

The Inclusion of Patient Testimonials in Decision Aids:

Effects on Treatment Choices

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Background. Decision aids often provide statistical information and patient testimonials to guide treatment choices. This raises the possibility that the testimonials will overwhelm the statistical information. **Methods.** Prospective jurors in Philadelphia County were presented with hypothetical statistical information about the percentage of angina patients who benefit from angioplasty and bypass surgery (50% and 75%, respectively). They were also given written testimonials from hypothetical patients who had benefited or not benefited from each of the two treatments. The numbers of patients benefiting and not benefiting were varied to be either proportionate to the statistical information or disproportionate. In study 1, all participants received 1 testimonial from a patient who had benefited from angioplasty and 1 from a patient who had not. Participants receiving the proportionate questionnaire version were also given 3 testimonials from patients who benefited from bypass surgery and 1 from a patient who did not, coinciding with the hypothetical statistical information. In contrast, participants receiving the disproportionate questionnaire version received only 1 testimonial from a patient who benefited from surgery and 1 from a patient who did not. In study 2, all participants received 2 examples of patients who benefited from angioplasty and 2 who did not. Participants with the proportionate questionnaire version received the same testimonials regarding surgery as in study 1. Those receiving the disproportionate questionnaire version received 2 testimonials from patients who benefited from bypass and 2 from patients who did not. Finally, a separate set of participants in study 2 received a questionnaire with no testimonials. **Results.** In study 1, 30% of participants receiving the disproportionate questionnaire version chose bypass surgery versus 44% of those receiving the proportionate questionnaire ($P = 0.002$ by χ^2). In study 2, 34% of participants receiving the disproportionate questionnaire version chose bypass surgery versus 37% of those receiving the proportionate questionnaire ($P = 0.59$ by χ^2). Of those receiving no patient testimonials, 58% chose bypass surgery. **Conclusions.** The inclusion of written patient testimonials significantly influenced hypothetical treatment choices. Efforts to make the mix of positive versus negative testimonials proportionate to statistical information may, under some circumstances, affect choices in ways that cannot automatically be assumed to be optimal. **Key words:** decision making; cognitive bias; decision aid; informed consent; vividness. (*Med Decis Making* 2001;21:60–68)

Health care professionals are becoming increasingly aware of the important role patient preferences ought to play in medical decision making.^{1,2} To help patients sort out their treatment preferences, researchers have begun developing a wide range of

decision aids.³ Decision aids go a step beyond educational information by helping patients understand how various treatment choices influence their probability of experiencing specific health outcomes, by providing information about how those outcomes might affect their quality of life, and by structuring information in ways intended to empower patients to actively participate in their treatment choices.^{1,2} To help people understand their treatment alternatives, some decision aids even provide testimonials from patients who have already received the available treatments, in which the patients describe how specific health treatments or health outcomes have affected their quality of life.³

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The development of decision aids is a rapidly progressing research field. Developers have begun to assess how decision aids influence patient knowledge,^{4,10} treatment choice,^{4,7-9} decision satisfaction, and decision anxiety.^{2,10-11} However, many questions remain unanswered about how decision aids influence choice¹² and whether patient testimonials can distract people from statistical information.

In a classic example of the power of testimonials to influence choice, Borgida and Nisbett¹³ gave introductory psychology students 1 of 2 forms of information about 10 upper-level psychology courses and asked them to say which course they would enroll in:

Subjects in a “statistical summary” condition received what was purported to be actual mean evaluations . . . based on the reports of the dozens of students who had taken each course the preceding term. Subjects in a “face-to-face” condition were exposed to a panel of 10 upper level psychology students: for each of the courses, two or three students who had actually taken the course rated the course on the 5 point scale and then made a few comments on the course consistent with their evaluations. The mean evaluation for a given course, which was given to subjects in the statistical summary condition, was fixed so as to coincide with the mean of the evaluations in the face-to-face condition.¹⁴

The researchers found that participants receiving the face-to-face testimonials intended to take more of the highly evaluated courses than did those who received only statistical summary data, despite the fact that the statistical summary data were from a significantly larger group of participants and thus should be more accurate information. The vividness of face-to-face recommendations was a more powerful influence on choice than the nonvivid statistical data.

