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Imagining life with an ostomy: Does a video intervention improve quality-of-life predictions for a medical condition that may elicit disgust?☆

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Abstract

Objective—To test a video intervention as a way to improve predictions of mood and quality-of-life with an emotionally evocative medical condition. Such predictions are typically inaccurate, which can be consequential for decision making.

Method—In Part 1, people presently or formerly living with ostomies predicted how watching a video depicting a person changing his ostomy pouch would affect mood and quality-of-life forecasts for life with an ostomy. In Part 2, participants from the general public read a description about life with an ostomy; half also watched a video depicting a person changing his ostomy pouch. Participants' quality-of-life and mood forecasts for life with an ostomy were assessed.

Results—Contrary to our expectations, and the expectations of people presently or formerly living with ostomies, the video did not reduce mood or quality-of-life estimates, even among participants high in trait disgust sensitivity. Among low-disgust participants, watching the video *increased* quality-of-life predictions for ostomy.

Conclusion—Video interventions may improve mood and quality-of-life forecasts for medical conditions, including those that may elicit disgust, such as ostomy.

Practice implications—Video interventions focusing on patients' experience of illness continue to show promise as components of decision aids, even for emotionally charged health states such as ostomy.

Keywords

Ostomy; Video; Quality-of-life; Judgment

1. Introduction

Imagine a patient deciding whether to have surgery to create an ostomy to resolve his unresponsive ulcerative colitis. His decision probably depends on whether he thinks life with an ostomy (with which his bodily waste would pass out of his body from an opening created

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in his abdomen) would be better or worse than his present life with ulcerative colitis (which involves several painful bowel movements a day).

People trying to estimate the quality-of-life (QOL) with an ostomy typically make predictions that are significantly lower than the QOL actually reported by people who have ostomies [1,2]. Indeed, extensive research has shown that people often mispredict how they would feel after a variety of events [3]. Particularly, people tend to predict that new circumstances will have more intense and longer-lasting effects on emotions and/or QOL than they actually do. This tendency to overestimate the emotional impact of events has been dubbed the impact bias and has been shown in diverse medical [1,4–6] and non-medical domains [7–9].

Interventions that improve these emotional predictions have been rare, especially in the medical domain. One intriguing avenue to explore for debiasing such predictions is video. A video, compared to a verbal or written description, provides more information, which may be more concrete, vivid, and/or emotionally evocative [10–12]. It is plausible that people learning about a medical condition through a video, in addition to or instead of a verbal/written description, would make less biased predictions.

Recent work using video, while not looking directly at emotion or QOL predictions, demonstrated significant changes in preferences for end-of-life care. In a study by Volandes et al. [13], participants who watched a video about a patient with advanced dementia (compared to those who received only a verbal description of life with dementia) were more likely to prefer comfort care over life-prolonging care in the event that they themselves developed advanced dementia. One reasonable interpretation of this result is that people who saw the video imagined a lower QOL with advanced dementia than those receiving the verbal description alone, and were thus less interested in prolonging life at all costs.

Because people with advanced dementia cannot report their present QOL, we cannot know if the forecasts implied by participants' care preferences were made less biased by watching the video. We suspect that this particular video intervention was debiasing, and some evidence supports this. Specifically, participants in the video group showed better knowledge of dementia and had more consistent care preferences over time. If the implied higher QOL predictions were indeed less biased, dementia is an unusual case where people tend to *overestimate* QOL. However, there are good reasons to suspect that in a more typical domain where patients' QOL is underestimated, especially when the medical condition of interest elicits strong emotions, a video intervention may make QOL forecasts even worse.

First, research suggests when people predict how a future event will make them feel, they first assess how they feel about that event in the present moment. Ultimate predictions are then anchored on this initial emotional assessment [14]. Thus, if a video (compared to a written description) were to evoke more negative emotion at the time the forecast is made, the forecasts themselves might be more negative.

Second, watching a video could increase focalism, the tendency to neglect consideration of other life events that would impact QOL (e.g., dining with friends, reading books) while focusing solely on the impact of the event of interest. Focalism has been proposed to be a key contributor to the impact bias [15]. A video may increase focalism because the video would focus on the health state rather than on other aspects of a person's life.

