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Preconsultation compassion video to reduce anxiety among patients referred to a cancer centre: a randomised control trial

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ABSTRACT

Objective Anxiety is common among patients attending an initial oncology consultation. The objective of this trial was to test if an enhanced compassion video emailed to patients prior to their initial oncology consultation reduces anxiety compared with being sent an information-only introduction video.

Methods and analysis We conducted a randomised control trial at a single university-based cancer centre between May 2021 and October 2023. We enrolled adult patients scheduled for an initial cancer consultation. Subjects underwent simple 1:1 randomisation to receive either a standard introduction video or an enhanced compassion video via email. Investigators and subjects were blinded to allocation. The primary outcome was degree of anxiety on arrival to the initial oncology consultation, measured using the Hospital Anxiety and Depression scale (HADS).

Results Of 1005 subjects randomised to the standard video and 1038 to the enhanced compassion video, 183 and 179 subjects completed the HADS-anxiety in each group, respectively. Only 25% reported watching their assigned video. There was no difference in degree of anxiety between the standard or compassion video groups using intention to treat analysis (median (IQR) 7 (4–10) vs 7 (4–10), p value=0.473)) or per-protocol analysis (limited to subjects who reported watching the video) (median (IQR) 7 (4–10) (n=45) vs 7 (5–10) (n=46), p value=0.997).

Conclusion Receiving an enhanced compassion video did not reduce anxiety compared with a standard introduction video. Given 25% of subjects reported watching their assigned video, future research should focus on identifying interventions at the point-of-care to reduce anxiety.

Trial registration number NCT04503681.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Anxiety is common among patients attending an initial oncology consultation and is associated with poor clinical outcomes. Interventions aimed at reducing anxiety among patients with cancer may improve clinical outcomes.

WHAT THIS STUDY ADDS

⇒ This randomised control trial found anxiety is common among patients presenting for an initial oncology consultation; however, receiving an enhanced compassion video did not decrease anxiety compared with receiving a standard introduction video.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Given only 25% of patients reported watching the assigned video, future research should focus on identifying interventions at the point of care to increase patient experience of compassion and reduce anxiety.

INTRODUCTION

It is common for patients to have a high degree of anxiety during an initial oncology consultation.[1 2] Not only is anxiety psychologically distressing but a high degree of anxiety has been shown to compete with task-relevant processes and restrict the capacity of working memory.[3] Therefore, when clinicians are discussing cancer diagnosis and treatment options, anxiety may interfere with a patient's ability to retain information and make informed treatment decisions. Furthermore, anxiety treatment is associated with reduced mortality risk among patients with cancer.[4] Thus, interventions aimed at reducing anxiety among patients with cancer may enhance patient involvement in care and improve quality of life and other clinical outcomes.

Compassion is commonly defined as the emotional response to another's pain or suffering involving an authentic desire to help.[5–7] Compassionate communication is associated with (1) reduced stress-mediated disease pathophysiology, (2) increased stress buffering, (3) antidepressant effects and (4) attenuation of somatic disease effects on psychological and emotional

well-being.[8 9] Furthermore, greater patient experience of clinician compassion lowers patients' anxiety and distress,[10] is associated with better patient emotional health[11] and is associated with lower development of post-traumatic stress disorder (PTSD) symptoms among patients who experience a medical emergency.[9] Previous studies have found when volunteers watch video-vignettes of clinician–patient interactions, videos containing compassionate statements increase volunteer trust in the physician and decrease anxiety.[12 13] A study by Fogarty *et al* randomised volunteer breast cancer survivors to watch either a standard video of a breast cancer consultation, in which a physician described treatment options, or an 'enhanced compassion' video identical to the standard video, but with two additional segments, during which the oncologist acknowledged the psychological concerns of the patient, validated the patient's emotional state and expressed emotional support.[14] They found that the breast cancer survivors who watched the enhanced compassion video had a significantly lower degree of anxiety compared with the group who watched the standard video. Thus, viewing compassionate statements via video may be a means to attenuate anxiety among active cancer patients prior to an initial oncology consultation. While compassionate statements have been shown to reduce anxiety among volunteers in a hypothetical scenario, it is not yet known if a similar intervention reduces anxiety among patients preparing for an initial oncology consultation.