The above-mentioned study illustrates the potential power of testimonials to influence the choices of patients reviewing clinical decision aids. In most cases, testimonials represent only a tiny subset of the cases contained in the statistical summary data, chosen to illustrate “typical” clinical scenarios; therefore, patients reviewing decision aids containing both types of information should not be affected by whether the testimonials report positive or negative outcomes (with certain specific exceptions, noted below). However, the Borgida and

Nisbett study suggests another possibility: When presented with both statistical and testimonial information with regard to the outcomes of treatment options, patients might give insufficient weight to the statistical information, resulting in an influence of testimonial information on decisions that is not commensurate with its value.

Clearly, if testimonials do affect patients’ choices when presented in combination with statistical data, it is important for designers of decision aids to be aware of this. Which strategy is best—to present one testimonial representing each outcome, or to present varying numbers of testimonials to mirror the ratio of positive to negative outcomes found in the statistical information, or perhaps to avoid testimonials altogether? In the Borgida and Nisbett study described earlier, participants received either statistical or testimonial information, not both. In the study reported here, we present participants with both types of information in combination (as would be the case in real decision aids) and vary the mix of positive and negative outcomes presented in the testimonials to see what effect this has on choices.

Study 1

PARTICIPANTS

Participants were prospective jurors in the Philadelphia County Courthouse. In Philadelphia County, prospective jurors are selected from voter registration and driver’s license records. Surveys were distributed to prospective jurors after announcing that those who filled out a survey would receive a candy bar.

QUESTIONNAIRE DESIGN

Participants were asked to choose between 2 treatments for angina—balloon angioplasty and bypass surgery. These treatment choices were chosen on the basis of pilot testing, in which it was determined that close to half of participants would choose each of the 2 treatments, based purely on hypothetical statistical information about their relative effectiveness. (Having such a “close call” was important to be able to test for the effect of testimonials on treatment choice; if one treatment

had been overwhelmingly preferred to the other, it would have been less likely that testimonials would have influenced choice.)

Subjects were given the following scenario:

Imagine that you have a narrowing of the arteries to your heart, causing you to suffer from *angina*—significant chest pain and tightness when you exert. For example, you get crushing pain in your chest after walking up one flight of stairs. This makes it difficult for you to do any type of exercise or even to do certain household chores.

Imagine you have taken *medicines* for your angina, but they *have not relieved the pain*. There are two treatments which could potentially open up your heart arteries and cure you of your angina.

Balloon angioplasty: Balloon angioplasty involves admitting you to the hospital and inserting a tube up through an artery in your leg. Physicians will maneuver the tube into one of your heart arteries and attempt to open up where it is narrowed. They will open up the artery by expanding a balloon within the artery. Most people receiving balloon angioplasty recover quickly, and leave the hospital the next day.

Bypass surgery: Bypass surgery involves a surgical operation on the heart. This involves opening up your chest and performing major surgery to bypass the blocked artery. Most people receiving bypass surgery remain in the hospital for close to one week and take approximately a month to recover from the surgery.

While patients receiving *balloon angioplasty* recover much faster than patients receiving bypass surgery, patients receiving *bypass surgery* are more likely to get rid of their chest pains.

Participants were told that “balloon angioplasty cures angina (or chest pain) in 50% or half of patients.” They were then given examples of 2 patients who received balloon angioplasty, one who got relief of angina and another who did not:

Bill W., 55 years old: “I had pains, making it hard for me to walk the dog or have sexual relations with my wife. After angioplasty, I no longer have any chest pain and I can do any activities I want to do.”

Jane P., 59 years old: “I had a lot of chest pain that made it hard for me to do any exercise. It even hurt when I ate a large meal. The angioplasty did not help at all. I still have just as many chest pains.”

Participants were told that “bypass surgery cures angina (or chest pains) in 75% or three-fourths of

people.” There were 4 examples of patients who had bypass surgery, 3 of whom benefited from the surgery and 1 of whom did not:

Tom B., 61 years old: “My chest pain was so bad that any time I got into a debate with a friend or colleague, I could feel my chest tightening. It made me afraid to do any kind of exercise for fear that I would have a heart attack. The bypass surgery cured me of my chest pain. I’m not afraid anymore of having a heart attack.”

Ellen W., 53 years old: “I used to be an avid tennis player. Then I started getting chest pains. I couldn’t even play doubles. After my bypass surgery, I was back to the tennis courts and now I can play tennis with my children again.”

