**Appendix A**

**Fig. A.1.** Overview of manipulations of prognostic communication (van der Velden et al. 2023).

**

**Fig. A.2.** CONSORT diagram (van der Velden et al. 2023).

 **Table A.1.** Overview of tested interaction terms for each cluster of outcomes, based on predefined hypotheses.

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| --- | --- | --- |
| **Cluster of outcomes** | **Interaction term** **(manipulation x AP characteristic)** | **Hypotheses**  |
| Emotional reaction (cluster 1): difference scores for positive affect,negative affect andstate anxiety | *Type* of disclosure | **x** | Prognostic information preference | Whether or not APs prefer to know prognosis influences the effect of the type of disclosure on their emotional reaction. E.g., the positive effects of prognostic disclosure on negative affect and state anxiety, and its negative effect on positive affect, are stronger for APs who prefer not knowing. |
| Uncertainty tolerance | The degree to which APs are tolerant for uncertainty influences the effect of the type of disclosure on their emotional reaction. E.g., the positive effects of communication of unpredictability on negative affect and state anxiety, and its negative effect on positive affect, are stronger for APs with lower uncertainty tolerance. |
| *Content* of disclosure: *framing*  | **x**  | Uncertainty tolerance | The degree to which APs are tolerant for uncertainty influences the effect of framing prognosis on their emotional reaction. E.g., the positive effects of providing standard, best- and worst-case survival scenarios on negative affect and state anxiety, and its negative effect on positive affect, are 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 their emotional reaction. E.g., the positive effects of providing word-based estimates on negative affect and state anxiety, and its negative effect on positive affect, are stronger for APs with lower uncertainty tolerance. |
| Coping with cancer(cluster 2): helplessness/hopelessness andfighting spirit | *Type* of disclosure | **x** | Trait optimism | The degree to which APs are naturally optimistic influences the effect of the type of disclosure on coping with cancer. E.g., the positive effect of prognostic disclosure on helplessness/hopelessness, and its negative effect on fighting spirit, are stronger for APs with less trait optimism.  |
| 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 coping with cancer. E.g., the positive effect of prognostic disclosure on helplessness/hopelessness, and its negative effect on fighting spirit, are stronger for APs who have a weak desire to strive for length of life. |
| *Content* of disclosure: *framing* | **x**  | Trait optimism | The degree to which APs are naturally optimistic influences the effect of framing prognosis on coping with cancer. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on helplessness/hopelessness, and its negative effect on fighting spirit, are stronger for APs with less trait optimism.  |
| 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 coping with cancer. E.g., the positive effect of providing standard, best- and worst-case survival scenarios on helplessness/hopelessness, and its negative effect on fighting spirit, are stronger for APs who have a weak desire to strive for length of life.  |
| *Content* of disclosure: *precision*  | **x**  | Trait optimism | The degree to which APs are naturally optimistic influences the effect of the precision of prognosis on coping with cancer. E.g., the positive effect of providing numerical estimates on helplessness/hopelessness, and its negative effect on fighting spirit, are stronger for APs with less trait optimism. |
| 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 coping with cancer. E.g., the positive effect of providing numerical estimates on helplessness/hopelessness, and its negative effect on fighting spirit, are stronger for APs who have a weak desire to strive for length of life.  |
| Appreciation of the consultation (cluster 3): trust in the oncologist and uncertainty a, satisfaction a and desirability regarding provided prognostic information a | *Type* of disclosure | **x** | Prognostic information preference  | Whether or not APs prefer to know prognosis influences the effect of the type of disclosure on their appreciation of the consultation. E.g., the positive effects of prognostic disclosure on trust in the oncologist, satisfaction and desirability regarding provided prognostic information, and its negative effect on uncertainty regarding provided prognostic information, are stronger for APs who prefer knowing. |
| Uncertainty tolerance | The degree to which APs are tolerant for uncertainty influences the effect of the type of disclosure on their appreciation of the consultation. E.g., the positive effects of prognostic disclosure on trust in the oncologist, satisfaction and desirability regarding provided prognostic information, and its negative effect on uncertainty regarding provided prognostic information, are stronger for APs with lower uncertainty tolerance. |
| *Content* of disclosure: *framing* | **x** | Education  | The level of APs’ education influences the effect of framing prognosis on their appreciation of the consultation. E.g., the positive effects of providing standard, best- and worst-case survival scenarios on trust in the oncologist, satisfaction and desirability regarding provided prognostic information, and its negative effect on uncertainty regarding provided prognostic information, are stronger for APs with higher education. |
| Uncertainty tolerance | The degree to which APs are tolerant for uncertainty influences the effect of framing prognosis on their appreciation of the consultation. E.g., the positive effects of providing standard, best- and worst-case survival scenarios on trust in the oncologist, satisfaction and desirability regarding provided prognostic information, and its negative effect on uncertainty regarding provided prognostic information, are stronger for APs with lower uncertainty tolerance. |
| *Content* of disclosure: *precision* | **x** | Education  | The level of APs’ education influences the effect of the precision of prognosis on their appreciation of the consultation. E.g., the positive effects of providing numerical estimates on trust in the oncologist, satisfaction and desirability regarding provided prognostic information, and its negative effect on uncertainty regarding provided prognostic information, are stronger for APs with higher education. |
| Uncertainty tolerance | The degree to which APs are tolerant for uncertainty influences the effect of the precision of prognosis on their appreciation of the consultation. E.g., the positive effects of providing numerical estimates on trust in the oncologist, satisfaction and desirability regarding provided prognostic information, and its negative effect on uncertainty regarding provided prognostic information, are stronger for APs with lower uncertainty tolerance. |
| a Items were not presented to APs in the condition with non-disclosure (video 1). Abbreviations: AP: analogue patient. |

