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Responding to negative health events: A test of the Bad News Response Model

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People can respond to bad news in a variety of ways. The Bad News Response Model suggests that three aspects of bad news (the controllability, likelihood, and severity of negative consequences) predict which response (Watchful Waiting, Active Change, or Acceptance) people are likely to choose. This article presents an initial test of the predictions of the Bad News Response Model. College students ($N = 234$) and older adults ($N = 116$) read a scenario about a person with a suspicious mole that varied in the controllability, likelihood, and severity of the outcomes. Consistent with our predictions, people prefer Watchful Waiting when controllability, likelihood, and severity are low, Active Change when controllability and likelihood are high, and Acceptance when controllability is low. These findings provide support for the Bad News Response Model and suggest that responses to bad news may be foreseeable based on the type of news people receive.

Keywords: bad news; responses; decision making; coping; skin cancer

Introduction

All bad news is not created equal. Some news presents myriad options for taking action; other news provides only the option of acceptance. Some news foreshadows additional bad outcomes in the future; other news is short lived in its effects. Some news is serious; other news is relatively benign. We test a model that takes into account various facets of bad news and suggests that responses to bad news may be sensitive to the type of news people receive. Specifically, we outline and test several predictions of the Bad News Response Model (Sweeny & Shepperd, 2007) in a health-related domain.

The Bad News Response Model

According to the Bad News Response Model, people can respond to bad news in three potentially productive ways. First, people can engage in *Watchful Waiting*. Watchful Waiting involves responding to bad news in a relatively passive or conservative manner. The term 'Watchful Waiting' can refer in some contexts to specific alternatives to

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aggressive treatment (e.g., De Haes & Koedoot, 2003), but we use the term to refer more generally to a 'wait and see' mentality. As the word 'watchful' implies, Watchful Waiting involves awareness of the possibility that things may not turn out well and vigilance to any changes in the situation. However, the word 'waiting' emphasises that people who engage in this response do not immediately take drastic action in an effort to change the outcomes of the bad news.

In some ways, Watchful Waiting is similar to emotion-focused coping (Folkman & Lazarus, 1980). Both Watchful Waiting and emotion-focused coping emphasise emotion regulation and distraction from the stressful situation. However, emotion-focused coping is a far more general response to stress that can complement each of the responses described by the Bad News Response Model, whereas Watchful Waiting is a specific response to bad news that involves both vigilance and avoiding or delaying action.

Second, people can engage in *Active Change*. Active Change involves responding to bad news with vigorous efforts to improve the situation or prevent it from getting worse. Active Change often involves information seeking in an effort to learn more about the situation and to connect with others who have experienced similar situations (Aldwin & Revenson, 1987; Lazarus, 1981; Lazarus & Launier, 1978), preventative behaviours designed to keep the situation from worsening, and treatment behaviours designed to promote positive change. In Active Change these efforts are directed at the negative situation at hand in an attempt to make the situation better, not primarily in an attempt to manage one's emotions in response to the situation. As such, Active Change is similar to problem-focused coping, which in part involves taking actions directed towards improving a negative situation (Carver, Scheier, & Weintraub, 1989; Folkman & Lazarus, 1980; Folkman & Lazarus, 1985).

Third, people can engage in *Acceptance*. In contrast to Active Change, Acceptance involves actively directing energy towards moving forward and dealing with the consequences of the bad news rather than trying to change the outcomes of the news. As such, people are most likely to engage in Acceptance when they can do little to change the situation. Other theories view acceptance as the final stage in a coping process that first passes through a stage of denial (Gamliel, 2000; Kübler-Ross, 1969). In contrast, we suggest that people can respond with Acceptance immediately upon receiving bad news, although people may attempt other responses before engaging in Acceptance.

Acceptance involves two primary behaviours. People who engage in Acceptance tell others about the bad news to gain social support and a better understanding of the experience (Pennebaker, 1988; Pennebaker, Zech, & Rimé, 2001). Acceptance also involves accommodation of the event into the bad news-recipient's life. Accommodation can include both behavioural changes (e.g., changing daily routines and diet) and cognitive changes (e.g. making sense of the event or finding the good in it; Davis, Nolen-Hoeksema, & Larson, 1998; Rabow & McPhee, 1999). These behaviours are not attempts to change an unchangeable situation; instead, they are aimed at dealing with the situation as it stands.

