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Communication study

# Breaking bad news: Effects of forecasting diagnosis and framing prognosis

Emily K. Porensky[1,*], Brian D. Carpenter

*Department of Psychology, Washington University in St. Louis, St. Louis, USA*

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ABSTRACT

*Objective:* Research to support guidelines for breaking bad news is lacking. This study used an experimental paradigm to test two communication strategies, forecasting bad news and framing prognosis, in the context of cancer.

*Methods:* In a $2 \times 2$ design, 128 participants received bad news in a hypothetical consultation. A videotaped physician presented diagnostic and prognostic information, varying warning (warning shot vs. no warning), and framing (positive vs. negative). Effects on psychological distress, recall accuracy, and subjective interpretations of the news were assessed.

*Results:* Warning was not associated with lower psychological distress or improved recall. Individuals who heard a positively-framed prognosis had significantly less psychological distress, rated their prognosis better, and were more hopeful than those who heard a negatively-framed prognosis. However, they also showed a trend toward reduced accuracy in recalling prognostic statistics.

*Conclusions:* Results contribute to a growing body of literature exploring optimal approaches for communicating bad news in health care.

*Practice Implications:* Although research in clinical settings is needed to bolster results, findings suggest that when providers use positive framing to reduce distress about prognosis, they should also consider ways to overcome potential reductions in recall accuracy, such as repeating statistical information or supplementing with written information.



## 1. Introduction

Breaking bad news, such as disclosing a cancer diagnosis or a poor prognosis, is reported to be one of the most stressful communication tasks faced by healthcare professionals [1–4]. An expanding body of literature indicates that the way bad news is conveyed has meaningful consequences with respect to patient outcomes [5,6], including information recall [7,8], emotional distress [9,10], satisfaction [10,11], trust in the clinician [12,13], and treatment adherence [14]. There are numerous guidelines for how to deliver bad news optimally (e.g., [3,15–24]), though many are based on expert consensus [16,18,25].

There is also growing awareness that healthcare providers benefit from specialized training in breaking bad news [4]. Education programs increase physician knowledge and confidence in applying these communication skills [18,26–31]. Some have increased patient satisfaction [32] and trust [13], but few have measured more robust psychosocial outcomes such as patient anxiety or distress [25,33]. More research is needed to ensure that communication guidelines and training programs are grounded in empirical evidence, particularly with respect to patient outcomes [17,25,32,33]. Nearly 45% of all publications on "breaking bad news" in cancer do not present data [25], and most that do are retrospective or descriptive studies of patient preferences [25,34]. Neither methodology allows for the empirical control necessary to determine whether and how particular communication strategies actually influence outcomes [5].

Studying healthcare communication as it naturally unfolds is constrained by practical and ethical limitations [25,35]. Experimental research conducted in laboratory settings can help to fill this gap by systematically varying physicians' communication and then observing how this affects outcomes [35–37]. As highlighted in a recent review [35], scripted video vignettes "can yield valid and informative results," particularly for understanding causal relationships in healthcare communication. An increasing number

* Corresponding author at: 1670 Upham Dr. Columbus, OH 43210, USA. Fax: +1 614 688 3700.
*E-mail address:* eporensky@gmail.com (E.K. Porensky).

[1] Dr. Porensky is now at The Ohio State University Department of Psychiatry and Behavioral Health. I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

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of studies have employed videotape paradigms to investigate a range of communication variables and outcomes (e.g., [10,38–40]).

In this study we used a video-vignette paradigm to evaluate the effect of two communication strategies: (1) warning of a cancer diagnosis and (2) framing prognosis. Many communication guidelines, including the widely-used SPIKES protocol [18], encourage physicians to forecast bad news with a "warning shot" (e.g., "I'm afraid I have bad news") [18,22,24,41–43]. A sociological study of bad-news narratives [44] is typically cited to support the claim that warning will soften the blow of bad news and improve patient understanding [18,42,45]; however, quantitative research that allows for causal inferences is lacking [44], and one study reported that patients dislike the warning shot approach [46].

