Medical errors: extreme service failures and recoveries

Hulda G. Black, Emily A. Goad and Jill S. Attaway
Marketing Campus, Illinois State University College of Business, Illinois, USA

Abstract

Purpose – The purpose of this research is to investigate the relationship among jurors’ attribution of responsibility of the error, patient styles and juror decisions (e.g. acquittal of the physician). Specifically, this research examines the influence of an individual’s approach to their healthcare (active vs. passive), and decisions to acquit in malpractice cases.

Design/methodology/approach – In total, 459 individuals were surveyed using a commercial call center for participation in a corresponding mail survey. Surveys were also distributed to undergraduate business students at a Midwestern university.

Findings – Cluster analysis revealed two categories of patient styles: “active patients” (39.4 per cent) and “passive patients” (60.6 per cent). Regardless of patient style, this research found all respondents viewed medical error disclosure as important. However, respondents in the passive group were more likely to acquit the physician and the hospital nursing staff as compared with those classified as active.

Practical implications – The safety of patients in the healthcare system and prevention of errors is a critical issue. However, when errors occur, medical providers should disclose information to the patient and take responsibility to attenuate their negative impact. Further, this research reveals that patients who rely more on their physicians, trust their recommendations and question physicians less are more likely to acquit. Medical providers can use this information as motivation to continue to build this type of trust with their patients.

Originality/value – Medical errors are costly for all parties involved. This research provides insight for not only members of the legal profession involved in medical malpractice cases, but also risk managers and hospital administrators and healthcare providers regarding the decision-making process used by individuals serving on a jury.

Keywords Medical errors, Healthcare marketing

Paper type Research paper

Introduction

US healthcare spending is the largest of any nation at over US$8,500 per person and 17.7 per cent of gross domestic product (Davis et al., 2014). Yet, the quality of care as measured by medical errors has been called an epidemic (Institute of Medicine, 2000). According to the Commonwealth Fund, the USA ranks 7th out of 11 countries surveyed on providing safe care (Davis et al., 2014).

Medical errors have been defined in many ways, such as “a behavior which falls below a standard of care” (Guillod, 2013, p. 182) or “the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim” (Institute of Medicine, 2000, p. 1). In its study of errors in the healthcare industry, the Institute of Medicine (2000, p. 1) stated that “at least 44,000 people, and perhaps as many as 98,000 people, die in hospitals each year as a result of medical errors that could have been prevented”. On the practitioners’ behalf, the...
American Medical Association suggests that approximately two-thirds of US states are in the midst of a “malpractice crisis” or showing signs of trouble (Mello et al., 2004). Medical errors and the litigious climate impact both practitioners and patients, as the total costs of medical errors is estimated to vary between $17 and $29 billion per year in hospitals nationwide (Institute of Medicine, 2000, p. 1).

Given this seeming epidemic in medical care among all populations, healthcare institutions and their employees should seek to minimize medical errors, and in turn, malpractice claims. This goal in healthcare, aligns with service recoveries in marketing theory and literature. In general, the purpose of service recovery efforts in healthcare settings following a medical incident is to restore the trust or confidence of patients, family members and anyone else impacted by the service failures (Berry and Leighton, 2004). Oftentimes in extreme medical error situations, basic recovery efforts lead to redress through medical liability or malpractice claims. Once an incident escalates to the point where a patient or their family obtains legal counsel, and potentially files a civil suit, measures to correct the error become limited to: out-of-court settlement or dismissal of the case by a judge or pursuing the case through a jury trial. Thus, those involved in medical malpractice cases should seek to understand the decision-making processes among potential jurors.

The purpose of this research is to investigate the relationship among jurors’ attribution of responsibility of the error, patient styles, and juror decisions (e.g. acquittal of the physician). Specifically, cluster analysis is used to determine patients’ styles in healthcare. Then, further analyses are conducted to examine:

- What is the impact of perceived responsibility of the patient/guardian on acquittal decisions in malpractice cases?
- Does an individual’s style or approach toward healthcare influence their perceptions and judgments about a malpractice case, its outcome and any compensation or awards in a plaintiff settlement?
- Also, if there are differences, do they vary with attributions of responsibility?