The primary aim of this randomised control trial was to test if receiving a video via email containing compassionate statements from an oncologist prior to an initial oncology consultation reduces anxiety, compared with receiving a standard introduction video, among patients referred to a cancer centre. We hypothesised that watching a video containing compassionate statements from an oncologist prior to the initial cancer consultation would reduce patient anxiety compared with watching a standard introduction video.

METHODS

Trial setting and design

We performed a prospective, randomised, controlled, parallel-group clinical trial at a single university-based cancer centre between 1 May 2021 and 31 October 2023. The trial is reported according to the Consolidated Standards of Reporting Trials statement (online supplemental table 1).[15] It was *a priori* registered on the United States National Library of Medicine ClinicalTrials.gov and the protocol was previously published.[16] The Institutional Review Board at our institution approved this study, and all subjects provided written informed consent to participate in the study. Data for this trial are publicly available.[17]

Patient and public involvement

Patients were not involved in the design, or conduct, or reporting or dissemination plans of our research.

Participants

We enrolled adult patients scheduled for an initial cancer consultation at our cancer centre. These patients have a confirmed diagnosis of cancer or a suspicion of cancer that requires further evaluation. Inclusion criteria included: (1) age greater than or equal to 18 years and (2) scheduled for an initial cancer consultation. We excluded patients who did not have an active email address or were medically unable to complete the research questionnaire at the time of the initial cancer consultation.

Intervention

When a new patient scheduled an appointment for an initial cancer consultation, the scheduling operator sent an email to the patient containing a link for one of two introduction videos. Subjects received either an information only standard introduction video (76 s) or an enhanced compassion video (107 s). The two videos featured the same oncologist (ie, Medical Director of the cancer centre) and were identical except the enhanced compassion video contained five additional compassion-focused statements. The compassionate statements added to the enhanced compassion video were based on the statements used by Fogarty *et al*[14] and further modified based on the results of a systematic review of clinician compassionate behaviours, which found incorporating statements of support, acknowledgement, patient's perspective, emotion naming, and validation increased patient perception of compassion.[18] The full scripts for each video were previously published[16] and are displayed in the online supplemental methods.

Randomisation and masking

At the time of scheduling an initial consultation with a scheduling operator, patients were randomly assigned to receive one of the two videos using a simple (ie, not stratified) parallel design, computer-generated 1:1 randomisation schedule. The randomisation schedule was generated a priori by an independent statistician. Scheduling operators were blinded to the video allocation and sent the next video in the randomisation sequence that was labelled either 'video A' or 'video B'. The study was not discussed with patients prior to their scheduled appointment in order to keep the patients masked to the study hypotheses prior to the consultation and to prevent any influence knowledge of the videos' purpose may have on the outcome measures. Investigators and the research statistician were blinded to video allocation until after all study assessments and analyses were completed.

Measurements and data collection

On arrival to the cancer centre, prior to the initial cancer consultation (ie, while patients were waiting to be seen by an oncologist), subjects were approached to participate in the study by research coordinators. After obtaining written informed consent, the research coordinators administered the research questionnaire to subjects. The questionnaire assessed the subjects' perception of the

video oncologist's compassion using the 5-item compassion measure, a previously validated patient-assessed measure of perceived compassion during patient care (scale range 5–20, with higher score indicating greater compassion).[19–21] Subjects were asked about prior history of anxiety and/or depression. We abstracted patient demographics as well as clinical information pertaining to cancer diagnosis from the medical record.