Daniel C., 62 years old: “I looked forward to retirement, until I got angina. Then I wondered why I had worked so hard all my life only to face a retirement in which I’d have a hard time getting out of the house because of my chest pains. I couldn’t take long walks. I certainly wouldn’t be able to do the traveling outdoors that I’d hoped to be able to do. After my bypass surgery, my chest pains went away, and now I look forward to retirement so I can travel and take long walks whenever I desire.”

Elizabeth D., 58 years old: “Every Sunday, my husband and I used to walk to church with our neighbors. It became a real nice time to visit with people. I even looked forward to discussing the sermon on the way home and hear what everyone thought about it. Then I started getting angina pains and we had to start driving to church. I never realized how much I looked forward to my Sunday walks until I couldn’t do them anymore. Then I had bypass surgery and it didn’t help my chest pain. I still can’t walk back and forth to church without pain. I am frustrated that the treatment did not work.”

Participants were randomized to 4 questionnaire versions. In the *proportionate questionnaire*, participants received all 4 examples of bypass patients; thus, they received examples of successful and unsuccessful bypass surgery in the same proportion as its hypothetical success rate. In the remaining 3 questionnaire versions, participants received only 2 examples of patients who had received bypass surgery, one who had obtained angina relief and another who had not; thus, the proportion of patients in the examples who improved was 50%, whereas the statistical information mentioned that 75% would be expected to improve. These 3 versions differed in terms of which of the 3 improved patients people read about.

Table 1 • Study Design and Percentage of Participants Choosing Bypass—Studies 1 and 2

	Study 1		Study 2		
	Proportionate	Disproportionate	Proportionate	Disproportionate	None
<i>n</i>	219	318	197	322	74
Number of testimonials for					
Angioplasty (benefit)	1	1	2	2	0
Angioplasty (no benefit)	1	1	2	2	0
Bypass (benefit)	3	1	3	2	0
Bypass (no benefit)	1	1	1	2	0
Total	6	4	8	8	0
Percentage choosing bypass	44	30	37	34	58
Proportionate versus disproportionate ^a	9.64 (0.002)			0.29 (0.59)	
No testimonials versus other 4 conditions ^a	4.54 (0.033)	20.10 (0.00001)	10.04 (0.0015)	14.17 (0.0002)	

a. Table entries in these rows are chi-squares and (*P* values).

Because there were no statistically significant differences in treatment choices of participants who received these 3 questionnaire versions, they have been grouped together and will be referred to as the *disproportionate questionnaire*. The study design is illustrated in Table 1.

Participants were asked to indicate which of the 2 treatments they would choose if they had angina, and they were asked to explain their treatment choice.

DATA ANALYSIS

Demographic characteristics across the questionnaire versions were compared with analysis of variance for continuous variables and chi-square tests for categorical variables. Treatment choices were compared across questionnaire versions with chi-square tests.

RESULTS

A total of 537 participants completed a questionnaire (219 proportionate, 318 disproportionate). Their average age was 42 (SD = 13). Their average number of years of education was 14 (SD = 3); 65% were female, 41% were African American, and 52% were Caucasian. Subjects' demographic characteristics did not differ across questionnaire versions (all *P*s > 0.15).

As shown in Table 1, of those participants receiving the proportionate questionnaire, 44% indicated they would choose bypass surgery. In contrast, of those receiving the disproportionate questionnaire, which included only 1 example of a patient with a good bypass outcome, only 30% chose bypass surgery (*P* = 0.002 compared to

proportionate questionnaire choices by chi-square test).

Study 2

Study 1 showed that hypothetical treatment choices were significantly influenced by patient testimonials, even when statistical information about treatment success rates was held constant. Participants were more likely to choose bypass surgery when they received 3 positive testimonials and 1 negative testimonial rather than 1 positive and 1 negative.

One possible explanation for the effect of testimonials found in study 1 is that the ratio of positive to negative testimonials for bypass was higher in the proportionate condition than in the disproportionate condition. There were, however, other differences between the proportionate and disproportionate conditions that might have affected choices. For example, the proportionate condition included a total of 6 testimonials (4 about bypass and 2 about angioplasty), compared with 4 testimonials (2 about bypass and 2 about angioplasty) in the disproportionate condition. Something in the content of the 2 extra testimonials (other than the outcomes) might have affected decisions. Alternatively, the simple fact that the proportionate condition contained twice as many testimonials from bypass patients as angioplasty patients could have given participants the idea that most patients choose bypass. It is even conceivable that simply getting 6 testimonials rather than 4 somehow affects decisions.

