

Can Oncologists Prompt Patient Prognostic Awareness to Enhance Decision-Making? Data From the NEOetic Study

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Abstract

Introduction: Anti-neoplastic therapy improves the prognosis for advanced cancer, albeit it is not curative. An ethical dilemma that often arises during patients' first appointment with the oncologist is to give them only the prognostic information they can tolerate, even at the cost of compromising preference-based decision-making, versus giving them full information to force prompt prognostic awareness, at the risk of causing psychological harm.

Methods: We recruited 550 participants with advanced cancer. After the appointment, patients and clinicians completed several questionnaires about preferences, expectations, prognostic awareness, hope, psychological symptoms, and other treatment-related aspects. The aim was to characterize the prevalence, explanatory factors, and consequences of inaccurate prognostic awareness and interest in therapy.

Results: Inaccurate prognostic awareness affected 74%, conditioned by the administration of vague information without alluding to death (odds ratio [OR] 2.54; 95% CI, 1.47–4.37, adjusted $P = .006$). A full 68% agreed to low-efficacy therapies. Ethical and psychological factors oriented first-line decision-making, in a trade-off in which some lose quality of life and mood, for others to gain autonomy. Imprecise prognostic awareness was associated with greater interest in low-efficacy treatments (OR 2.27; 95% CI, 1.31–3.84; adjusted $P = .017$), whereas realistic understanding increased anxiety (OR 1.63; 95% CI, 1.01–2.65; adjusted $P = 0.038$), depression (OR 1.96; 95% CI, 1.23–3.11; adjusted $P = .020$), and diminished quality of life (OR 0.47; 95% CI, 0.29–0.75; adjusted $P = .011$).

Conclusion: In the age of immunotherapy and targeted therapies, many appear not to understand that antineoplastic therapy is not curative. Within the mix of inputs that comprise inaccurate prognostic awareness, many psychosocial factors are as relevant as the physicians' disclosure of information. Thus, the desire for better decision-making can actually harm the patient.

Keywords: decision-making; information; prognostic awareness; depression; quality of life.

Implications for Practice

This study is the first to evaluate the impact of cancer prognostic awareness on interest in low-efficacy therapies for advanced, unresectable tumors during the initial consultation. Results indicate that inaccurate prognostic awareness remains prevalent in the era of immunotherapy and targeted therapies, affecting decision-making, mood, and quality of life. Oncologists' common ambiguous communication style often fails to address the topic of death. The study highlights the complex interplay of factors that influence the belief in curability and interest in low-efficacy therapies when making treatment decisions. The results of this research also illustrate the ethical and psychological considerations that guide decision-making and the trade-off between autonomy and quality of life, mood, and other factors. The desire for better decision-making may ultimately harm the patient.

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Introduction

Any appointment with the oncologist necessarily entails an ethical dilemma. The problem is that patient-centered decision-making requires that expectations and preferences be aligned with scientific evidence.^{1,2} However, many hurdles must be overcome in this situation. To begin with, prognostic awareness is a multifactorial phenomenon in which cultural considerations and individual circumstances are intertwined.³ In this process, family or physician collusion is not uncommon. Consequently, many subjects with incurable diseases such as cancer, report unrealistic expectations, and misconceptions regarding treatment objectives and are incapable of distinguishing whether the aim is to cure or prolong overall survival (OS).⁴⁻¹¹ This phenomenon can be found in all societies and has even found its way into mainstream culture.^{11,12} For instance, in the Cancer Care Outcomes Research and Surveillance (CanCORS) study, 69% and 81% of patients with metastatic lung and colon cancer, respectively, responded in a way that was compatible with the belief in curability.⁵ The authors concluded that the misunderstanding surrounding prognosis stood in the way of making preference-based decisions, which in extreme cases, would affect the validity of the informed consent.^{13,14} One potential interpretation would be that achieving realistic perceptions about the drugs could theoretically decrease the use of services that would probably not enhance quality of life (QoL) and not dramatically change survival.^{1,15} The problem is that conveying something so sensitive as a death sentence takes time, given that it will necessarily trigger psychological suffering and compromise QoL.^{8,16,17} Thus, when surveyed, most respond that they want truthful information that will enable them to engage in decision-making, yet at the same time, they need to hold onto hope, and deem abrupt information as lacking compassion.^{5,18} Pragmatically speaking, this means that information cannot be forced precisely at a time when it is needed to decide on first-line treatment; hence, the timing for full disclosure has to be pondered. This deliberation must be brief, if treatment efficacy is to remain unaffected. Nonetheless, developing adaptive coping strategies tends to take time; therefore, providing more complete information will either delay treatment¹⁹ or have consequences for the patient's mental wellbeing.

Moreover, the elevated toxicity and scant efficacy of the traditional chemotherapy regimens developed in the 1990s led to the thought that, had they known their prognosis better, some patients would not have accepted treatment.⁵ This panorama has changed as a result of the identification of druggable molecular alterations in oncogenes and the development of immune-based therapies, such as immune checkpoint inhibitors.^{20,21} Since the palliation/toxicity trade-off is more favorable in some cases, we have used the NEOetic study of the Bioethics Group of the Spanish Society of Medical Oncology (SEOM) to analyze how disclosure of prognostic information and expectations regarding the efficacy of classic (chemotherapy) and modern (immunotherapy and biologics) anticancer drugs for unresectable advanced cancers affect general interest in first-line treatments and psychological outcomes.