**Table A.2.** Full baseline-script and supplementary scripts for each manipulation (van der Velden et al. 2023).

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| --- | --- |
| **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 oncologist 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 towards 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 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 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.* |
| Manipulated script (hospital consultation room) | ***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 amedianlife expectancy of11 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 evenlive 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 ofamedianlife 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 chemotherapyOncologist: “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 chemotherapyOncologist: “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.*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 evenlive 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 chemotherapyOncologist: “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 chemotherapyOncologist: “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 chemotherapyOncologist: “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 A.3.** Detailed description of development procedures (van der Velden et al. 2023). a

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| --- | --- |
| Video-vignettes | We developed video-vignettes following published recommendations (Hillen, van Vliet et al. 2013; van Vliet, Hillen et al. 2013). 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; 3x2 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 (Cunningham et al. 2008; Ter Veer et al. 2016). Best- and worst-case survival scenarios were based on 90th and 10th percentiles from these survival curves.Table S1 (online-only) 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 (Clayton et al. 2007; Henselmans et al. 2017; Mori et al. 2019; van der Velden et al. 2021; van Vliet, van der Wall et al. 2013). 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 in semi-structured interviews (i.e., “go or no-go” decision) with five more cancer patients.  |
| 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*Video engagement=5.2, *M*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 Video Engagement-Scale’s screener item (i.e., “I was fully concentrated on the video while watching”, “1: totally disagree” to “7: totally agree”) were excluded from the analyses as per protocol(Lehmann et al. 2022) *(n*=8/1044), resulting in a final sample of 1036 APs.  |
| a Figure 1 presents an overview of phases and procedures of this study. Abbreviations: AP: analogue patient; *n*: sample size; *M*: mean. |

