Effects of prognostic communication strategies on prognostic perceptions, treatment decisions and end-of-life anticipation in advanced cancer: an experimental study among analogue patients

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Original Article

Effects of Prognostic Communication Strategies on Prognostic Perceptions, Treatment Decisions and End-Of-Life Anticipation in Advanced Cancer: An Experimental Study among Analogue Patients

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Abstract

Context. Evidence-based guidance for oncologists on how to communicate prognosis is scarce.

Objectives. To investigate the effects of prognostic communication strategies (prognostic disclosure *vs.* communication of unpredictability *vs.* non-disclosure; standard *vs.* standard and best-case *vs.* standard, best- and worst-case survival scenarios; numerical *vs.* word-based estimates) on prognostic perceptions, treatment decision-making and end-of-life anticipation in advanced cancer.

Methods. This experimental study used eight videos of a scripted oncological consultation, varying only in prognostic communication strategies. Cancer-naive individuals, who imagined being the depicted patient, completed surveys before and after watching one video ($n = 1036$).

Results. Individuals generally perceived dying within 1 year as more likely after prognostic disclosure, compared to communication of unpredictability or non-disclosure ($P < 0.001$), and after numerical versus word-based estimates ($P < 0.001$). Individuals felt better informed about prognosis to decide about treatment after prognostic disclosure, compared to communication of unpredictability or non-disclosure ($P < 0.001$); after communication of unpredictability versus non-disclosure ($P < 0.001$); and after numerical versus word-based estimates ($P = 0.017$). Chemotherapy was more often favored after prognostic disclosure versus non-disclosure ($P = 0.010$), but less often after numerical versus word-based estimates ($P < 0.001$). Individuals felt more certain about the treatment decision after prognostic disclosure, compared to communication of unpredictability or non-disclosure ($P < 0.001$). Effects of different survival scenarios were absent. No effects on end-of-life anticipation were observed. Evidence for moderating individual characteristics was limited.

Conclusion. *If* and *how* oncologists discuss prognosis can influence how individuals perceive prognosis, which treatment they prefer, and how they feel about treatment decisions. Communicating numerical estimates may stimulate prognostic understanding and informed treatment decision-making. J Pain Symptom Manage 2024;67:478−489.

Key Words

Prognosis, neoplasms, communication, physician-patient relations, medical decision-making, end-of-life

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Key Message

This experimental video-vignette study in advanced cancer showed that *if* and *how* oncologists communicate prognosis influences how individuals perceive prognosis, whether they prefer chemotherapy, and how they feel about treatment decisions. Disclosing prognosis, and using numerical versus word-based estimates specifically, stimulates prognostic understanding and informed treatment decision-making.

Introduction

Information about prognosis facilitates informed treatment decision-making and end-of-life preparation for patients with advanced cancer.[1–3] Most patients want to know prognosis, yet literature shows a high prevalence of inaccurate prognostic perceptions.[4–11] Effective physician-patient communication is an important prerequisite for promoting prognostic understanding.[12] However, oncologists often experience difficulty with prognostic disclosure and, to-date, evidence-based guidance on how to best communicate prognosis is scarce.[13–20]

To optimize prognostic communication, we need to understand the effects of oncologists' messages. According to observational studies, oncologists do not standardly disclose prognosis and often express that life expectancy cannot be foretold.[21,22] There is some evidence that prognostic non-disclosure may contribute to inaccurate prognostic perceptions, but the effects of disclosing unpredictability of prognosis are unknown.[23–27] Besides the aforementioned *types* of disclosure, it is conceivable that the *content* of oncologists' messages impacts patients.[28] Observational research suggests that oncologists commonly provide best-case scenarios for survival and use imprecise language (e.g., "months to years").[21,22,29–31] These expressions may leave room for patients' hope, but may also lead to overestimation of survival.[23,32–34] In contrast, worst-case survival scenarios and/or numerical estimates (e.g., median overall survival) are presumed to improve patients' prognostic understanding and help planning the future.[32,35] While literature gives warning that suboptimal prognostic communication possibly promotes administration of aggressive medical interventions and could hamper timely end-of-life care,[23,26,36–45] the effects of oncologists' messages on patients' treatment decision-making and anticipation of death remain uninvestigated.

Effects of the *type* and *content* of disclosure of prognosis may depend on patients' background or personal characteristics, like their education, coping style or uncertainty tolerance, and perhaps also on their preferences for participating in treatment decision-making and striving for life extension.[32,34,46–51] Evidence for moderating characteristics is limited, although it may help oncologists to effectively tailor prognostic communication to individuals. Overall, existing studies lack scientific rigor and clinical recommendations are predominantly expert opinion-based.[2,12] Hence, we aimed to scrutinize the independent, causal effects of various prognostic communication strategies on prognostic perceptions (perceived likelihood of dying from cancer within 1 year from now with and without chemotherapy), treatment decision-making (perceived sufficiency of prognostic information to decide about treatment, the treatment decision itself and certainty about the treatment decision) and end-of-life anticipation (preparation for the end of life and planning for the future) in the advanced cancer setting, i.e.:

1. The *type* of disclosure: prognostic disclosure *vs.* communication of unpredictability *vs.* non-disclosure.
2. The *content* of disclosure: *framing* (standard *vs.* standard and best-case *vs.* standard, best- and worst-case survival scenarios) and *precision* (numerical *vs.* word-based estimates) of prognosis.
3. The influence of individual characteristics (i.e., background and personal characteristics; patient preferences) on effects of the *type* and *content* of disclosure of prognosis.

Methods

Study Design

The current paper reports on one of two sets of planned analyses on data collected in a randomized controlled experimental study, using video-vignettes of a simulated consultation. We included analogue patients (APs) as proxies for patients from the general population. This validated design is considered appropriate when manipulating communication in reality is considered unethical.[52–59] In our video-vignettes, professional actors portrayed a male patient with metastatic esophageal cancer, his daughter and a female oncologist, having a scripted conversation about treatment options with and without chemotherapy.

Communication was standardized, yet the *type* and *content* of disclosure of prognosis were systematically manipulated. Fig. S1 (Supplementary Material) illustrates manipulations; Table 1 presents all conditions. We used a parallel group design to test the *type* of disclosure: prognostic disclosure *vs.* communication of unpredictability *vs.* non-disclosure. We further manipulated the *content* of conditions with prognostic disclosure in a balanced factorial design, combining two factors: *framing* with three levels (standard *vs.* standard and best-case *vs.* standard, best- and worst-case survival

Table 1
Overview of Conditions, Including Number of Participants

Manipulation: *Type* of Disclosure of Prognosis				*n*	Duration of Total Video and Variable Content (Min.Sec)[a]
Parallel group design	Condition 1: Non-disclosure				208
	Condition 2: Communication of unpredictability				210
	Conditions 3–8: Prognostic disclosure				618
		Manipulation: *content* of disclosure of prognosis			
		Factor: framing of prognosis (3 levels)	**Factor: precision of prognosis** (2 levels)		
Balanced factorial 3 × 2 design	Condition 3	Standard scenarios	Numerical estimates	103	9.07 (1.44)
	Condition 4	Standard + best-case scenarios	Numerical estimates	103	9.42 (2.19)
	Condition 5	Standard + best-case + worst-case scenarios	Numerical estimates	100	10.20 (2.57)
	Condition 6	Standard scenarios	Word-based estimates	104	8.49 (1.26)
	Condition 7	Standard + best-case scenarios	Word-based estimates	103	9.19 (1.56)
	Condition 8	Standard + best-case + worst-case scenarios	Word-based estimates	105	9.52 (2.29)

[a]The minutes and seconds between parentheses present the time of the video that includes variable content (i.e., manipulated prognostic communication). Abbreviations: *n*: sample size.

scenarios) and *precision* with two levels (numerical *vs.* word-based estimates of survival). Aforementioned manipulations resulted in eight conditions in total.

Numerical estimates were based on published clinical trial data. We adopted the median overall survival for metastatic esophageal cancer with and without chemotherapy as standard scenarios, and 90th and 10th percentiles of these curves as best- and worst-case scenarios, respectively.[60,61]

Sample and Procedure

Individuals were eligible for participation if they were ≥ 18 years and had Dutch proficiency, internet access, no audiovisual impairments and no self-reported (previous) cancer diagnosis. We selected cancer-naive individuals to prevent confounding influences of real patients' prior personal experiences as well as burdening real patients with reliving a bad news conversation. An independent research agency (Flycatcher Internet Research) handled the recruitment of APs and data collection. The agency stratified eligible APs in their panel by age (5-year interval groups), sex and education before starting recruitment to achieve a sample representative of the target population, i.e., Dutch patients with stage IV cancer. To this end, data from Netherlands Cancer Registry and Statistics Netherlands were used.

The research agency sent baseline surveys (T0) to the stratified sample in a private, secure, online platform. After ≤ 3 weeks, outcomes surveys (T1) were sent to APs who provided informed consent and completed T0. APs answered questions immediately before (T1, pre-video) and after (T1, post-video) watching one randomly assigned video. APs were allocated to one condition upon starting the video through blocked randomization with a predetermined, fixed size and sequence (1122345678). For conditions 1 and 2, an allocation ratio of 2:1 was used to allow detection of effects of the *type* of disclosure of prognosis. The agency compensated APs with online credits and performed data validity checks.

The institutional medical ethics review board waived formal approval (W20_347 # 20.385app).

Development and Piloting

Video-vignettes were developed by medical communication researchers and oncologists, following published recommendations.[57,58] The script (Table S1, Supplementary Material) was built on existing audio-recordings of oncological consultations, video-vignette studies and communication guidelines.[21,22,41,55,62] Test-videos were created and piloted before recording final videos ($M_{duration}$ = 9.3 min/sec; range = 7.23−10.20 min/sec). Researchers specialized in video-vignettes, oncologists, cancer patients and cancer-naive individuals evaluated the (medical) content, comprehensibility,

emotional load, credibility, manipulation success and overall quality of the script, test-videos and final videos.