Methods

Design and Population

NEOetic is a prospective, multicenter (15 oncology departments) study of the SEOM Bioethics group. The study enrolled

patients ≥ 18 years with advanced or metastatic cancer deemed ineligible for curative resection. These patients were suitable candidates for systemic cancer treatment, as determined by the oncologist during their initial visit. The eligibility criteria did not entirely rule out the potential for some patients to be considered for resection after a positive response to systemic treatment or achieving long-term survival with immunotherapy. Exclusion criteria consisted of subjects not eligible for systemic, antineoplastic treatment or who, in the oncologist's opinion, were not suitable to participate, as well as those who had received cancer treatment in the last 2 years. Those who agreed to take part signed the informed consent form, were instructed on how to fill in the printed questionnaires, which they completed at home and handed in to the auxiliary personnel prior to initiating systemic treatment. The study was approved by the Ethics Committee of each participating center and was conducted in accordance with Good Clinical Practices and the Declaration of Helsinki.

Study Measures

Clinical data were gathered by the oncologist during the patient interview and clinical history prior to initiating therapy and was similar at all participating centers. Participants completed a questionnaire regarding demographic characteristics, including aspects such as education, family and social structure, employment status, and clinical data.

The psychometric questionnaires used were: Mini-MAC (Mini-Mental Adjustment to Cancer Scale),²² EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer Quality of Life C30 Questionnaire),^{23,24} BSI-18 (Brief Symptom Inventory 18),^{25,26} FACIT-Sp-12 (Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale),^{27,28} HHS (Herth Hope Scale),^{29,30} Duke-UNC-11 (perceived social support),^{31,32} MUIS-C (Mishel Uncertainty in Illness Scale-Community form),³³ SWD (Satisfaction With Decision),³⁴ CWQ-FoR (Cancer Worry Questionnaire),³⁵ NEOetic-EIT (expectations regarding treatment effectiveness), NEOetic-POI (Preference On Information), and NEOetic-IIT (Interest In therapy), STAR-P (Scale to Assess the Therapeutic Relationship-Patients' version).³⁶ The characteristics, interpretation, and validation in Spanish of these questionnaires can be found in [Supplementary Table S1](#).

The NEOetic-EIT scale was created specifically for this study and was tested on the first 30 participants, at which point the decision was made to continue without any modification. The "belief in curability of the cancer" variable was obtained from the question: "Do you think the treatment will help cure your cancer?" Accurate prognostic awareness was defined as disagreeing or strongly disagreeing [with the belief] that their cancer could be cured.

NEOetic-IIT quantified the potential interest in treatment by means of 6 items that represented scenarios with hypothetical therapies with successively greater OS benefits, lacking other alternatives. For this study, low-efficacy therapy was considered to be the one that prolonged OS by less than 6 months. The subject was considered to be interested when the rating was "likely" or "very likely."

Statistics

Proportional odds (PO) regressions were fitted to model the endpoints. Predictors were chosen theoretically, following consensus among the project coordinators and systematic review of the literature. The qualitative judgment of several

studies with consistency criteria, theoretical plausibility, causality, and lack of temporal ambiguity was considered. Redundancy analyses were conducted via flexible parametric additive models to rule out the possibility of some model variables being predicted by the remaining covariates.³⁷ The limiting sample size supports a model having a maximum of 30 coefficients.^{37,38} Brant's tests and a likelihood ratio tests were applied to evaluate the PO assumption.^{39,40} This assumption was fulfilled in all the models. The existence of interactions was explored systematically, creating interaction terms such as "belief in curability of the cancer" × "coping strategy."⁸ In the event that significant interaction terms ($P < .05$) were found, subgroup analyses were performed. In addition, the non-linearity of all the continuous variables was probed using natural splines when necessary. The CIs of the model predictions were adjusted to the average or reference value of the covariates. Other exploratory analyses were conducted with Kendall's Tau rank correlations or χ^2 -tests for proportions. Adjusted P -values were calculated by the Bonferroni-Holm (BH) method with $\alpha = .05$. Missing values were minimized during the monitoring of the study and only affected 5 cases (<1%), applying complete case analysis. Analyses were performed using R v4.05 including the rms library.⁴¹ Examples of the R code are presented in [Supplementary Table S2](#).

Results

Patients

The database contains 550 patients with unresectable advanced cancer (incurable) recruited over the course of 2 years (2020 and 2021); baseline characteristics are summarized in [Table 1](#). Information on belief in curability was available for 545 of them (see flow diagram in [Supplementary Fig. S1](#)). Most were male (58%, $n = 319$) with a median age of 66 years (range, 18-90). Almost one quarter (24%, $n = 133$) were over the age of 70. The most commonly cancers were bronchopulmonary (37%, $n = 203$), colorectal (22%, $n = 123$), and other digestive neoplasms (22%, $n = 122$). Regarding therapies, 21% ($n = 117$) received immunotherapy, while 23% ($n = 126$) were given targeted therapy with or without chemotherapy. Only 1 patient (0.2%) declined systemic treatment after the initial consultation with the oncologist, while 16 patients (2.9%) opted for antineoplastic therapy following a second opinion at a different center.

The participants displayed great concern for their health; 51% ($n = 282$) were afraid of dying and 84% stated that they were aware of the severity of their disease. Nevertheless, most (74%, 407/550) agreed that the treatment would help to cure their cancer. Only 17.6% (95% CI, 14.6-21.0) were clearly cognizant of their prognosis. In contrast, the oncologist estimated the median OS to be 22.6 months (range, 5-100) for the entire group, and physicians agreed that long-term survival was possible in only 13.4% ($n = 74$).