Outcome measures

The primary outcome measure was anxiety severity on arrival to the cancer centre for the initial consultation measured using the Hospital Anxiety and Depression scale (HADS). The HADS is a well-validated, 14-item, self-reported instrument used to assess anxiety and depressive symptoms in populations with medical conditions, specifically oncology populations.[22–27] It has two 7-item subscales: HADS Anxiety and HADS Depression. Each item is scored on a 4-point scale (0=not at all to 3=nearly all the time); thus, each subscale can range from 0 to 21. The secondary outcomes were the HADS Depression score as well as the proportion of randomised subjects who did not attend their scheduled appointment (ie, cancelled their appointment or did not show up) and the proportion of randomised subjects who did not agree to participate in the research study. All data were entered into Research Electronic Data Capture, a secure, web-based application designed to support data capture for research studies,[28] and exported into Stata/SE V.18.0 for Mac, StataCorp LP (College Station, Texas) for analysis.

Statistical analysis

Our full statistical plan was previously published.[16] For descriptive statistics, we report categorical data as proportions with 95% CIs and continuous data as means with SD or medians with IQRs as appropriate. We used Cronbach's alpha to separately test the internal reliability of the HADS anxiety scale, HADS depression scale and the 5-item compassion measure among our cohort. We tested if the enhanced compassion video group perceived the video oncologist as more (or less) compassionate than the standard introduction video group, as measured by the 5-item compassion measure, using the Wilcoxon rank-sum test. We also used quantile regression to report the median difference with 95% CI. We report the median difference as opposed to the mean difference given the outcome variables of interest are ordinal data and not normally distributed.

For the primary outcome, we used the Wilcoxon rank-sum test to test for a difference in the HADS anxiety scale between the two video groups and used quantile regression to report the median difference with 95% CI. We performed a sensitivity analysis calculating mean difference with 95% CI and used the t-test to test for a difference between groups. We also performed a sensitivity analysis dichotomising the HADS anxiety scale into low (≤8) and moderate/high (>8). A cut point of 8 on the HADS subscales has been defined as the optimal cut point for diagnosis screening and is commonly used to define clinically significant symptoms in research studies.[25 29] We used the Fisher's exact test to test if the proportion of patients with clinically significant symptoms differed between the two video groups and report the absolute risk difference with 95% CIs. For our secondary outcome measure, we repeated the same analyses using the HADS depression scale in place of the HADS anxiety scale. We performed all analyses using intention to treat principle. We then performed a per protocol analysis excluding patients who stated they did not watch the video prior to presentation to the cancer centre. We used Fisher's exact test to test for differences in the proportion of subjects who did not attend their scheduled appointment and proportion of subjects who did not agree to participate in the research study between the two video groups.

We performed exploratory analyses to test if the relationship between video group and anxiety severity differs among prespecified subgroups we performed separate multivariable quantile regression models with the HADS anxiety scale as the dependent variable and entering the following patient characteristic along with an interaction term between video group and the characteristic as independent variables: (1) age (decile), (2) sex (male vs female), (3) race (white vs black vs other), (4) suspected primary cancer (breast vs gastrointestinal vs pulmonary vs gynaecologic vs other).[16] We performed a similar post hoc analysis dichotomising age into three categories: <40, 40–65 and >65.

We considered a p value less than 0.05 to be statistically significant for a difference in the primary outcome (HADS-anxiety score). Given the secondary and subgroup analyses were exploratory we did not adjust for multiple comparisons.

Sample size calculation

Assuming an alpha of 0.05, power of 0.8 and an SD of 5 for the HADS anxiety scale, based on previous literature,[24 26] to detect a clinically meaningful difference (previously defined as a 1.5-point difference)[30] between the two groups, we required 176 subjects per group.