To accomplish these objectives, multiple models based on the precepts of attribution and service recovery theory are tested. As shown in Figure 1, attribution of responsibility is a precursor to judgment decisions. However, this relationship may be impacted by an individual’s involvement in their healthcare. This research provides recommendations to healthcare providers, risk managers and legal counsel for developing appropriate recovery strategies within a service recovery framework, and accounting for attribution theory. The theoretical discussion and recommended plan of action are relevant to both plaintiffs’ and

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**Figure 1.**
Model of medical errors from a service recovery framework
the defendants’ counsels, in addition to insurance providers, medical/hospital administrators, physicians and hospital staff when facing a medical malpractice lawsuit.

**Conceptual framework**

When service failures (i.e. errors) occur, firms generally engage in service recovery efforts to remedy the situation, restore customer satisfaction and retain these customers (Vaerenbergh and Orsingher, 2016). Schoefer (2008) highlights the importance of service recovery actions in customer satisfaction and retention; specifically, they note that weak recovery efforts can magnify negative service evaluations, whereas excellent recovery approaches can enhance customer satisfaction. Furthermore, researchers have found that justice is a key aspect in recovery situations that results in positive customer and firm outcomes (Inyang, 2015; Vaerenbergh and Orsingher, 2016). Medical errors are a more severe form of service failures that often result in recovery actions by the physician, firm or patient. In particular, distributive justice is often examined as an outcome of service recoveries, including both monetary and psychological compensations (Vaerenbergh and Orsingher, 2016). The following sections outline recovery of medical errors from a service recovery framework perspective and is depicted in Figure 1.

**Medical errors and malpractice liability.** While promoting patient safety and delivering high quality of care to patients is the goal of medical-related systems, a large number of medical errors continue to occur and create problems for patients, medical providers and associated practices/hospitals. When medical staff member(s) commit errors, they often experience negative emotions and are motivated to practice defensive medicine where they either fail to report these errors or attempt to justify their actions; this is called “second victim problem” (Szostak, 2011; Rubin and Bishop, 2013). However, research shows that patients are actually less likely to file a lawsuit if the error is disclosed (Szostak, 2011); yet, the litigious culture of patients persists across the medical field (Geckeler, 2007). Schoefer (2008) highlights the importance of service recovery efforts in customer satisfaction and retention; specifically, they note that weak recovery efforts can magnify negative service evaluations whereas excellent recovery approaches could enhance customer satisfaction.

Litigation is the primary course of action for parties and their families in medical errors to seek redress, understand what happened and why, elicit an apology, raise recognition of an issue and receive compensation (Berry and Bendapudi, 2007; Gallagher et al., 2003; Szostak, 2011). According to the 2012 Annual Report from the National Practitioner Data Bank (2014), 12,598 new medical malpractice reports were filed, and a cumulative total of 380,164 have been filed since 1990 in the USA with 41.2 per cent of cases resulting in malpractice payments. Mean settlements in these cases range from $160,312 (equipment/product-related cases) to $572,199 (obstetrics-related cases). Furthermore, the time lapse between reporting a medical malpractice claim and receiving a settlement is quite lengthy and varies between an average of 4 years for equipment/product-related claims, 5.2 years for anesthesia-related claims and 6.6 years for obstetrics-related claims. The Annual Report statistics are consistent with research that reports an average time of resolution of five years with one in three medical malpractice liability claims taking six or more years to conclude (Studdert et al., 2006).