Surveys were piloted among cancer-naive individuals and pre-tested by the research agency. To allow evaluation of study procedures, a subset of eligible APs participated during a *test phase* (April 2021; n = 41/79 completes). The study proved feasible; only the survey instructions required minor adjustments. Hence, we continued with the *study phase* (May 2021; n = 1003/1828 completes). Fig. 1 illustrates all aforementioned steps. Table S2 (Supplementary Material) provides details about development procedures.

Measures

See Table S3 (Supplementary Material) for details about the study's measures, including example items and Cronbach's alphas.

Individual Characteristics. We assessed APs' background characteristics (T0): age, sex, religion, education, knowledge of cancer and experience with oncological consultations for a loved one. Considering personal characteristics, we measured active coping (Utrecht Coping List subscale[63]) and uncertainty tolerance (Tolerance for Ambiguity[64]). After instructing APs to imagine being diagnosed with cancer, we assessed patient preferences: prognostic information preference,[9] preferred role in medical decision-making (Control Preference Scale[65]) and attitude toward striving for length of life (Quality Quantity Questionnaire subscale[66]).

Validity Checks. To check if manipulations were perceived as intended (T1, post-video), we measured APs' perceptions of the *type* and *content* of disclosure of prognosis. Additionally, we assessed video engagement (shortened Video Engagement Scale, VES[67]) and perceived video realism.[52,54,57,67–73] The shortened VES entails a screener item (i.e., "I was fully concentrated on the video while watching"; 1–7, "totally disagree" to "totally agree"), excluding APs scoring ≤ 2 from analyses.[67]

Outcomes. For this analysis, we included post-video measures only. Items were self-developed, yet built on prior research, and instructed APs to imagine being the depicted patient.

Primary outcomes encompassed APs' *prognostic perceptions* (T1, post-video): "How likely is it that you will die from cancer within 1 year from now if you receive treatment (1) with and (2) without chemotherapy?" (0–100, "extremely unlikely" to "extremely likely").[74] These items were proxies for prognostic understanding. Given the median overall survival of 11 months for metastatic esophageal cancer treated with chemotherapy only, and patients' often optimistically biased prognostic perceptions,[4,75,76] we expected APs with better prognostic understanding to perceive dying from cancer as more likely than APs with poorer understanding. Secondary outcomes encompassed items on APs' *treatment decision-making* (T1, post-video): perceived sufficiency of prognostic information to decide about treatment, the treatment decision itself (chemotherapy/no

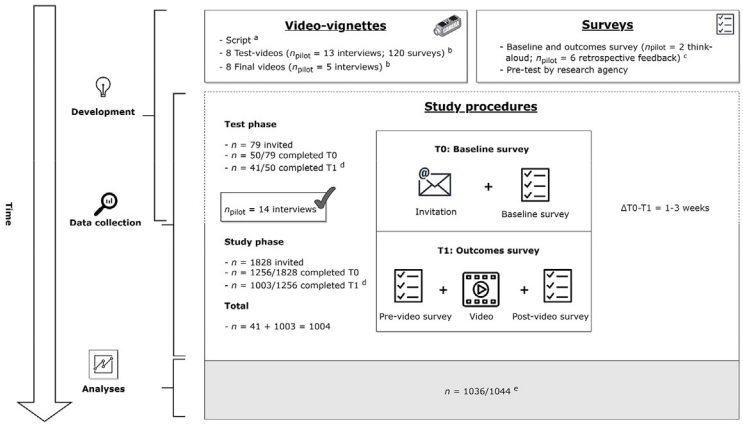

Fig. 1. Overview of phases and procedures of this study. [a]Based on existing audio-recorded oncological consultations, video-vignette studies and prognostic communication guidelines. [b]Interviews were conducted among cancer patients (each watching 2 videos) and surveys among cancer-naive individuals (each watching 1 video). [c]Based on the content of the video-vignettes. Think-aloud and retrospective feedback procedures were conducted among cancer naive-individuals. [d]n = 29/79 (T0) and n = 9/50 (T1) APs in the *test phase*, and respectively n = 572/1828 (T0) and n = 253/1256 (T1) APs in the *study phase*, were non-responders, drop-outs or non-serious responders. [e]n = 8/1044 APs were excluded from the analyses (scores ≤ 2 on the shortened video engagement scale's screener item, i.e., "I was fully concentrated on the video while watching"; 1–7, "totally disagree" to "totally agree"). Abbreviations: *n*: sample size.

chemotherapy) and certainty about the treatment decision.[69] Other secondary outcomes pertained to APs' *end-of-life anticipation* (T1, post-video): preparation for the end of life (e.g., care preferences, place of death, funeral) and planning for the future.[77]

Statistical Analyses

Power. Following a-priori G*Power analyses (f = 0.125, small-medium size; ANOVA; power 80%; α = 0.05; df = 2), each of six prognostic disclosure conditions required 103 APs to detect main and interaction effects (videos 3−8; balanced factorial design). Communication of unpredictability and non-disclosure conditions each needed 206 APs (videos 1−2; parallel groups). The final sample required $N = 1030$.

Preparatory Analyses. We checked scores for the shortened VES' screener item. Manipulation success was examined by comparing proportions of APs who believed having watched a video with a certain manipulation among APs who truly watched a video with and without this manipulation (Chi2-tests). We examined differences in APs' age, sex and education between all eight conditions (Chi^2-tests, one-way ANOVAs).

Primary Analyses. To test the independent effects of the *type* (prognostic disclosure *vs.* communication of unpredictability *vs.* non-disclosure) and *content* (*framing* and *precision*) of disclosure of prognosis, we conducted separate multivariate analyses of variance (MANOVAs). For simultaneous significance testing of multiple outcomes, we clustered outcomes that were theoretically coherent and statistically correlated ($r < 0.9$).[78] This resulted in three clusters: (1) *prognostic perceptions* (perceived likelihood of dying from cancer within 1 year from now with and without chemotherapy; $r = 0.5$); (2) *treatment decision-making* (perceived sufficiency of prognostic information to decide about treatment, certainty about treatment decision; r = 0.4); and (3) *end-of-life anticipation* (preparation for the end of life, planning for the future; r = -0.3). We used logistic regressions to analyze effects on the treatment decision itself (binary).

To examine moderators, we added interaction terms of the *type* of disclosure, *framing* and *precision* of prognosis with APs' individual characteristics. We selected unique interaction terms for each cluster of outcomes, using predefined hypotheses (see Tables S4 and S5), to avoid multiple testing. For continuous moderators, we performed mean centering.

We determined significance (α = 0.05) of MANOVAs' omnibus tests with Hotelling's Trace test statistic, given its presumed robustness for violation of multivariate normality and homogeneity of covariance matrices.[79] If significant, we inspected MANOVAs' univariate follow-up tests, performed post-hoc analyses where needed and reported statistics for models including moderators and interactions. Analyses were performed with IBM SPSS Statistics 26.

Results

Of 1044 APs with complete data (response rate 55%; Fig. S2, Supplementary Material), 8 were excluded with the screener item.[67] Of 1036 APs in the analyses, 60% were male. Mean age was 66 years. Most APs (63%) indicated their cancer knowledge as average (Table 2). Video engagement and perceived video realism were satisfactory ($M_{\text{Video engagement}} = 5.3$, $M_{\text{Video realism}} = 5.9$). Manipulations were successful, although *framing* was less clearly perceived by APs than other manipulations (Table S6). Table 3 presents descriptives for the hypothesized moderators (see Tables S4 and S5, Supplementary Material), validity checks and outcomes, stratified by manipulation. APs' age, sex or education did not significantly differ across conditions.

The Type of Disclosure

Tables S7−S10 demonstrate all results. We found a significant overall effect of the type of disclosure on *prognostic perceptions* (F [4, 2062] = 22.455, $p_{\text{omnibus}} <$ 0.001, Hotelling's Trace = 0.087). Univariate results showed that APs perceived dying from cancer within 1 year *with* chemotherapy (F [2, 1033] = 14.737, $P <$ 0.001) and *without* chemotherapy (F [2, 1033] = 44.052, $P < 0.001$) as more likely after prognostic disclosure, compared to communication of unpredictability or non-disclosure.

We found a significant overall effect of the type of disclosure on *treatment decision-making* (F [4, 2050] = 41.589, $p_{\text{omnibus}} < 0.001$, Hotelling's Trace = 0.162). Univariate results showed that APs felt better *informed about prognosis* to decide about treatment (F [2, 1027] = 83.135, $P < 0.001$) after prognostic disclosure, compared to communication of unpredictability or non-disclosure, and after communication of unpredictability compared to non-disclosure. Also, APs felt more *certain* about the treatment decision (F [2, 1027] = 9.647, $P < 0.001$) after prognostic disclosure, compared to communication of unpredictability or non-disclosure. We found a significant moderating effect of the *preferred role in medical decision-making* (F [4, 2050] = 2.893, p_{omnibus} = 0.021, Hotelling's Trace = 0.011), which opposed our hypotheses. The more APs preferred the oncologist to decide, the more *uncertain* they felt about the treatment decision after non-disclosure, compared to prognostic disclosure or communication of unpredictability (interaction: F [2, 1027] = 4.188, P = 0.015). APs' *uncertainty tolerance* did not moderate effects.

Table 2
Background Characteristics of the Total Sample

APs' Characteristics	Total Sample ($n = 1036$)
Sex (male), % (n)	60.1 (623)
Age (years), mean ± SD	65.77 ± 10.85
Education, % (n)[a]	
Low	29.2 (303)
Medium	42.0 (435)
High	28.8 (298)
Religion, % (n)	
Christianity	44.3 (459)
Other	6.2 (64)
None	49.5 (513)
Knowledge of cancer, % (n)	
None or very little	4.3 (45)
Little	24.9 (258)
Average	63.1 (654)
Much	7.1 (74)
Very much	0.5 (5)
Experience with oncological consultations for a loved one (yes), % (n)	36.4 (377)
Active coping (UCL subscale, 7–28), mean ± SD	20.01 ± 3.31
Uncertainty tolerance (TFA, 7–42), mean ± SD	24.53 ± 5.02
Prognostic information preference (yes), % (n)	90.7 (940)
Preferred role in medical decision-making (CPS, 1–5), mean ± SD[b]	2.63 ± 0.83
Attitude toward striving for length of life (QQQ subscale, 4–20), mean ± SD	11.76 ± 3.31
Video engagement (shortened VES, 1–7), mean ± SD	5.31 ± 1.15
Perceived video realism (1–7), mean ± SD	5.90 ± 1.04

[a]Low vocational education; medium level vocational education; high vocational or academic education.
[b]Lower scores indicate preferring to make the final selection about which treatment to receive by yourself; higher scores indicate preferring to leave all decisions regarding treatment up to the oncologist.
Abbreviations: AP: analogue patient; *n*: sample size; SD: standard deviation; UCL: Utrecht Coping List; TFA: Tolerance for Ambiguity; CPS: Control Preferences Scale; QQQ: Quality Quantity Questionnaire; VES: Video Engagement Scale.

