Disclosing Medical Errors to Patients: It's Not What You Say, It's What They Hear

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BACKGROUND: There is consensus that patients should be told if they are injured by medical care. However, there is little information on how they react to different methods of disclosure.

OBJECTIVE: To determine if volunteers' reactions to videos of physicians disclosing adverse events are related to the physician apologizing and accepting responsibility.

DESIGN: Survey of viewers randomized to watch videos of disclosures of three adverse events (missed mammogram, chemotherapy overdose, delay in surgical therapy) with designed variations in extent of apology (full, non-specific, none) and acceptance of responsibility (full, none).

PARTICIPANTS: Adult volunteer sample from the general community in Baltimore.

MEASUREMENTS: Viewer evaluations of physicians in the videos using standardized scales.

RESULTS: Of 200 volunteers, 50% were <40 years, 25% were female, 80% were African American, and 50% had completed high school. For designed variations, scores were non-significantly higher for full apology/responsibility, and lower for no apology/no responsibility. *Perceived* apology or responsibility was related to significantly higher ratings (chi-square, 81% vs. 38% trusted; 56% vs. 27% would refer, $p < 0.05$), but inclination to sue was unchanged (43% vs. 47%). In logistic regression analyses adjusting for age, gender, race and education, perceived apology and perceived responsibility were independently related to higher ratings for all measures. Inclination to sue was reduced non-significantly.

CONCLUSIONS: Patients will probably respond more favorably to physicians who apologize and accept responsibility for medical errors than those who do not apologize or give ambiguous responses. Patient perceptions of what is said may be more important than what is actually said. Desire to sue may not be

affected despite a full apology and acceptance of responsibility.

KEY WORDS: medical error; disclosure; apology; video; patient perceptions; vignette.

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INTRODUCTION

There is consensus among professional organizations, ethicists, physicians and the general public that physicians are obligated to disclose medical errors that cause harm (adverse events) to patients.¹⁻¹⁹

Research suggests that following an adverse event, patients want an apology, an explanation of what happened and someone to take responsibility.^{4,12,13,20-24} Practice appears to fall short of this, with less than a third of patients even told about harmful errors,^{10,12,25,26} and wide variation in what physicians choose to disclose.²⁷⁻²⁹

Few studies have examined the disclosure process or its consequences for patients. Many patients believe that doctors sometimes withhold information about medical accidents.³⁰ Patients involved in an adverse event expressed concern about the occurrence and timing of disclosure, lack of an apology and inadequate follow-up.³¹ An Internet survey found that full disclosure may strengthen the patient-physician relationship and may reduce desire to sanction physicians.²¹ A comparison of different methods of disclosure found that full disclosure resulted in greater trust and satisfaction, and no increased likelihood of seeking legal advice.³² Other studies found that patients were more likely to trust physicians who played an active role in disclosing a serious error,³³ whereas inadequate disclosure may increase the likelihood of a malpractice claim.³⁴ Despite these findings, there are unanswered questions about conducting disclosure discussions, including how apology and acknowledgment of responsibility affect patients' and families' reactions.^{27,34-35}

We showed volunteers videotaped vignettes that depicted physicians disclosing adverse events to patients and surveyed them on their evaluation of the physicians. We hypothesized that disclosures that included full apology and acceptance of

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responsibility would be associated with improved physician trust and reduced proclivity to sue.

METHODS

Design

This was a survey of volunteers who viewed video vignettes of a physician disclosing an adverse event to a patient or family member. We created videos of three adverse events using actors to portray physicians and patients. Volunteers recruited from Baltimore City were randomized to view vignettes including different combinations of apology and responsibility. Viewers completed a survey on their emotional response, their evaluation of the physician and likelihood of suing.

