

SCIENTIFIC ARTICLE

MEDICAL ERRORS: IMPACT OF APOLOGY AND ADMISSION ON THE RESOLUTION AND COMPENSATION OF CLAIMS

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Abstract

Studies investigating the impact of apologies and admission of responsibility for medical errors have been primarily observational, making it hard to attach a causal effect to the admission of responsibility and apologies. Second, most research on the settlement of medical malpractice cases were conducted in the US, with its particular litigation laws and culture.

In this multi-jurisdictional study, we investigate the impact of apology and admission of responsibility on preferred resolution and compensation of claims. Employing a vignette design, we examine, among a sample of 327 respondents from 10 different countries, whether admission and apology by the doctor impact respondents' preference for resolution through a civil court case, mediation or a disciplinary board, as well as preferred damages for pain and suffering.

Admission and apology by the physician in the vignette did not impact respondents' preference for settlement through a civil court case or mediation, nor did it affect the amount respondents found suitable compensation for pains and damages. We perceived the absence of an apology as particularly aggravating. Thematic analysis of open answers reveals that the impact of admission and apology differs for the three resolution modes and is often contextual and conditional. Future (vignette) studies should investigate whether different cases of medical errors yield similar results and whether more knowledgeable or experienced respondents (such as lawyers) would have other preferences and arguments.

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I. Background

I.1 Introduction

'To err is human, to forgive is divine' Pope Alexander, 1711

As this commonly used phrase suggests, errors and imperfect performance are inherent to human behaviour.¹ An error is often conceptualised as flawed human conduct or action, a consequence of cognitive (dis)ability. The occurrence of human error often depends on chance and contextual factors, which are external (e.g., lack of resources or inadequate working conditions) or internal (e.g., intoxication or sleep deprivation) to the actor. Regardless of the conditions that made a mistake more or less probable, the inherent characteristic of human errors is that they happen without intent.² Although some mistakes can be completely harmless, others can cause severe damage and long-term material or immaterial consequences. Despite the inherent propensity of humans to make mistakes, people can be reluctant to admit they have made a mistake and take responsibility for it. They are also unwilling to apologise for their mistakes or to make amends with the ones they have harmed. Reasons for this can lie in defensive mechanisms,³ feelings of shame,⁴ pride or worry about one's reputation⁵ or fear of retaliation and punishment.⁶ However, research on error disclosure and mistake admittance points to a clear pattern: admitting and apologising for mistakes benefit both the perpetrator and the person harmed by the error. Our explorative study used a vignette design to investigate the impact of admission of responsibility and apology by a doctor for a medical error⁷ on the preferred settlement manner and desired compensation for pain and suffering. Given that most of the extant literature is US based, we focus explicitly on a continental European context, allowing different legal languages and experiences based on residence and nationality.

I.2. Mistakes in Medical Practice: Medical Errors

As emphasised by Cuschieri, errors and their nature are equivalent across all human professions and activities. Medical errors are flawed human actions in medical practice that result from cognitive (dis)ability and depend on chance and actors' external and internal contextual factors.⁸ The broader perception and impact of mistake acknowledgement and apologies are quite similar in the errors in medical treatment. Many empirical studies on the topic show the relevance of full disclosure of information to patients and an admission of the error, acknowledgement, assuming responsibility, and offering apologies where appropriate.⁹

¹ Alfred Cuschieri, 'Nature of Human Error' (2006) 244 *Annals of Surgery* 642 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1856596/>>.

² *ibid.*

³ Terry Mizrahi, 'Managing Medical Mistakes: Ideology, Insularity and Accountability among Internists-In-Training' (1984) 19 *Social Science & Medicine* 135. <<https://www.sciencedirect.com/science/article/pii/0277953684902806>>.

⁴ Sevan Helo and Carol-Anne E Moulton, 'Complications: Acknowledging, Managing, and Coping with Human Error' (2017) 6 *Translational Andrology and Urology* 773-782. See also Andrew J Howell, Jessica B Turowski & Karen Buro, 'Guilt, empathy, and apology' (2012) 53(7) *Personality and Individual Differences*, 917-922.

