Communication Study

Disclosing medical errors to patients: Effects of nonverbal involvement

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ABSTRACT

Objective: The purpose of this study was to test causal effects of physicians’ nonverbal involvement on medical error disclosure outcomes.

Methods: 216 hospital outpatients were randomly assigned to two experimental treatment groups. The first group watched a video vignette of a verbally effective and nonverbally involved error disclosure. The second group was exposed to a verbally effective but nonverbally uninvolved error disclosure. All patients responded to seven outcome measures.

Results: Patients in the nonverbally uninvolved error disclosure treatment group perceived the physician’s apology as less sincere and remorseful compared to patients in the involved disclosure group. They also rated the implications of the error as more severe, were more likely to ascribe fault to the physician, and indicated a higher intent to change doctors after the disclosure.

Conclusion: The results of this study imply that nonverbal involvement during medical error disclosures facilitates more accurate patient understanding and assessment of the medical error and its consequences on their health and quality of life.

Practice implications: In the context of disclosing medical errors, nonverbal involvement increases the likelihood that physicians will be able to continue caring for their patient. Thus, providers are advised to consider adopting this communication skill into their medical practice.

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1. Introduction

At least 1.3 million patients are injured in the United States every year by adverse events in their medical care. This count exceeds the combined number of injuries and deaths that result from motor and air crashes, suicides, falls, poisonings, and drownings [1]. More than two thirds of such incidents result from preventable human error [2], making medical errors the eighth most common cause of death in the United States [3]. Studies in Switzerland [4], Australia [5], the United Kingdom [6], and Denmark [7] have found similar results, implying that medical errors are an worldwide problem [8].

In recent years, the health care environment has experienced a movement toward promoting transparency regarding critical events. For example, the Joint Commission on Accreditation of Healthcare Organizations [9] now requires hospitals to disclose all unanticipated outcomes to patients. Along the same lines, the National Quality Forum [10] recently passed “safe practice” guidelines for health care professionals, recommending physicians to disclose factual information about critical events, express regret, offer an apology if appropriate, and encouraging health care institutions to implement an organizational disclosure support system. At least 34 U.S. states now mandate the disclosure of critical events or rely on “apology laws” that encourage health providers to apologize to their patients without having to face litigation [11].

Despite these public efforts, physicians often choose not to disclose errors to their patients [12-15]. In fact, errors are only disclosed in less than a third of all cases [16], and such disclosures often fail to meet patients’ expectations [17]. Less than half of all physicians provide complete details of what happened, apologize to their patients, and discuss how future repetitions of an error will be prevented [17,18]. The reasons for this disclosure gap are manifold. Studies show that physicians want to disclose errors to their patients [12,16,17], but disclosure is uncommon because of inadequate system support [19] and physicians’ lack of skills and training in how to conduct these difficult conversations [20]. This dilemma implies that effective error disclosures are a matter of communication competence, calling for an empirical research agenda that lays out the criteria of skillful disclosure as a heuristic foundation for future research and practice.

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First attempts to conceptualize and operationalize effective error disclosure have empirically validated a set of verbal statements physicians should communicate to their patients. The findings of these studies reveal that patients prefer an explicit statement that there was an error, even if it was minor [12,21–23]. Patients also expect details about what went wrong and why, specific implications for their medical care, and a sincere apology that recognizes their suffering [24]. Furthermore, patients would like to be informed how the health care team will learn from the error and prevent similar events from happening again to other patients in the future [12].

The combined effort that generated these criteria is impressive, but the implications of the studies are limited for several reasons. First, a recent investigation [18] only partially validated the criteria of effective error disclosure [25], suggesting that further empirical validations and possibly extensions of the disclosure standards might be necessary. Furthermore, most of the study designs that yielded the criteria predominantly relied on patient samples, used correlational rather than causal data, and failed to integrate any theoretical frameworks. Finally, despite a common recognition in the communication literature that interpretations of emotional messages [26], evaluations medical performance, and patient satisfaction [27] are predominantly associated with physicians’ nonverbal cues, most error disclosure studies to this date have solely examined the verbal disclosure contents. Based on the existing literature in communication science, it can be speculated that patients will most likely rely on their physician’s nonverbal behaviors during a disclosure in making inferences about the error, its implications for their health, the physicians’ clinical competence, and their future medical care. Following this contention, an exclusive research focus on verbal disclosure messages would yield an incompressive set of error disclosure skills.