Because of video's likely effect on emotions at the time of prediction and its potential exacerbation of focalism, we hypothesized that while a video intervention might provide more detailed and accurate information, it will cause people to make QOL forecasts that are more negative (and thus, in most cases, more discrepant with actual patient QOL reports)

compared to a written or verbal description. Furthermore, if the condition of interest tended to be emotionally evocative, we expected that people who are relatively more prone to experience certain medically relevant negative emotions, such as disgust, would be more affected by a video because they would tend to experience a more intense negative emotional reaction.

To explore the effect of video interventions on QOL estimates, we focused on an emotionally evocative condition, ostomy. Research shows that healthy people appear to significantly underestimate patients' QOL for ostomy, making it an excellent test case for the theory outlined above [1,2]. We hypothesized that a video depicting life with an ostomy would reduce QOL estimates. Moreover, to supplement our own hypotheses, we elicited theories from a population of people who both have a great deal of experience with ostomies, and who may be called upon to advise potential ostomy patients: namely, people who have lived with an ostomy.

Then, in order to test our theory about the effect of video interventions on QOL estimates – and the theory of ostomy patients themselves – we performed a video intervention experiment modeled on the dementia study of Volandes et al. [13], but explicitly examining QOL and mood forecasts. Half of our participants only read a description of life with an ostomy before making QOL and mood estimates, while the other participants also watched a video of a person with an ostomy explaining and demonstrating how he changes his ostomy pouch. We examined the effect of the video on QOL and mood predictions for life with an ostomy.

2. Method

2.1. Part 1: Survey of ostomy population

2.1.1. Participants—With the permission of the United Ostomy Associations of America (UOAA) board of directors, we recruited participants with a post on a discussion forum hosted at the UOAA website, ostomy.org. People who currently or previously had an ostomy, as well as people in a relationship with someone with an ostomy, were eligible to participate in a brief, unpaid, anonymous survey. Respondents were required to be 18 or older. Forty-eight people completed the survey; 47 were eligible to participate and were included in analysis.

2.1.2. Materials

Ostomy description: A description of life with an ostomy was adapted from Smith et al. [2] and elaborated using information from the United Ostomy Associations of America, Inc. [16] and the American Pediatric Surgical Nurses Association [17]. We also included the steps for changing an ostomy pouch as demonstrated in the video we used, so that people in the No Video condition would, at least on an abstract level, have the same information as people who saw the video. The description is reproduced in Appendix A.

Ostomy video: We used a video created by a person with an ostomy that was intended to educate new ostomy patients. In the video, a man in his mid-twenties demonstrates how he changes his ostomy pouch, explaining the steps as he performs them. He removes his ostomy pouch and adhesive ring to reveal his stoma, cleans the area around the stoma, prepares a new adhesive wafer, adheres the wafer around his stoma, and attaches the ostomy pouch. The man is otherwise healthy-looking and presents the information in a matter-of-fact manner.

The video was publically available online and we obtained the creator's permission to use it in this study. In the interest of time, we edited the 7-min video down to 2 min, 54 s by removing some extraneous content (e.g., adjusting the camera, waiting for an adhesive to dry) and the skin-cleaning step. Informal pilot testing showed near-universal strong disgust reactions to the video, particularly when the stoma was visible. The video is available at <http://www.vimeo.com/decisionmaking/ostomycare>.

2.1.3. Procedure—The survey asked participants to imagine a situation in which some people were provided with either the written description of life with an ostomy, or both the description and a video of a man demonstrating how he changes his ostomy pouch. The description of life with an ostomy and the video as described in Section 2.1.2 were provided in the survey.

Survey respondents were asked, “Compared to people who did not watch the video, I think that people who watched the video would predict that the quality of life with an ostomy would be:” and responded using a 7-point scale (1 = “Much worse” to 7 = “Much better”). Respondents then made similar judgments for two different subgroups: “people who are more easily disgusted than average” and “people who are less easily disgusted than average.” Finally, respondents provided some information about their own ostomy and answered demographic questions.

2.1.4. Analysis—One-sample *t*-tests were used to compare mean scale responses to the scale midpoint.

2.2. Part 2: Video intervention experiment

2.2.1. Participants—We recruited participants using Amazon Mechanical Turk (MTurk), an online service that enables people to be paid for completing short online tasks. Data obtained from MTurk have been shown to be as reliable as those obtained by standard internet samples and American college samples [18,19]. Several well-known psychological phenomena have been replicated with MTurk samples [19] and results have been shown to meet acceptable psychometric standards [18].