The most common communication style was qualitative without alluding directly to demise (65%, $n = 356$). Of the ones who conveyed quantitative information, 38% (24/63) reported relative data, 49% (31/63) absolute outcomes, 6% (4/63) showed the participant the pivotal trial, and in the rest, it was unclear ([Fig. 1](#)). Indices of satisfaction with the interview and doctor-patient relationship were high (see questionnaire in [Supplementary Table S1](#)).

Table 1. Baseline characteristics.

	N (%)
Age, median (range)	66 (18-90)
Sex, female	231 (42)
Tumor	
Colorectal	123 (22.3)
Lung	203 (36.9)
Head and neck	16 (2.9)
Upper GI	122 (22.1)
Breast	29 (5.2)
Others	57 (10.3)
ECOG PS	
0	189 (34.3)
1	325 (59.0)
≥2	36 (6.5)
Oncological setting	
Unresectable metastases	401 (72.9)
Potentially resectable metastases	41 (7.4)
Resectable early metastases	8 (1.4)
Locally advanced unresectable	89 (16.1)
Locally advanced potentially resectable	11 (2.0)
Therapy	
Immuno-therapy	117 (21.3)
Chemotherapy	306 (55.6)
Targeted therapy	126 (22.9)
The patient declined to receive systemic treatment	1 (0.2)
QLQ-C30 symptoms scale, median (range)	27.1 (0-94.4)
Administered information profile	
Not informed because of conspiracy	3 (0.55)
Not reported as inappropriate	7 (1.27)
Qualitative information without alluding to death	356 (64.7)
Qualitative information alluding to death	121 (22.0)
Approximate quantitative information	51 (9.2)
Accurate quantitative information	12 (2.1)
Marital status	
Married or in a couple	374 (68.0)
Single	62 (11.2)
Divorced	63 (11.4)
Widowed	51 (9.2)
Number of children	
0	83 (15.0)
1	104 (18.9)
2	227 (41.2)
≥3	136 (24.7)
Education level	
No education	49 (8.9)
Primary education	217 (39.4)
Secondary education	153 (27.8)
University studies	131 (23.8)
Employment status	
Not working	2 (0.3)
Retired	248 (45.0)
Part-time worker	1 (0.1)
Full-time worker	299 (54.3)

Table 1. Continued

	N (%)
Primary caregiver	
Alone, no support	39 (7.0)
Family	498 (90.5)
Friend/ acquaintance	9 (1.6)
Staff of an institution (residence)	4 (0.7)

Abbreviations: ECOG PS, Eastern Cooperative Group performance status; upper GI, upper gastrointestinal tumor; QLQ, quality of life questionnaire.

Predictors of Inaccurate Prognostic Awareness

After noting that inaccurate prognostic awareness was prevalent (Fig. 1), we wanted to assess the associated factors. In the ordinal multivariable model, the most common administered information profile (qualitative information without alluding to death) augmented inaccurate prognostic awareness, versus the disclosure of quantitative information (approximate or precise) (odds ratio [OR], 2.54; 95% CI, 1.47-4.37; adjusted $P = .006$). In absolute terms, this entailed a belief in curability in 67.9% (95% CI, 49.5-82.1) vs. 79.9% (95% CI, 47.7-94.5) among patients who received full disclosure compared to uninformed subjects, respectively. Vague information making no reference to death and no information had the same explanatory effect. In a sensitivity analysis, quantitative information was effective when it was communicated as absolute risk reductions (OR 0.37, 95% CI, 0.19-0.70), but not when relative effect measures were provided (Supplementary Table S3). Moreover, other factors associated with increasing belief in curability were hope, spirituality, fighting spirit, tumor site other than breast, prolonged expected survival time (with a threshold of around 20 months), and not being afraid to die (Table 2; Supplementary Table S4). The marginal effects are shown in Fig. 2.

Predictors of Interest in Low-Efficacy Therapies

The survey concerning preferences detected that 68% (378/550) agreed to low-efficacy therapies, which was greater in participants with inaccurate prognostic awareness. To probe further into this phenomenon, we fitted an ordinal multivariable model with an interest in low-efficacy therapies as the response variable. Accurate prognostic awareness correlated with less interest in low-efficacy treatment. Thus, this interest rate was 56.3% (95% CI, 38.5-72.7) and 74.2% (95% CI, 61.2-83.9) among subjects with an accurate prognostic awareness compared to those who stated that cure was “very likely” (OR 0.44; 95% CI, 0.26-0.76; adjusted $P = .017$). Other factors associated with more interest in low-efficacy therapies were greater perceived social support and greater hope (Fig. 3; Supplementary Fig. S2).

Correlation Between Prognostic Awareness and Other Endpoints

Believing in cure correlated with several endpoints, such as greater fighting spirit, fatalism/stoic acceptance, hope, global health status, and satisfaction with decision and care (Fig. 4). In contrast, the belief in curability negatively correlated with uncertainty, helplessness/hopelessness, depression, anxiety, somatization, and several symptoms (Supplementary Fig. S3).

To delve further into the impact of prognostic awareness, we fitted multivariable models for QoL, depression, and anxiety (details and specifications can be found in Supplementary Table S5). A higher BSI-anxiety score was observed in individuals who did not believe in the curability of cancer (OR 1.63; 95% CI, 1.01-2.65; adjusted $P = .038$), with evidence of an interaction with coping based on fighting spirit (P -value [interaction] = .0199) (Supplementary Fig. S4).