In an attempt to fill to this void, the current study sets out to test the causal effects of physician nonverbal involvement on the effectiveness of error disclosures and patients’ subsequent behavioral intentions. While holding the effectiveness of the verbal message constant, it examines effects of physician nonverbal involvement on the extent to which patients perceive that the physician (1) apologized, (2) apologized sincerely, (3) expressed remorse, (4) and attempted to explain the error. Furthermore, it assesses the degree to which physician nonverbal involvement will influence patients’ (5) perceptions of the severity of the error’s implications, (6) fault attributions, and (7) intentions to change physicians.

2. Methods

2.1. Sample and procedures

A written transcript of a hypothetical error disclosure to a standardized patient from a previous study [18] was optimized to meet all criteria of effective error disclosures [25]. Two professional actors were hired and trained to create two 4-minute video vignettes of this disclosure. The videos were filmed in a hospital room with the patient lying in bed and the physician disclosing that a surgical sponge was retained in the patient’s abdomen. The nonverbal behaviors of the disclosing physician actor were controlled in each vignette reflecting opposite ends of Guerrero’s [28] ratings of nonverbal involvement, which comprise nonverbal displays of (1) immediacy (i.e., appropriate touch, proxemic distancing, forward lean, body orientation, prolonged gaze), (2) expressiveness (i.e., kinesic and vocal animation), (3) altercentrism (i.e., attentiveness and interest, affirmative head nods), (4) smooth interaction management (i.e., speech fluency, response latencies, turn-taking and interruptions), (5) compposure (i.e., vocal and bodily relaxation, lack of random movement), and (6) positive affect (i.e., appropriate smiling, facial and vocal pleasantness). The final video vignettes were uploaded into an online survey for data collection.

Thirty physicians at a large Southeastern teaching hospital distributed the study announcements to their outpatients at the end of their medical consultations over a period of two months. Volunteering patients submitted a registration form into a physical drop box that was deposited at the nurses’ station. The principal investigator collected the forms and randomly assigned the volunteers to the two experimental conditions: (1) a verbally effective and nonverbally involved error disclosure, and (2) a verbally effective and nonverbally uninvolved error disclosure. Each participant received an email with the respective survey link. Upon entering the survey, they were asked to imagine that they are the patient in an upcoming error disclosure and exposed to their treatment condition. After the treatment, all patients responded to the same post-test measures. Upon completion of the survey, participants were mailed a $10 coffee card for their participation.

The software IBM SPSS statistics 19.0 was used for the data analysis. Analyses of variance were conducted to test for potential treatment effects on the seven outcome variables. In addition, post hoc analyses were run to evaluate the potential influence of various patient predispositions on the predicted treatment outcomes.

2.2. Measures

Respondents were asked to indicate on a 5-point Likert scale the extent to which they perceived the following effectiveness criteria present in the physician’s disclosure: (1) presence of an apology (i.e., “The physician apologized for the error”), (2) sincerity of the apology (i.e., “The physician’s apology was sincere”), (3) physician’s remorse (i.e., “The physician expressed genuine remorse”), and (4) explanation of the error (i.e., “The physician attempted to explain the error”). In addition, they were asked to rate the (5) severity of the error (i.e., “The implications of this incident for the patient are severe”), (6) fault attributions (i.e., “The doctor in this case was at fault”), and (7) intentions to switch doctors (i.e., “If I was the patient, I would probably change physicians”).

2.3. Manipulation check items

Additional items were included in the online survey to cross-validate the verbal and nonverbal messages in each treatment group. Specifically, patients were asked to indicate the degree to which they perceived that an error has occurred and the degree to which the error caused harm to the patient. Items to cross-validate the nonverbal manipulation tested patients’ perceptions of the physician’s involvement, coldness, rapport, and compposure.