Participants were required to be 18 or older and citizens of the United States. We used an attention filter (a test to see if a potential participant reads and follows survey instructions carefully [20]) at the beginning of the study; participants who did not pass were excluded from participating and did not complete the study (see Fig. 1 for the number of participants excluded at each step). A total of 223 people completed the study. Participation took approximately 5–10 min, and payment was \$0.75.

2.2.2. Materials—This experiment used the same description and video as Part I.

2.2.3. Procedure—The study procedure is illustrated in Fig. 1. Potential participants were informed that the study may involve watching a video containing medical content that some people may find disturbing. People who consented to participate were alternately assigned to the “Video” or “No Video” condition. To begin, all participants rated their “current mood in general these days” on a 10-point scale (1 = “very negative” to 10 = “very positive”), and their present QOL on a 100-point scale (“where 0 is the worst imaginable quality of life and 100 is the best imaginable quality of life”), then read the written description of life with an ostomy. At this point, those in the Video condition watched the video, while those in the No Video condition proceeded immediately to the next section.

In the next section, everyone was asked to “imagine that you have had an ostomy for the past 6 months. You have fully recovered from the surgery, and your surgical wound is well-healed. You have been cured of the illness that caused you to get an ostomy.” All participants then predicted their general mood and QOL under these conditions. Next, participants rated how it would feel to change their ostomy pouch (10-point scale from “very negative” to “very positive”), how disgusting they think it would be to have an ostomy (10-point scale from “not at all disgusting” to “extremely disgusting”), and how stigmatized having an ostomy would make them feel (10-point scale from “not at all” to “extremely”).

Next, participants in the Video group judged how their ratings would have been different if they had *not* watched the video, but only read the description. Participants in the No Video group instead judged how their ratings would have been different if they *had* seen a video of a person changing an ostomy pouch. Both judgments were made on a 7-point scale from “much more negative” to “much more positive”.

In order to assess whether the watching the video would cause people to revise previously made QOL estimates for life with an ostomy, at this point, participants in the No Video condition viewed the video, and were given a chance to revise their previous QOL ratings for life with an ostomy. Next, all participants answered 5 true/false knowledge questions about life with an ostomy (as described in Appendix B) and indicated their agreement with 4 statements about the value of the video (adapted from Volandes et al. [13], also described in Appendix B).

All participants then completed a short (8-item) version [21,22] of the standard trait disgust sensitivity scale [23]. This shortened version has a correlation of about .90 with the full disgust scale, which has been shown to be behaviorally valid [24]. No items on this scale targeted colostomy-specific disgust (as in [22]). Finally, all participants provided demographic information.

2.2.4. Analysis—To control for inter-individual variation in mood and QOL estimates, in our analyses we used the change from baseline mood and QOL anticipated from an ostomy as our main dependent measure (i.e., change in mood/QOL = mood/QOL with an ostomy – baseline mood/QOL). Thus, more negative numbers indicate greater anticipated decrement in mood or QOL from an ostomy.

A trait disgust sensitivity score was determined for each participant by calculating the average response across the 8 items of the disgust scale. Responses for each item ranged from 1 to 4, with lower numbers indicating less disgust. The median trait disgust sensitivity score across all participants was 2.50.

The amount of time participants spent on the page of the survey that displayed the video was recorded. While those who watched all 174 seconds of the video had significantly lower disgust scale scores than those who did not (2.42 vs. 2.70, $t(217) = 3.47$, $p > 0.01$), disgust scale scores did not significantly predict the actual number of seconds a person spent on the video page. In our analyses, all participants were included. If only those who watched the whole video are included, all significant effects still hold, and none of the results reported as non-significant become significant.

Chi-square tests were used to compare categorical demographic information across conditions. Independent samples t -tests were used to compare main effects across conditions. One-sample t -tests were used to compare mean scale responses to the scale midpoint. To investigate the effect of study condition on high- and low-disgust participants,

linear regression spotlight analyses at one standard deviation above and below the mean for trait disgust were performed [25,26].

Note that with the exception of the post-video revised QOL estimates, knowledge questions, disgust scale, and demographic factors, all measures from the No Video group were collected before these participants watched the video.