The predicted mean BSI score for depression was 70.8 (95% CI, 67.5-73.1) and 67.8 (95% CI, 64.5-70.1) among participants with an accurate prognostic awareness vs. those who deemed curability as being “very likely” (OR, 1.96; 95% CI, 1.23-3.11; adjusted $P = .020$). Mood was found to be correlated with other factors such as fear of dying, being male, having symptoms, or lack of social support (Supplementary Table S5). The predicted mean QLQ-C30—Global health status was 47.8 (95% CI, 37.0-56.8) and 57.7 (95% CI, 49.7-65.2) in individuals who had an accurate prognostic awareness compared to those who believed that curability was “very likely” (OR, 0.47; 95% CI, 0.29-0.75; adjusted $P = .011$). The correlations between the interest in low efficacy therapies and other endpoints are shown in Supplementary Table S6.

Discussion

In the course of this study, we have found that, following their first appointment with the oncologist, only 18% of the individuals with incurable cancer understand that the antineoplastic therapy is not curative. While repeated discussions with the oncologist throughout the patient journey may lead to a better understanding of prognosis over time, patients may not be fully aware of the true benefits of therapies during the initial visit when therapeutic decisions must be made. This finding is perplexing, especially considering the widespread information and awareness surrounding cancer in modern society. Nevertheless, the percentage is only slightly lower than that of the CanCORS study, with the same measurement instrument,⁵ albeit appreciably lower than studies from 2 or 3 decades ago in multiple cultural contexts.¹¹ The persistent nature of these findings despite the progress made in oncology, suggests the need for further research to uncover the underlying reasons, and to enhance communication between patients and oncologists for better-informed treatment decisions.

In our study, the oncologist’s most common prognostic disclosure (~65%) was qualitative, without so much as the mere mention of death. This ambiguous profile worsened prognostic awareness by 12 percentage points, in contrast to the quantitative disclosure expressed in the form of absolute risks and with some explicit allusion to demise. Nevertheless, more complete disclosure did not keep approximately 2/3 of the well-informed participants from expressing unrealistic expectations, which points toward more complex underlying causes. Some such aspects include spirituality, fighting spirit, or constructs that interject emotional components that contribute to the person believing in the possibility of being cured, regardless of the scientific data.⁴²⁻⁴⁴

The most notorious consequence of the lack of prognostic awareness is the 18% increase in interest in therapies having low efficacy. It is difficult to check this datum against the rest of the bibliography, as most of the series are from the field of

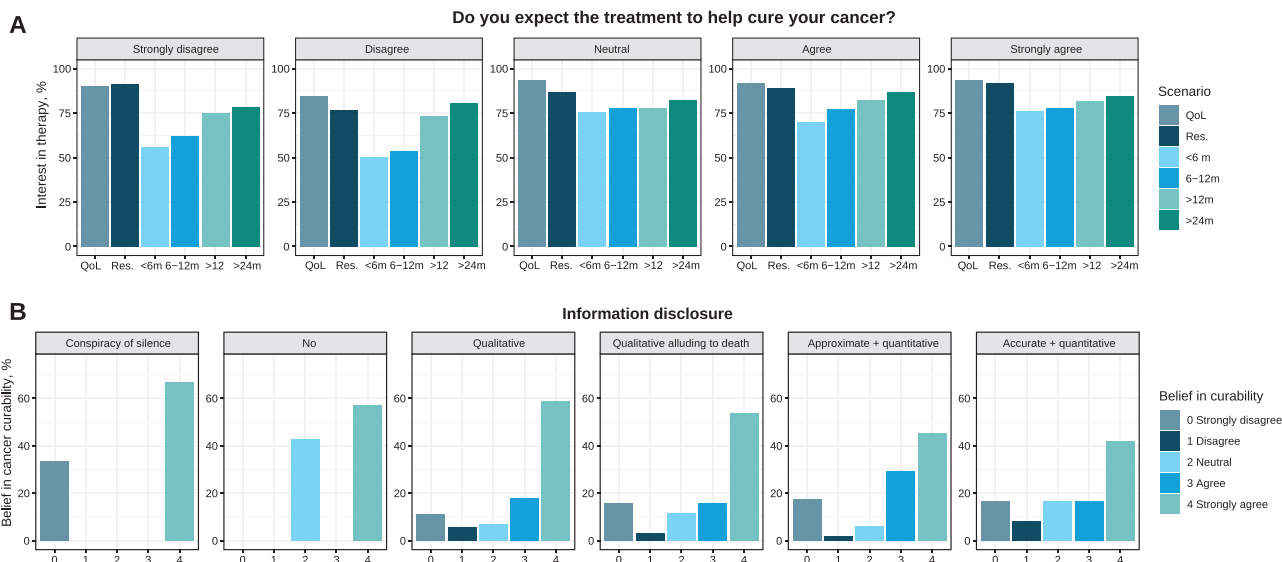


Figure 1. (A) Relationship between belief in curability vs. interest in therapy. **(B)** Relationship between type of disclosure and belief in curability. Abbreviations: QoL, quality of life; Res, treatment that achieves tumor response; <6m, treatment that increases survival by at least 6 months; 6-12m, treatment that increases survival by between 6 and 12 months; >12m, treatment that prolongs survival by more than 12 months, >24m, treatment that increases survival by more than 24 months. Note: (A) Displays the percentage of individuals interested in antineoplastic therapy under different assumptions regarding its efficacy (symptom relief or improvement in quality of life only, antitumor response without prolonging survival, or survival increments <6, 6-12, >12, or >24 months). Each panel represents possible responses to the question: “Do you expect the treatment to help cure your cancer?.” Each panel in (B) represents a different communication style of the oncologist, with the bars showing whether the patient agreed with the belief that their cancer could be cured.