It is evident that the costs and time involved to settle these cases are extensive. Further, it is clear that patients and their families desire greater transparency and openness regarding their medical treatments including disclosure of errors. As noted by Guillod (2013, p. 184):

> a number of countries have enacted disclosure laws mandating disclosure of medical errors under specific circumstances [...] (however) there seems to be little evidence that such laws have significantly encouraged open disclosure of medical errors.
Uniquely, the University of Michigan Health System (UMHS) implemented a medical error disclosure system in 2001 where they reported medical errors to patients and offered compensation. A study of pre- and post-system costs for UMHS, between 1995 and 2007, shows that the disclosure along with compensation reduced: the number of new claims, time to resolve claims and costs related to total liability and patient compensation (Kachalia et al., 2010). Given this, it is important that physicians, practices and hospitals understand how to execute productive service recovery systems. To begin this examination, this research first examines how patients attribute responsibility in malpractice cases, and the resulting outcomes in medical service recovery.

Recovery strategies and outcomes. When service failures occur, such as medical errors in the healthcare system, providers often attempt some form of recovery process to redress the situation so that the likelihood of potential litigation is mitigated, and the provider–patient relationship is preserved. However, if a patient or their family member pursues litigation in court, it is important to understand the influences of juror decisions. In particular, the relationship between jurors’ characteristics and their attitudes, feelings and judgment regarding malpractice cases is important, as a jury trial involves the opportunity to select and de-select potential jury members through questioning (i.e. voir dire). Thus, both parties have the opportunity to select (or de-select) jurors by identifying individual difference characteristics that are related to a favorable verdict (for either party). This selection ability then can aid in reducing (or enhancing) likelihoods of desired verdicts and/or outcomes.

The way in which jurors assign responsibility to parties in a malpractice case is an important consideration for both sides of a malpractice claim. Research in social psychology indicates that when individuals examine outcomes, they look to assign causality (Harvey et al., 2014). Specifically, the most common “attributional dimension is the locus of causality, which refers to whether the perceived cause of an outcome is internal or external” (Harvey et al., 2014, p. 130). Furthermore, attributions are often based on personal relevance and experience (Harvey et al., 2014). Given that attributions of responsibility are dependent on personal characteristics, this research hypothesizes that:

H1. The attributions of patient responsibility will directly relate to malpractice outcomes (verdict decisions).

Involvement in healthcare. Another individual difference characteristic that is important to consider is a person’s level of involvement and interest in their healthcare. A patient’s willingness to play an active role in their health has been shown to contribute to their adherence to treatment (Garrity, 1981; Golin et al., 1996). As noted by Berry and Bendapudi (2007), healthcare services require the complete involvement of the customer or patient in the service, and patient–provider interaction is essential to the delivery of healthcare (Thompson, 2003). A passive or low-involved participant would be someone in a more traditional role of patient, who asks minimal questions, feels helpless, believes they have little control over the situation and accepts information from the physician or medical provider without question (Black and Gallan, 2015; Roter and McNeilis, 2003). The passive segment lacks both the knowledge and the motivation and accepts their treatment providers’ recommendations at face value (Williams and Heller, 2007). Alternatively, an active patient engages in purposeful information-seeking, asks questions regarding treatment and seeks a collaborative relationship with the medical provider to establish goals and course of treatment (Garrity, 1981). In other words, an active patient is skilled and motivated, specifically indicating that they do not take recommendations at face value, but need greater explanation and clarity (Williams and Heller, 2007).
An individual’s level of involvement with their healthcare may influence their perceptions in a medical liability lawsuit and judgment toward the plaintiff given attribution theory. Considering that attributions are generally based upon personal relevance and experience (Harvey et al., 2014), people then generally assign causality based on their own experience. Given this, individuals who are more passively involved with their healthcare may have higher levels of trust in medical providers’ recommendations, and in turn place more responsibility for errors on the patient; particularly given their level of trust and dependence on the provider. On the other hand, individuals who have higher, or more active levels of involvement in their healthcare, expect the injured patient to have also played an active role in their health care (or that of a guardian). In turn, these individuals attribute more responsibility to the physician, resulting in a lower level of acquittal for the provider. Therefore, it is hypothesized:

\[ H2. \] An individual with a passive (low) level of involvement in healthcare is more likely to acquit the physician and the hospital nursing staff as compared to an individual with an active (high) level of involvement in healthcare.