3. Results

3.1. Respondent demographics

The sample for this study included 216 patients (15% male, 85% female) with a mean age of 45 years (range 18–80, SD = 14.45). Almost half of the sample (42%) had once worked in a doctor’s office, hospital, or pharmacy. A majority of the patients (84%) held a 2-year college degree or higher. About 36% of the patients reported that they had experienced a medical error, 21% indicated that they had been harmed by a medical error, 9% responded that they had filed a complaint, and 1% had pursued a medical malpractice suit against a doctor or health care provider.
3.2. Manipulation check

One-way analyses of variance (ANOVA) were conducted to compare patients’ responses to the manipulation check items across treatment groups. All patients agreed that the scenario described a harmful medical error. The patients also accurately distinguished the nonverbal manipulations in the nonverbally involved (scripted “inv”) versus uninvolved (scripted “uninv”) disclosure treatment groups, \( F(1, 216) = 151.61, p < 0.01, \) \( \mu_{\text{inv}} = 4.29, SD_{\text{inv}} = 0.68, \mu_{\text{uninv}} = 2.65, SD_{\text{uninv}} = 1.20, \) evidencing a successful experimental manipulation.

3.3. Treatment effects

One-way analyses of variance (ANOVAs) were conducted to test the research hypotheses. The independent variable, treatment, included two levels: nonverbal involvement and nonverbal non-involvement. The dependent variables were patients’ perceived (1) presence of apology, (2) sincerity of apology, (3) remorse, (4) explanation of the causes and consequences of the error, (5) severity of the error, (6) fault attributions, and (7) intentions to switch doctors. The Welch test was conducted to correct for possible unequal variances.

Patients who were exposed to the nonverbally involved error disclosure expressed significantly higher agreement than the patients in the uninvolved disclosure group that: (1) the physician apologized for the error, Welch’s \( F(1, 209) = 35.63, p < 0.01; \) (2) the physician’s apology was sincere, Welch’s \( F(1, 198) = 87.60, p < 0.01; \) (3) the physician expressed genuine remorse, Welch’s \( F(1, 206) = 73.03, p < 0.01; \) and (4) the physician attempted to explain the error, Welch’s \( F(1, 214) = 24.59, p < 0.01. \) In contrast, the patients in the uninvolved disclosure group indicated significantly higher perceptions than the patients in the involved disclosure group that (5) the implications of the incident for the patient were severe, Welch’s \( F(1, 214) = 9.92, p < 0.01; \) (6) the doctor was at fault, Welch’s \( F(1, 212) = 4.72, p < 0.05; \) and (7) they would change physicians, Welch’s \( F(1, 214) = 12.55, p < 0.01. \) Thus, all seven hypotheses were confirmed. The means and standard errors for the disclosure treatment groups are reported in Table 1.

3.4. Post hoc analyses

Additional exploratory ANCOVAs were conducted to test for potential effects of patients’ religiosity on the relationships stated above. The analyses evidenced no significant impacts, suggesting that the reported treatment effects were robust to the patients’ religious predispositions. Furthermore, several two-way ANCOVAs were run to test for potential interaction effects of sex and previous error experiences on the relationships reported above. The analyses revealed two significant interaction effects associated with patient sex.

First, treatment and patient sex were significant in predicting patients’ perceptions that the physician apologized for the error, \( F(1, 212) = 6.13, p = .01. \) Simple main effects analyses were conducted to interpret this interaction. To control for Type I error, alpha was set at .025. The analyses only revealed a significant treatment effect for female patients, \( F(1, 212) = 41.65, p < .01, \) \( \mu_{\text{inv}} = 4.47, \ SE_{\text{inv}} = 0.07, \mu_{\text{uninv}} = 3.78, SE_{\text{uninv}} = 0.08, \) suggesting that the nonverbal treatment was only effective for female but not for male patients in predicting patient perceptions of physician apology.