Table 2. Proportional odds regression for “belief in curability of the cancer.”

Effects	OR (95%, CI)
Age, 72 vs. 59	0.92 (0.72-1.18)
Expected survival, 25 vs. 12 months	1.78 (1.10-2.86)
QLQ-C30 symptoms scales, 43 vs 15	0.82 (0.63-1.06)
Spirituality (FACIT), 23 vs. 8	1.24 (1.00-1.55)
Children, 2 vs. 1	1.01 (0.87-1.17)
Perceived social support (Duke-UNC-11), 48 vs. 39	1.38 (0.95-2.02)
Hope (Herth scale), 14 vs. 11	1.60 (1.22-2.09)
ECOG PS >1	0.99 (0.48-2.06)
Fighting spirit (mini-MAC), 100 vs. 67	3.00 (1.77-5.08)
Sex, female	0.73 (0.49-1.08)
Oncological setting, potentially resectable vs. unresectable metastases	1.64 (0.80-3.36)
Oncological setting, locally advanced vs. unresectable metastases	1.43 (0.87-2.34)
Immuno-therapy vs. chemotherapy	0.95 (0.55-1.63)
Targeted therapy vs. chemotherapy	0.80 (0.48-1.32)
Education, no vs. primary education	0.54 (0.28-1.02)
Education, secondary vs. primary	0.79 (0.50-1.24)
Education, university studies vs. primary education	0.87 (0.54-1.40)
Fear of death, none vs. severe	2.29 (1.44-3.65)
Fear of death, moderate vs. severe	1.29 (0.83-2.01)
Colorectal vs. lung cancer	0.87 (0.47-1.61)
H&N vs. lung cancer	0.60 (0.20-1.79)
Upper GI vs. lung cancer	0.70 (0.40-1.22)
Breast vs. lung cancer	0.16 (0.68-0.41)
Other tumors vs. lung cancer	0.76 (0.38-1.51)
Information disclosure, non vs. qualitative (death not mentioned)	0.73 (0.18-2.91)
Information disclosure, qualitative, death alluded vs. qualitative (death not mentioned)	0.73 (0.47-1.15)
Information disclosure, quantitative vs. qualitative (death not mentioned)	0.39 (0.22-0.67)

Odds ratios >1 denote greater belief in curability.