⁵ Helo & Moulton 2017, *supra* note 4.

⁶ Thomas H Gallagher, Amy D Waterman, Alison G Ebers, Victoria J Fraser & Wendy Levinson 'Patients' and physicians' attitudes regarding the disclosure of medical errors' (2003) 289 (8) *JAMA* p 1001.

⁷ Medical malpractice and medical error are generally, and also in the academic literature, used interchangeably and there is no accepted general definition. For consistency, in this article, we use only the term medical error, even though the term 'medical malpractice' was also used in our fieldwork.

⁸ Cuschieri 2006, *supra* note 1.

⁹ Jennifer K Robbenmolt, 'Apologies and Medical Error' (2008) 467 *Clinical Orthopaedics and Related Research* 376 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2628492/>>. See also Lodewijk J Smeehuijzen, Kiliaan van

Research has revealed evidence that patients who suffered damages because of a doctor's error desire to receive the doctor's acknowledgement for the mistake and damages they have caused.¹⁰ We found that this can fulfil (some of) the needs of injured patients who suffered due to the medical error. For injured persons' psychological (immaterial) needs to be most successfully fulfilled, several elements of apologies should be distinguished. Firstly, the responsibility for the error and its consequences is acknowledged. Second, apologies are a way of expressing sympathy to the injured person. Thirdly, the transgressor should initiate remedial actions for recovery, such as adequate compensation for damages.¹¹ In most medical errors, remedial actions will be the remit of a hospital's legal staff rather than the particular physician. However, in combination with acknowledgement of the error (incl. apologies), a powerful 'medicine' emerges to repair the damage; mere compensation for damages (material) or mere apologies leads to less forgiveness by injured persons than their combination.¹²

Findings of empirical studies conducted on forgiveness and retaliation, in general, portray a similar picture, namely, people were more likely to forgive the transgressor if it took additional concrete steps to make amends and compensate for the mistake.¹³ The first element, acknowledgement of responsibility, is the most powerful, especially when done personally by the transgressor. This element addresses the relational aspect of the injured person's needs and the moral aspect. The relational aspect regards the fact that an event causing damage disturbs the relational balance between the injured person and the transgressor. One of the injured person's needs in this respect is that the transgressor restores this feeling of 'status'.¹⁴ The moral element concerns the acknowledgement of violated values after the event. This element regards the need of the injured person to receive admission and confirmation from the transgressor that their actions were indeed not in conformity with existing social norms, especially concerning morality and ethics.¹⁵ These aspects, namely, admission and apology with respect to medical errors, are the focus of this study.

Most empirical studies conducted on cases of medical errors suggest that admitting mistakes and apologising can have a beneficial effect on dispute settlement. Receiving apologies impacted litigants' settlement decision-making processes, their perception of the dispute and of the actors they were in dispute with.¹⁶ And vice versa, a study among patients showed that in some cases, their primary motive

Wees, Arno J Akkermans, Johan Legemaate, Susanne van Buschbach, & J E Hulst, 'Opvang en schadeafwikkeling bij onbedoelde gevolgen van medisch handelen' (2013) Amsterdam: Vrije Universiteit Amsterdam.

¹⁰ Jennifer K. Robbennolt, 'What We Know and Don't Know about the Role of Apologies in Resolving Health Care Disputes' (2005) 21 Ga St U L Rev 1009.

¹¹ Arno Akkermans, 'Achieving Justice in Personal Injury Compensation: The Need to Address the Emotional Dimensions of Suffering a Wrong' in Prue Vines and Arno Akkermans (eds), *Unexpected Consequences of Compensation Law* (Hart 2020) p 15-37. See also Arno Akkermans & L Hulst, 'De niet-financiële impact van schadetoebrenging en hoe daaraan tegemoet te komen' (2014) Tijdschrift voor Vergoeding Personenschade 4, 102-110.

¹² Akkermans & Hulst 2014, supra note 11.

¹³ Jeanne S Zechmeister and others, 'Don't Apologize Unless You Mean It: A Laboratory Investigation of Forgiveness and Retaliation' (2004) 23 Journal of Social and Clinical Psychology 532. See also Akkermans 2020, supra note 6 and Akkermans & Hulst 2014, supra note 11.