APs were significantly more likely to *choose chemotherapy* (OR = 1.599, 95%CI [1.118; 2.288], $P = 0.010$) after prognostic disclosure compared to non-disclosure. APs' *attitude toward striving for length of life* did not moderate effects.

We found no significant overall effect of the type of disclosure on *end-of-life anticipation*, nor significant moderating effects of APs' *active coping* or *attitude toward striving for length of life*.

The Content of Disclosure

There was no significant overall effect of framing on *prognostic perceptions*. However, we found a significant overall effect of the precision of prognosis (F [2, 605] = 24.812, $p_{\text{omnibus}} < 0.001$, Hotelling's Trace = 0.082). Univariate results showed that APs perceived dying from cancer within 1 year *with* chemotherapy (F [1, 606] = 47.371, $P < 0.001$) and *without* chemotherapy (F [1, 606] = 14.993, $P < 0.001$) as more likely after numerical instead of word-based estimates. APs' *education* did not moderate effects.

There was no significant overall effect of framing on *treatment decision-making*. However, there was a significant overall effect of the precision of prognosis (F [2, 609] = 3.059, $p_{\text{omnibus}} = 0.048$, Hotelling's Trace = 0.010). Univariate results showed that APs felt better *informed about prognosis* to decide about treatment (F [1, 610] = 5.778, $P = 0.017$) after numerical instead of word-based estimates. APs' *uncertainty tolerance* did not moderate effects.

There was no significant overall effect of framing on the treatment decision itself. However, APs were significantly less likely to *choose chemotherapy* (OR = 0.460, 95%CI [0.316; 0.670], $P < 0.001$) after numerical instead of word-based estimates. Post-hoc analyses revealed that, compared to non-disclosure, prognostic disclosure did not lead to a preference for chemotherapy when giving numerical estimates; only word-based estimates did. APs' *attitude toward striving for length of life* did not moderate effects.

We found no significant overall effects of framing or the precision of prognosis on *end-of-life anticipation*, nor significant moderating effects of APs' *active coping* or *attitude toward striving for length of life*.

Discussion

This study demonstrated that individuals perceive death from cancer within 1 year as more likely after prognostic disclosure, compared to communication of unpredictability or non-disclosure, and after numerical versus word-based estimates. Individuals felt better informed to decide about treatment after prognostic disclosure, and after receiving numbers specifically. This effect holds for oncologists explaining the unpredictability of prognosis, rather than not mentioning prognosis. Additionally, individuals were more likely to choose chemotherapy and felt more certain about this decision after prognostic disclosure versus non-disclosure, yet they less often favored

Table 3
Hypothesized Moderators, Validity Checks and Outcomes (Stratified by Manipulation)

	Non-Disclosure (Video 1) $n = 208$	Communication of Unpredictability (Video 2) $n = 210$	Prognostic Disclosure (Videos 3–8) $n = 618$	Prognostic Disclosure With Standard Scenarios (Videos 3 & 6) $n = 207$	Prognostic Disclosure With Standard and Best-Case Scenarios (Videos 4 & 7) $n = 206$	Prognostic Disclosure With Standard, Best- and Worst-Case Scenarios (Videos 5 & 8) $n = 205$	Prognostic Disclosure With Numerical Estimates (Videos 3–5) $n = 306$	Prognostic Disclosure With Word-Based Estimates (Videos 6–8) $n = 312$
Hypothesized moderators								
Education, % (n)[a]								
Low	26.4 (55)	28.1 (59)	30.6 (189)	31.4 (65)	33.5 (69)	26.8 (55)	27.5 (84)	33.7 (105)
Medium	43.3 (90)	45.7 (96)	40.3 (249)	41.1 (85)	39.3 (81)	40.5 (83)	40.5 (124)	40.1 (125)
High	30.3 (63)	26.2 (55)	29.1 (180)	27.5 (57)	27.2 (56)	32.7 (67)	32.0 (98)	26.3 (82)
Active coping (UCL subscale, 7–28), mean ± SD	20.15 ± 3.26	19.49 ± 3.36	20.14 ± 3.29	19.78 ± 3.34	20.36 ± 3.26	20.27 ± 3.26	20.28 ± 3.45	20.00 ± 3.13
Uncertainty tolerance (TFA, 7–42), mean ± SD	24.34 ± 5.20	24.49 ± 4.86	24.61 ± 5.01	24.68 ± 4.86	24.61 ± 4.92	24.56 ± 5.26	24.85 ± 5.25	24.38 ± 4.76
Preferred role in medical decision-making (CPS, 1–5), mean ± SD[b]	2.57 ± 0.78	2.77 ± 0.88	2.60 ± 0.82	2.57 ± 0.83	2.62 ± 0.77	2.60 ± 0.87	2.58 ± 0.81	2.61 ± 0.84
Attitude toward striving for length of life (QQQ subscale, 4–20), mean ± SD	11.60 ± 3.29	12.23 ± 3.22	11.65 ± 3.34	11.61 ± 3.33	11.90 ± 3.17	11.43 ± 3.52	11.53 ± 3.30	11.76 ± 3.38
Validity checks								
Video engagement (shortened VES, 1–7), mean ± SD	5.23 ± 1.18	5.29 ± 1.16	5.35 ± 1.14	5.27 ± 1.15	5.34 ± 1.18	5.45 ± 1.09	5.35 ± 1.15	5.35 ± 1.13
Perceived video realism (1–7), mean ± SD	5.86 ± 0.99	5.83 ± 1.17	5.94 ± 1.00	5.81 ± 1.06	5.92 ± 0.97	6.09 ± 0.95	5.95 ± 0.99	5.92 ± 1.01
Outcomes								
Perceived likelihood of dying from cancer ≤ 1 year with chemotherapy (0–100) , mean ± SD	54.42 ± 17.26	54.59 ± 16.89	60.71 ± 18.67	63.14 ± 18.91	58.13 ± 19.63	60.84 ± 17.12	65.42 ± 19.35	56.09 ± 16.76
Perceived likelihood of dying from cancer ≤ 1 year without chemotherapy (0–100) , mean ± SD	67.72 ± 18.85	67.65 ± 18.89	79.49 ± 20.49	81.08 ± 20.78	77.83 ± 21.15	79.55 ± 19.48	82.60 ± 19.54	76.44 ± 20.98
Perceived sufficiency of prognostic information to decide about treatment (1–5), mean ± SD	2.71 ± 1.21	3.10 ± 1.12	3.73 ± 0.97	3.70 ± 1.03	3.77 ± 0.92	3.72 ± 0.97	3.83 ± 1.01	3.63 ± 0.93
Treatment decision (chemotherapy), % (n)	43.3 (90)	53.3 (112)	52.8 (326)	48.8 (101)	55.8 (115)	53.7 (110)	44.8 (137)	60.6 (189)
Certainty about treatment decision (0–10), mean ± SD	6.20 ± 2.71	6.48 ± 2.19	6.94 ± 2.23	6.65 ± 2.44	7.03 ± 2.05	7.14 ± 2.18	7.08 ± 2.21	6.81 ± 2.25
Preparation for the EOL (1–6), mean ± SD	4.78 ± 1.05	4.76 ± 0.91	4.80 ± 1.02	4.77 ± 0.94	4.76 ± 1.09	4.86 ± 1.04	4.81 ± 1.00	4.79 ± 1.04
Planning for the future (1–4), mean ± SD	2.12 ± 0.80	2.07 ± 0.79	2.05 ± 0.71	2.07 ± 0.75	2.04 ± 0.70	2.03 ± 0.68	2.03 ± 0.65	2.06 ± 0.77

[a]Low vocational education; medium level vocational education; high vocational or academic education.
[b]Lower scores indicate preferring to make the final selection about which treatment to receive by yourself; higher scores indicate preferring to leave all decisions regarding treatment up to the oncologist.
Abbreviations: n: sample size; SD: standard deviation; UCL: Utrecht Coping List; TFA: Tolerance for Ambiguity; CPS: Control Preferences Scale; QQQ: Quality Quantity Questionnaire; VES: Video Engagement Scale; EOL: end of life.

chemotherapy after numerical instead of word-based estimates.

Our results imply that disclosing (numerical) prognostic estimates improves understanding of a poor prognosis, considering that patients often overestimate survival.[80] Notably, this study contradicts literature suggesting that prognostic disclosure may discourage choosing disease-oriented, life prolonging treatment.[6,62] We speculate that prognostic information makes people aware of impending death and, in reaction, they desire chemotherapy to extend life.[44] Especially when making high-stakes decisions in the face of death, the anticipated regret related to "doing nothing" could motivate a preference for chemotherapy.[81,82] Alternatively, the balance between pros and cons of treatment may have been more favorable in prognostic disclosure conditions, as *only* these conditions specified survival benefits, while *all* conditions specified side effects. It is remarkable that, compared to non-disclosure, prognostic disclosure did not lead to a preference for chemotherapy when the oncologist used numbers; only words did. Maybe, gaining "some time" with chemotherapy versus "6 months" is perceived as more worthwhile, because verbal probability phrases allow various interpretations.[83,84]

This study showed that prognostic disclosure generally yields more certainty about the treatment decision than communication of unpredictability or non-disclosure. Opposing our hypothesis, non-disclosure led to more uncertainty about the treatment decision among individuals preferring the oncologist to decide. Possibly, those who do not desire involvement in medical decision-making struggle more, if being confronted with a choice when information is lacking. Correspondingly, previous research suggests that patients preferring a passive rather than active role more often suffer distress, and discordance between patients' preferred and actual involvement in decision-making may induce decisional regret and dissatisfaction.[85,86]

Prognostic communication strategies do not seem to differentially affect end-of-life anticipation. Mean scores show that, overall, individuals intended to make arrangements in case of passing away and would only plan for a limited timeframe, i.e., the forthcoming months (Table 3). In all conditions, the oncologist mentioned the incurability of the disease and the treatment's palliative intent. Potentially, this message intrinsically conveys the life-threatening nature of metastatic cancer. Since items on end-of-life anticipation only captured *intended* future behavior, additional research should investigate how these outcomes relate to *actual* behavior.