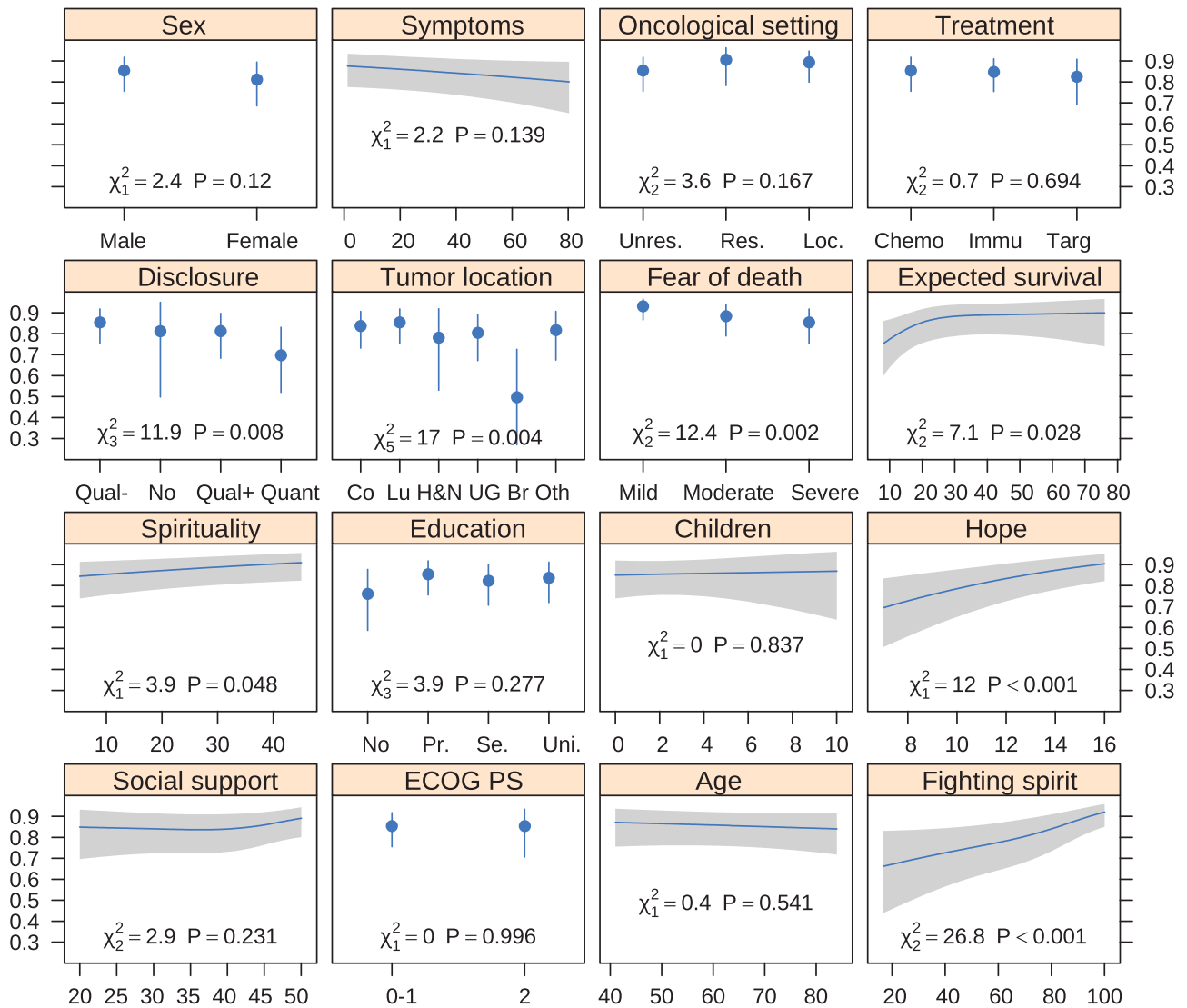


Figure 2. Marginal effects for the model of belief in curability. For each variable, the plot shows the probability that the belief that cancer can be cured is scored as likely or very likely. All other covariates are held constant at the average or baseline level. The main assumptions of the model are shown. Wald tests for the most meaningful hypotheses in a design are shown. Abbreviations: Br, breast cancer; chemo, chemotherapy; co, colorectal; H&N, head and neck cancer; immu, immunotherapy; lu, lung cancer; oth, other tumors; Pr, primary education; qual- , qualitative, death not alluded; qual + , qualitative, death alluded; quant , quantitative; Se, secondary education; targ, targeted therapies; UG , upper gastrointestinal cancer; uni, university studies.

adjuvancy, where the aim is to cure, or from the context of palliative care in terminal or refractory patients.⁴⁵⁻⁴⁷ At present, there is a hefty body of evidence that upholds the observations that the preferences in both scenarios are conflicting, with well-informed subjects who weigh the possibility of suffering side effects differently on the basis of whether or not there is a chance to be cured.^{1,2,15} Specific first-line data are scarce.

Overall, our data provide a nuanced confirmation of an idea outlined in the CanCORS study, as well as other authors findings,^{5,46,47} according to which, inaccurate prognostic awareness would compromise the ability to make informed decisions. This conclusion requires that certain caveats be taken into account. To begin with, although the degree of prognostic awareness was the single trait most strongly associated with interest in low-efficacy therapies, the combination of other factors such as hope and social support consistently predicted interest in such therapies, even more so than the

degree of prognostic disclosure. Second, regardless of individual realism, most of the subjects in our series reported interest in receiving therapies aimed at improved QoL or tumor regression, even when OS remained unchanged. In the previously published literature, attitudes vary. While some reject drugs having a marginal benefit, others accepted therapies to alleviate symptoms or improve QoL, without prolonging OS.⁴⁸⁻⁵¹

The comprehensive analysis cannot overlook the psychological and other endpoint consequences of prognostic awareness. In our series, subjects unaware of their prognosis had 10 percentage points better QoL compared to those who were well aware of their status; this improvement covered all QoL domains. Furthermore, accurate prognostic awareness involved more psychological symptoms, including anxiety, depression, concern about their health, and other adverse outcomes, in line with earlier studies.^{8,16,17,52} In this regard, our data are similar to those of Nipp et al⁸ who reported worse