**Table A.4.** Instruments used in the baseline survey and outcomes survey, including example items and Cronbach’s alphas.a, b

|  |  |  |  |
| --- | --- | --- | --- |
| **Survey type** | **Type of variable** | **Variable** | **Measure** |
| Baseline survey (T0) | Background characteristics | Age | Standard sociodemographic questionnaire (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”) (Fruijtier et al. 2022; Medendorp et al. 2017).  |
| 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) (Visser et al. 2017).  |
| Personal characteristics | Trait optimism | Life Orientation Test-Revised (LOT-R; 10 items; Cronbach’s α = .79). E.g.,“I’m always optimistic about my future” (0-4, “strongly disagree” to “strongly agree”; 6 items were summed, 4 items were filler items)(Scheier et al. 1994).  |
| Uncertainty tolerance | Tolerance for Ambiguity-Scale (TFA; 7 items; Cronbach’s α = .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)(Geller et al. 1993).  |
| Patient preferences | Prognostic information preference c | Adopted from prior research and adjusted (1 item). I.e., “Are you a person who wants to know your life expectancy?” (binary, yes/no)(Hagerty et al. 2004).  |
| Attitude toward striving for length of life c | Length of life-subscale of the Quality Quantity Questionnaire (QQQ; 4 items;Cronbach’s α = .80). E.g., “To live a bit longer, I would clutch at any straw” (1-5, “strongly disagree” to “strongly agree”; scores were summed)(Stiggelbout et al. 1996).  |
| Outcomes survey (T1) | Validity checks(T1, post-video) | 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 d | Shortened Video Engagement-Scale (shortened VES; 4 items; Cronbach’s α = .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)(Lehmann et al. 2022).  |
| Perceived video realism d | Adopted from prior research (3 items; Cronbach’s α = .91). E.g., “I thought the video was realistic” (1-7 “strongly disagree” to “strongly agree”; scores were summed and averaged)(Fruijtier et al. 2022; Hillen, van Vliet et al. 2013; Lehmann et al. 2022; Medendorp et al. 2017; Medendorp et al. 2021; Visser et al. 2017; Visser et al. 2022; Visser, Hillen et al. 2016; Visser, Tollenaar et al. 2016; Visser et al. 2018).  |
| Emotional reaction(T1, pre-video; T1, post-video) | Positive affect | Positive affect-subscale of the Positive and Negative Affect-Scale (PANAS; 10 items; Cronbach’s α = .91 pre-video and .87 post-video). E.g., “Indicate the extent to which you feel excited right now, that is, at the present moment” (1-5, “very slightly or not at all” to “extremely”; scores were summed)(Watson, Clark et al. 1988).  |
| Negative affect | Negative affect-subscale of the Positive and Negative Affect-Scale (PANAS; 10 items; Cronbach’s α = .88 pre-video and .91 post-video). E.g., “Indicate the extent to which you feel distressed right now, that is, at the present moment” (1-5, “very slightly or not at all” to “extremely”; scores were summed)(Watson, Clark et al. 1988).  |
| State anxiety | State-subscale of the Spielberger State Trait Anxiety Inventory-Short Form (STAI-state-SF; 6 items; Cronbach’s α = .85 pre-video and .91 post-video). E.g., “I feel tense” (1-4, “not at all” to “very much so”; scores were summed)(Marteau and Bekker 1992).  |