**Method**

**Sample**

The data for this study are from 459 individuals that participated in a research study regarding the possible impact of patients’ involvement in their healthcare, attribution regarding personal responsibility of errors and juror malpractice decisions. To examine these issues, a commercial call center in the Midwest was used to contact residents of the county for participation in a corresponding mail survey. A total of 400 individuals agreed to participate in the mail survey; 255 completed (and usable) surveys were returned, resulting in a usable response rate of approximately 64 per cent. In addition, surveys were distributed to undergraduate business students at a Midwestern university. The students received extra credit to complete the survey, and additional credit if a non-student completed the survey; a total of 204 completed surveys were returned.

From the 459 completed surveys, 64 per cent were women and 36 per cent were men. The age of the survey respondents ranged from 21 to over 70 years, with 35 per cent of respondents between 21 and 29 years old, and 43 per cent of respondents from 30 to 59 years old. Furthermore, 39 per cent of respondents had “some college” education, while 25 per cent had a “college degree”; the remainder did not indicate their level of education. Moreover, 64 per cent of the sample bring in over $35,000 a year in income.

**Questionnaire design and administration**

Quantitative research using focus groups with survey instruments provided the data for this research. The survey was organized in several sections:

- items assessing respondents’ attitudes about healthcare;
- items regarding the disclosure of medical errors;
- a vignette describing a medical error involving a labor and delivery medical situation and the clinical outcome to the baby who suffered mental and physical disabilities because of a delayed delivery;
- items assessing participants’ opinions about the case and their view regarding responsibility of various parties for the child’s medical issues; and
- background and demographic items.
A hypothetical vignette involving a medical error related to labor and delivery was chosen because this medical specialty is frequently impacted by adverse medical outcomes which lead to medical malpractice cases. In the vignette, a mother in labor at a hospital has various issues arising during labor. A timeline is detailed where the mother and baby are monitored, assessed and monitored further. At one point, the heart rate monitors show fetal distress. Three hours after this fetal distress, the child is born via an emergency C-section. Immediately, the baby girl has numerous problems. While she is able to go home after four weeks, she is constantly monitored using a heart rate device and needs a feeding tube to eat. The doctor attributes the health issues to an infection that was present at labor. After seeking advice from an attorney and experts, the mother learns her daughter’s injuries may have occurred as result of failure to deliver immediately upon signs of fetal distress.

After reading through the vignette, respondents were asked to respond to various questions. Also, readers were asked to imagine the family had filed a lawsuit against the doctor and hospital. Respondents were asked to imagine they were a member of the jury to determine the outcome. Following this, respondents answered questions related to responsibility, followed by acquittal. Three items were used to assess the responsibility of various parties for the child’s medical issue – her mother, physician and hospital nursing staff using a seven-point scale where “1” indicated no responsibility and “7” complete responsibility. Five items were used to gather participant opinions regarding how likely (seven-point scale) they would be to acquit the physician/hospital nursing staff and/or support damages if they were a juror who was charged with deciding the case. To assess damages, respondents were asked the likelihood of awarding:

- full economic damages (loss of income) for the mother;
- full economic damages (loss of income and long-term medical care) for the daughter; and
- full non-economic damages (loss of normal life) for the daughter.

The mother and child are both considered victims in the scenario presented, as the mother faces loss of income and caring for the sick child, while the child faces a loss of normal life. Last, an open-ended response question was used to determine how much money the participant would award the family or plaintiff. Exploratory factor analysis assessed construct validity of the attitudes toward healthcare and disclosure of medical errors in this study and reliability testing was used demonstrating the measures performed well with Cronbach’s $\alpha$ value of 0.75 or higher.