3. Results

3.1. Survey of ostomy population

Respondents had a mean age of 53.5; 60.5% were female. Ninety-three percent of respondents currently had an ostomy, and the remainder previously did. The mean length of time with an ostomy was 8.5 years. Overall, respondents expected the video to have a small negative impact on QOL ratings for life with an ostomy (mean rating: 3.53, SD: 1.52, significantly lower than the scale's midpoint of 4 = "About the same", $t(43) = -2.19$, $p = 0.03$). When considering only people who are more easily disgusted than average, respondents expected that the video would cause an extreme decrement in QOL ratings (mean rating: 1.88, SD, 1.27, significantly lower than the midpoint of the scale, $t(41) = -10.791$, $p < 0.01$). When considering only people who are less easily disgusted than average, respondents did not expect the video to have an effect (mean rating: 4.17, SD: 1.41, not significantly different from the midpoint of the scale, $t(41) = 0.77$, $p = 0.45$). On the whole, the predictions made by people who currently or formerly had ostomies were quite similar to our own hypotheses that watching the video would reduce QOL ratings for life with an ostomy, especially among easily disgusted participants.

3.2. Video intervention experiment

3.2.1. Participant characteristics—Demographic characteristics of the participants are shown in Table 1. None of these characteristics differed across people assigned to the two study conditions ($ps > 0.10$ for all).

3.2.2. Effect of the video on mood and QOL predictions

Main effects: Contrary to our hypothesis, participants who watched the video did not give lower ratings overall to life with an ostomy. Rather, participants in the Video group gave slightly, though not significantly, higher ratings than those in the No Video group (see Table 2).

In high- and low-disgust participants: While no main effect of the video was found, we hypothesized that the video would cause more easily disgusted people to give lower QOL and mood estimates for life with an ostomy. Contrary to our predictions, we found that the video intervention did not change QOL or mood ratings for high-disgust participants (for QOL, $\beta = -4.22$, $t = 1.24$, $p = 0.22$; for mood, $\beta = -0.08$, $t = 0.20$, $p = 0.84$). In low-disgust participants, however, the effect of the video was quite surprising: those who saw the video gave significantly *higher* QOL and mood ratings (for QOL, $\beta = 8.58$, $t = -2.55$, $p = 0.01$; for mood, $\beta = 1.18$, $t = -2.77$, $p = 0.01$). The effects of the video on the mood and QOL estimates of low- and high-disgust participants are illustrated in Fig. 2.

3.2.3. Additional measures—Means, standard deviations, and test statistics for the following analyses are reported in Table 2. Participants in the Video condition reported that they would feel significantly better about changing their own ostomy pouch than those in the No Video condition. However, the video did not significantly affect ratings of how disgusting participants thought it would be to have an ostomy or how stigmatized they would feel if they had an ostomy. Participants in the Video condition believed that seeing

the video did not influence their mood and QOL ratings. Participants in the No Video condition believed that if they had seen the video, they would have made slightly more negative ratings. Upon seeing the video, participants in the No Video condition made significantly less-negative QOL estimates for life with an ostomy. None of these results varied significantly with trait disgust.

On average, participants answered 4.7 of the 5 knowledge questions correctly ($SD = 0.56$). Participants reported that the video gave them a better understanding of life with an ostomy (mean = 3.41, $SD = 0.55$) on a 1–4 scale, and believed that the video would help others make better predictions (mean = 3.46, $SD = 0.53$). Finally, participants were neutral on whether they were comfortable watching the video (mean = 2.46, $SD = 0.81$) and whether they would recommend the video to others (mean = 2.49, $SD = 0.83$).

4. Discussion and conclusion

4.1. Discussion

Contrary to our expectations and those of people currently or previously living with an ostomy, watching a video depicting a medical condition that elicits disgust did *not* decrease mood or QOL estimates for that condition, even among people high on trait disgust sensitivity. In fact, among people less prone to disgust, watching the video *increased* mood and QOL ratings for ostomy, implying that their estimates were more congruent with the actual experiences of people who have ostomies.