| Coping with cancer(T1, post-video) | Helplessness/hopelessness e | Helplessness/hopelessness-subscale of the Mental Adjustment to Cancer-scale (MAC; 6 items; Cronbach’s α = .74). E.g., “I feel like giving up” (1-4, “does not apply at all to me” to “totally applies to me”; scores were summed)(Watson, Greer et al. 1988).  |
| Fighting spirit e | Fighting spirit-subscale of the Mini Mental Adjustment to Cancer-scale (Mini-MAC; 4 items; Cronbach’s α = .78). E.g., “I am determined to beat this disease” (1-4, “does not apply at all to me” to “totally applies to me”; scores were summed)(Watson et al. 1994).  |
| Appreciation of the consultation(T1, post-video) | Trust in the oncologist e | Trust in Oncologist Scale-Short Form (TiOS-SF, adjusted for APs; 8 items; Cronbach’s α = .91). E.g.,“I think this oncologist can handle any medical situation, even a very serious one” (1-5, “strongly disagree” to “strongly agree”; scores were summed and averaged)(Hillen, Butow et al. 2013; Hillen et al. 2014; Hillen et al. 2012; Hillen et al. 2017).  |
| Uncertainty regarding provided prognostic information e, f | Mishel Uncertainty in Illness-Scale (MUIS; selection of 4 out of 33 original items, adjusted to match this study’s content; Cronbach’s α = .62). E.g., “The explanations this oncologist gives about my life expectancy seem hazy to me“ (1-5, “strongly disagree” to “strongly agree”; scores were summed and averaged)(Mishel 1981; Mishel and Clayton 2008).  |
| Satisfaction regarding provided prognostic information e, f | Patient Satisfaction Questionnaire (PSQ; selection of 1 out of 5 original items, adjusted to match this study’s content). I.e., “How satisfied are you with the information you received from this oncologist about the general life expectancy of people with metastatic esophageal cancer?“ (0-10 visual analogue scale with slider bar, “not at all satisfied” to “very satisfied”)(Aalfs et al. 2007). |
| Desirability regarding provided prognostic information f | Self-developed (1 item). I.e., “Would you like to receive information about life expectancy as was provided by the oncologist in the video?” (1-5, “I certainly would not” to “I certainly would”). |
| a The content of this table partly overlaps results of a different analysis (reported elsewhere (van der Velden et al. 2023)) on the dataset used for the current paper.  b Interpretation: < 0.50 unacceptable, 0.50–0.60 poor, 0.60–0.70 questionable, 0.70–0.80 acceptable, 0.80–.90 good, 0.90–1.00 excellent. c Items included an introductory sentence, e.g., “We would like to know your reactions in the following imaginary situation. Imagine that you get cancer.” d Items were placed at the end of the outcomes survey to prevent APs stepping out of the imaginary situation prematurely. e 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...”. f Items were not presented to APs in the condition with non-disclosure (video 1). Abbreviations:AP: analogue patient. LOT-R: Life Orientation Test-Revised; TFA: Tolerance for Ambiguity-Scale; QQQ: Quality Quantity Questionnaire; VES: Video Engagement-Scale; PANAS: Positive and Negative Affect-Scale; STAI-state-SF: State-subscale of the Spielberger State Trait Anxiety Inventory-Short Form; MAC: Mental Adjustment to Cancer; TiOS-SF: Trust in Oncologist Scale-Short Form; MUIS: Mishel Uncertainty in Illness-Scale; PSQ: Patient Satisfaction Questionnaire. |