RESULTS

A total of 374 subjects were enrolled; 186 received the enhanced compassion video and 188 received the standard video (figure 1). Baseline subject characteristics are displayed in table 1 and appear well balanced between the groups. The majority of subjects were female (64%), and the most common initial consultation was for breast cancer (32%). The median (IQR) time from the video being sent to patients and their scheduled oncology consultation was 9 (5–15) days. We found the HADS-anxiety (alpha=0.86), HADS-depression (alpha=0.77) and 5-item compassion measure (alpha=0.93) had good internal reliability. We did not find evidence of a difference in the proportion of subjects who did not attend their scheduled appointment between the enhanced

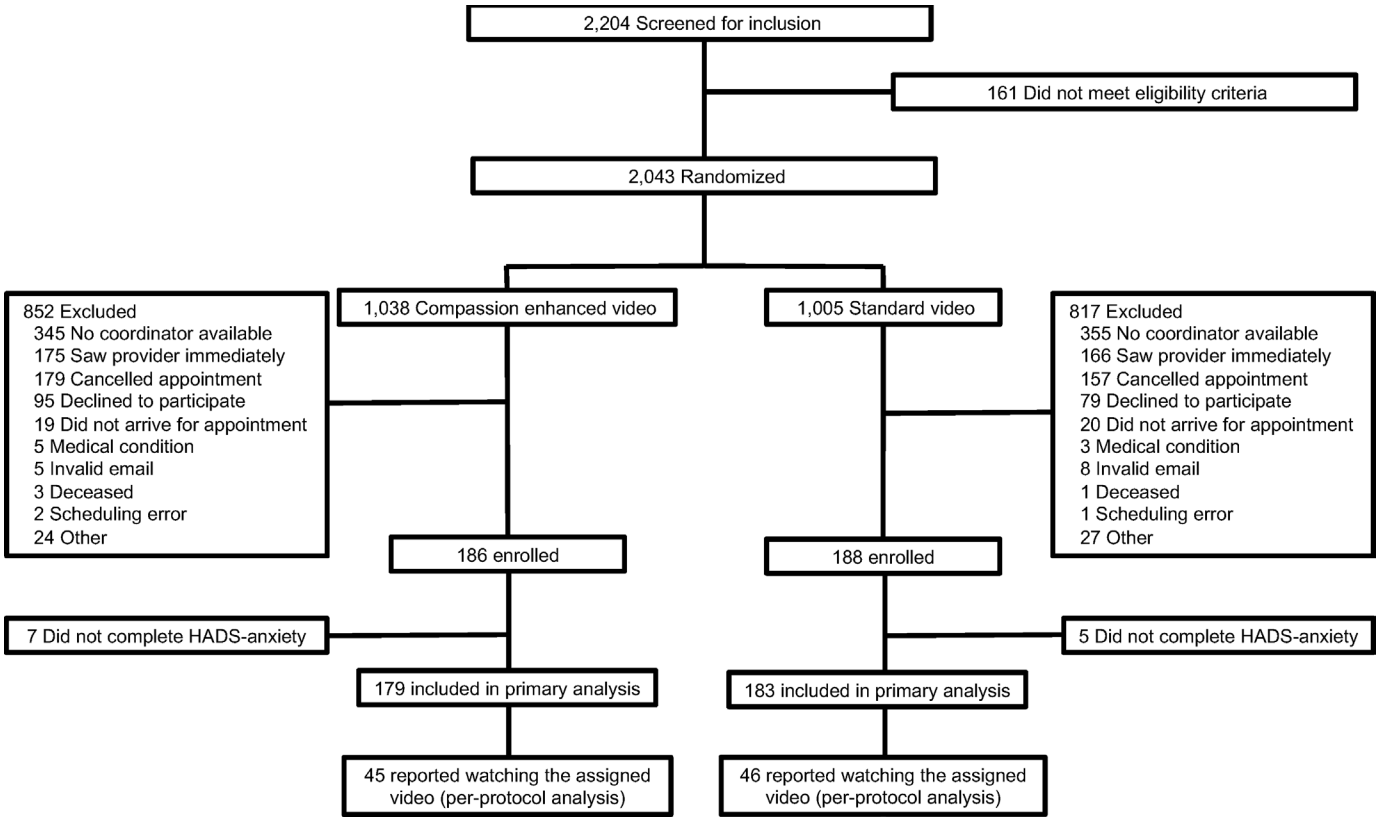

Figure 1 Consort diagram. HADS, Hospital Anxiety and Depression Scale.

compassion and the standard introduction video groups (19% (198/1038) vs 18% (177/1005) respectively, Fisher's exact test p value=0.424), nor the proportion of subjects who did not agree to participate (9% (95/1038) vs 8% (79/1005), Fisher's exact test p value=0.304).