Disclosure of best- and/or worst-case survival scenarios lacked effects on all outcomes. Perhaps, individuals were less able to process this information on top of standard scenarios, because of evoked emotions or limits to the brain's information processing capacity.[87–89] Importantly, 60% of participants reported to recall additional scenarios while watching videos without such communication (Table S6). Maybe, our standard scenarios inherently comprised best- and worst-case information (e.g., "one-half of people die within 11 months, the other half of people live longer than 11 months"). Although—in theory, there is much to say for communicating prognosis in different scenarios, we cannot confirm it yields better prognostic understanding or different decision-making behavior.

Similarly, we found no evidence that the effects of prognostic communication depend on individuals' education, uncertainty tolerance, active coping or attitude toward striving for length of life. Hypothetically, this implies that our findings apply to most patients, or, that we omitted individual characteristics that moderate effects in reality, such as patients' physical condition. Future studies should further unravel how prognostic communication differentially impacts individual patients.

Limitations of our study firstly involve the restricted ecological validity, as watching a video-vignette clearly does not equal being in an actual consultation. Second, we included cancer-naive individuals, among whom the physical, emotional and existential burdens of having advanced cancer were not present. Although literature demonstrates that cancer-naive individuals who imagine having cancer are valid proxies for real patients,[52,59] and scores for perceived video realism and video engagement were satisfactory in the current study, the inclusion of real patients might yield different responses. That is, patients living with a life-threatening disease may interpret prognostic information differently, as they need to reconcile their own existence with the unavoidable state of nonexistence upon death. While we recognize that extrapolation of findings to clinical practice is speculative, we feel that manipulation of prognostic communication in a more ecologically valid would not be ethically justified without at least some substantiation from experimental research with APs, especially since existing evidence for this hard-to-study topic is still at a preliminary stage. Future research can build on this video-vignette experiment through replication among individuals with a cancer diagnosis, at risk of cancer or with a history of cancer. Using more ecologically valid methods, virtual reality technologies allow systematic testing of prognostic communication elements within realistic settings. Experiments may ultimately inform an intervention on prognostic communication skills for oncologists; its effectiveness could be tested in an RCT with simulation patients, or with real patients to enhance real-world impact. Researchers may audiotape physician-patient conversations to analyze whether the prognostic communication skills taught in the intervention are endorsed, and use surveys to assess patient outcomes. A

third limitation involves the unknown validity of our outcome measures and clinical relevance of observed differences. Considering prognostic perceptions specifically, one could question if an increase in perceived likelihood of dying from cancer truly reflects better prognostic *understanding*. The term prognostic *understanding* is moreover debatable, as it only refers to the cognitive comprehension of prognostic information, while psychological processes may also shape patients' prognostic perceptions (e.g., emotions, coping). Fourth, this paper addressed the instrumental function of prognostic communication only, while its emotional function is essential too.[90] A last limitation involves the study's Dutch setting, possibly restricting generalizability of findings. Our data moreover lack demographic information like race, ethnicity or immigration status, which is especially important when contextualizing findings within a multi-cultural society. Strengths involve our large, stratified sample, thoroughly pilot-tested study materials and RCT design, which allows causal conclusions.

To conclude, oncologists should be aware that *if* and *how* they discuss prognosis may affect their patients. Our experimental study indicates that prognostic communication may not only impact how individuals perceive prognosis, but also if they want chemotherapy and how they feel about this treatment decision. Numerical estimates specifically can stimulate prognostic understanding and informed decision-making. When survival data are unavailable, transparency about the limits of medical knowledge seems more helpful than not discussing prognosis at all. Still, it remains pivotal to firstly explore patients' preferences and readiness for prognostic information.[12]

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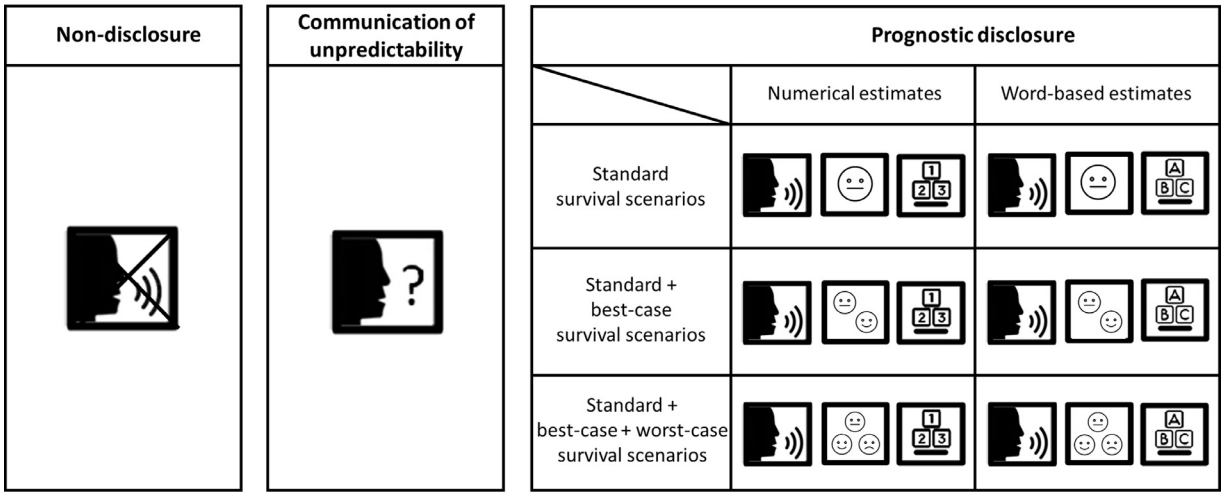

Fig. S1. Overview of manipulations of prognostic communication.

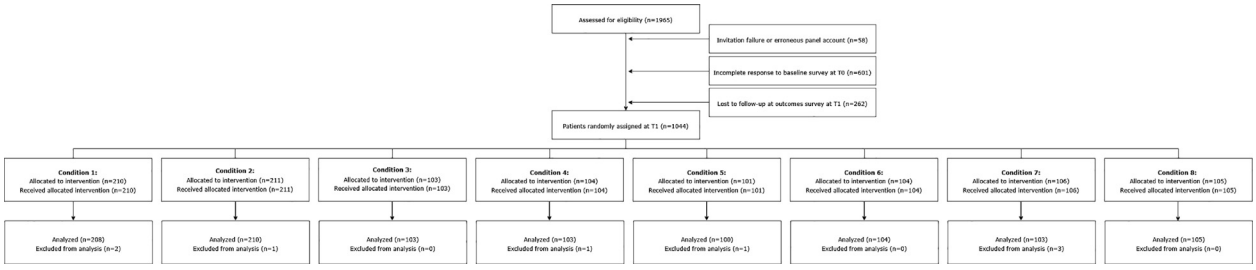

Fig. S2. CONSORT diagram.