**Table A.5.** Manipulation success, based on APs’ perceptions of and the actual prognostic communication of the oncologist (van der Velden et al. 2023). a

|  |  |
| --- | --- |
| **Manipulation of prognostic communication strategies** | **Validity checks** |
| **APs who agreed to have watched a video withthe indicated manipulation among APs** **who truly watched a video** ***with* the indicated manipulation (%)** | **APs who agreed to have watched a video withthe 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*<.001. a Chi2-tests were used to compare proportions of APs who *agreed* 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 A.6.** Main and interaction effects of the type and contentof disclosure of prognosison APs’ emotional reaction (MANOVAs).

|  |  |  |
| --- | --- | --- |
| **Effects** | **Multivariate****Cluster of outcomes: *emotional reaction*** | **Univariate** |
| **Manipulation:** ***Type* of disclosure** | **Hotelling’s Trace** | **F** | **Hypothesis df** | **Error df** | ***p*** | **Partial η2** | **Outcomes** | **df** | **F** | ***p*** | **Partial η2** |
| Type of disclosure | .010 | 1.668 | 6 | 2048 | .125 | .005 | - | - | - | - | - |
| Prognostic information preference | .007 | 2.308 | 3 | 1025 | .075 | .007 | - | - | - | - | - |
| Type of disclosure x prognostic information preference | .007 | 1.233 | 6 | 2048 | .286 | .004 | - | - | - | - | - |
| Uncertainty tolerance a | .021 | 7.122 | 3 | 1025 | <.001\*\*\* | .020 | ΔPositive affect | 1 | .092 | .761 | .000 |
| ΔNegative affect | 1 | 17.620 | <.001\*\*\* | .017 |
| ΔState anxiety | 1 | 4.147 | .042\* | .004 |
| Type of disclosure x uncertainty tolerance | .008 | 1.294 | 6 | 2048 | .257 | .004 | - | - | - | - | - |
| **Manipulation:** ***Content* of disclosure**  | **Hotelling’s Trace** | **F** | **Hypothesis df** | **Error df** | ***p*** | **Partial η2** | **Outcomes** | **df** | **F** | ***p*** | **Partial η2** |
| Framing of prognosis | .008 | .774 | 6 | 1214 | .590 | .004 | - | - | - | - | - |
| Precision of prognosis | .004 | .827 | 3 | 608 | .479 | .004 | - | - | - | - | - |
| Uncertainty tolerance a | .027 | 5.532 | 3 | 608 | <.001\*\*\* | .027 | ΔPositive affect | 1 | 4.778 | .029\* | .008 |
| ΔNegative affect | 1 | 2.965 | .086 | .005 |
| ΔState anxiety | 1 | .211 | .646 | .000 |
| Framing of prognosis x uncertainty tolerance | .015 | 1.498 | 6 | 1214 | .175 | .007 | - | - | - | - | - |
| Precision of prognosis x uncertainty tolerance | .016 | 3.233 | 3 | 608 | .022\* | .016 | ΔPositive affect | 1 | 5.983 | .015\* | .010 |
| ΔNegative affect | 1 | 7.867 | .005\*\* | .013 |
| ΔState anxiety | 1 | 5.870 | .016\* | .010 |
| \*Significant at *p*<.05. \*\*Significant at *p*<.01. \*\*\*Significant at *p*<.001. a Significant main effects of uncertainty tolerance on APs’ emotional reaction 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 η2: effect size expressing the amount of variance accounted for by one or more independent variables (small effect, partial η2 = .01; medium effect, partial η2 = .06; large effect, partial η2 = .14 (Sink and Mvududu 2010)); Δ: difference. |