Predictors of responding

As discussed at the outset, bad news can vary on a number of dimensions. The Bad News Response Model suggests that some aspects of bad news are particularly important in predicting how people respond (Sweeny & Shepperd, 2007). Specifically, previous research

on risk perception, health behaviour, and coping draws attention to three characteristics of bad news that are likely to play a significant role in responding.

First, bad news varies in the extent to which its outcomes are *controllable*. The ability to control the outcomes of bad news varies greatly across different situations. For example, news of cancer might be followed by numerous treatment options or few to no treatment options. Similarly, some health threats may arise from uncontrollable sources (e.g. genetic risk factors) or from controllable sources (e.g. preventative health behaviours). Several theories suggest that people may respond differently to controllable *versus* uncontrollable threats (Aspinwall & Taylor, 1997; Floyd, Prentice-Dunn, & Rogers, 2000; Janz & Becker, 1984; Kirscht, 1988; Maddux & Rogers, 1983; Rogers, 1983). Research on active *versus* passive coping strategies suggest people who perceive outcomes as high in controllability tend to engage in active coping, whereas people who perceive outcomes as low in controllability tend to acknowledge an inability to change the situation and choose more passive coping responses (Aldwin, 1991; Carver et al., 1989; Folkman & Lazarus, 1980). As such, we hypothesize that people will engage in Active Change when controllability is high and Watchful Waiting or Acceptance when controllability is low.

Second, bad news varies in the *likelihood* that it will be followed by negative outcomes, regardless of whether those outcomes are controllable. Some bad news is likely to have negative outcomes whereas other bad news is not. For example, a physician might announce discovery of a suspicious-looking mole to a patient without knowing whether or not the mole is cancerous. Some moles are very likely to be cancerous (high likelihood of negative outcomes), whereas others are not (low likelihood of negative outcomes). Likewise, a diagnosis of high blood pressure or cholesterol may be more or less likely to predict more dire health concerns in the future. Likelihood can influence responding by changing the perceived costs and benefits of an effortful and costly response. Accordingly, theories of preventative health behaviour suggest that people are more likely to take action when negative outcomes are likely and to remain passive when negative outcomes are unlikely (Ajzen & Fishbein, 1980; Janz & Becker, 1984; Edwards, 1954; Rogers, 1983). Thus, we hypothesize that people will engage in Active Change when likelihood is high and Watchful Waiting when likelihood is low.

Third, bad news varies in the *severity* of negative consequences. A mole can indicate a more or less serious form of skin cancer, and a positive result on a mammogram can suggest a more or less serious stage of breast cancer. Even relative non-severe consequences can be negative, but people are likely to respond differently to bad news with serious or severe consequences than to bad news with relatively non-severe consequences. Research finds that the severity of health risks predicts whether people will engage in both preventative strategies (Janz & Becker, 1984; Rogers, 1983) and active responses (Anderson, 1977; Parkes, 1986; Terry, 1991). People appear to opt for more active responses when outcomes are severe and less active responses when outcomes are non-severe. Thus, we hypothesize that people will engage in Active Change when severity is high and Watchful Waiting when severity is low.

Significance of the present study

Although the Bad News Response Model focuses in part on the role of the bad newsgiver (see Sweeny & Shepperd, 2007, for more detail), the focus of the present study is on the model as a predictor of how people respond to bad news. In this sense the model is similar

to traditional coping theories. Nevertheless, it differs in several important ways. First, although researchers have examined the effectiveness of various coping strategies across situations, the coping literature stops short of establishing the key factors that *predict* responses to negative events. In contrast, the Bad News Response Model identifies three situational factors that can account for significant variance in responses to bad news. Second, coping researchers have tended to focus on responses to relatively serious events, and as a result the general conclusion of the coping literature is that active responses are preferable. In contrast, the Bad News Response Model describes responding under many different circumstances and suggests that active responses may be detrimental when the bad news is uncontrollable, unlikely to lead to negative outcomes, or relatively benign. Thus, the Bad News Response Model does not attempt to replace existing coping theories. Instead, it extends the applications and conclusions of previous theories and attempts to strengthen the predictive nature of coping research.