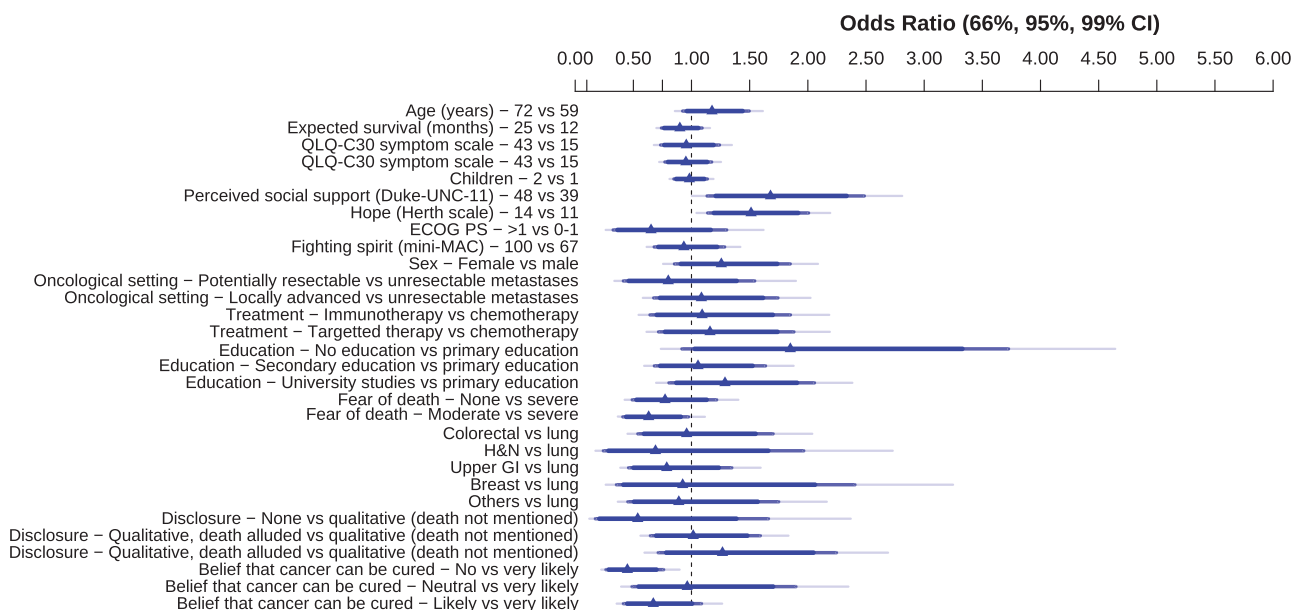


Figure 3. Proportional odds model to predict interest in low-efficacy therapies. The graph displays the odds ratios resulting from this model. The complete model is shown in Table 2. Interquartile effects are presented in the case of continuous variables. Odds ratios >1 denote greater belief that cancer can be cured. Abbreviations: ECOG PS, Eastern Cooperative Group performance status; H&N, head & neck cancer; FACIT, Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale; QLQ-C30, European Organization for Research, and Treatment of Cancer Quality of Life C30 Questionnaire; mini-MAC, Mini-Mental Adjustment to Cancer Scale..

QoL and mood associated with accurate prognostic awareness, possibly interacting with certain coping profiles.

Thus, our study maps out 2 opposite poles, the ethical and the psychological one, of a moral dilemma that is posed at first appointments, during which the oncologists are apparently doomed to make a mistake, whatever decision they make.⁵³ On the one hand, they must carefully inform their patient, given that unrealistic expectations can entail agreeing to first-line treatments of scant usefulness or benefit, whose palliation-toxicity index may not be in line with individual preferences, in a context of ever-growing costs.¹ On the other hand, reluctance to fully disclose the patient’s prognosis seeks to circumvent the psychological impact, under the premise that not all patients have the same needs or preferences; that they sometimes simultaneously “want and don’t want” to hear their death sentence, and oftentimes caregivers do not agree with information that is too negative. A possible solution to this dilemma is to adopt a patient-centered approach to communication taking into account factors such as health literacy level, cultural background, and emotional state.⁵⁴⁻⁵⁶ For example, some patients may prefer direct and fact-based communication while others may benefit from a more empathetic and supportive approach. The timing of discussions about prognosis and treatment options is also important. While it is crucial to fully inform patients from the beginning, overwhelming them with too much information during their initial visit may be counterproductive. Oncologists may need to consider breaking down information into smaller, more manageable pieces and providing ongoing support and education throughout the patient journey. Ultimately, by working together with patients to develop a shared understanding of different treatment options’ potential benefits and limitations, oncologists can empower them to make informed decisions that align with their values and care goals.

Our study should be interpreted in the context of its limitations. The first is the cultural dependence on the belief in curability. Nevertheless, our outcomes are comparable to those observed in other populations.¹¹ Second, the data refer solely to the first appointment with the oncologist and no longitudinal measurements have been made. Yet, the information extracted from the first visits is relevant, inasmuch as this is when treatment foundations are established, capturing the ethical dilemma of these appointments. Third, the questionnaire administered may not have epitomized such a subtle construct as belief in curability with the necessary specificity (ie, some patients report the desire to be cured more than the belief itself). It is also possible that fear focuses patients’ attention on the short term or leaves them to forget the details of the appointments.⁵⁷ Therefore, caution must be exercised when interpreting self-reported questionnaires until a validated, multidimensional tool is available.^{58,59} Since the study was cross-sectional, it is challenging to establish a clear cause-and-effect relationship between variables. Therefore, the reported impact of prognostic awareness on several endpoints is better understood as a correlation. Further investigation is required to understand the complex interplay between these factors. Finally, we based the definition of “low-efficacy therapy” on a fixed value (6 months), which may be clinically relevant in tumors with poor prognosis.

When interpreting the results of this study, it is crucial to bear in mind that the focus was on exploring the ethical implications of treatment decision-making at the time of initial cancer diagnosis with an oncologist. The hypothesis was that lack of knowledge about prognosis could impact treatment decisions. The study’s findings highlight the interplay between multiple factors, such as fear of death, information received, and symptoms, which collectively influence belief in curability and interest in low-efficacy therapies. These findings underscore the importance of improving communication between clinicians and patients to ensure fully informed and