**Table A.7.** Main and interaction effects of the type and contentof disclosure of prognosison APs’ coping with cancer (MANOVAs).

|  |  |  |
| --- | --- | --- |
| **Effects** | **Multivariate****Cluster of outcomes: *coping with cancer*** | **Univariate** |
| **Manipulation:** ***Type* of disclosure** | **Hotelling’s Trace** | **F** | **Hypothesis df** | **Error df** | ***p*** | **Partial η2** | **Outcomes** | **df** | **F** | ***p*** | **Partial η2** |
| Type of disclosure | .003 | .820 | 4 | 2050 | .512 | .002 | - | - | - | - | - |
| Trait optimism a | .056 | 28.856 | 2 | 1026 | <.001\*\*\* | .053 | Helplessness/hopelessness | 1 | 55.403 | <.001\*\*\* | .051 |
| Fighting spirit | 1 | 26.299 | <.001\*\*\* | .025 |
| Type of disclosure x trait optimism | .003 | .647 | 4 | 2050 | .629 | .001 | - | - | - | - | - |
| Attitude toward striving for length of life a | .213 | 109.091 | 2 | 1026 | <.001\*\*\* | .175 | Helplessness/hopelessness | 1 | 10.905 | <.001\*\*\* | .011 |
| Fighting spirit | 1 | 197.886 | <.001\*\*\* | .162 |
| Type of disclosure x attitude toward striving for length of life | .006 | 1.543 | 4 | 2050 | .187 | .003 | - | - | - | - | - |
| **Manipulation:** ***Content* of disclosure**  | **Hotelling’s Trace** | **F** | **Hypothesis df** | **Error df** | ***p*** | **Partial η2** | **Outcomes** | **df** | **F** | ***p*** | **Partial η2** |
| Framing of prognosis | .008 | 1.203 | 4 | 1208 | .308 | .004 | - | - | - | - | - |
| Precision of prognosis | .000 | .014 | 2 | 605 | .986 | .000 | - | - | - | - | - |
| Trait optimism a | .113 | 34.159 | 2 | 605 | <.001\*\*\* | .101 | Helplessness/hopelessness | 1 | 64.786 | <.001\*\*\* | .097 |
| Fighting spirit | 1 | 33.684 | <.001\*\*\* | .053 |
| Framing of prognosis x trait optimism | .006 | .845 | 4 | 1208 | .497 | .003 |  | - | - | - | - |
| Precision of prognosis x trait optimism | .000 | .113 | 2 | 605 | .893 | .000 | - | - | - | - | - |
| Attitude toward striving for length of life a | .180 | 54.511 | 2 | 605 | <.001\*\*\* | .153 | Helplessness/hopelessness | 1 | 6.920 | .009\*\* | .011 |
| Fighting spirit | 1 | 100.258 | <.001\*\*\* | .142 |
| Framing of prognosis x attitude toward striving for length of life | .006 | .940 | 4 | 1208 | .440 | .003 | - | - | - | - | - |
| Precision of prognosis x attitude toward striving for length of life | .004 | 1.164 | 2 | 605 | .313 | .004 | - | - | - | - | - |
| \*Significant at *p*<.05. \*\*Significant at *p*<.01. \*\*\*Significant at *p*<.001. a Significant main effects of trait optimism and attitude toward striving for length of life on APs’ coping with cancer 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 η2: effect size expressing the amount of variance accounted for by one or more independent variables (small effect, partial η2 = .01; medium effect, partial η2 = .06; large effect, partial η2 = .14 (Sink and Mvududu 2010)). |