This surprising result is at odds with the theory developed in Section 1, namely, that (1) the video would cause a stronger negative emotional reaction than a written description, leading to lower mood and QOL forecasts, and (2) the video would tend to increase focalism, similarly lowering forecasts. Our data indicate that people did not experience notable discomfort watching the video, and so perhaps the footage did not prompt an overwhelmingly negative emotional response relative to a written description. Another possibility is that the video did lead to a stronger negative emotional reaction, but that over the course of the video people quickly habituated to the visual stimuli, so that by the end of it, participants felt relatively little disgust. Given the evidence on the speed of habituation [27,28] and the relatively large weight given to feelings at the *end* of an experience [29,30], this mechanism appears plausible. Regarding the effect of focalism, it is possible that the video did not differentially cause people to engage in focalism relative to a written description. Or, perhaps it did, but this effect was outweighed by a habituation effect.

While this study was not designed to test mechanism, the effect we report here has important implications for both clinical practice and future research. Beyond testing mechanisms like the one mentioned above, future research might test the idea that video causes people to make less biased mood/QOL estimates. Note that with a video intervention, QOL ratings in our study increased for a large subset of participants, while in the study by Volandes et al. [13], the implied QOL ratings decreased. Perhaps the video intervention corrected otherwise too-low forecasts in the case of ostomy, and too-high forecasts in the case of dementia. To investigate this possibility, video interventions should be tested in other domains where the direction of forecasting bias can be determined.

In this study, the emotion we chose to focus on was disgust. Given that different emotions can have divergent effects even if they have the same negative valence [31], it is not apparent what the effect of a video intervention would be in a situation where the focal emotion is fear, for example. This would be a valuable question to pursue in future research.

4.1.1. Limitations—There may be concern that the participants in this study were not representative of the population from which they were drawn (e.g., since potential participants were warned that the study could involve content some find disturbing, leading to self-selection bias), or that their disgust scale scores were influenced by watching the video. These reservations should be mitigated by our finding that the participants in this study did not differ on baseline QOL, baseline mood, or trait disgust scores compared to those obtained in three other MTurk studies previously performed by our lab, which did not have a content warning and did not contain graphic material.

One limitation of our study is that we used a general population sample rather than targeting people who were presently facing a decision about whether to get an ostomy. Future research investigating the effect of a video intervention in such a population would be beneficial, as would research examining whether decision making, in addition to forecasts of mood and QOL, could also be improved.

4.2. Conclusion

Research shows that people are typically biased in their predictions about how they would feel in certain future states, including medical conditions. Poor predictions can lead to poor decisions, which can be particularly consequential in the medical domain. This study showed that a video intervention may lead a large subpopulation to make less biased mood and QOL forecasts for a medical condition. This occurred even though the condition we investigated may elicit negative emotions, and even though other attempts to de-bias forecasts in the medical domain have met with limited success.

4.3. Practice implications

A patient's prediction of what the quality of her life would be with a medical condition is a factor that should reasonably be included in her decision making process. Unfortunately, research shows that these predictions are often biased. Despite the concerns of the patients we surveyed, and our own concerns about the strong emotions some videos may elicit, our study provides evidence that video interventions focusing on patients' experience of illness continue to show promise as components of decision aids, potentially debiasing QOL predictions. Decision aid developers should not instinctively reject emotive videos as components of their decision aids but, instead, should test them to see if they nevertheless improve people's ability to predict the impact of illness on their lives.

Note that our participants neither predicted nor recognized the debiasing effect of the video on their own predictions. Thus, if a person contemplating surgery to create an ostomy had a video like the one in this study available as a decision aid, he might choose not to watch it, unless otherwise encouraged, in an effort to avoid content that he may believe will be disturbing. He would likely not recognize that there is a substantial chance the video would make his forecasts about life with an ostomy less biased.

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Appendix A. Ostomy description

What is an ostomy?

An ostomy is a surgically created opening in the lower abdomen that allows for the discharge of bodily wastes. Part of your intestine will protrude a little bit through this

opening. This part of your intestine is called a stoma. A stoma is usually round, red, moist, and shiny. It looks like the inside of your cheek.

Your stoma would not normally be visible to you, because it would be covered by a plastic pouch. This pouch is about the size of an adult hand and is called an ostomy bag. You would wear an ostomy bag all the time. The bag collects the waste that exits your body. You would need to change this bag every 2–10 days.

Why would you get an ostomy?

The most common reason a person would get an ostomy is cancer treatment. Other problems, such as diverticulitis, Crohn's disease, or physical trauma, may also lead to an ostomy.

What is life like with an ostomy?

After you heal from the ostomy surgery, the opening is not painful. You would no longer have bowel movements (poop) in the usual way (i.e., on the toilet). Instead, your feces would pass through your stoma into your ostomy bag.