Furthermore, the present research is novel in that it represents the first test of the Bad News Response Model. The traditional view of coping suggests that active coping is usually the most effective strategy for dealing with stressful situations or bad news. This traditional view discounts the possibility that the most effective response to some situations is less active and not focused on the stressful event (Aldwin & Revenson, 1987). The Bad News Response Model goes beyond traditional thinking by proposing that specific situations may call for different types of responses. Specifically, the model proposes that the most effective response (Watchful Waiting, Active Change, or Acceptance) varies as a function of situational aspects (controllability, likelihood, and severity) of the bad news. In the present research we explore whether participants confronting bad news naturally respond in ways consistent with the model.

Hypotheses

The primary purpose of the present study was to examine how the controllability, likelihood, and severity of the outcomes of bad news predict the responses people choose. The Bad News Response Model makes three predictions regarding the relationship between the type of bad news and responses:

> *Hypothesis* 1: People are more likely to engage in Watchful Waiting when perceived controllability, likelihood, and/or severity of outcomes are low than when they are high.
>
> *Hypothesis* 2: People are most likely to engage in Active Change when perceived controllability, likelihood, and/or severity of outcomes are high than when they are low.
>
> *Hypothesis* 3: People are most likely to engage in Acceptance when they perceive the controllability of outcomes as low than when they perceive controllability as high.

We predicted main effects for controllability, likelihood, and severity on responding. Importantly, we recognise that it is quite possible that controllability, likelihood, and severity may interact in their effects on responding, producing, for example, a synergistic effect rather than an additive effect. For example, participants may be particularly likely to favour Active Change when severity, controllability, and likelihood are all high. Although we do not offer specific hypotheses for how controllability, likelihood, and severity might interact to influence responding, we manipulated these three situational variables factorially so that we might examine interactive effects.

Methods

Participants

Participants were 234 undergraduates recruited through the web-based participant pool and 116 older adults (greater than the age of 40 years) recruited through email. Although our brief questionnaire did not include items asking for the gender and specific age of our participants, the pool from which the college-age sample was drawn is ~73% women and 27% men, with an average age of ~19 years old. Although undergraduate students, from which the majority of our sample was drawn, are sometimes inappropriate for testing health-related issues, this study asked participants to imagine receiving news of skin cancer, a problem that all people in Florida (where this study was conducted) regardless of age are particularly sensitive and face relatively high risk. Many of the students who pilot-tested our scenarios indicated that they or a friend had personal experience with some form of skin cancer. Nonetheless, we collected data from older adults in addition to college students to allow us to test for possible age effects.

Procedure

Participants read one of eight possible versions of a scenario about a person with a suspicious mole. The scenarios varied in terms of (1) the controllability of the possible type of skin cancer. (2) the likelihood that the mole is cancerous, and (3) the severity of the possible type of skin cancer Although we designed our scenarios to manipulate the variables of interest rather than to precisely represent the situation patients might actually face in a dermatologist's office, it is noteworthy that participants in a pilot test indicated that the scenarios were believable.

The scenario read as follows:

Imagine that you make an appointment with your doctor about a suspicious mole on your back. After examining the mole, your doctor determines that, *if the mole is cancerous*, it most likely is a (**non-severe/severe**) form of skin cancer that grows (slowly/quickly) and is (unlikely/likely) to cause health problems.[1] Although the mole (**cannot/can**) **be removed** through surgery, your doctor determines that there is (**only a 1–2%/a 50–60%**) chance that the mole is cancerous. Your doctor decides to biopsy the mole to determine if it is cancerous, and the biopsy results will be ready in 1–2 weeks.

Participants next read descriptions of the three response types (Watchful Waiting, Active Change, and Acceptance). The descriptions were as follows:

Watchful Waiting: This response involves a 'wait and see' mentality. People engaged in this response are aware that they are facing a possible threat. However, they go about life as usual rather than take action. For example, if you engaged in Watchful Waiting in response to the scenario above, you would not undergo surgery or make any significant life changes at this time. Instead, you would check the mole periodically for changes.

Active Change: This response involves specific actions directed toward addressing the bad news. It includes behaviourus like seeking information, prevention, and treatment. For example, if you engaged in Active Change in response to the scenario above, you may read up on skin cancer, get a second opinion, or have the mole removed immediately.

Acceptance: This response involves coming to terms with bad news rather than taking action to change the situation. Acceptance involves making changes, not to affect the outcome, but rather to incorporate the negative event into one's life. For example, if you engaged in Acceptance in response to the scenario above, you may update your will and tell others about the mole to get social support.