Table S1
Full Baseline-Script and Supplementary Scripts for Each Manipulation

Script	Scene *Italicized:* Non-Verbal Actions Underlined: Variations in Prognostic Communication
Baseline-script (hospital waiting room)	**SCENE 1, part 1** (regular camera perspective, focus on waiting room) *The hospital waiting room is empty. Mr. van Dijk and his daughter walk into the waiting room and sit down. They wait for him to be called in by the oncologist. It is apparent that Mr. van Dijk is nervous, but he remains calm. Mr. van Dijk and his daughter are silent until the oncologist enters the waiting room.* Voice over: "This is Mr. van Dijk with his daughter. Mr. van Dijk has been suffering from a sense of fullness, less appetite for food, dizziness and fatigue for some time now. After several examinations in the hospital, he received very bad news. Cancer had been discovered in his esophagus, with metastases to his lungs. The physician has told Mr. van Dijk that it is not possible for him to get better. Today, he has an appointment with the oncologist; the specialist in treating cancer with medicine. She will discuss the treatment options for his esophageal cancer. You are now going to watch a part of this conversation. While watching, try to imagine that you are the patient. How would you feel if you were in Mr. van Dijk's shoes?" **SCENE 1, part 2** (regular camera perspective, focus on the consultation room's door) *The oncologist opens the door of the consultation room, enters the waiting room and calls in Mr. van Dijk.* Oncologist: "Mr. van Dijk, come on in." *Mr. van Dijk and his daughter walk toward the consultation room. The oncologist gestures for them to enter the consultation room.*
Baseline-script (hospital consultation room)	**SCENE 2** (regular camera perspective, focus on patient and his daughter as they walk into the consultation room and sit down) *The oncologist, Mr. van Dijk and his daughter enter the consultation room.* Oncologist: "Please, take a seat." Patient: "Yes, thank you." *The oncologist takes a seat behind the desk. Mr. van Dijk and his daughter sit opposite to her. He rubs his upper legs with his hands slightly nervously.* **SCENE 3** (over the shoulder camera perspective, alternating focus on the patient and his daughter or on the oncologist, dependent on the speaker) Oncologist: "So, it's good to have you here together." *The oncologist looks at the patient and his daughter when she starts the conversation.* "I am dr. Steensma, one of the oncologists in this hospital. You're sitting here with me today, because of the bad news you got last week about the esophageal cancer." *The oncologist's facial expression is serious, yet understanding. She shifts her gaze to the patient.* "How are you now, how are you feeling?" Patient: "Yeah. . . Well, I'm doing okay. . . Although the dizziness is quite bothersome. And I'm so tired. . . Sometimes, even a short walk is too much. . ." *The patient pauses for a moment.* "You know, it's hard for me to wrap my head around it, the diagnosis... But right now, I'm particularly curious about what you're going to tell me." *The oncologist nods understandingly.* Oncologist: "Yes, I understand..." *The oncologist looks at the patient and his daughter when she continues the conversation.* "Well, today we'll broadly discuss what kind of treatments we can offer you. This might be quite a lot of information. But don't worry, we don't have to make any decisions today." *The patient glances at his daughter for a moment and looks back at the oncologist.* Patient: "Okay, yes, yes. . . I'm a bit nervous about it all." *The oncologist nods.* Oncologist: "Yes. . . Well, what we can do for you. . . You should think of it like this: first of all, we'll ensure that you have as little complaints as possible. So, for example, the dizziness you mentioned, we're going to try to do something about that. And besides that, there are essentially two treatment options, each with their own pros and cons. We'll have to discuss these options together to see which one suits your needs best." *The patient and his daughter nod and hum.* Patient: "Okay. . ." *The oncologist looks at the patient, briefly shifts her gaze to his daughter, and looks at the patient again before continuing the conversation.* Oncologist: "The first option is to give chemotherapy; a treatment that focuses on fighting the cancer. This allows us to slow down the growth of the cancer. And, perhaps, it makes the tumors smaller, so they'll cause fewer complaints." *The oncologist pauses for a moment.* "The second option is to forego chemotherapy. Then, you'll only receive treatment for your complaints and not for the cancer itself. We'll focus entirely on your quality of life in that case. If, for example, you experience pain in the future, we will give you medication to relief the pain. But that's something we can further discuss when it happens." Patient (*says this hesitantly*): "Okay, yes, that's fine. . . So, then it's. . . Chemotherapy or not. . ." Oncologist: "Yes, indeed. That's what it comes down to." Daughter: "And. . . How does getting chemotherapy work? What are we supposed to expect?" Oncologist: "Well, when we're discussing chemotherapy for metastatic esophageal cancer... We're talking about treatment with Capox, which is a combination of the medicines Capecitabine and Oxaliplatin, but you can forget those names again. What matters, is that you'll receive these medicines in cycles of 3 weeks. On the first day, you'll receive the medicines via an IV. Besides that, you'll take tablets for 2 weeks. In the third week of the cycle, you'll rest. Do you understand?" *The patient and his daughter nod.* Oncologist: "For a start, we'll do these cycles 3 times in a row. After that, we'll make a scan to see how the cancer reacts; whether the treatment is effective. And, of course, we'll keep a close eye on how you're handling it." Daughter: "Ah, okay. Well, yes, that's good to hear." *The oncologist focuses on the patient again.* Oncologist: "But. . . The chemotherapy cannot cure you; it cannot remove the cancer. . . It can slow down the disease, which gives you the chance to gain more time to live." *The patient and his daughter exchange looks.* Patient: "Yes. . . Okay. . . I get it." *The oncologist's facial expression is understanding and she pauses for a moment, before continuing the conversation.* Oncologist: "You must take this into account. . . We are not sure whether the treatment will work for you in advance. And chemotherapy comes with side effects. You should think of hair loss, nausea, losing weight. . . Your hands and feet may become sore. . . And your fatigue might worsen. So, for example, the long walks you like to take, that may not always be possible. . ." Patient: "Hmm. . . Well. . . That doesn't sound like a good time." Oncologist: "How much it's going to affect you. . . That's different for everyone. But, of course, we'll also keep a close eye on these side effects and we'll try to prevent them. If you want, I can give you an information booklet about the chemotherapy later." Daughter: "Yes, please. . . It's a lot to take in." *The daughter looks at the patient. The oncologist nods.* Oncologist: "Yes. . . So, as I mentioned earlier. . . The first option is to start this chemotherapy. The second option is to refrain from chemotherapy and direct the treatment at your complaints. The advantage of this second option is that you won't experience any side effects and you won't have to visit the hospital as much. The disadvantage is that we're not slowing down the disease, which may cause complaints in the long run. And: we're no longer trying to extend your life." *Silence.* Daughter: "Well." Patient: "Phew. . . Okay, yes. . . That's quite a dilemma. . . I mean, how we should proceed..." Oncologist: "Yes, that's right. It's often difficult for patients to know exactly what they're getting into, what they can expect." *Silence.*

(*Continued*)

Table S1
Continued

Script	Scene *Italicized:* Non-Verbal Actions Underlined: Variations in Prognostic Communication			
Manipulated script (hospital consultation room)	**SCENE 4** (over the shoulder camera perspective, alternating focus on the patient and his daughter or on the oncologist, dependent on the speaker)			
	***Type* of disclosure of prognosis:**			
	Non-disclosure	–		
	Communication of unpredictability	Oncologist: "Look, chemotherapy could potentially extend your life. Then you might wonder... What kind of extension are we talking about, how long do I have?" *Pause.* "The tricky part is. . . I don't have a crystal ball; I can't tell you what your future looks like. How each option turns out. . . That differs from person to person. So, what your life expectancy would be. . . I can't say anything about that. . . I just don't know." *The patient and his daughter nod and hum.*		
	Prognostic disclosure	***Content* of disclosure of prognosis:**		
		Precision of prognosis	**Framing of prognosis**	
		Numerical estimates	Standard scenario	Oncologist: "Look, chemotherapy could potentially extend your life. Then you might wonder... What kind of extension are we talking about, how long do I have?" *Pause.* "The tricky part is. . . I can't tell you what it's like for you personally. . . But I can say what we generally know about the life expectancy of people with your type of cancer. So... What is known about the large group." *The patient and his daughter nod and hum.* Patient: "Okay. . ." Oncologist: "If we focus on the first option, the group that receives chemotherapy... In that case, we usually talk about a median life expectancy of 11 months. By that, we mean that one-half of people die within 11 months, and that the other half of people live longer than 11 months. . ." *The oncologist pauses to give the patient and his daughter room to react.* Patient: "Wow. . ." *The patient looks incredulous and softly shakes his head. His daughter looks at him and puts her hand on his shoulder.*
			Best-case scenario	Optional script: add best-case scenario for treatment with chemotherapy Oncologist: "But. . . You know, I also have to say. . . Sometimes, there are patients who are doing very well, who respond to chemotherapy very well, and can even live on for more than 3 years. There are not many of those, about 10 percent, but such positive stories do exist." Patient: "Okay. . ."
			Worst-case scenario	Optional script: add worst-case scenario for treatment with chemotherapy Oncologist: "However, we also know that. . . And I have to be honest about that. . . There's a similarly small chance that patients deteriorate earlier. In the worst-case, they still die within 2 to 3 months with chemotherapy. That's also possible." *Silence.* Patient: "Gee. . ."
			Standard scenario (continued)	Oncologist: "Yeah. . . Are you still following?" *The patient and his daughter nod.* Oncologist: "If we then consider the second option... So looking at how long the group of people without chemotherapy generally live... In that case, we usually speak of a median life expectancy of 5 months. At that point, as I explained earlier, half of the patients are still alive."
			Best-case scenario	Optional script: add best-case scenario for treatment without chemotherapy Oncologist: "But here too, there are outliers: in the best-case, again about 10 percent, people live on for more than 1 year."
			Worst-case scenario	Optional script: add worst-case scenario for treatment without chemotherapy Oncologist: "And in the worst-case, again a small group, we're talking about less than 1 month to live." *The patient puts his hand over his mouth.* Patient: "Hmm. . ." *The patient sighs.*
			Standard scenario (continued)	Oncologist: "It's quite a lot, isn't it, all this information." Patient and daughter: "Yes, yes. . . It is." Oncologist: "So, in short, if we now compare those two options. . . Then, you can see that with chemotherapy, on average, about 6 months are gained."
		Word-based estimates	Standard scenario	Oncologist: "Look, chemotherapy could potentially extend your life. Then you might wonder... What kind of extension are we talking about, how long do I have?" *Pause.* "The tricky part is. . . I can't tell you what it's like for you personally. . . But I can say what we generally know about the life expectancy of people with your type of cancer. So... What is known about the large group." *The patient and his daughter nod and hum.* Patient: "Okay. . ." Oncologist: "If we focus on the first option, the group that receives chemotherapy... In that case, we usually talk about a life expectancy of months to a few years. . ." *The oncologist pauses to give the patient and his daughter room to react.*

(*Continued*)

Table S1
Continued

Script	Scene *Italicized:* Non-Verbal Actions Underlined: Variations in Prognostic Communication		
			Patient: "Wow. . ." *The patient looks incredulous and softly shakes his head. His daughter looks at him and puts her hand on his shoulder.*
		Best-case scenario	Optional script: add best-case scenario for treatment with chemotherapy Oncologist: "But. . . You know, I also have to say. . . Sometimes, there are patients who are doing very well, who respond to chemotherapy very well, and can even live on for quite a long time. There are not many of those, but such positive stories do exist." Patient: "Okay. . ."
		Worst-case scenario	Optional script: add worst-case scenario for treatment with chemotherapy Oncologist: "However, we also know that. . . And I have to be honest about that. . . There's a similarly small chance that patients deteriorate earlier. In the worst-case, they still die quite quickly with chemotherapy. That's also possible." *Silence.* Patient: "Gee. . ."
		Standard scenario (continued)	Oncologist: "Yeah. . . Are you still following?" *The patient and his daughter nod.* Oncologist: "If we then consider the second option... So looking at how long the group of people without chemotherapy generally live... In that case, we usually no longer talk about years, but rather about months."
		Best-case scenario	Optional script: add best-case scenario for treatment without chemotherapy Oncologist: "But here too, there are outliers: in the best-case, again a small chance, people live longer."
		Worst-case scenario	Optional script: add worst-case scenario for treatment without chemotherapy Oncologist: "And in the worst-case, again a small group, we're talking about really only a very short time to live." *The patient puts his hand over his mouth.* Patient: "Hmm. . ." *The patient sighs.*
		Standard scenario (continued)	Oncologist: "It's quite a lot, isn't it, all this information." Patient and daughter: "Yes, yes. . . It is." Oncologist: "So, in short, if we now compare those two options. . . Then, you can see that with chemotherapy, on average, some time is gained."
Baseline-script (hospital consultation room)	**SCENE 5** Patient: "Yes. . . These messages are tough. . ." *The oncologist's facial expression is understanding and she nods. The oncologist leans in.* Oncologist: "Yes, I understand. But whatever you decide, any decision is a good one. And I can help you with that. Whether chemotherapy is worth it for you also depends on what you find important in life. . . How you envision the upcoming period, what you still want to do, and what'd be the limit for you. . ." *Patient nods.* The oncologist: "What's that like for you?" *Conversation continues, but the volume reduces while the video fades out at the same time.* Patient (*increasingly less audible*): "Well... I do know a number of people in my environment who have also had chemotherapy. And well, thinking about my own life, then. . ."		

