sample consisted of a predominantly White patient population with limited racial diversity, and this may lessen the generalizability of our findings. The number and quality of the conversations about aging-related concerns were assessed at only a single time point; thus, we were unable to assess longer term aging-related communication outcomes.

In conclusion, overall, patients who had higher degrees of frailty had more and higher quality conversations about aging-related concerns with their oncologists. Furthermore, the GA intervention—a summary and list of recommendations provided to oncologists and patients—increased the number and quality of these conversations across all frailty categories. The GA can help oncologists to identify prefrail and frail patients with advanced cancer, and the GA intervention can facilitate effective oncologist-patient communication, which can in turn improve the health and well-being of patients through improved trust, motivation, patient-oncologist relationships, compliance, and self-care skills.[40] Future work should investigate whether improved patient-oncologist communication leads to improved clinical outcomes for prefrail and frail older adults with advanced cancer.

FUNDING SUPPORT

This work was supported by the University of Rochester Clinical Trial Science Award (KL2 TR001999) from the National Institutes of Health, the Patient-Centered Outcomes Research Institute (4634), the National Cancer Institute (R01 CA177592, UG1 CA189961, T32 CA102618, and K99 CA237744), and the National Institute on Aging (R33 AG059206-01 and K24 AG056589). The investigators were independent in the conduct and analysis of the results. Funders had no role in the design or conduct of the study; in the collection, management, analysis, or interpretation of the data; in the preparation, review, or approval of the manuscript; or in the decision to submit the manuscript for publication. All statements in this report, including its findings and conclusions, are solely those of the authors; do not necessarily represent the official views of the funding agencies; and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute, its board of governors, or the methodology committee.

CONFLICT OF INTEREST DISCLOSURES

Kah Poh (Melissa) Loh reports consulting fees from Pfizer and Seattle Genetics. The other authors made no disclosures.

AUTHOR CONTRIBUTIONS

Nikesha Gilmore: Conceptualization and execution of the study, analysis of data, interpretation of the data, writing of the manuscript, intellectual contributions to the manuscript, and reading and approval of the final version of the manuscript. **Huiwen Xu:** Analysis of data, interpretation of the data, intellectual contributions to the manuscript, and reading and approval of the final version of the manuscript. **Lee Kehoe:** Interpretation of the data, writing of the manuscript, intellectual contributions to the manuscript, and reading and approval of the final version of the manuscript. **Amber S. Kleckner:** Writing of the manuscript, intellectual contributions to the manuscript, and reading and approval of the final version of the manuscript. **Kiran Moorthi:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Lianlian Lei:** Analysis of data, intellectual contributions to the manuscript, and reading and approval of the final version of the manuscript. **Mostafa R. S. Mohamed:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Kah Poh (Melissa) Loh:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Eva Culakova:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Marie Flannery:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Erika Ramsdale:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Paul R. Duberstein:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Beverly Canin:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Charles Kamen:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Gilbert Giri:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Erin Watson:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Amita Patil:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Adedayo A. Onitilo:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Brian Burnette:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Michelle Janelsins:** Intellectual contributions to the manuscript and reading and approval of the final version of the manuscript. **Supriya G. Mohile:** Conceptualization and execution of the study, interpretation of the data, writing of the manuscript, intellectual contributions to the manuscript, and reading and approval of the final version of the manuscript.

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