Second, treatment and patient sex were significant in predicting patients’ perceptions that the physician explained the error, \( F(1, 212) = 5.15, p = .02. \) Again, the treatment effect was only significant for female patients in predicting perceived explanation of the error, \( F(1, 212) = 29.00, p < .01, \) \( \mu_{\text{inv}} = 4.46, \ SE_{\text{inv}} = 0.07, \mu_{\text{uninv}} = 3.96, SE_{\text{uninv}} = 0.07. \) In addition, within the involved disclosure group, female patients indicated significantly higher perceptions that the physician explained the error than male patients \( F(1, 212) = 6.02, \) \( p < .025, \mu_{\text{female}} = 4.46, \ SE_{\text{female}} = 0.07, \mu_{\text{male}} = 4.00, \ SE_{\text{male}} = 0.18. \)

4. Discussion and conclusion

The current research study demonstrates the importance of physicians’ nonverbal involvement during error disclosures, suggesting that a lack of involvement will compromise the effectiveness of the disclosure and patients’ subsequent behavioral intentions. For example, patients who received a nonverbally uninvolved error disclosure expressed lower agreement that the physician provided an explanation of the causes and consequences of the error. This finding implies that patients in the uninvolved disclosure group evaluated their situation less accurately. They also expressed more negative evaluations of the error and were more likely to change physicians than patients in the involved disclosure group. Thus, patients seem to misunderstand and overreact to verbally effective error disclosures that lack nonverbal involvement, and their inflated perceptions of the severity of the error may cause them to experience unnecessary distress. Furthermore, patients’ exacerbated fault attributions that result from physicians’ lack of nonverbal involvement can encourage them to switch physicians. As a result, physicians can lose influence over their patient’s well-being. Thus, the current standards of effective error disclosure \[25,29\] need to be expanded to integrate nonverbal involvement as a crucial communication skill that contributes to important disclosure outcomes above and beyond the effectiveness of the verbal disclosure contents.

A previous study has demonstrated that nonverbal involvement does not attain any positive outcomes above and beyond what effective written disclosures can achieve \[30\]. However, as evidenced in the current study, nonverbal uninvolved provokes negative outcomes. One interpretation of this phenomenon could be that patients presume that physicians will communicate nonverbal involvement in the context of medical error disclosures. If they do not display involvement, patients will react in problematic ways. Thus, nonverbal involvement is not to be seen as a skill that will be rewarded by patients, but rather as an expectation patients host in their mindset. It is the violation of this nonverbal expectancy that causes inflated reactions and deviant behaviors among patients. Therefore, it is in the physician’s and

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Treatment effects: means, standard errors, and pairwise comparisons of the outcome variables.</th>
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<tbody>
<tr>
<td>Treatment</td>
<td>(1) Apology</td>
</tr>
<tr>
<td>M</td>
<td>SE</td>
</tr>
<tr>
<td>(a) Involvement</td>
<td>4.42(p)</td>
</tr>
<tr>
<td>(b) Non-Involvement</td>
<td>3.82(p)</td>
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Note: Subscripts indicate significant pairwise differences. Higher scores indicate higher patient ratings for variables 1–4 and lower patient rating for variables 5–7.
patient’s best interest that physicians acquire and practice nonverbal involvement as a patient-centered error disclosure skill.

4.2. Conclusion

Two of the most important objectives of an error disclosure are the correction of the error and continued guidance of the patient toward the best follow-up treatment. These objectives require an accurate patient understanding of the situation and the patient’s capacity to engage in informed decision-making regarding follow-up care. The results of this study indicate that physicians’ verbal effectiveness is not a sufficient criterion to achieve these goals. Instead, it is their nonverbal involvement that contributes to realistic patient self-assessment, optimized patient understanding, and constructive behavioral intentions. Thus, nonverbal involvement is a critical communication skill in the context of error disclosures that can enable physicians to continue caring for the physiological wellbeing of their patient and guide their patient into the best direction of corrective follow-up care.

4.3. Practice implications

Physicians are advised to consider integrating nonverbal involvement as a communication skill into their medical practice. This skill includes the display of nonverbal cues that communicate immediacy, altercentrism, expressiveness, composure, positive affect, and smooth interaction management to facilitate positive error disclosure outcomes. One method to accumulate such nonverbal skills is through training and feedback with simulated patients.

Competing interests

The author received no support from any organization for the submitted work, had no financial relationships with any organizations that might have an interest in the submitted work in the previous three years, and no other relationships or activities that could appear to have influenced the submitted work.

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References


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