It is also possible that the effect of testimonials found in study 1 was a function of the particular

combination of positive and negative testimonials we happened to use. Of the 4 possible combinations of treatment option and outcome, the only one represented by multiple testimonials was bypass surgery with a positive outcome. This was represented by 3 times as many testimonials as any of the other combinations, and it accounted for half of all testimonials in the proportionate condition. This mixture of testimonials might have suggested a greater discrepancy between the 2 treatments than the 50% and 75% effectiveness figures would indicate.

All of these concerns raise the question of whether the difference in treatment choices seen in study 1 would occur in other situations. In study 2, therefore, we modified the experimental procedure to address these concerns. The 2 treatment options, the hypothetical statistical information concerning their effectiveness, and the ratio of positive to negative testimonials presented were the same as in study 1. But we altered the total number of testimonials provided, so that in all questionnaire versions, people received 4 examples of patients receiving angioplasty and 4 examples of patients receiving bypass.

Another question not answered by study 1 was how the choices of participants getting proportionate and disproportionate testimonials compare with those of participants getting statistical information only. We might expect that the addition of a mix of testimonials disproportionate to the statistical information would skew choices, but what about a proportionate mix of testimonials? Does it have no effect on choices, or does it reinforce the statistical information, causing a greater preference for the more effective option? To address this question, we added an extra version of the questionnaire to study 2, identical to the others except that no testimonials were included.

PARTICIPANTS

Participants were prospective jurors in the Philadelphia County Courthouse, recruited in exactly the same way as in study 1.

QUESTIONNAIRE DESIGN

We presented participants with the same scenario as in study 1. However, we changed the number of

testimonials participants received for each treatment option. For example, in study 1, all participants received 1 example of a patient benefiting from angioplasty and 1 from a patient who did not. In study 2, all participants received 2 additional testimonials from angioplasty patients—an additional patient who benefited and an additional patient who did not.

Aaron G., 60 years old: “My wife and I wanted to move out west so we could do more hiking and biking and other outside activities. But then I started having chest pains and it got so bad that I could barely walk up a flight of stairs. It was frustrating for me because I have always been active. After I had angioplasty, my chest pains went away and we are moving out to Arizona next month.”

Crockett M., 68 years old: “My biggest hobby has always been carpentry and since my retirement it’s also a source of income. A few years ago, my doctor told me I had angina and I really started to notice that it was affecting my work. I couldn’t lift large pieces of wood and I had to rest often. When I had to cut down my shop work to two hours a day because of exhaustion, I decided to go ahead and get the angioplasty. It didn’t help me and I still have to limit my work.”

In addition, as in study 1, participants in the proportionate questionnaire version received 3 testimonials from patients benefiting from bypass and 1 from a patient who did not; they received the same testimonials as in study 1. However, unlike study 1, participants in study 2 receiving the disproportionate questionnaire version received 2 examples of a patient benefiting from bypass and 2 testimonials from patients who did not. This was accomplished by altering 1 of the 3 positive testimonials from the proportionate questionnaire so that the patient did not benefit from bypass. Across 3 questionnaire versions, we varied the identity of which of these 3 patients did not benefit. Because choices did not differ across these 3 questionnaire versions, we grouped them together for the purposes of analysis and discussion as the disproportionate questionnaire version. Finally, an additional questionnaire version was created in which the scenario and hypothetical statistical information were identical to the other versions, but no testimonials were included. The design is illustrated in Table 1.

RESULTS

A total of 593 participants completed a questionnaire (197 proportionate, 322 disproportionate, 74 no testimonials). Their average age was 43 (SD = 13). Their average number of years of education was 14 (SD = 3); 62% were female, 40% were African American, and 53% were Caucasian. Participants' demographic characteristics did not differ across questionnaire versions (all P s > 0.05).

As shown in Table 1, of those participants receiving the proportionate questionnaire, 37% indicated they would choose bypass surgery. Of those participants receiving the disproportionate questionnaire, 34% chose bypass surgery. The difference between the 2 groups was not statistically significant ($P = 0.59$).