Table S2

Detailed Description of Development and Piloting Processes[a]

Study Component	Development and Piloting Processes
Video-vignettes	We developed video-vignettes following published recommendations.[1,2] The baseline-script included an introductory scene depicting a male patient with advanced esophageal cancer and his daughter in a waiting room, while a voice-over conveys the patient's backstory and instructs APs to imagine themselves in his situation. The baseline-script additionally included a consultation scene, in which a female oncologist explains the main treatment options consistent with current practice (palliative chemotherapy *vs.* best supportive care). Apart from the prognostic non-disclosure condition (video 1), all conditions included content supplementary to the baseline-script. One condition (video 2) was supplemented with the oncologist's communication of unpredictability of prognosis; six conditions (videos 3−8) were supplemented with prognostic estimates for both treatment options. For the six prognostic disclosure conditions (videos 3-8; 3 × 2 balanced factorial design), we developed a script with standard survival scenarios, which could be supplemented with best-case survival scenarios only, or also with worst-case survival scenarios. These variations in *framing* were combined with variations in *precision*: numerical or word-based prognostic estimates (e.g., "median life expectancy of 11 months" *vs.* "months to a few years"). For conditions with numerical estimates, we adopted the group-level median overall survival for advanced esophageal cancer with and without chemotherapy as standard scenarios, based on previously published clinical trial data.[3, 4] Best- and worst-case survival scenarios were based on 90th and 10th percentiles of these survival curves. Table S1 shows the full script. The script was developed by medical communication researchers (n=2), experienced in the advanced cancer setting, and based on previously audio-recorded oncological consultations, past video-vignette studies and existing prognostic communication guidelines. The script's medical content, credibility, manipulation success and overall quality were evaluated by oncologists (n=3) and researchers specialized in video-vignette designs (n=4). The script was rehearsed with professional actors, allowing for further evaluation and adjustment of the script. Next, we recorded eight test-videos and evaluated their comprehensibility, emotional load, credibility, manipulation success and overall quality in a pilot study, using semi-structured interviews (n=13 cancer patients, 2 videos each) and online surveys (n=120 cancer-naive individuals, 1 video each). Pilot study results informed a final script. We recorded eight new videos and tested their overall quality (i.e., "go or no-go" decision) in semi-structured interviews with five more cancer patients, leading to the final videos.
Surveys	Surveys were composed and evaluated by medical communication researchers (n = 3) and an oncologist (n = 1), piloted among 8 cancer-naive individuals (n = 2/8 providing "think-aloud" feedback; n = 6/8 providing feedback retrospectively) and pre-tested by the research agency.
Study procedures	A subset of eligible APs participated during a *test phase* (April 2021; n = 79 invited, n = 50/79 completed T0, n = 41/50 completed T1) to allow evaluation of the quality of study procedures (n = 14/41 telephonic interviews), video engagement and perceived video realism ($M_{\text{Video engagement}}$ = 5.2, $M_{\text{Video realism}}$ = 6.0; maximum attainable scores = 7). The study proved feasible; only the survey instructions required minor adjustments. Hence, we continued with the *study phase*, including a larger sample of APs (May 2021; n = 1828 invited, n = 1256/1828 completed T0, n = 1003/1256 completed T1). Combining both samples, complete data of 1044 APs were available. APs scoring ≤ 2 on the shortened Video Engagement Scale's screener item (i.e., "I was fully concentrated on the video while watching"; 1−7, "totally disagree" to " totally agree") were excluded from the analyses as per protocol[5] (n = 8/1044), resulting in a final sample of 1036 APs.

[a]Fig. 1 presents an overview of phases and procedures of this study.

Abbreviations: AP: analogue patient; *n*: sample size; *M*: mean.

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Table S3

Measures Used in the Baseline Survey and Outcomes Survey, Including Example Items and Cronbach's alphas[a]

Survey Type	Type of Variable	Variable	Measure
Baseline survey (T0)	Background characteristics	Age	Standard background questions (4 items). E.g., "What is your age?"
		Sex	
		Religion	
		Education	
		Knowledge of cancer	Adopted from prior research and adjusted (1 item). I.e., "How much knowledge do you have about cancer?" (1−5, "nothing or very little" to "very much").
		Experience with oncological consultations	Adopted from prior research and adjusted (1 item). I.e., "Have you ever been to a hospital appointment for cancer for someone close to you?" (binary, yes/no).
	Personal characteristics	Active coping	Active tackling subscale of the Utrecht Coping List (UCL; 7 items; Cronbach's $\alpha = 0.84$). E.g., "Using a direct approach to solve the problem" (1−4, "never" to "very often"; scores were summed).
		Uncertainty tolerance	Tolerance for Ambiguity (TFA; 7 items; Cronbach's $\alpha = 0.68$). E.g., "If I am uncertain about the responsibilities involved in a particular task, I get very anxious" (1−6, "strongly agree" to "strongly disagree"; scores were summed).
	Patient preferences	Prognostic information preference[b]	Adopted from prior research and adjusted (1 item). I.e., "Are you a person who wants to know your life expectancy?" (binary, yes/no).
		Preferred role in medical decision-making[b]	Control Preferences Scale (CPS; 1 item, adjusted to match this study's content). I.e., "Which of the following situations would be the most ideal for you to decide on a treatment for cancer?" (1−5, "I prefer to make the final selection about which treatment I will receive" to "I prefer to leave all decisions regarding my treatment to my oncologist").
		Attitude toward striving for length of life[b]	Length of life subscale of the Quality Quantity Questionnaire (QQQ; 4 items; Cronbach's $\alpha = 0.80$). E.g., "To live a bit longer, I would clutch at any straw" (1−5, "strongly disagree" to "strongly agree"; scores were summed).
Outcomes survey (T1, post-video)	Validity checks	Perceptions of the *type* and *content* of disclosure of prognosis	Self-developed (4 items). E.g., "Did the oncologist use numbers to indicate life expectancy?" (binary, "no, she only used words to indicate life expectancy"/"yes, she used numbers to indicate life expectancy").
		Video engagement[c]	Shortened Video Engagement Scale (shortened VES; 4 items; Cronbach's $\alpha = 0.84$). E.g., "In my imagination it was as if I were the patient" (1−7, "strongly disagree" to "strongly agree"; scores were summed and averaged).
		Perceived video realism[c]	Adopted from prior research (3 items; Cronbach's $\alpha = 0.91$). E.g., "I thought the video was realistic" (1−7 "strongly disagree" to "strongly agree"; scores were summed and averaged).
	Prognostic perceptions[d]	Perception of prognosis with chemotherapy	Adopted from prior research and adjusted (1 item). I.e., "How likely is it that you will die from cancer within 1 year from now if you receive treatment with chemotherapy?" (0−100 visual analogue scale with slider bar, "extremely unlikely" to "extremely likely").
		Perception of prognosis without chemotherapy	Adopted from prior research and adjusted (1 item). I.e., "How likely is it that you will die from cancer within 1 year from now if you receive treatment without chemotherapy?" (0−100 visual analogue scale with slider bar, "extremely unlikely" to "extremely likely").
	Treatment decision-making[d]	Perceived sufficiency of prognostic information to decide about treatment	Adopted from prior research and adjusted (1 item). I.e., "Do you know enough about life expectancy after the consultation with the oncologist to make a choice about cancer treatment?" (1−5, "I certainly do not" to "I certainly do").
		Treatment decision	Adopted from prior research and adjusted (1 item). I.e., "What choice would you make regarding the cancer treatment?" (binary, chemotherapy/no chemotherapy).
		Certainty about treatment decision	Self-developed (1 item). I.e., "Imagine that you have just made a decision about the cancer treatment. How certain are you about your decision?" (0−10 visual analogue scale with slider bar, "not at all certain" to "very certain").
	End-of-life anticipation[d]	Preparation for the end of life	Adopted from prior research and adjusted (1 item). I.e., "Would you make arrangements in case you would pass away? You could, for example, think of documenting care preferences, place of death or a funeral" (1−6, "no, I would not make arrangements" to "yes, I would make arrangements directly").
		Planning for the future	Self-developed (1 item). I.e., "For what period of time would you make future plans?" (1−4, "I would not make future plans" to "I would make plans for the coming years").

[a]Interpretation: < 0.50, unacceptable; 0.50−0.60, poor; 0.60−0.70, questionable; 0.70−0.80, acceptable; 0.80−0.90 good; 0.90−1.00, excellent.
[b]Items included an introductory sentence, e.g., "We would like to know your reactions in the following imaginary situation. Imagine that you get cancer."
[c]Items were placed at the end of the outcomes survey to prevent APs stepping out of the imaginary situation prematurely.
[d]Items included an introductory sentence, e.g., "Try to imagine being in the patient's situation once again. You just had this [the depicted] conversation with the oncologist. Answer the following questions based on how you experienced this conversation. If you were the patient in the video...".
Abbreviations: AP: analogue patient; UCL: Utrecht Coping List; TFA: Tolerance for Ambiguity; CPS: Control Preferences Scale; QQQ: Quality Quantity Questionnaire; VES: Video Engagement Scale.