After reading these descriptions, participants indicated the likelihood that they would engage in each response (1 = *very unlikely*, 9 = *very likely*). Participants also indicated which response they would choose if forced to select one response. Participants then indicated how likely they were to have cancer (1 = *very unlikely*, 9 = *very likely*), how severe that outcome would be if it occurred (1 = *not at all bad*, 9 = *very bad*), and how much control they had over the outcomes (1 = *little or no control*, 9 = *full control*).

Results

Manipulation checks

To test the effectiveness of our manipulations, we conducted separate 2 (Controllability: *high vs. low*) by 2 (Likelihood: *high vs. low*) by 2 (Severity: *high vs. low*) between-subjects ANOVA on the three manipulation check items. The manipulations of controllability, likelihood, and severity were quite successful. Analysis of the controllability manipulation check item yielded a main effect of controllability, $F(1, 342) = 4.32$, $p < 0.04$, $d = 0.22$. Participants rated the outcomes as less controllable in the low control condition ($M = 3.87$, $SD = 2.59$) than in the high control condition ($M = 4.47$, $SD = 2.85$). Analysis also yielded an unexpected Controllability × Likelihood interaction for this item, $F(1, 342) = 4.11$, $p = 0.04$, $d = 0.22$. However, this interaction in no way qualified the main effect of controllability.

Analysis of the likelihood manipulation check item yielded a single main effect of likelihood, $F(1, 342) = 148.11$, $p < 0.0001$, $d = 1.31$. Participants rated the negative outcome as less likely in the low likelihood condition ($M = 2.65$, $SD = 1.84$) than in the high likelihood condition ($M = 5.13$, $SD = 2.00$). Analysis of the severity manipulation check item yielded a single main effect of severity, $F(1, 342) = 18.75$, $p < 0.0001$, $d = 0.47$. Participants rated the outcomes as less severe in the low severity condition ($M = 6.05$, $SD = 2.45$) than in the high severity condition ($M = 7.12$, $SD = 2.15$). There were no other significant main effects or interactions, all Fs < 2.60, all ps > 0.10, all ds < 0.17.

Likert-type ratings

We tested the first set of hypotheses using 2 (Controllability: *high vs. low*) by 2 (Likelihood: *high vs. low*) by 2 (Severity: *high vs. low*) between-subjects ANOVAs, on participants' ratings of the likelihood that they would choose Watchful Waiting, Active Change, and Acceptance.

Watchful Waiting

We hypothesized that people would prefer Watchful Waiting when the controllability, likelihood, and severity of the negative outcome were low than when they were high (Hypothesis 1). As illustrated in Figure 1, our hypotheses were confirmed. First, participants were more likely to choose Watchful Waiting when controllability was low ($M = 4.89$, $SD = 2.90$) than when controllability was high ($M = 3.97$, $SD = 2.87$), $F(1, 340) = 8.64$, $p < 0.01$, $d = 0.32$. Second, participants were more likely to choose Watchful Waiting when likelihood was low ($M = 4.75$, $SD = 3.01$) than when likelihood was high ($M = 4.09$, $SD = 2.79$), $F(1, 340) = 5.02$, $p = 0.02$, $d = 0.24$. Finally, participants were more likely to choose Watchful Waiting when severity was low ($M = 4.78$, $SD = 2.85$) than when severity was high ($M = 4.07$, $SD = 2.94$), $F(1, 340) = 4.91$, $p = 0.03$, $d = 0.27$. No

other significant effects emerged for Watchful Waiting, all $Fs < 1.01$, all $ps > 0.31$, all $ds < 0.11$.

Active Change

We hypothesized that people would prefer Active Change when the controllability, likelihood, and severity of the negative outcome were high than when they were low (Hypothesis 2). The analyses supported two of our three hypotheses (Figure 2). First, participants were more likely to choose Active Change when controllability was high ($M = 7.46$, $SD = 2.03$) than when controllability was low ($M = 6.85$, $SD = 2.39$), $F(1, 342) = 7.32$, $p < 0.01$, $d = 0.29$. Second, participants were more likely to choose Active Change when likelihood was high ($M = 7.58$, $SD = 1.88$) than when likelihood was low ($M = 6.74$, $SD = 2.47$), $F(1, 342) = 14.51$, $p < 0.001$, $d = 0.41$. However, participants were no more likely to choose Active Change when severity was high ($M = 7.33$, $SD = 2.12$) than when severity was low ($M = 7.00$, $SD = 2.33$), $F(1, 342) = 1.69$, $p = 0.19$, $d = 0.14$. No other significant effects emerged for Active Change, all $Fs < 3.46$, all $ps > 0.06$, all $ds < 0.20$.