Among the study 2 participants who received the questionnaire with no testimonials, 58% indicated they would choose bypass surgery. A set of four chi-square tests was performed, comparing the "no testimonial" participants with each of the other 4 groups in studies 1 and 2; to adjust for the multiple comparisons, a P level of 0.01 was taken as the criterion of statistical significance. By this criterion, the proportion of no testimonial participants who chose bypass surgery (58%) was significantly higher than that of participants receiving the disproportionate questionnaire in study 1 (30%, $P = 0.00001$) or study 2 (34%, $P = 0.0002$), or participants receiving the proportionate questionnaire in study 2 (37%, $P = 0.0015$); it was not significantly higher than that of participants receiving the proportionate questionnaire in study 1 (44%), but the trend was clearly in that direction ($P = 0.033$).

Discussion

These studies demonstrate that written patient testimonials can significantly influence hypothetical treatment choices when presented in combination with statistical summary data on treatment effectiveness. The percentage of participants expressing a preference for bypass surgery over angioplasty to treat angina varied from 58% (among participants receiving no testimonials) to 30% (among participants receiving 1 positive and 1 negative testimonial for each treatment), even

though all participants received exactly the same statistical information about the effectiveness of the treatments.

Each study included proportionate and disproportionate versions of the questionnaire, which differed in the ratio of positive to negative testimonials for surgery. In study 1, the 2 versions also differed in several other characteristics—most notably, the total number of testimonials presented (the proportionate version included 2 extra testimonials, both from patients benefiting from bypass surgery, that were not included in the disproportionate version). In addition, the particular mix of positive and negative testimonials in the proportionate condition might have exaggerated the relative merits of bypass surgery. In study 2, by contrast, the ratio of positive to negative testimonials for surgery was the only factor that differed across the 2 versions (all participants received the same set of 8 testimonials; the ratio was altered by changing the outcome in 1 testimonial from negative to positive). Surgery was preferred more often by participants receiving the proportionate version than by those receiving the disproportionate version in study 1, but not in study 2. This suggests that the difference in choices between the 2 versions in study 1 either was not due to the difference in the ratio of positive to negative outcomes or is restricted to situations in which the mix of positive and negative testimonials is especially salient.

A separate question addressed by study 2 was how the addition of testimonials to a decision aid containing statistical information affects choices; we examined this by including a questionnaire version identical to the proportionate and disproportionate versions but containing statistical information alone. We expected that the proportionate testimonials would either have no effect on choices or would reinforce the statistical information; thus, the percentage of participants choosing bypass surgery in the proportionate condition should have been equal to or higher than the percentage in the no testimonials condition. Contrary to our expectations, 58% of participants receiving the no testimonials version chose surgery, as opposed to 37% of participants receiving the proportionate version (and 44% of participants receiving the proportionate version in study 1). In these 2 studies, giving people any testimonials, regardless of the number and proportion, steered them away from surgery. Although this result was

unexpected by us, in hindsight, several areas of research and theory are consistent with it. Thus, several possible explanations can be advanced. We present 3 below. Because these explanations are post hoc, they must be considered speculative.

One possible explanation is that the testimonials may have contained important information that was relevant to the choice—for example, facts about the disease, or the treatment options, not otherwise mentioned in the decision aid. According to this explanation, the difference between the no testimonials condition and the other conditions was not an effect of testimonials per se but of information that happened to be located in a testimonial rather than in the description of the disease or treatment option. It seems unlikely that this would account for the effect of testimonials seen in these 2 studies, but it is difficult to rule it out definitively.

Research has demonstrated that case-specific information can influence decisions even when it is not considered relevant. This suggests other possible explanations for the difference between the no testimonials condition and the other conditions. By way of introduction to these other explanations, let us review the observed effect: Receiving testimonials rendered people less likely to choose bypass, which was more invasive than angioplasty but which the statistical data indicated was more effective. Therefore, any potential explanation must be based on the assumption that receiving testimonials somehow caused participants to pay less attention to statistical data on effectiveness. Within this constraint, a number of alternatives are possible. These fall into 2 general categories, as described below.

One general category of explanations has to do with things like cognitive capacity and salience of information. The no testimonials questionnaire materials contained a relatively small amount of information, and it is likely that the effectiveness data stood out and therefore played a relatively large part in decisions. By contrast, all testimonials questionnaires included a substantial amount of additional information, and it was a different type of information—personal stories, which may be processed very differently than dry facts. The statistical information on effectiveness may not have been retained in memory, either because of the sheer amount of information or because dry statistics are relatively uninteresting or difficult to process. And even if it were retained in memory, it

would represent a relatively small portion of the total amount of information presented and therefore might play a correspondingly small role in the decision. This explanation is supported by a number of studies showing that when people are given only statistical information (for example, the relative proportion of lawyers and engineers in a population), they use it to make judgments (for example, the likelihood that an individual member of the population is a lawyer), but as soon as they are given any concrete, individual-level information, even information that they consider irrelevant (for example, the individual's age, marital status, and the fact that he is well liked by his colleagues), they begin to disregard the statistical information.¹⁷