Table S4
Overview of Tested Interaction Terms for Each Cluster of Outcomes, Based on Predefined Hypotheses (MANOVAs)

Cluster of Outcomes	Interaction Term (Manipulation x AP Characteristic)			Hypotheses
Prognostic perceptions (cluster 1): perceived likelihood of dying from cancer within 1 year from now with and without chemotherapy	*Content* of disclosure: *framing*	x	Education	The level of APs' education influences the effect of framing prognosis on prognostic perceptions. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on the perceived likelihood of dying from cancer within 1 year from now is stronger for APs with higher education.
	Content of disclosure: *precision*	x	Education	The level of APs' education influences the effect of the precision of prognosis on prognostic perceptions. E. g., the positive effect of providing numerical estimates on the perceived likelihood of dying from cancer within 1 year from now is stronger for APs with higher education.
Treatment decision-making (cluster 2): perceived sufficiency of prognostic information to decide about treatment, certainty about treatment decision	*Type* of disclosure	X	Uncertainty tolerance	The degree to which APs are tolerant for uncertainty influences the effect of the type of disclosure on treatment decision-making. E.g., the positive effect of prognostic disclosure on the perceived sufficiency of prognostic information to decide about treatment and certainty about the treatment decision is stronger for APs with lower uncertainty tolerance.
			Preferred role in medical decision-making	APs' preferred role in medical decision-making influences the effect of the type of disclosure on treatment decision-making. E.g., The positive effect of prognostic disclosure on the perceived sufficiency of prognostic information to decide about treatment and certainty about the treatment decision is stronger for APs who prefer to make the treatment decision themselves.
	Content of disclosure: *framing*	**x**	Uncertainty tolerance	The degree to which APs are tolerant for uncertainty influences the effect of framing prognosis on treatment decision-making. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on the perceived sufficiency of prognostic information to decide about treatment and certainty about the treatment decision is stronger for APs with lower uncertainty tolerance.
	Content of disclosure: *precision*	x	Uncertainty tolerance	The degree to which APs are tolerant for uncertainty influences the effect of the precision of prognosis on treatment decision-making. E.g., the positive effect of providing numerical estimates on the perceived sufficiency of prognostic information to decide about treatment and certainty about the treatment decision is stronger for APs with lower uncertainty tolerance.
End-of-life anticipation (cluster 3): preparation for the end of life, planning for the future	*Type* of disclosure	x	Active coping	The degree to which APs use an active coping style influences the effect of the type of disclosure on end-of-life anticipation. E.g., the positive effect of prognostic disclosure on preparation for the end of life is stronger for APs who have a more active coping style.
			Attitude toward striving for length of life	The degree to which APs want to strive for length of life influences the effect of the type of disclosure on end-of-life anticipation. E.g., the positive effect of prognostic disclosure on preparation for the end of life, and its negative effect on planning for the future, is stronger for APs who have a weak desire to strive for length of life.
	Content of disclosure: *framing*	x	Active coping	The degree to which APs use an active coping style influences the effect of framing prognosis on end-of-life anticipation. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on preparation for the end of life is stronger for APs who have a more active coping style.
			Attitude toward striving for length of life	The degree to which APs want to strive for length of life influences the effect of framing prognosis on end-of-life anticipation. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on preparation for the end of life, and its negative effect on planning for the future, is stronger for APs who have a weak desire to strive for length of life.

(*Continued*)

Table S4
Continued

Cluster of Outcomes	Interaction Term (Manipulation x AP Characteristic)			Hypotheses
	Content of disclosure: *precision*	x	Active coping	The degree to which APs use an active coping style influences the effect of the precision of prognosis on end-of-life anticipation. E.g., the positive effect of providing numerical estimates on preparation for the end of life is stronger for APs who have a more active coping style.
			Attitude toward striving for length of life	The degree to which APs want to strive for length of life influences the effect of the precision of prognosis on end-of-life anticipation. E.g., the positive effect of providing numerical estimates on preparation for the end of life, and its negative effect on planning for the future, is stronger for APs who have a weak desire to strive for length of life.

Abbreviations: MANOVA: multivariate analysis of variance; AP: analogue patient.

Table S5
Overview of Tested Interaction Terms for Each Cluster of Outcomes, Based on Predefined Hypotheses (Logistic Regressions)

Outcome	Interaction Term (Manipulation x AP Characteristic)			Hypotheses
Treatment Decision	*Type* of Disclosure	x	Attitude Toward Striving for Length of Life	The degree to which APs want to strive for length of life influences the effect of the type of disclosure on the treatment decision. E.g., the positive effect of prognostic disclosure on disfavoring chemotherapy is stronger for APs who have a weak desire to strive for length of life.
	Content of disclosure: *framing*	x	Attitude toward striving for length of life	The degree to which APs want to strive for length of life influences the effect of framing prognosis on the treatment decision. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on disfavoring chemotherapy is stronger for APs who have a weak desire to strive for length of life.
	Content of disclosure: *precision*	x	Attitude toward striving for length of life	The degree to which APs want to strive for length of life influences the effect of the precision of prognosis on the treatment decision. E.g., the positive effect of providing numerical estimates on disfavoring chemotherapy is stronger for APs who have a weak desire to strive for length of life.

Abbreviations: AP: analogue patient.

Table S6

Manipulation Success, Based on APs' Perceptions of and the Actual Prognostic Communication of the Oncologist[a]

Manipulation of Prognostic Communication Strategies		Validity Checks			
		APs who believed to have watched a video with the indicated manipulation among APs who truly watched a video *with* the indicated manipulation (%)		APs who believed to have watched a video with the indicated manipulation among APs who truly watched a video *without* the indicated manipulation (%)	
***Type* of disclosure of prognosis**	Non-disclosure	Video 1	52% ***	Videos 2, 3, 4, 5, 6, 7 and 8	2%
	Communication of unpredictability	Video 2	92% ***	Videos 1, 3, 4, 5, 6 7 and 8	16%
	Prognostic disclosure	Videos 3, 4, 5, 6, 7 and 8	89% ***	Videos 1 and 2	11%
***Content* of disclosure of prognosis**	Standard scenarios only	Videos 3 and 6	36% ***	Videos 4, 5, 7 and 8	4%
	Best-case scenarios	Videos 4, 5, 7 and 8	95% ***	Videos 3 and 6	59%
	Worst-case scenarios	Videos 5 and 8	97% ***	Videos 3, 4, 6 and 7	60%
	Numerical estimates	Videos 3, 4 and 5	87% ***	Videos 6, 7 and 8	20%
	Word-based estimates	Videos 6, 7 and 8	80% ***	Videos 3, 4 and 5	13%

***Significant at $P < 0.001$.

[a]Chi^2-tests were used to compare proportions of APs who *believed* to have watched a video with the indicated manipulation (i.e., reflecting their perceptions of the prognostic communication of the oncologist) among APs who truly watched a video *with* and *without* the indicated manipulation (i.e., reflecting the actual prognostic communication of the oncologist). It would be expected that the proportion of APs who *believed* to have watched a video with the indicated manipulation would be higher among participants who had truly watched a video *with* the indicated manipulation. APs' indicated their perceptions of the *type* and *content* of disclosure of prognosis, using the following items. *Type* of disclosure: "Did the oncologist say anything about life expectancy? (1) She didn't mention life expectancy at all; (2) She told the patient that she cannot say anything about life expectancy; (3) She told the patient what the life expectancy is for people with metastatic esophageal cancer in general." *Content* of disclosure (*framing*): "Did the oncologist say anything about how long patients live in the best-case scenario? This is a small group of patients, who are doing very well, and who live longer with the disease than most people. (1) No, she didn't say anything about life expectancy in the best-case scenario. (2) Yes, she said something about life expectancy in the best-case scenario." and "Did the oncologist say anything about how long patients live in the worst-case scenario? This is a small group of patients, who deteriorate quickly, and who die from the disease sooner than most people. (1) No, she didn't say anything about life expectancy in the worst-case scenario. (2) Yes, she said something about life expectancy in the worst-case scenario." *Content* of disclosure (*precision*): "Did the oncologist use numbers to indicate life expectancy? (1) No, she only used words to indicate life expectancy. (2) Yes, she used numbers to indicate life expectancy."

Abbreviations: AP: analogue patient

Table S7

Main and Interaction Effects of the Type and Content of Disclosure of Prognosis on APs' Prognostic Perceptions (MANOVAs)

Effects	Multivariate Cluster of Outcomes: *Prognostic Perceptions*						Univariate				
Manipulation: *Type* of Disclosure	Hotelling's Trace	F	Hypothesis df	Error df	*P*	Partial η^2	Outcomes	df	F	*P*	Partial η^2
Type of disclosure	.087	22.455	4	2062	< 0.001***	.042	Perceived likelihood of dying from cancer ≤ 1 year with chemotherapy	2	14.373	< 0.001***	.028
							Perceived likelihood of dying from cancer ≤ 1 year without chemotherapy	2	44.052	< 0.001***	.079
Manipulation: *Content* of disclosure	**Hotelling's Trace**	**F**	**Hypothesis df**	**Error df**	***P***	**Partial η^2**	**Outcomes**	**df**	**F**	***P***	**Partial η^2**
Framing of prognosis	.012	1.854	4	1208	0.116	.006	-	-	-	-	-
Precision of prognosis	.082	24.812	2	605	< 0.001***	.076	Perceived likelihood of dying from cancer ≤ 1 year with chemotherapy	1	47.371	< 0.001***	.073
							Perceived likelihood of dying from cancer ≤ 1 year without chemotherapy	1	14.993	< 0.001***	.024
Education[a]	.020	3.050	4	1208	0.016*	.010	Perceived likelihood of dying from cancer ≤ 1 year with chemotherapy	2	3.835	0.022*	.012
							Perceived likelihood of dying from cancer ≤ 1 year without chemotherapy	2	2.295	0.102	.008
Framing of prognosis x education	.022	1.640	8	1208	0.109	.011	-	-	-	-	-
Precision of prognosis x education	.015	2.198	4	1208	0.067	.007	-	-	-	-	-

*Significant at $P < 0.05$.
**Significant at $P < 0.01$.
***Significant at $P < 0.001$.
[a]Significant main effects of education on APs' prognostic perceptions were not described in the results section, as these findings were not relevant to our research questions.
Abbreviations: AP: analogue patient; MANOVA: multivariate analysis of variance; F: F-test statistic; df: degrees of freedom; *p*: probability value; partial η^2: effect size expressing the amount of variance accounted for by one or more independent variables (small effect, partial $\eta^2 = 0.01$; medium effect, partial $\eta^2 = 0.06$; large effect, partial $\eta^2 = 0.14$[1]). Reference: (1) Sink CA, Mvududu NH. Statistical power, sampling, and effect sizes: Three keys to research relevancy. Counseling Outcome Research and Evaluation. 2010;1(2):1–18.