Vignette Development

Three adverse events were depicted: a year-long delay in noticing a malignant-looking lesion on a mammogram, a chemotherapy overdose ten times the intended amount and a slow response to pages by a pediatric surgeon for a patient who eventually codes and is rushed to emergency surgery. The dialogues were scripted to include elements of an ideal initial disclosure including: (1) notification of an error, (2) description of what happened, (3) a sincere apology, (4) acceptance of responsibility, (5) description of steps to be taken to mitigate harm and correct the situation, and (6) assurance of an investigation to prevent recurrence.^{12,25,36}

We designed five versions of each case by varying two of these elements: the apology and acceptance of responsibility. The apology was varied so that the physician made either a full (personal and specific) apology (A+), a non-specific apology (e.g., I'm sorry that your family member is so ill")(A°) or no apology (A-). Responsibility was either accepted (R+) or not accepted (R-) by the physician (Table 1). A possible sixth variation (nonspecific apology, responsibility not accepted) was excluded to simplify the design. Because preliminary analyses showed few differences in responses to variations 2, 3 and 4, we collapsed them into a single category "incomplete apology or responsibility (A°/R°)." Variations were further grouped into category I: A+R+, category II: A°/R°, and category III: A-R-.

Table 1. Designed Variations in the Video Vignettes of Disclosure Discussions

Variation 1 (A+R+)	Variation 2 (A-R+)	Variation 3 (A°R+)
Sincere apology	No apology	Non-specific apology
Accepted responsibility	Accepted responsibility	Accepted responsibility
Variation 4 (A+R-)	Variation 5 (A-R-)	
Sincere apology	No apology	
Did not accept responsibility	Did not accept responsibility	-

Category I: variation 1: sincere apology/accepted responsibility (A+R+); category II: variations 2, 3 and 4 combined: incomplete apology and/or responsibility A°/R°; category III: variation 5: no apology/no responsibility (A-R-)

Different professional actors were used for each of the three cases: four of the actors were female, two were male and all were Caucasian. Johns Hopkins Medical Video produced the videos.

Survey Instrument

We reviewed the literature and consulted with experts to identify domains and draft questions. The survey evaluated seven aspects of the discussion: (1) overall perception of the physician's handling of the incident, (2) evaluation of the physician, (3) viewer's emotional response, (4) trust in the physician, (5) desire to have the physician as one's own doctor, (6) inclination to refer a friend/family member to the physician and (7) likelihood of suing the physician. The survey also asked viewers whether or not they *perceived* an apology or the physician accepting responsibility.

Respondents could rate the physician's handling of the incident as poor, fair, good, very good or excellent. Evaluation of the physician included: concern for the patient, professionalism, medical competence, sympathy toward the patient and defensive behavior. Emotional responses included feeling: upset, reassured, frustrated and angry. Questions adapted from trust-in-physician scales³⁷ included: cares for the patient as a person, thinks only about what is best for his/her patients, never misleads you about anything and would put the patient's needs above their own when treating medical problems.

The questions used 5-point Likert-type response options (emotional response: not at all, a little bit, moderately, quite a lot and extremely; evaluation of physician, trust in physician, having physician as own, refer and sue: strongly agree, agree, not sure, disagree or strongly disagree) and were scored as summated rating scales. Cronbach's alpha³⁸ for the multi-item scales were satisfactory: negative emotional response (0.84), positive perception of physician (0.80) and trust in physician (0.71).

Demographic questions included participant's age (18-30, 31-40, 41-50, 51-60 and >61), gender, race/ethnicity, number of doctor visits and hospital admissions in the past year, educational attainment (high school, college and graduate school) and whether they had ever experienced a medical error.¹⁵

PROCEDURES

Recruitment

Volunteers were recruited using fliers in Baltimore City and e-mail inviting participation in a study about "Difficult Medical Situations." Between April 1 2004 and July 28 2004 we enrolled 200 participants. Inclusion criteria included age >18 years and a self-reported English reading level at the eighth-grade level or higher. Compensation was \$20. The study was approved by the Johns Hopkins Institutional Review Board.

Interview Procedure

Each volunteer viewed three disclosure dialogues, with variations and order viewed assigned using a random number table. The terms 'medical error' and 'medical mistake' were not mentioned,

and videos were viewed individually to prevent contamination. Prior to each video, volunteers were given information that the patient/family member would have had and encouraged to put themselves in the position of the patient or family member. Volunteers completed a survey after each video. The entire process took 30 to 45 min. Among 600 viewings by the 200 volunteers, 19.5% were of an A+R+ vignette, 19.5% A-R+, 21.5% A°R+, 20.5% A+R- and 18.9% A-R-.

STATISTICAL ANALYSES

Chi-square tests were used for differences in viewer demographic characteristics across the vignettes. We aimed to enroll 186 subjects to have 80% power to detect a difference of 20% in trust score between apologizing vs. not apologizing at a level of $p < 0.05$.