Twelve subjects did not answer one or more of the HADS-anxiety items (seven in the enhanced compassion group and five in the standard video group). The median (IQR) HADS-anxiety score was 7 (4–10) and 33% had a score greater than 8. Among patients with no prior documented or self-reported history of anxiety, 25% (67/273) had a HADS-anxiety score greater than 8. In the intention to treat analysis, we did not find evidence of a difference in the median (IQR) HADS-anxiety score between the enhanced compassion (n=179) and standard video (n=183) groups (7 (4–10) vs 7 (4–10) respectively, Wilcoxon rank-sum p value=0.473), the mean (SD) HADS-anxiety score (6.9 (4.5) vs 7.1 (4.4) respectively, t-test p value=0.620) or those with a HADS-anxiety score >8 (32% (58/179) vs 37% (67/183), respectively, Fisher's exact test p value=0.440) (table 2).

Six subjects did not answer one or more of the HADS-depression items (three in the enhanced compassion group and three in the standard video group). The median (IQR) HADS-depression score was 3 (1–6) and 12% had a score greater than 8. In the intention to treat analysis, we did not find evidence of a difference in the median (IQR) HADS-depression score between the enhanced compassion (n=183) or standard video groups (n=185) (3 (1–6) vs 3 (1–6) respectively, Wilcoxon rank-sum p value=0.338), mean (SD) HADS-depression score (4.1 (3.6) vs 3.6 (3.1) respectively, t-test p value=0.205), or those with a HADS-depression score >8 (15% (27/183) vs 9% (16/185) respectively, Fisher's exact test p value=0.076) (table 2).

Of the 374 subjects, only 93 (25%) reported watching the video (46/186 (25%) enhanced compassion video and 47/188 (25%) standard video). Online supplemental table 2 displays patient characteristics of subjects who did and did not report watching the video. Women were two times as likely to watch the assigned video as men (31% vs 15%, respectively). One patient in the standard video group who reported watching the assigned video did not complete the 5-item compassion measure. Among those who reported watching their assigned video we did not find evidence of a difference in the median (IQR) 5-item compassion measure between the enhanced compassion (n=46) and standard video groups (n=46) (20 (16–20) vs 20 (16–20), median difference 0 (95% CI −1.0 to 1.0), Wilcoxon rank-sum p value=0.942). We did not find evidence of a difference in the HADS-anxiety score between those who reported watching their assigned video (n=91) and those who did not (n=269) (median (IQR) 7 (5–10) vs 7 (3–10) respectively, Wilcoxon rank-sum p value=0.431). In the per protocol analysis, including only those who reported watching their assigned video, we did not find evidence of a difference in the HADS-anxiety score between the enhanced compassion video group (n=45) and the standard video group (n=46) (median (IQR) 7 (4–10) vs 7 (5–10), respectively, Wilcoxon rank-sum p value=0.997). We also did not find evidence