¹⁴ See Akkermans 2020, supra note 11 and Akkermans & Hulst 2014, supra note 11.

¹⁵ A third concept that expresses the immaterial needs of victims in case of damages, regards the theoretical concept of 'procedural justice'. This concept concludes in brief that individuals base their subjective assessment of justice of decisions strongly on procedural aspects of these decisions and the way they are being approached in these procedures. See also Akkermans 2020, supra note 6 and Akkermans & Hulst 2014, supra note 11.

¹⁶ Jennifer K Robbennolt, 'Apologies and Settlement Levers' (2006) 3 Journal of Empirical Legal Studies p 333-373.

for filing a legal claim was to receive admission for the medical error by the doctor.¹⁷ Moreover, patients regularly waived an initially announced legal claim as soon as they felt they had been taken seriously in an open dialogue with the doctor.¹⁸ Receiving apologies made the injured persons more likely to agree to settlement negotiations and accept particular settlement offers.¹⁹

In an empirical study in which participants had to answer questions regarding settlement negotiations after a hypothetical traffic accident involving an injured pedestrian, it was found that participants' estimation of the necessary amount for a fair settlement for damages was lower when the pedestrian received an apology.²⁰ The results obtained in the study implied that the immaterial value of apologising and assuming responsibility for causing the accident could sometimes be more important than the economic value of compensation.²¹

A similar study that employed vignettes describing hypothetical tort cases (motorcycle accidents) found that injured actors have material and immaterial needs to be satisfied following the incident. The study found that receiving an apology was more likely to fulfil the immaterial needs of the injured person better than material compensation. However, it has also been found that participants' decision to settle depended mostly on the level of compensation and not on receiving an apology. That is, participants would reject to settle if the compensation for suffered (monetary) losses was too low, regardless of an apology.²²

Studies have found that acknowledging errors in the treatment process can also have beneficial practical implications for the patient. It can facilitate the disclosure of all uncertainties for the patient,²³ and the reduction or prevention of further misunderstandings and mistakes.²⁴ Making the patient aware of all relevant information regarding their treatment can enable them to make informed decisions and take on a more active role in ensuring they get the proper care.²⁵

Acknowledgement of medical errors and apologising can also be beneficial for the doctor. Research has found that doctors suffer significant psychophysical stress after making a mistake in treating a patient.²⁶ They suffer from increased feelings of anxiety and experience sleep problems, loss of confidence, and fear of reputational harm.²⁷ Interestingly, doctors were more likely to be distressed when they were not satisfied with how information about the errors was disclosed to the patient.²⁸ Acknowledging the mistake can also open doors for doctors to initiate remedial actions towards the patient to compensate for their mistakes.²⁹ Recognising the mistake and analysing its occurrence or causes can also facilitate doctors to

¹⁷ Smeehuijzen & others 2013, supra note 9.

¹⁸ Berber Laarman & Arno Akkermans, 'De afwikkeling van medische schade onder de Wkkgz' (2017) 3 TVP p 57-79, referring to *Kamerstukken I* 2014/15, 32402, 1 of the *Wkkgz*.

¹⁹ Robbennolt 2008, supra note 9.

²⁰ Robbennolt 2006, supra note 16.

²¹ Incidentally, contrary to what many victims' lawyers think. See note 18. See also Robbennolt 2006, supra note 16.

²² Robbennolt 2006, supra note 16.

²³ Jay Katz, 'Why Doctors Don't Disclose Uncertainty' (1984) 14(1) *The Hastings Center Report* p 35-44.

²⁴ Albert W Wu & others, 'To Tell the Truth' (1997) 12 *Journal of General Internal Medicine* 770.

²⁵ *ibid.*

²⁶ Helo & Moulton 2017, supra note 4.

²⁷ Amy D Waterman and others, 'The Emotional Impact of Medical Errors on Practicing Physicians in the United States and Canada' (2007) 33 *Joint Commission journal on quality and patient safety* 467 <<https://www.ncbi.nlm.nih.gov/pubmed/17724943>>. See also AW Wu, 'Medical Error: The Second Victim' (2000) 320 *BMJ* 726.