Results

Disclosure of medical errors

First, cluster analysis was conducted to identify segments based upon participant responses to four statements related to partnering in their medical treatment and trust in their physician. K-means cluster analysis was used to promote identification of distinct no-nested clusters and a two-cluster solution was retained because there was clear separation among clusters and good distribution of cases across clusters following theory. The clusters were labeled “active patients” (39.4 per cent of the sample) and “passive patients” (60.6 per cent of the population). Table I summarizes the cluster membership and results of an ANOVA procedure to compare the groups regarding their opinion about healthcare and trust in their physician, and all items were statistically significant ($p < 0.01$). Respondents in cluster 1 named “active patients” were less likely to rely on their doctor’s recommendations and scored higher in questioning their doctor’s recommendations while those who were “passive patients” scored higher on trusting their physician’s recommendations and being less likely to question their physician’s advice.
Attribution of patient responsibility and juror decisions

$H1$ uses attribution theory to explore the relationship between patient responsibility and “juror” decisions using ANOVA. Table II summarizes the mean scores for the various juror decisions comparing passive patients to active patients. Two items were statistically significant ($p < 0.05$): acquittal of the physician and acquittal of the hospital nursing staff. Passive patients were more likely to acquit the physician (mean of 2.64 vs. 2.29) and the hospital nursing staff (mean of 2.96 vs. 2.66) reflecting a higher level of trust or willingness to trust the physician or nursing staff. However, there were no statistically significant differences for damages or the amount of an award.

Moderating role of patient involvement in healthcare

Using moderated regression, patients’ styles of involvement in healthcare: active versus passive and attitude regarding the responsibility of the mother in regards to influence on acquittal or guilty verdict of the physician were evaluated. The results are summarized in Table III and demonstrate a statistically significant interaction effect. Figure 2 depicts the interaction and shows the correlation between responsibility of the mother and acquittal is 0.43 (square root of $R^2$ of 0.19) for passive-style patients and 0.21 (square root of $R^2$ of 0.05) for active patients. Therefore, the relationship between attribution of patient responsibility and acquittal is higher for those respondents who are more traditional (i.e. passive) in their approach to healthcare.

Discussion

The purpose of this research was to investigate the relationship between attribution of responsibility, patient styles in healthcare involvement and juror decisions. Specifically, this research explored how juror’s level of involvement in healthcare influences perceptions and judgments about malpractice cases and their corresponding outcomes. Cluster analysis was used to identify specific customer segments (styles) of involvement in healthcare.

Consistent with the literature, this research found that all types of respondents, passive or active, viewed disclosure of medical errors as important. Patients with an “active” style were more likely to question their doctors and recommendations, whereas “passive” patients relied more on their physicians, trusted their recommendations and questioned them less. Thus, a deeper level of trust was observed with “passive” patients compared to those with “active” styles. These identified clusters were then used to examine how they impacted the relationship between attribution of responsibility and juror decisions.

The safety of patients in the healthcare system and prevention of errors is an important issue. If a patient is harmed because of the error, they or their family members may seek reparation through the legal system by filing a medical malpractice suit against the healthcare provider. The

<table>
<thead>
<tr>
<th>Item</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active patients</td>
<td>Passive patients</td>
</tr>
<tr>
<td></td>
<td>(n = 178)</td>
<td>(n = 273)</td>
</tr>
<tr>
<td>I strongly rely on my doctor’s recommendations to maintain my health</td>
<td>3.88$^a$</td>
<td>5.86</td>
</tr>
<tr>
<td>I often question my doctor’s recommendations</td>
<td>4.77$^a$</td>
<td>3.76</td>
</tr>
<tr>
<td>I am very confident in the doctors and medical staff</td>
<td>4.29$^a$</td>
<td>5.93</td>
</tr>
<tr>
<td>I would never question the advice of my doctor</td>
<td>3.77$^a$</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Notes: $^a$Anova $p < 0.01$. All items measured on a seven-point scale where “1” represents strongly disagree and “7” represents strongly agree