Table 1 Baseline patient characteristics

Variables	All subjects n=374	Enhanced compassion video n=186	Standard video n=188
Age (years (SD))	62 (12)	62 (11)	61 (13)
Age<40 years (n (%))	22 (6)	8 (4)	14 (7)
Age 40–65 years (n (%))	206 (55)	105 (56)	101 (54)
Age>65 years (n (%))	146 (36)	73 (39)	73 (39)
Female (n (%))	238 (64)	117 (63)	121 (64)
Race (n (%))			
White/Caucasian	262 (70)	133 (72)	129 (69)
Black/African American	54 (14)	26 (14)	28 (15)
Asian	6 (2)	2 (1)	4 (2)
Other	52 (14)	25 (13)	27 (14)
Hispanic ethnicity (n (%))	16 (4)	7 (4)	9 (5)
Pre-existing comorbidities (n (%))			
Diabetes	45 (12)	26 (14)	19 (10)
Known coronary artery disease	5 (1)	4 (2)	1 (1)
Hypertension	121 (32)	62 (33)	59 (31)
Renal insufficiency	4 (1)	2 (1)	2 (1)
Pulmonary disease	27 (7)	16 (9)	11 (6)
Cerebral vascular disease	3 (1)	1 (1)	2 (1)
Congestive heart failure	3 (1)	2 (1)	1 (1)
Cancer type (n (%))			
Breast	119 (32)	54 (29)	65 (35)
Gastrointestinal	66 (17)	31 (17)	35 (19)
Pulmonary	25 (7)	13 (7)	12 (6)
Skin	14 (4)	7 (4)	7 (4)
Central nervous system	6 (2)	6 (3)	0
Gynaecologic	47 (13)	28 (15)	19 (10)
Other	94 (25)	46 (25)	48 (26)
Unknown	3 (1)	1 (1)	2 (1)
Prior diagnosis of depression* (n (%))	75 (20)	37 (20)	38 (20)
Prior diagnosis of anxiety* (n (%))	101 (27)	50 (27)	51 (27)
Days from video sent to consultation (median (IQR))	9 (5–15)	11 (6–15)	8 (4–15)

*Documented in electronic medical record and/or self-reported.

of a difference in the proportion with a HADS-anxiety score >8 (38% (17/45) vs 35% (16/46), respectively, Fisher's exact p value=0.829). Similarly, we did not find evidence of a difference in the HADS-depression score between the enhanced compassion video (n=45) and standard video (n=46) (median (IQR) 3 (1–6) vs 2 (1–6), respectively, Wilcoxon rank-sum pvalue=0.304), nor the proportion with a HADS-depression score >8 (9% (4/45) vs 7% (3/46), respectively, Fisher's exact p value=0.714) table 2).

In our subgroup analyses, we did not find evidence of an interaction between video group and age as a continuous variable (interaction p value=0.273), nor did we find an interaction between video group and any of the categorical subgroups (figure 2). While we found a lower point estimate median anxiety among the enhanced compassion video group across several subgroups, none was found to be statistically significant.

DISCUSSION

In this randomised control trial, we tested if being sent a video-containing compassionate statements from an oncologist prior to an initial oncology consultation reduced anxiety among patients referred to a cancer centre. We found the majority of patients reported some degree of anxiety and a third of patients reported a high degree of anxiety on arrival to the cancer centre. We did

Table 2 Primary and secondary outcome measures

Variables	Enhanced compassion video	Standard video	Difference* (95% CI)	P value
Intention to treat analysis				
HADS—anxiety	n=179	n=183		
Median (IQR)	7 (4–10)	7 (4–10)	0 (–1.1 to 1.1)	0.473†
Mean (SD)	6.9 (4.5)	7.1 (4.4)	–2.3 (–1.1 to 0.7)	0.620‡
HADS—anxiety>8 (n (%))	58 (32)	67 (37)	–4.2% (–14.0 to 5.6)	0.440§
HADS—depression	n=183	n=185		
Median (IQR)	3 (1–6)	3 (1–6)	0 (–0.8 to 0.8)	0.338†
Mean (SD)	4.1 (3.6)	3.6 (3.2)	0.4 (–0.2 to 1.1)	0.205‡
HADS—depression>8 (n (%))	27 (15)	16 (9)	6.1% (–0.4 to 12.6)	0.076§
Per-protocol analysis				
HADS—anxiety	n=45	n=46		
Median (IQR)	7 (4–10)	7 (5–10)	0 (–1.7 to 1.7)	0.997†
Mean (SD)	7.4 (4.1)	7.3 (3.9)	0.1 (–1.5 to 1.8)	0.869‡
HADS—anxiety>8 (n (%))	17 (38)	16 (35)	3.0% (–16.8 to 22.7)	0.829§
HADS—depression	n=45	n=46		
Median (IQR)	3 (1–6)	2 (1–6)	1 (–0.9 to 2.9)	0.304†
Mean (SD)	3.8 (3.1)	3.3 (3.2)	0.5 (–0.8 to 1.8)	0.433‡
HADS—depression>8 (n (%))	4 (9)	3 (7)	2.4% (–8.6 to 13.3)	0.714§