²⁸ See Waterman & others 2007, supra note 27 and Wu 2000, supra note 27.

²⁹ Nancy J Crigger, 'Always Having to Say You're Sorry: An Ethical Response to Making Mistakes in Professional Practice' (2004) 11 *Nursing Ethics* 568.

initiate processes of personal or systemic improvements to prevent future mistakes.³⁰ As it was found that patients desire doctors to prevent future errors,³¹ this problem-solving approach by the doctors can further reinforce fulfilling the patient's needs.

I.3. Resolution of Medical Errors in Practice

Previous research on the relationship between full disclosure of mistakes, an apology for medical errors and decisions to take (legal) action against the transgressor demonstrates a clear pattern.³² Injured persons and their families are less likely to sue doctors and hospitals for medical errors when they receive all information about the transgression, an apology from the responsible actors and their acknowledgement of mistakes.³³ Failure to communicate medical errors clearly and honestly to injured persons,³⁴ cruel treatment of the injured persons, and denial of responsibility for the mistake³⁵ increase the likelihood of injured persons taking (legal) action. A study surveying injured persons and relatives involved in legal action against the doctors or hospitals showed four reasons for litigation: (1) injured persons and relatives desired to prevent future errors, (2) they wanted to acquire information and explanation about the committed error, (3) they desired to be compensated for monetary losses as well as their pain and suffering and, (4) they wanted to ensure accountability for negligent actions.³⁶ We should note that resolution options in the medical sector have been depicted as 'fragmented', making it hard for patients to distinguish between the implications of the different options.³⁷ For example, expectations of patients that filed a disciplinary procedure versus those filing a (legal) complaint differed only minimally, while the objectives of those procedures differ fundamentally.³⁸

I.3.1. Court Proceedings

The needs of injured persons can be immaterial (such as apologies and acknowledgement of violated values and material (such as monetary compensation). When monetary losses have been or will be suffered, victims expect fair compensation for these losses to restabilise their financial position.³⁹ Court proceedings, eminently, enable claims for compensation, and liability law, as applied in practice, takes monetary compensation as its central focus. However, these financial needs can also be fulfilled through other settlement options. And in particular, court proceedings have key characteristics that can be detrimental to patients.⁴⁰ These characteristics include i.a. their adversarial nature (positioning parties

³⁰ Helo & Moulton 2017, supra note 4.

³¹ Laarman & Akkermans 2017, supra note 18. See also Rebecca Rubel-Sieder, 'Full Disclosure: An Alternative to Litigation' (2008) 48 Santa Clara Law Review 473; and Wu 2000, supra note 27.

³² Robbenmolt 2005, supra note 10 and Rebecca Rubel-Sieder 2008, supra note 31.

³³ *ibid.*

³⁴ S Elango, 'Medical negligence suits: risk management' (2003) 58(4) Medical Journal Malaysia 625.

³⁵ C Vincent, A Phillips and M Young, 'Why Do People Sue Doctors? A Study of Patients and Relatives Taking Legal Action' (1994) 343 The Lancet 1609
<<https://www.sciencedirect.com/science/article/pii/S0140673694930627>>.

³⁶ *ibid.*

³⁷ This follows from research (and practice) in the Dutch context. See Laarman & Akkermans 2017, supra note 18.

³⁸ S Kruikemeier, Remco Coppen, Jany Rademakers & Roland Friele, '*Ervaringen van mensen met klachten over de gezondheidszorg*' (2009) Utrecht: NIVEL.

³⁹ R Huver, Kiliaan Van Wees, Arno Akkermans & Niek Elbers '*Slachtoffers en aansprakelijkheid. Een onderzoek naar behoeften, verwachtingen en ervaringen van slachtoffers en hun naasten met betrekking tot het civiele aansprakelijkheidsrecht Deel I: Terreinverkenning*' (2007) Den Haag: WODC.