The 5-point response scale used for each item was dichotomized into positive vs. negative response, based on the distribution of responses. The frequency of positive vs. negative responses was compared by the designed variations for apology and accepting responsibility, and by the viewer's perception of whether these had occurred.

Chi-square tests were used to examine bivariate relationships of the designed and perceived variations to responses. A p -value of less than 0.05 indicated statistical significance. To adjust for potential confounding effects of viewer characteristics, logistic regression was used to examine the multivariable relationships of variations to responses, adjusted for age, gender, educational background and race. Odds ratios and 95% CI were reported for positive response vs. negative response on each scale for category I vs. category II vs. category III (the reference group). All analyses were performed using STATA 8.0.

RESULTS

Of the 200 participants, 50% were <40 years old, 25% were female, 80% were African American, and 50% had completed high school (Table 2). Demographic variables were balanced across the three cases ($p > 0.1$), so analyses were based on pooled responses.

Designed Variations in Apology and Accepting Responsibility

Table 3 shows the association of the designed variation in physician handling of the disclosure with the dependent variables. In A+R+ vignettes, compared to A°/R° viewers were more likely to rate physicians as having handled the incident well, have positive perceptions, trust them, and want to refer or have them as their doctor. Physicians in A-R- vignettes received better ratings for handling of the incident than A°/R° physicians. Viewers were most likely to want to sue A°/R° physicians, followed by A-R- and A+R+. None of these comparisons were statistically significant.

Multivariate results for the designed vignettes and different outcomes were mixed (Table 4). Compared to A-R-, viewers were more likely to rate A+R+ physicians as having handled the incident well (OR=1.16), less likely to have a negative

Table 2. Respondent Characteristics (n=200)

	Frequency (%)
Age (years old)	
18-30	22
31-40	27
41-50	34
51-60	15
>60	2
Gender	
Male	25
Race	
White/Caucasian	14
Black/African American	80
Hispanic/Latino	1
Native American	4
Other	1
Education	
High school	50
College	30
Graduate	20

emotional response, more likely to trust the physician, want them as their doctor and refer. They were slightly less likely to want to sue, but also rated physicians less positively (OR=0.86). Viewers gave still more negative ratings to A°/R° physicians and were more likely to want to sue (OR=1.38). None of these comparisons were statistically significant.

Viewer Perceptions of Apology and Accepting Responsibility

The bolded text in Table 3 shows the association of viewer perceptions of the disclosure and the different outcomes. When

Table 3. Association of Variation in Error Disclosure (Designed and Viewer Perceived) and Outcomes

	Full apology and responsibility (A+R+)	Incomplete apology or responsibility (A°/R°)	Neither apology nor responsibility (A-R-)	P-value for chi-square test
Good handling of incident	57% 56%	45% 44%	51% 32%	P=0.05 P<0.001
Positive perception of physician	48% 58%	42% 40%	47% 21%	P=0.40 P<0.001
Negative emotional response	51% 40%	49% 56%	53% 64%	P=0.83 P<0.001
Trust in physician	71% 81%	59% 52%	64% 38%	P=0.08 P<0.001
Having physician as own doctor	21% 25%	15% 10%	17% 8%	P=0.38 P<0.001
Referral to physician	18% 25%	17% 11%	19% 8%	P=0.85 P<0.001
Sue physician	39% 43%	47% 46%	41% 47%	P=0.19 P=0.65

Unbolded text: Designed variation

Bolded text: Viewer perception

Table 4. Multivariate Analysis for the Association of Designed Variation in Error Disclosure and Outcomes: OR (95% Confidence Intervals)^b

	Good in handling incident	Positive perception of physician	Negative emotional response	Trust in physician	Having physician as own doctor	Referral to physician	Sue physician
Full apology and responsibility (A+R+) ^a	1.16 (0.66, 2.01)	0.86 (0.50, 1.50)	0.82 (0.47, 1.42)	1.49 (0.83, 2.64)	1.53 (0.75, 3.14)	1.19 (0.58, 2.41)	0.97 (0.55, 1.69)
Incomplete apology or responsibility (A°/R°) ^a	0.73 (0.47, 1.14)	0.77 (0.49, 1.19)	0.85 (0.55, 1.33)	0.86 (0.55, 1.35)	0.90 (0.49, 1.63)	0.87 (0.49, 1.54)	1.38 (0.88, 2.15)

^aReference group: neither apology nor responsibility^bAdjusting for age, gender, education and race

viewers perceived A+R+, they gave higher ratings on handling of the incident, reported less negative emotional response, more positive perceptions and more trust, and were more inclined to refer or have the physician as their doctor. Next came A°/R°, followed by A-R- (P all<0.001). Viewers who perceived A-R- were slightly more inclined to sue, followed by perceived A°/R° and was least likely to sue perceived A+R+ physicians (P>0.05).