**Table A.8.** Main and interaction effects of the type and contentof disclosure of prognosison APs’ appreciation of the consultation (MANOVAs).

|  |  |  |
| --- | --- | --- |
| **Effects** | **Multivariate****Cluster of outcomes: *appreciation of the consultation*** | **Univariate** |
| **Manipulation:** ***Type* of disclosure** | **Hotelling’s Trace** | **F** | **Hypothesis df** | **Error df** | ***p*** | **Partial η2** | **Outcomes a** | **df** | **F** | ***p*** | **Partial η2** |
| Type of disclosure **a** | .015 | 3.932 | 3 | 807 | .008\*\* | .014 | Uncertaintyb  | 1 | .755 | .385 | .001 |
| Satisfaction b | 1 | 11.303 | <.001\*\*\* | .014 |
| Desirability b  | 1 | 3.017 | .083 | .004 |
| Prognostic information preference | .002 | .472 | 3 | 807 | .702 | .002 |  | - | - | - | - |
| Type of disclosure x prognostic information preference | .013 | 3.451 | 3 | 807 | .016\* | .013 | Uncertainty b  | 1 | 7.291 | .007\*\* | .009 |
| Satisfaction b | 1 | 1.312 | .252 | .002 |
| Desirability b | 1 | 6.268 | .012\* | .008 |
| Uncertainty tolerance c | .022 | 6.045 | 3 | 807 | <.001\*\*\* | .022 | Uncertainty b | 1 | 1.599 | .206 | .002 |
| Satisfaction b | 1 | 9.517 | .002\*\* | .012 |
| Desirability b | 1 | 2.236 | .135 | .003 |
| Type of disclosure x uncertainty tolerance | .010 | 2.794 | 3 | 807 | .039\* | .010 | Uncertainty b | 1 | 1.608 | .205 | .002 |
| Satisfaction b | 1 | 3.867 | .050 | .005 |
| Desirability b | 1 | 7.811 | .005\*\* | .010 |
| **Manipulation:** ***Content* of disclosure**  | **Hotelling’s Trace** | **F** | **Hypothesis df** | **Error df** | ***p*** | **Partial η2** | **Outcomes** | **df** | **F** | ***p*** | **Partial η2** |
| Framing of prognosis | .019 | 1.392 | 8 | 1184 | .195 | .009 | - | - | - | - | - |
| Precision of prognosis | .020 | 2.978 | 4 | 593 | .019\* | .020 | Trust in the oncologist | 1 | .317 | .574 | .001 |
| Uncertaintyb | 1 | 4.139 | .042\* | .007 |
| Satisfaction b | 1 | 7.791 | .005\*\* | .013 |
| Desirability b | 1 | 5.792 | .016\* | .010 |
| Education c | .060 | 4.457 | 8 | 1184 | <.001\*\*\* | .029 | Trust in the oncologist | 2 | 1.950 | .143 | .007 |
| Uncertaintyb | 2 | 6.924 | <.001\*\*\* | .023 |
| Satisfaction b | 2 | 2.053 | .129 | .007 |
| Desirability b | 2 | .856 | .425 | .003 |
| Framing of prognosis x education | .024 | .899 | 16 | 2366 | .570 | .006 | - | - | - | - | - |
| Precision of prognosis x education | .015 | 1.146 | 8 | 1184 | .329 | .008 | - | - | - | - | - |
| Uncertainty tolerance c | .024 | 3.628 | 4 | 593 | .006\*\* | .024 | Trust in the oncologist | 1 | 1.000 | .318 | .002 |
| Uncertaintyb | 1 | 5.374 | .021\* | .009 |
| Satisfaction b | 1 | 1.260 | .262 | .002 |
| Desirability b | 1 | 1.976 | .160 | .003 |
| Framing of prognosis x uncertainty tolerance | .011 | .814 | 8 | 1184 | .590 | .005 | - | - | - | - | - |
| Precision of prognosis x uncertainty tolerance | .007 | 1.039 | 4 | 593 | .386 | .007 | - | - | - | - | - |
| \*Significant at *p*<.05. \*\*Significant at *p*<.01. \*\*\*Significant at *p*<.001. a We used an adjusted dummy to analyze effects of the *type* of disclosure on APs’ uncertainty, satisfaction and desirability regarding prognostic information, as these outcomes were not assessed in the non-disclosure condition (i.e., two categories: prognostic disclosure *vs.* communication of unpredictability). As a result, APs’ trust in the oncologist was analyzed separately, using one-way ANOVAs. b Regarding provided prognostic information. c Significant main effects of education and uncertainty tolerance on APs’ appreciation of the consultation 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 η2: effect size expressing the amount of variance accounted for by one or more independent variables (small effect, partial η2 = .01; medium effect, partial η2 = .06; large effect, partial η2 = .14 (Sink and Mvududu 2010)). |

**Table A.9.** Main and interaction effects of the typeof disclosure of prognosison APs’ trust in the oncologist (one-way ANOVAs). a

|  |
| --- |
| **Trust in the oncologist** |
| **Effects** | **Sum of squares** | **df** | **Mean square** | **F** | ***p*** |
| Type of disclosure | 1.267 | 2 | .634 | 2.386 | .093 |
| Prognostic information preference | .692 | 1 | .692 | 2.606 | .107 |
| Type of disclosure x prognostic information preference | .059 | 2 | .030 | .111 | .895 |
| Uncertainty tolerance b | 1.272 | 1 | 1.272 | 4.791 | .029\* |
| Type of disclosure x uncertainty tolerance | 1.779 | 2 | .890 | 3.350 | .035\* |
| \*Significant at *p*<.05. a As APs’ uncertainty, satisfaction and desirability regarding prognostic information were not assessed in the non-disclosure condition, APs’ trust in the oncologist was the only variable in the cluster “appreciation of the consultation” for which differences between all categories of the *type* of disclosure (i.e., prognostic disclosure *vs.* communication of unpredictability *vs.* non-disclosure) were examined. As a result, trust in the oncologist was analyzed separately, using one-way ANOVAs*.* b The significant main effect of uncertainty tolerance on APs’ trust in the oncologist was not described in the results section, as this finding was not relevant to our research questions. Abbreviations: AP: analogue patient; ANOVA: analysis of variance; df: degrees of freedom; F: F-test statistic; *p*: probability value. |

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