Medical errors

Table I. Cluster membership means
Table II. Involvement with healthcare and juror decisions

<table>
<thead>
<tr>
<th>Item</th>
<th>Cluster 1 (n = 178)</th>
<th>Cluster 2 (n = 273)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquittal (not guilty) of the doctor</td>
<td>2.29&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.64</td>
</tr>
<tr>
<td>Acquittal (not guilty) of the hospital nursing staff</td>
<td>2.66&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.96</td>
</tr>
<tr>
<td>Full economic damages (loss of income) for the mother</td>
<td>5.11</td>
<td>5.22</td>
</tr>
<tr>
<td>Full economic damages (loss of income and long-term medical care) for the daughter</td>
<td>5.74</td>
<td>5.67</td>
</tr>
<tr>
<td>Full non-economic damages (loss of a normal life) for the daughter</td>
<td>5.18</td>
<td>5.38</td>
</tr>
<tr>
<td>If the entire verdict were your decision, what award would you give the plaintiff?</td>
<td>$5.80 million</td>
<td>$5.11 million</td>
</tr>
</tbody>
</table>

Notes: <sup>a</sup>Anova p < 0.05. All items measured on a seven-point scale where “1” represents very unlikely and “7” represents very likely.

Table III. Role of patient style, responsibility of patient and acquittal of physician

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Standardized beta coefficient</th>
<th>t-value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient style</td>
<td>0.091</td>
<td>1.027</td>
<td>0.305</td>
</tr>
<tr>
<td>Responsibility of mother</td>
<td>0.648</td>
<td>4.907</td>
<td>0.000</td>
</tr>
<tr>
<td>Interaction (Patient style X Responsibility of mother)</td>
<td>-0.350</td>
<td>-2.343</td>
<td>0.020</td>
</tr>
</tbody>
</table>

Note: Model Statistics - F = 25.796 (0.000) R² = 0.143
current research found that one individual difference characteristic – involvement in healthcare – (active or passive) influences potential jurors’ opinions and judgments regarding acquittal of medical providers and/or nursing staff. While both groups of patients were unlikely to acquit in the given scenario, passive patients were more likely to acquit than active patients. In terms of compensation and economic damages for the family (if guilty), patient styles showed no significant difference. Research testing the propositions raised in this manuscript could assist members of the legal profession involved in medical malpractice cases, risk managers and hospital administrators as well as healthcare providers in their understanding of the decision-making process used by individuals serving on a jury. For example, lawyers for medical providers and/or plaintiffs may choose to use this as part of the jury selection in voir dire.

In the vignette presented, the mother and child are both members of vulnerable populations. The mother, who is experiencing medical issues, is in the hands of the hospital and nursing staff with no place to turn to while in labor. After her daughter is born, she faces the challenge of raising a child with severe medical issues. This might result in loss of income for the mother who now must serve as a long-term caregiver for her daughter. Last, the child faces a lifetime of issues, including loss of normal life. This is important not only from the patient/guardian perspective, but also from the service provider perspective. Specifically, monetary awards in obstetrics cases average $572,199; these are unfortunately also some of the most common cases. Furthermore, the time lapse between reporting a medical malpractice claim and receiving a settlement (or service recovery) is quite lengthy, averaging 6.6 years for obstetrics related claims.

Research indicates that jurors that trust physicians and/or nurses more, have a traditional/passive style toward healthcare and tend to acquit the medical professional. Thus, it is critical that defendants and their lawyers work to build trust on their own side because trust seems to be the most crucial component in litigious success. Overall, this research provides guidelines for attorneys, plaintiffs, marketing managers and consultants in medical (malpractice) cases. More specifically, this research indicates that particular juror styles, and individual attributions of responsibility, lead to successful resolution of medical issues. Finally the findings, and indications, of this research provide new extensions of both the service recovery framework and attribution theory.

References


**Corresponding author**

Hulda G. Black can be contacted at: hblack@ilstu.edu