*Median, mean or risk difference.
†Wilcoxon rank-sum p value.
‡T-test p value.
§Fisher's exact p value.
HADS, Hospital Anxiety and Depression Scale.

not find evidence that receiving an enhanced compassion video decreased anxiety compared with receiving a standard introduction video among this patient cohort.

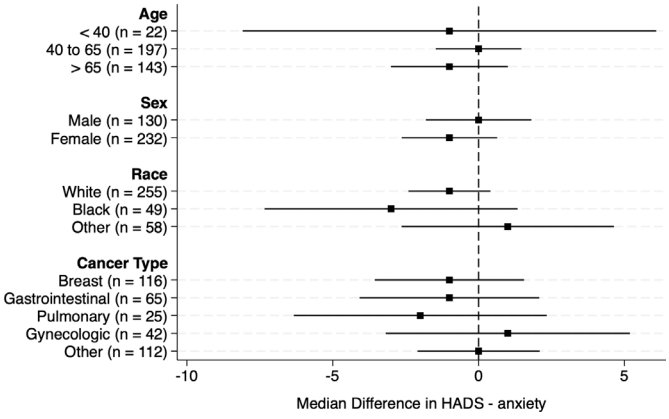

Figure 2 Median difference, with 95% CI, in the Hospital Anxiety and Depression scale (HADS)—anxiety score between the enhanced compassion video group compared with the standard video group (reference) stratified by categorical subgroups. Median difference (95% CI) age: < 40: –1.0 (–8.1 to 6.1), 40–65: 0 (–1.5 to 1.5), > 65: –1 (–3 to 1.0) sex: male: 0 (–1.8 to 1.8), female: –1 (–2.6 to 0.6) race: white: –1 (–2.4 to 0.4), Black: –3 (–7.3 to 1.3), other: 1 (–2.6 to 4.6) cancer type: breast: –1 (–3.6 to 1.6), gastrointestinal: –1 (–4.1 to 2.1), pulmonary –2 (–6.3 to 2.3), gynaecologic: 1 (–3.2 to 5.2), other: 0 (–2.1 to 2.1).

However, only 25% of patients reported watching the assigned video.

The reported degree of anxiety in this study cohort is consistent with prior studies.[25 26] Even among patients with no history of anxiety prior to cancer diagnosis, 25% reported a high degree of anxiety on arrival to the cancer centre. Thus, our results provide further evidence that anxiety is common among patients newly diagnosed with cancer. Prior research has also demonstrated that a high degree of anxiety remains persistent even among cancer survivors.[24] This compilation of evidence highlights the urgent need for research to identify interventions to reduce anxiety among this patient population. While compassionate care at the bedside has been associated with reduced anxiety and PTSD symptoms among patients,[9 10] our study did not find that compassionate statements via video prior to consultation with an oncologist reduced anxiety. This null result may be in part to the fact that the majority of patients did not watch the video. Future research should be directed at increasing engagement in point of care interventions to reduce anxiety, for example, personalised phone calls with compassionate statements during the scheduling process.