Table S8

Main and Interaction Effects of the Type and Content of Disclosure of Prognosis on APs' Treatment Decision-Making (MANOVAs)

Effects	Multivariate Cluster of Outcomes: *Treatment Decision-Making*						Univariate				
Manipulation: *Type* of Disclosure	Hotelling's Trace	F	Hypothesis df	Error df	*P*	Partial η^2	Outcomes	df	F	*P*	Partial η^2
Type of disclosure	.162	41.589	4	2050	< 0.001***	.075	Perceived sufficiency of prognostic information to decide about treatment	2	83.135	< 0.001***	.139
							Certainty about treatment decision	2	9.647	< 0.001***	.018
Uncertainty tolerance[a]	.011	5.403	2	1026	0.005**	.010	Perceived sufficiency of prognostic information to decide about treatment	1	2.741	0.098	.003
							Certainty about treatment decision	1	3.928	0.048*	.004
Type of disclosure x uncertainty tolerance	.007	1.878	4	2050	0.112	.004	-	-	-	-	-
Preferred role in medical decision-making[a]	.011	5.681	2	1026	0.004**	.011	Perceived sufficiency of prognostic information to decide about treatment	1	4.500	0.034*	.004
							Certainty about treatment decision	1	10.482	0.001***	.010
Type of disclosure x preferred role in medical decision-making	.011	2.893	4	2050	0.021*	.006	Perceived sufficiency of prognostic information to decide about treatment	2	1.419	0.243	.003
							Certainty about treatment decision	2	4.188	0.015*	.008
Manipulation: *Content* of disclosure	Hotelling's Trace	F	Hypothesis df	Error df	*P*	Partial η^2	Outcomes	df	F	*P*	Partial η^2
Framing of prognosis	.011	1.615	4	1216	0.168	.005	-	-	-	-	-
Precision of prognosis	.010	3.059	2	609	0.048*	.010	Perceived sufficiency of prognostic information to decide about treatment	1	5.778	0.017*	.009
							Certainty about treatment decision	1	2.206	0.138	.004
Uncertainty tolerance	.003	0.857	2	609	0.425	.003	-	-	-	-	-
Framing of prognosis x uncertainty tolerance	.009	1.397	4	1216	0.233	.005	-	-	-	-	-
Precision of prognosis x uncertainty tolerance	.002	.661	2	609	0.516	.002	-	-	-	-	-

*Significant at $P < 0.05$.
**Significant at $P < 0.01$.
***Significant at $P < 0.001$.
[a]Significant main effects of uncertainty tolerance and preferred role in medical decision-making on APs' treatment decision-making were not described in the results section, as these findings were not relevant to our research questions.
Abbreviations: AP: analogue patient; MANOVA: multivariate analysis of variance; F: F-test statistic; df: degrees of freedom; *p*: probability value; partial η^2: effect size expressing the amount of variance accounted for by one or more independent variables (small effect, partial $\eta^2 = 0.01$; medium effect, partial $\eta^2 = 0.06$; large effect, partial $\eta^2 = 0.14$ [(1)]). Reference: (1) Sink CA, Mvududu NH. Statistical power, sampling, and effect sizes: Three keys to research relevancy. Counseling Outcome Research and Evaluation. 2010;1(2):1–18.

Table S9

Main and Interaction Effects of the Type and Content of Disclosure of Prognosis on APs' Treatment Decision (Logistic Regressions)[a]

Effects			Treatment Decision[b]					
Manipulation: *Type* of Disclosure	B	SE	Wald	df	*P*	Exp(b)	Lower CI	Upper CI
Constant	−.279	.157	3.142	1	0.076	.757		
Type of disclosure								
Non-disclosure (ref)			6.941	2	0.031*			
Communication of unpredictability	.240	.228	1.108	1	0.293	1.271	.813	1.989
Prognostic disclosure	.469	.183	6.601	1	0.010**	1.599	1.118	2.288
Attitude toward striving for length of life[c]	.345	.059	33.833	1	< 0.001**	1.411	1.257	1.585
Type of disclosure x attitude toward striving for length of life								
Non-disclosure (ref)			1.979	2	0.372			
Communication of unpredictability	.130	.094	1.912	1	0.167	1.139	.947	1.370
Prognostic disclosure	.037	.069	.281	1	0.596	1.037	.906	1.187
Manipulation: *Content* of disclosure	B	SE	Wald	df	*P*	Exp(b)	Lower CI	Upper CI
Constant	.392	.193	4.124	1	0.042*	1.481		
Framing of prognosis								
Standard scenarios only (ref)			2.413	2	0.299			
Standard and best-case scenarios	.248	.229	1.168	1	0.280	1.281	.817	2.008
Standard, best- and worst-case scenarios	.358	.238	2.267	1	0.132	1.431	.898	2.281
Precision of prognosis[d]	−.777	.192	16.404	1	< 0.001***	.460	.316	.670
Attitude toward striving for length of life[c]	.443	.076	33.867	1	< 0.001***	1.558	1.342	1.809
Framing of prognosis x attitude toward striving for length of life								
Standard scenarios only (ref)			.795	2	0.672			
Standard and best-case scenarios	−.075	.090	.689	1	0.406	.928	.778	1.107
Standard, best- and worst-case scenarios	−.015	.090	.027	1	0.869	.985	.826	1.175
Precision of prognosis x attitude toward striving for length of life[d]	−.045	.073	.378	1	0.539	.956	.829	1.103

*Significant at $P < 0.05$.
**Significant at $P < 0.01$.
***Significant at $P < 0.001$.
[a]Given that APs' treatment decision is a binary variable, this is the only outcome measure that was analyzed with logistic regression models.
[b]0 = no chemotherapy, 1 = chemotherapy.
[c]The significant main effect of attitude toward striving for length of life on APs' treatment decision was not described in the results section, as this finding was not relevant to our research questions.
[d]0 = word-based estimates, 1 = numerical estimates.
Abbreviations: AP: analogue patient; B: unstandardized coefficient; SE: standard error; df: degrees of freedom; *P*: probability value; Exp(b): exponentiation of the B coefficient, which is an odds ratio; CI: 95% confidence interval; ref: reference category.

Table S10

Main and Interaction Effects of the Type and Content of Disclosure of Prognosis on APs' End-of-Life Anticipation (MANOVAs)

Effects	Multivariate Cluster of Outcomes: *End-of-Life Anticipation*						Univariate				
Manipulation: *Type* of Disclosure	Hotelling's Trace	F	Hypothesis df	Error df	*P*	Partial η^2	Outcomes	df	F	*P*	Partial η^2
Type of disclosure	.002	.435	4	2050	0.783	.001	-	-	-	-	-
Active coping[a]	.017	8.807	2	1026	< 0.001***	.017	Preparation for the EOL	1	.508	0.476	.000
							Planning for the future	1	17.604	< 0.001***	.017
Type of disclosure x active coping	.002	.600	4	2050	0.663	.001	-	-	-	-	-
Attitude toward striving for length of life[a]	.036	18.465	2	1026	< 0.001***	.035	Preparation for the EOL	1	26.442	< 0.001***	.025
							Planning for the future	1	18.014	< 0.001***	.017
Type of disclosure x attitude toward striving for length of life	.007	1.733	4	2050	0.140	.003	-	-	-	-	-
Manipulation: *Content* of disclosure	Hotelling's Trace	F	Hypothesis df	Error df	*P*	Partial η^2	Outcomes	df	F	*P*	Partial η^2
Framing of prognosis	.003	.379	4	1208	0.824	.001	-	-	-	-	-
Precision of prognosis	.001	.264	2	605	0.768	.001	-	-	-	-	-
Active coping[a]	.026	7.728	2	605	< 0.001***	.025	Preparation for the EOL	1	.181	0.671	.000
							Planning for the future	1	13.932	< 0.001***	.022
Framing of prognosis x active coping	.005	.776	4	1208	0.541	.003	-	-	-	-	-
Precision of prognosis x active coping	.002	.612	2	605	0.543	.002	-	-	-	-	-
Attitude toward striving for length of life[a]	.025	7.631	2	605	< 0.001***	.025	Preparation for the EOL	1	10.195	0.001***	.017
							Planning for the future	1	8.307	0.004**	.014
Framing of prognosis x attitude toward striving for length of life	.002	.338	4	1208	0.852	.001	-	-	-	-	-
Precision of prognosis x attitude toward striving for length of life	.002	.739	2	605	0.478	.002	-	-	-	-	-

*Significant at $P < 0.05$.
**Significant at $P < 0.01$.
***Significant at $P < 0.001$.
[a]Significant main effects of active coping and attitude toward striving for length of life on APs' end-of-life anticipation were not described in the results section, as these findings were not relevant to our research questions.
Abbreviations: AP: analogue patient; MANOVA: multivariate analysis of variance; F: F-test statistic; df: degrees of freedom; *p*: probability value; partial η^2: effect size expressing the amount of variance accounted for by one or more independent variables (small effect, partial $\eta^2 = 0.01$; medium effect, partial $\eta^2 = 0.06$; large effect, partial $\eta^2 = 0.14$[1]); EOL: end of life. Reference: (1) Sink CA, Mvududu NH. Statistical power, sampling, and effect sizes: Three keys to research relevancy. Counseling Outcome Research and Evaluation. 2010;1(2):1–18.