The only problem with this explanation is that it still does not provide a truly satisfying account of the most paradoxical result we found: If testimonials simply distract people from statistical information, then why were participants in the proportionate condition, who received information on effectiveness both from statistics and from testimonials, still less likely to choose the more effective option than participants who received only statistical information? We have to make the additional assumption that, in the testimonials, the information on effectiveness was somehow less salient, relative to the other information presented, than it was in the no testimonials condition.

A final class of explanations is based on the idea that the testimonials did not affect people's ability to process the statistical data on effectiveness but, rather, changed the importance people placed on effectiveness versus invasiveness. This type of explanation can be derived from Miller's model of approach-avoidance conflict, which suggests that if a given action has both costs and benefits, as one gets closer to taking the action, the motivation to avoid the costs increases faster than the motivation to achieve the benefits.^{16,17} Although this tendency was originally described as a function of physical proximity to objects that have both positive and negative valence, it is presumably a function of perceived proximity, that is, how close the object appears to be rather than how close it is. This suggests the possibility that vividly imagining an object may have an effect similar to being physically near to it. And, because the effect of testimonials may lie in their power to produce vivid, concrete images, they may cause people to focus more on avoiding costs than on achieving benefits. Hearing testimonials about surgery and angioplasty might

have made the treatments seem more real, and thus more proximate, causing people to shift the weights they put on the costs and benefits of those treatments. This explanation says that participants getting testimonials did not disregard the statistical information on effectiveness; they just assigned the dimension of effectiveness less weight.

WHICH CHOICES ARE “BETTER”?

One practical question raised by the studies reported here is which version of the materials is producing the “best” choices. The 3 explanations presented above have different implications for this issue. The first explanation (that the testimonials contained important information) implies that the choices made by the participants who received testimonials were better because those participants had better information. In contrast, the second explanation (that the testimonials caused participants to disregard the statistical information) implies that the choices made by those participants were worse because they were ignoring important information. The third explanation (that the testimonials caused participants to shift the weights they placed on costs vs. benefits) implies that neither of these is necessarily correct. In the scenario we used, and in all clinical scenarios in which patient decision aids are needed, there is no one choice that is right for all patients—if there were, there would be no decision to be made. The right choice varies across individuals, depending on the values that the individual places on factors like effectiveness and invasiveness. Thus, an individual reviewing information on these factors will arrive at the choice that is right for her only if she assigns weights to the different pieces of information that are consistent with her values—or if she assigns a set of weights that are wrong but offsetting so that the answer comes out right by chance. If people give too much weight to the difference in effectiveness in the no testimonials condition, and the testimonials cause this weight to be reduced to a more appropriate level, then testimonials might produce better decisions, even if, in a strictly logical sense, the testimonial information should not outweigh the statistical information.

One limitation of these studies is that the testimonials varied in content—for example, the extent to which information on the patient’s pre-

and posttreatment activities and emotions was included. This may well have affected the percentage of participants choosing bypass surgery within any single condition; in addition, as mentioned earlier, the content of the 2 extra testimonials might have been a factor in the difference between the choices of participants in the proportionate and disproportionate conditions in study 1. In study 2, however, in which both versions contained the same testimonials, any variation across testimonials should not have been a factor.

These studies are exploratory and examine only a single hypothetical treatment choice given to members of the general public. It remains to be seen whether and how patient testimonials would influence choice in real-life clinical settings. Nevertheless, in testing how various methods of presenting information influence choice, it may be preferable to study nonpatients first, to avoid biasing patients whose treatment choices will have serious consequences. Research into such cognitive biases could usefully progress from hypothetical scenarios, such as the one studied here, to “semihypothetical” scenarios, presented to people who have faced similar choices already or who have clinical circumstances that make hypothetical choices somewhat more relevant. Great caution needs to be taken when performing these kinds of studies in patients making real treatment choices, until the extent of the bias and the potential for reducing the bias are better understood.

The science of decision aid development is in its youth. Our studies show an area that needs more exploration, so that decision aid developers will have a better idea of how the structure and content of the patient testimonials included in the decision aids influence choice.

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