Acceptance

We hypothesized that people would prefer Acceptance when the controllability of the negative outcome was low than when it was high (Hypothesis 3). Analyses confirmed
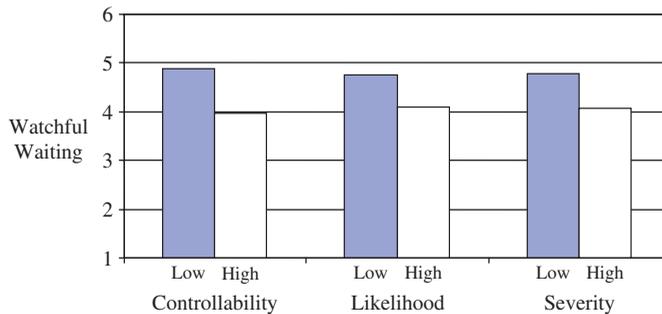

Figure 1. The likelihood that participants would choose Watchful Waiting. Means represent main effects of controllability, likelihood, and severity.
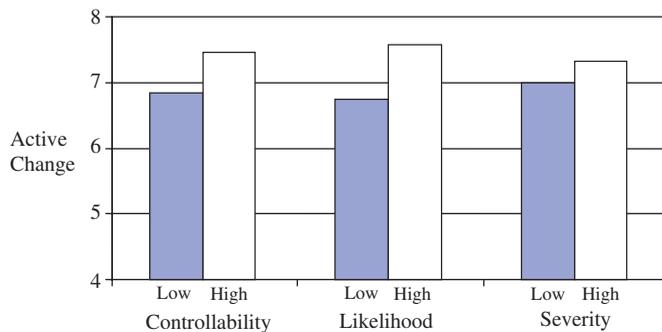

Figure 2. The likelihood that participants would choose Active Change. Means represent main effects of controllability, likelihood, and severity.

our hypothesis. Participants were more likely to choose Acceptance when controllability was low ($M = 4.15$, $SD = 2.82$) than when controllability was high ($M = 3.57$, $SD = 2.51$), $F(1, 342) = 3.92$, $p < 0.05$, $d = 0.21$. No other significant effects emerged for Acceptance, all $Fs < 2.74$, all $ps > 0.09$, all $ds < 0.18$.

Forced-choice responses

In addition to the Likert-type ratings for each response choice, participants also indicated which response they would choose if forced to pick one response to the scenario. We conducted Chi-square analyses examining the effects of controllability, likelihood, and severity on the frequency with which participants chose each response. Our predictions for participants' forced-choice responses were the same as our predictions for their Likert-type ratings.

Table 1 displays the number and percentage of participants who chose each response based on the manipulations of controllability, likelihood, and severity. The results were generally consistent with the hypotheses, although less clearly so than were the Likert-type responses. Supporting Hypothesis 1, participants opted for Watchful Waiting more often when likelihood was low than when likelihood was high, $\chi^2(1, N = 86) = 5.63$, $p = 0.02$. However, neither controllability, $\chi^2(1, N = 86) = 0.1.66$, $p = 0.20$, nor severity, $\chi^2(1, N = 86) = 0.42$, $p = 0.52$, had an effect on participants' response choices. Supporting Hypothesis 2, participants opted for Active Change more often when controllability was high than when it was low, $\chi^2(1, N = 240) = 4.82$, $p = 0.02$, and when likelihood was high than when it was low, $\chi^2(1, N = 240) = 4.27$, $p = 0.04$. However, once again, severity had no effect on participants' response choices, $\chi^2(1, N = 240) = 0.15$, $p = 0.70$.

The absence of an effect for severity on choices of Watchful Waiting and Active Change was surprising and somewhat inconsistent with the results from the Likert-type items. It is noteworthy that the mean response to the severity manipulation check item was above the scale midpoint of 5.0 in both the low severe and the high severe condition. Perhaps the absence of an effect for severity was due to participants in both high and low severity conditions regarding the situation described in the scenario as above threshold in seriousness for a forced-choice response.