In multivariate analyses of perceptions and outcomes, compared to A-R-, A+R+ physicians were rated higher for handling the incident, perceived more positively and trusted more (ORs=3.3, 5.8 and 7.3; p all P<0.05)(Table 5). Similarly, compared to A-R-, A°/R° physicians were rated higher for incident handling, perceived more positively and trusted more (ORs=1.7, 2.6 and 1.8; all with P<0.05). A similar pattern was observed for other outcomes, including having physician as own doctor, referring, less negative emotional response and slightly less propensity to sue (not statistically significant).

Relationship of Viewer Characteristics and Outcomes

Multivariate exploration of the relationships of age, gender and education to outcomes yielded mixed results. Older age was significantly associated with negative emotional response [OR=1.2 (1.02, 1.42)]; having physician as own doctor [OR=1.4 (1.11, 1.77)] and referral [OR=1.3 (1.03, 1.63)]. Female gender was associated with negative emotional response [OR=1.5 (1.02, 2.28)]. College education was associated with positive handling of the incident [OR=4.0 (1.84, 8.71)] and positive perception of the physician [OR=3.4 (1.58, 7.40)].

DISCUSSION

In this study, a full apology and acceptance of responsibility were associated with better ratings and greater trust in the physician, but were not associated with decreased propensity to sue. An unexpected finding was that after an adverse event, the patient's *perception* of what was said appeared to be more important than what was actually said.

To our knowledge, this is the first study to investigate the importance of how patients interpret the physician's communication about an adverse event. The video vignette methodology we used allowed us to control what was actually said, observing how participants interpreted this and how both of these factors related to their evaluation of the physician.

Our results support those from earlier studies suggesting that full disclosure of an adverse event leads to greater trust and more positive regard by patients and family members.^{21,32} This was particularly true when the physician acknowledged responsibility for the adverse event. Interestingly, acceptance of responsibility without an accompanying apology yielded no such benefit and may have even resulted in more negative judgments. This is similar to Schwappach's finding that equivocal statements acknowledging an error had no effect or even increased the probability of negative ratings.²¹ Our findings complement those of previous studies in that we obtained a community sample rather than health plan members.^{21,32}

A surprising finding was that the *perception* of what is said was more strongly associated with how physicians were perceived and trusted than what was actually said. This finding has face validity, but there have been few studies of how handling of an incident affects patients' evaluations.^{21,32} One interpretation is that just because we think we've conveyed a message does not

Table 5. Multivariate Analysis for the Association of Viewer Perceptions of Variation in Error Disclosure and Outcomes: OR (95% Confidence Intervals)

	Good in handling incident	Positive perception of physician	Negative emotional response	Trust in physician	Having physician as own doctor	Referral physician to friends	Sue physician
Full apology and responsibility (A+R+) ^a	3.33 ^c (2.05, 5.41)	5.80 ^c (3.42, 9.86)	0.41 ^c (0.26, 0.64)	7.26 ^c (4.44, 77.86)	4.01 ^c (1.88, 8.55)	4.23 ^c (1.99, 8.99)	0.83 (0.53, 1.30)
Incomplete apology or responsibility (A°/R°) ^a	1.71 ^c (1.03, 2.83)	2.6 (1.51, 4.50) ^{1d}	0.78 (0.48, 1.26)	1.77 ^c (1.10, 2.85)	1.40 (0.60, 3.56)	1.52 (0.66, 3.50)	0.96 (0.60, 1.53)

^aReference group: neither apology nor responsibility^bAdjusting for age, gender, education and race^cP<0.05, ^dP<0.01, ^eP<0.001

mean that it will be heard and understood. In communicating, the sender encodes meaning in his or her words and the receiver decodes the meaning.³⁹ Ambiguous wording from the sender or preoccupation of the receiver increases the chances of translation error. In addition, multiple factors affect how patients evaluate physicians.⁴⁰