Additional experimental research is also needed to guide clinicians in how to discuss prognosis with patients. Increasing consideration has been given to prognosis framing in practice guidelines [19,34] and research literature [3,14,22,47,48]. Framing is a manner of communicating that "influences how information is conveyed by supporting some interpretations and downplaying others" [47]. It has been debated whether it is more beneficial to frame prognosis positively (e.g., "You have a 30% chance of survival") or negatively (e.g., "You have a 70% chance of death") [47]. One study [49] found 43% of women with breast cancer preferred hearing prognosis framed positively (e.g., chance of cure) because it "encourages determination to manage treatment positively," whereas 33% preferred it framed negatively (e.g., chance of relapse) because it "emphasizes the importance of additional treatment" and was considered "more specific/precise." Negative framing may also be associated with increased congruence between patient and provider prognostic estimates [7]. Discerning whether prognostic framing influences psychological distress or patients' recall and interpretation is critical [47,50], particularly if these outcomes affect subsequent decisions about life-extending treatment [51–53].

In sum, there is a clear need for experimental research to support causal inferences about healthcare communication [35,36]. Despite growing acceptance of the video-vignette approach [35,37], no studies have employed this methodology to examine the effects of forecasting bad news, and only one has used it to address framing prognosis [14]. Although that investigation yielded interesting findings regarding the impact of minor word changes (i.e., affirmations vs. negations) on interpretations of positively and negatively-framed prognoses, it did not manipulate statistical estimates of prognosis, nor did it evaluate recall accuracy or immediate psychological outcomes.

The purpose of this current study was to use scripted video vignettes to evaluate the effects of warning and statistical prognosis framing in the context of cancer. We investigated the impact of these strategies on psychological distress, recall accuracy, and subjective interpretations of the news. We hypothesized that participants warned of bad news would report higher positive affect and lower negative affect and anxiety after receiving a colon cancer diagnosis, but would have equivalent recall of content compared with unwarned participants. We also expected participants who heard a negatively-framed prognosis to report lower positive affect, higher negative affect, higher anxiety, and less hopefulness. Accordingly, we believed that these participants would interpret their prognosis more negatively despite equivalent statistical recall accuracy.

## 2. Methods

### 2.1. Design

This study used an experimental paradigm with a videotaped physician employing two communication strategies for breaking bad news in a 2 (warning) × 2 (framing), between-subjects design. Four videotapes were modeled after those used in previous experimental studies [35,38]. Two videos depicted a physician disclosing a colon cancer diagnosis (one with warning and without warning); two depicted him discussing prognosis (one using positive outcome framing and one using negative outcome framing). Each participant viewed one diagnosis video and one prognosis video. The same middle-aged Caucasian male physician was portrayed in all four, two-minute recordings, and the physician always faced the camera and communicated to the participant directly. Scripts were reviewed for content by a gastroenterologist, a colorectal surgeon, and an oncologist. A manipulation check with

**Table 1**
Sample characteristics by condition.

| | Positive frame[a] | | Negative frame[a] | |
|---|---|---|---|---|
| | Warning[b] | No warning[b] | Warning[b] | No warning[b] |
| Age, mean years | 69.12 (8.81) | 66.41 (9.03) | 71.69 (10.75) | 68.78 (11.14) |
| Health, mean[c] | 3.56 (.95) | 3.84 (0.77) | 3.47 (1.02) | 3.56 (.98) |
| Gender (%) | | | | |
| Female | 53 | 59 | 53 | 37 |
| Race (%) | | | | |
| Black | 6 | 3 | 6 | 6 |
| White | 94 | 97 | 94 | 94 |
| Education (%) | | | | |
| High school/GED | 13 | 13 | 19 | 28 |
| Some college | 22 | 28 | 19 | 28 |
| College degree | 31 | 25 | 25 | 13 |
| Grad school/degree | 34 | 34 | 38 | 31 |
| Relationship status | | | | |
| Never married | 3 | 13 | 13 | 6 |
| Married/partnered | 62 | 56 | 47 | 75 |
| Widowed | 16 | 6 | 28 | 3 |
| Separated/divorced | 19 | 25 | 12 | 16 |
| Personal cancer history | 28 | 22 | 38 | 19 |
| Family history of cancer | 27 | 24 | 28 | 23 |

*Note*: condition means compared with ANOVAs. Condition frequencies compared with chi-square tests of association. All *ps* > .05. Values in parentheses represent standard deviations.

[a] $n = 64$ for each framing condition, collapsed across warning condition.

[b] $n = 32$.

[c] SF-36 item; scores range from 1 (poor) to 5 (excellent).