Table 1. Frequency analyses of response choices.

Condition	Frequency%					
	Watchful Waiting		Active Change		Acceptance	
Controllability						
High	37	20%	137	76%	7	4%
Low	49	29%	103	60%	19	11%
Likelihood						
High	32	18%	136	75%	13	7%
Low	54	32%	104	61%	13	8%
Severity						
High	40	22%	123	68%	17	9%
Low	46	27%	117	68%	9	5%

Supporting Hypothesis 3, participants opted for Acceptance more often when controllability was low than when controllability was high, $\chi^2(1, N = 26) = 5.54$, $p = 0.02$.

Age effects

Our sample included two distinct age groups: college students and older adults (i.e. greater than the age of 40 years). Although we did not have hypotheses regarding differences in responding based on age, we tested this possibility in several ways. First, we examined whether adults and college students perceived the situation described in the scenarios differently. In fact, across conditions, adults perceived the situation as more controllable ($M = 4.82$, $SD = 2.93$) than did college students ($M = 3.86$, $SD = 2.60$), $t(348) = 3.11$, $p < 0.01$, $d = 0.33$. Adults also perceived the situation to be more likely ($M = 4.29$, $SD = 2.48$) than did college students ($M = 3.73$, $SD = 2.16$), $t(347) = 2.18$, $p = 0.03$, $d = 0.23$. In contrast, college students perceived the situation to be more severe ($M = 6.86$, $SD = 2.27$) than did adults ($M = 6.07$, $SD = 2.44$), $t(349) = 3.01$, $p < 0.01$, $d = 0.32$.

Next, to examine whether our manipulations affected the responses of college students and older adults differently, we conducted 2 (Controllability: *high vs. low*) by 2 (Likelihood: *high vs. low*) by 2 (Severity: *high vs. low*) by 2 (Age: *college vs. older adult*) between-subjects ANOVAs on participants' ratings of the likelihood that they would choose Watchful Waiting, Active Change, and Acceptance. Analyses revealed two main effects of age. First, college students were more likely to choose Watchful Waiting ($M = 5.06$, $SD = 2.79$) than were older adults ($M = 3.09$, $SD = 2.70$), $F(1, 333) = 40.22$, $p < 0.0001$, $d = 0.68$. Second, college students were less likely to choose Active Change ($M = 6.74$, $SD = 2.47$) than were older adults ($M = 7.86$, $SD = 1.98$), $F(1, 342) = 14.51$, $p < 0.001$, $d = 0.41$. However, college students ($M = 4.00$, $SD = 2.46$) were just as likely as older adults ($M = 3.55$, $SD = 3.06$) to choose Acceptance, $F(1, 333) = 2.16$, $p = 0.14$, $d = 0.16$.

Analysis also yielded an Age × Controllability interaction for responses of Acceptance, $F(1, 333) = 3.91$, $p = 0.05$, $d = 0.21$. *Post hoc* tests using the Bonferroni adjustment revealed that collage-age participants were more likely to choose Acceptance when controllability was low ($M = 4.49$, $SD = 2.71$) than when controllability was high ($M = 3.54$, $SD = 2.12$), $F(1, 333) = 7.75$, $p < 0.001$, $d = 0.30$. In contrast, older adults in the low ($M = 3.48$, $SD = 2.96$) and high ($M = 3.62$, $SD = 3.17$) controllability conditions did not differ in their preference for Acceptance, $F(1, 333) = 0.28$, $p = 0.60$, $d = 0.06$. That is, only college students in our study differed in their preference for Acceptance based on controllability. No other significant interactions between age and our manipulations emerged, all Fs < 2.55, all ps > 0.11, all ds < 0.17.

Discussion

The present study provided an initial test of the Bad News Response Model – a model for understanding and predicting responses to bad news. Our study had two goals. First, we examined how people respond to different types of bad news. Second, we examined whether college students and older adults differ in their responses to different types of bad news. In most instances our hypotheses received strong support.

First, as expected, participants were more likely to choose Watchful Waiting when negative outcomes of the news were uncontrollable and/or unlikely to occur,

and/or non-severe (Hypothesis 1). Second, participants were more likely to choose Active Change when negative outcomes were controllable and/or likely to occur (Hypothesis 2). Finally, participants were more likely to choose Acceptance when negative outcomes were uncontrollable (Hypothesis 3).