If it is difficult to modify patient perceptions based on language, what can physicians do? One piece of advice is that once you have decided to disclose an error, you should make sure that the patient knows you really mean it. For a discussion that includes explaining, apologizing and accepting responsibility, this may involve repeating the message and aligning other channels of communication (e.g., posture, demeanor) to be congruent with the expression of regret, contrition and empathy. It is also important that physicians ask questions to help ensure the message is getting through. As in aviation, use of a "read back," where the receiver is required to verbally repeat the sender's message before taking any action, may be a useful way for physicians to test patient comprehension. There is a need for further research on the disclosure process.

Physicians and risk managers are particularly concerned that disclosure may increase the chances of being sued⁴¹—this is why many physicians never admit their mistakes.⁴² Studert has raised a theoretical argument against disclosure⁴³ but empirical evidence on the topic is limited.^{34,44–46} In our study, full disclosure and acceptance of responsibility were related to only a slight reduction in intention to sue. This may have been influenced by the severity of the outcomes, which are important in determining future actions.¹⁰ Mazor found that disclosure had a protective effect of 7.1% against seeking legal advice.³² Schwappach noted that in severe adverse outcomes, an honest, empathic and accountable approach decreased patients' support for strong physician sanctions by 59%.²¹ Fisseni found that patients were more likely to stay with general practitioners after serious medical errors if the physician played an active role in discovery and disclosure.³³

Our results could suggest that disclosure of an unsuspected error could lead to an increase in the number of lawsuits by making more patients aware they have suffered preventable harm. Given that six out of every seven patients who suffer preventable harm are unaware that it might have been prevented, disclosing the error might actually increase the number of suits being filed. Our finding that disclosure does not appear to increase the proclivity to sue among those who were aware that an error had occurred does not change the absolute risk that any given patient will sue. Regardless, the ethical imperative should compel a full disclosure to patients who suffer preventable harm.

Our study had several limitations. Some are inherent in the use of vignettes in research. Vignettes can be valuable tools for studying peoples' attitudes, perceptions and beliefs.^{47–49} It is also known that response biases can be introduced by a subtle difference in how material is framed.^{50,51} In our study, the scenarios were lifelike, but were compressed in length, possibly making it difficult to appreciate all the information presented. This is a problem that also occurs in real-life patient-doctor discussions. Another limitation is that some viewers may have judged the physicians who did not take responsibility for the adverse events as not having caused them, and rated them highly based on competence rather than honesty. Although this might also occur in reality, it would be

unacceptable to recommend that physicians should dodge their responsibility for the incident. Finally, asking participants to rate vignettes is inherently projective. We don't actually know how the participants in our study would act if they experienced an adverse event.

We may have been underpowered to detect differences, particularly between levels of apology, and to detect differences among the different vignettes. However, the trends observed were consistent with our hypotheses. There was an overrepresentation of African American and lower educational attainment participants. This group was fairly representative of East Baltimore and many other major metropolitan centers; the results are also consistent with previous results obtained from a primarily Caucasian sample.³² Our results hinted that viewers with more education perceived the physicians more positively. If these subjects were also more sensitive to our designed variations, they might have responded more in the way we hypothesized. In future studies, it would be important to include enough subjects from different demographic groups to test potential associations.

We omitted a possible sixth version of our cases (A^oR–). If this affected viewers' evaluations of the vignettes that they did see (for example, by diminishing the contrast between different versions), this could have introduced measurement error. We believe that it is unlikely to have introduced much bias, since version selection was randomized, and viewers gave their evaluations immediately after each video. Finally, due to constraints of time and money, we did not achieve ethnic diversity among the actors in our vignettes. This could have led some of the participants to rate physicians less positively or to identify less strongly with either the doctors or the patients, which could diminish the reliability of their evaluations.

The results of disclosing adverse events to patients and families, including the finding that 'it's not what you say, it's what they hear,' have implications for education and practice. There is broad consensus that physicians and health-care organizations should disclose adverse events to patients and their families. Physicians need support and assistance to accomplish this difficult task successfully. Training is needed to help those in training and practice carry out the difficult task of disclosing adverse events. It will be important to evaluate the effectiveness of that training, including how it is perceived by patients and their families.

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