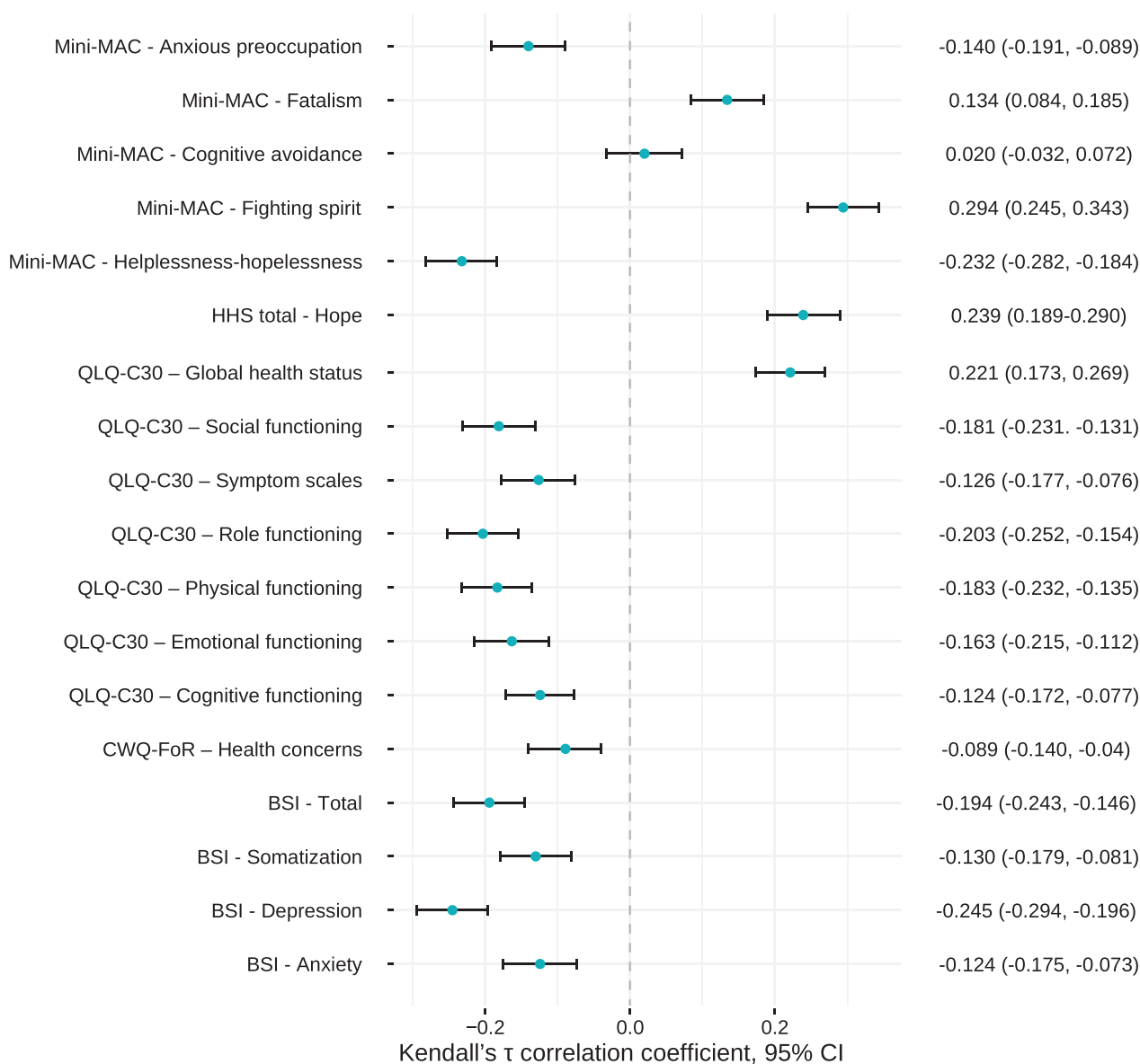


Figure 4. Kendall's τ correlation coefficients between the belief in curability and different scores. Abbreviations: BSI, Brief Symptom Inventory-18; CWQ-FoR, Cancer worry (for health) questionnaire; HHS, Herth Hope Scale; Mini-MAC, Mini-Mental Adjustment to Cancer Scale; QLQ-C30, EORTC Core Quality of Life questionnaire; see questionnaires in [Supplementary material](#). Interpretation of higher scores: QLQ-C30 global scale, higher level of QoL; for other QLQ-C30 scales, greater symptom burden or function impairment.

ethical treatment decision-making. Furthermore, it is noteworthy that patients' awareness of prognosis may increase over time during cancer treatment, which could affect their interest in certain therapies, such as after learning about tumor progression.

Taking into account these limitations, our study suggests that misunderstandings regarding prognosis remain common, have repercussions on the patient's mood, and condition-informed decision-making. Ethical and psychological considerations guide decision-making in a trade-off in which for some to gain autonomy, while others lose in QoL and mood. Each person's specific circumstances must be understood to gauge the consequences of gain or loss of information on a case-by-case basis.

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Ethics Statement

NEOetic study was approved by the Research Ethics Committee of the Principality of Asturias (May 17, 2019) and by the AEMPS (May 8, 2019). The studies have been performed in accordance with the ethical standards of the 1964 Declaration of Helsinki and its later amendments. This study is an observational, non-interventionist trial. Signed informed

consent was obtained from all patients. Informed consent and approval by the national competent authorities including permission for publication and diffusion of the data were obtained.

Conflict of Interest

Alberto Carmona-Bayonas reported travel grants from Ipsen Spain. The other authors indicated no financial relationships.

Author Contributions

Conception/design: A.C.-B., A.R.-G., T.G.-G., C.C., P.J.-F. Provision of study material or patients: All authors. Collection and/or assembly of data: All authors. Data analysis and interpretation: A.C.-B., A.R.-G., T.G.-G., C.C., P.J.-F. Manuscript writing: A.C.-B., A.R.-G., T.G.-G., C.C., P.J.-F. Final approval of manuscript: All authors.

Data Availability

Statistical analyses were performed using R v4.05 statistical software, including the rms library. Patients are identified by an encrypted code only known by the local researcher. The code is available in the [Supplementary material](#). The data underlying this article will be shared on reasonable request to the corresponding author.

Supplementary Material

Supplementary material is available at *The Oncologist* online.

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