All videos used in this study were recordings of the Medical Director of the cancer centre. Patients may not have perceived a greater authentic desire to help (ie, compassion) from the non-personalised, passive

compassion statements used in this study. It is possible that videos from the treating oncologist, the patient is scheduled to visit may seem more personal and thus result in a different outcome. Furthermore, it may not be compassionate statements themselves that resulted in lower anxiety in prior studies. In the study by Fogarty *et al*, cancer survivors viewed a video of a patient–clinician interaction.[14] It is possible that viewing the entire compassionate interaction resulted in lower anxiety, not solely the addition of compassionate statements. Similarly, a prior study found patient experience of compassion in the emergency department was associated with less PTSD symptoms 30 days after discharge among patients who experienced a life-threatening medical emergency.[9] It may be the experience of a compassionate interaction, not simply hearing compassionate statements that may be the key to decreasing anxiety. Thus, interventions at the point of care (eg, in the waiting room and/or during the beginning of the oncology consultation) may be more successful at conveying an authentic desire to help and be more effective at reducing anxiety. In addition, future qualitative studies may help guide development of more personalised compassion interventions.

We acknowledge that this study has important limitations to consider. First, this study was performed at a single university-based cancer centre. It is possible that a larger study or a study in a different patient population may have different results. Second, only 25% of enrolled subjects watched the assigned video. The low engagement with the study intervention may have attenuated the potential effects of the enhanced compassion video. However, this finding is important in and of itself and suggests that any intervention that relies on patients engaging with a passive email is unlikely to be effective in this patient population. While we performed a per protocol analysis among patients who reported watching their assigned video, based on our sample size calculation, this analysis was underpowered to detect a clinically meaningful difference. The reasons for low engagement are unknown. It is possible that some patients may not have been able to access their email, the email containing the video may have been sent to the subjects' spam/junk folder, or subjects' may have been hesitant to open the email link. It is also possible that the high degree of anxiety noted in this cohort could have contributed to the low engagement with the videos. However, we did not find a difference in anxiety between those who did and did not watch their assigned video. Third, it is possible that the HADS-anxiety was not sensitive to differences in anxiety between groups. However, the HADS-anxiety has previously been validated for use in oncology patients,[24–27] and we found good internal reliability in our cohort. In addition, we do not know subjects' baseline HADS-anxiety scores prior to receiving the intervention videos. However, ideally the randomisation process would result in similar baseline anxiety between the two groups. Fourth, a proportion of potential subjects were excluded due to no research coordinator available at the time the patients presented to the cancer centre. However, given an approximately equal proportion of patients excluded from each video group, and no clinically meaningful difference in measured patient characteristics between the groups (table 1), this does not appear to have affected the randomisation process and is unlikely to have biased the results. Fifth, non-response bias is possible. Patients who did not attend their scheduled appointment or declined to participate may have had a different degree of anxiety than those who participated in the study. For example, greater anxiety may result in patients not attending their scheduled appointments. It is also possible that there are other important differences between those who did and did not participate in the study, which could have impacted the results of the study. Considerations for future research should include active interventions to increase engagement (eg, personalised phone calls).

In summary, this randomised control trial found that a third of patients reported a high degree of anxiety when presenting for an initial oncology consultation and that receiving an enhanced compassion video did not decrease anxiety compared with receiving a standard introduction video. Given only 25% of patients reported watching the assigned video, future research should focus on identifying interventions with better patient engagement at the point of care to increase patient experience of compassion.

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Contributors All authors have made substantial contributions to this paper: BR acted as guarantor, supervised all aspects of the study and takes responsibility for the paper as a whole. BR, ST, CW, GG and AM conceived this study and the intervention. AN, KM, CO and AB acquired the data. BR, AN, KM, CO and AB managed the data. BR and ST analysed the data and interpreted results. BR drafted the manuscript and all authors contributed substantially to its revision. All authors approved the manuscript in its final form.

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Competing interests ST and AM have co-authored two books on compassion. The book proceeds are donated to the Cooper Foundation, and they have received payments for speaking engagements related to the books.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by The Cooper Health System Institutional Review Board FWA #: 00000211. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer-reviewed.

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