These findings are important in that they provide general support for the Bad News Response Model and offer preliminary evidence that the model is useful in predicting responses to bad news. The results of the present study are consistent with previous research suggesting that people may be more likely to prefer active responses over passive responses when they perceive bad news to have controllable consequences (Aldwin, 1991; Carver et al., 1989; Folkman & Lazarus, 1980), when they perceive negative outcomes as likely to occur (Ajzen & Fishbein, 1980; Janz & Becker, 1984; Edwards, 1954; Rogers, 1983), and when they perceive potential consequences as severe (Anderson, 1977; Parkes, 1986; Terry, 1991). This study also extends previous research by demonstrating that perceived controllability plays a singular role in predicting acceptance of bad news.

In addition to predicting responses to bad news under various circumstances, the Bad News Response Model may be useful for allowing people to evaluate their responses to bad news. That is, after receiving bad news recipients can evaluate the likelihood, severity, and controllability of the possible outcomes to understand how they should respond. For example, a woman who finds a suspicious lump in her breast can consider the likelihood that the lump is cancerous, how bad the consequences might be, and if she has any control over the situation at that time. Having evaluated the situation, she may have a better sense of the most effective response. This process may help people to override responses based solely on fear or anxiety or narrow beliefs about potential response effectiveness. Furthermore, physicians and other bad news-givers can use the model as a guide for evaluating patients' responses to negative health news. If a physician believes that a patient is responding inappropriately, s/he can pursue the possibility that the patient has misinterpreted one or more of the situational factors. Of course, the present study stops short of demonstrating the effectiveness of particular responses to different types of bad news, so future research can examine whether the response tendencies demonstrated in this study also represent effective responding.

Limitations

Although our findings almost entirely supported our predictions, several limitations of this study are worthnoting. First, participants in our study responded to hypothetical scenarios. This study provides important initial support for the predictions of the Bad News Response Model, but further studies are needed to examine whether our findings generalize to responding in real-life situations. Second, this study examined one type of health-related bad news: news of a suspicious mole. Although we have no reason to believe that our findings would change significantly in other domains, it is possible that the results were peculiar to the topic of the scenarios.

Finally, some unexpected findings in our study warrant further attention. Most notably, college students and older adults responded somewhat differently to our scenarios. Prior research finds that people generally perceive illness similarly across the age span (Leventhal & Prohaska, 1986) with the exception that the elderly perceived illnesses to be more severe than did younger people (Prohaska, Leventhal, Leventhal, & Keller, 1985). However, we found that older adults saw our scenarios as *less* severe, more

likely to result in negative consequences, and more controllable than did college students. Although we could not control for personal experience with skin cancer, we suspect that this finding may reflect college students' relative lack of exposure to skin cancer 'success stories.' That is, even older adults with no personal experience with skin cancer may nonetheless have brought to mind friends or family members who survived skin cancer despite apparently dire diagnoses. In addition, older adults may have had more knowledge about common types of skin cancer than did college students, which may have led them to perceive the situation in the scenario as easily treatable and not life threatening.

Older adults also responded to our scenarios differently than did college students. Older adults were far more likely to respond with Active Change and less likely to respond with Watchful Waiting than were college students. In addition, older adults did not differ in their preferences for Acceptance based on controllability. These age effects may also reflect adults' experience with successful treatments for skin cancer or knowledge about common types of skin cancer, which might have led them to choose active responses regardless of how we depicted treatment efficacy.

Conclusions

The Bad News Response Model is a systematic and theoretical model of responding to bad news, and the present findings provide the first empirical support of several of the model's predictions. Our findings suggest that people do not take a one-size-fits-all approach when responding bad news but rather tailor their responses to the type of news they receive. Most importantly, responses to bad news are not arbitrary but instead follow predictable patterns according to the controllability, likelihood, and severity of negative consequences that may follow from the news. Our findings further suggest that although both news-recipients and news-givers are sensitive to these variations in bad news, news-recipients lean towards active responses and newsgivers towards more conservative responses. Future studies can use our findings as a starting point to examine whether people's natural response tendencies lead to the best outcomes.

Acknowledgements

Note

1. The previous sentence represents the manipulation of severity. Low severity was represented by non-severe, slow-growing cancer that is unlikely to cause health problems. High severity was represented by severe, quick-growing cancer that is likely to cause health problems

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