Occasionally, you would experience odors and noises caused by gas and waste passing through the stoma. There is a chance that the ostomy bag may leak if you allow it to get too full. You would be restricted from lifting very heavy weight, but your daily activities will not otherwise be affected.

What are the best parts about having an ostomy?

Having an ostomy would not affect most parts of your life. In fact, you would probably not be aware of your ostomy for most of your day. Although you should not lift heavy weight, you could otherwise be as active as you want. If you wear relatively loose-fitting clothing, your ostomy bag would not be visible underneath your garments. Most other people would not know you have an ostomy unless you chose to tell them.

What is the worst part about having an ostomy?

Some people consider changing their ostomy bag to be the hardest part of life with an ostomy. The steps you would take to change your ostomy bag are:

1. Cover the area under your stoma with a rag in case your stoma leaks while the bag is removed.
2. Pull off the adhesive ring that attaches the bag to the skin around your stoma.
3. Clean the skin around your stoma.
4. Place a new adhesive ring around your stoma.
5. Attach a new bag to the adhesive ring.

Appendix B. Additional measures

Knowledge Questions: Each question was answered True or False

1. An ostomy allows bodily waste to pass out of the body.
2. A person with an ostomy still defecates in the usual way (i.e., on the toilet).
3. An ostomy bag can be seen under loose garments.

4. The part of the intestine that protrudes from the opening is call the stoma.
5. A person with an ostomy must change their ostomy bag every day.

Questions regarding the value of the video: Each question was answered on a 4-point scale from “Strongly Disagree” to “Strongly Agree”.

1. I have a better understanding of life with an ostomy after watching the video.
2. I was comfortable watching the video.
3. I would recommend the video to others.
4. I think the video would help people better predict what life would be like with an ostomy.

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Fig. 1.
Diagram depicting the study procedure.

Fig. 2.

The effect of the video intervention on (a) QOL and (b) mood estimates for life with an ostomy in low- and high-disgust participants. *Notes:* A median split has been performed on trait disgust scores here for ease of graphical presentation. In the analysis, trait disgust was treated as a continuous variable. Results are presented in terms of the change (from baseline) in QOL/mood expected with an ostomy. QOL ratings were made on a 0–100 scale; mood ratings were made on a 1–10 scale.

Table 1Participant characteristics: video intervention experiment ($N = 223$).

Characteristic	Value
Mean age, years (range)	34.11 (18–81)
Female sex	59.2%
Race	
White	83.4%
Black	5.4%
Asian	4.9%
Other	6.3%
Ethnicity, any race	
Hispanic or Latino/a	8.1%
Middle Eastern	2.2%
Education	
High school diploma or less	14.3%
Some college	39.5%
4-Year degree	31.4%
Advanced degree	14.8%
Prior ostomy experience	
Have/had ostomy	0.9%
Know someone with an ostomy	33.2%

Note: None of these characteristics differed between the two study conditions ($ps > 0.10$ for all).

Table 2Video intervention experiment *t*-tests.

Measure	Video group Mean (SD)	No Video group Mean (SD)	<i>t</i> (df)	<i>p</i>
All participants: difference in QOL with ostomy	−23.84 (20.83)	−25.87 (14.81)	0.81 (186)	0.42
All participants: difference in mood with ostomy	−2.56 (2.53)	−3.11 (2.01)	1.77 (208)	0.08
Feelings about changing ostomy pouch	3.78 (1.97)	2.90 (1.77)	3.51 (221)	0.001
Feelings of disgust about having an ostomy	6.80 (2.17)	7.05 (2.72)	0.78 (213)	0.44
Feelings of stigma with ostomy	6.87 (2.42)	7.32 (2.34)	1.40 (221)	0.16
Expected change in mood/QOL ratings if participants did not see video	3.89 (1.39)	—	0.83 (107)*	0.41
Expected change in mood/QOL ratings if participants did see video	—	3.35 (1.21)	5.76 (112)*	<0.001
No Video group: change in QOL estimates after viewing video	—	−25.94 (14.95) before −22.35 (18.21) after	2.31 (100) [†]	0.02

* Single-sample *t*-test assessing whether mean response was significantly different from the scale's; midpoint of 4 = "about the same".

[†] Paired-samples *t*-test comparing QOL ratings before and after video.