⁴⁰ In addition, court proceedings do not seem to be the preferred settlement option when patients seek for apologies, due to the misunderstanding that an apology can establish admission of liability (in the Dutch legal context, see Andrea Zwart-Hink, 'Moet wie excuses aanbiedt ook schade vergoeden?' (2017) 38 Nederlands

against each other, with the patient being forced to adopt a claiming attitude, and contending with a doctor or insurance company who may be induced to adopt a dismissive stance), their polarising effect, the perceived lack of control and their long lead time.⁴¹ These circumstances may lead to emotional harm and cause additional (mental) damage, referred to as *secondary victimisation* or *renewed victimisation* due to the legal proceedings; ‘the accident upon accident’.⁴²

I.3.2 Mediation

Compensation for monetary losses can also be achieved through means outside of court, such as mediation. Mediation, in its broadest sense, is a type of intervention in disputes where a neutral third party facilitates the communication and negotiations between (conflicting) parties to work towards a jointly supported and optimal decision-making process based on the veritable interests of parties.⁴³ Several elements of mediation seem to fit the settlement of medical errors quite well. The basis of this fit lies within the immaterial needs that arise among patients (and doctors) as a result of an adverse medical event.⁴⁴ As set out above, these needs include i.a. pertinent information and communication on the error, admission by the doctor, acknowledgement of responsibility and apologies where appropriate. The first relevant element that mediation has to offer in this respect is its approach; its direct, personal contact between the individuals involved in the medical error. This focus on human relationships is important in addressing medical errors, as patients perceive errors mainly as a personal matter.⁴⁵ Mediation – standard strictly confidential – then enables restoration of connection and lost contact between parties to a medical error case.⁴⁶

A second relevant element of mediation is its focus on underlying needs and interests rather than mere positions and arguments. Capturing the underlying needs and interests of the involved individuals as a starting point for the dialogue in mediation is one of its core foci points.⁴⁷ More particularly, by asking questions and reformulating what is being said, a mediator enables careful and serious attention to the immaterial needs of the patient (and doctor), preventing them from ending up in legal proceedings that

Juristenblad p 2800-2808). In order to explicitly distinguish apologies and acknowledgement of liability, most common law jurisdictions have ‘Apology laws’ implemented (see Alex Brenninkmeijer, ‘Excuses en conflictoplossing’ (2010) 4 Tijdschrift conflictoplossing p 27-30).

⁴¹ Smeehuijzen & others 2013, supra note 9. See also Arno Akkermans & Kiliaan Van Wees, ‘Het letselschadeproces in therapeutisch perspectief: hoe door verwaarlozing van zijn emotionele dimensie het afwikkelingsproces van letselschade tekortschiet in het nastreven van de eigen doeleinden’ (2007) 4 Tijdschrift voor Vergoeding Personenschade p 103-118; and Berber Laarman, ‘Just culture en herstelrecht in de afwikkeling van medische schade’ (2019) 3 Tijdschrift voor Vergoeding Personenschade p 65-83.

⁴² Akkermans & Wees 2007, supra note 41. See also Jehanne Hulsman, ‘*Alles goed?!? Omstreden diagnoses, ongeluk op ongeluk*’ (2004) Groningen: Gopher Publishers.

⁴³ Note that types, objectives and styles of mediation differ widely within (and among) different legal systems. See Alex Brenninkmeijer, (2017) *Handboek Mediation*. Den Haag: SDU. and Deborah Levi, ‘The role of apology in mediation’ (1997) New York University Law Review p 1165-1210.

⁴⁴ This apart from the more practical benefits that mediation can be quicker and less expensive for dispute settlement in medical malpractice cases. See F Buckner, ‘Mediation sans litigation in malpractice’ (2000) 16 The Journal of medical practice management p 156-9. <<https://pubmed.ncbi.nlm.nih.gov/11280207/>> and Carol B Liebman & Chris S Hyman, ‘Medical Error Disclosure, Mediation Skills, and Malpractice Litigation: A Demonstration Project in Pennsylvania’ (2005), <https://scholarship.law.columbia.edu/faculty_scholarship/3495> 2005. 1-117.

⁴⁵ Lodewijk Smeehuijzen e.o. ‘Over problemen en oplossingen in het medisch aansprakelijkheidsrecht’ (2013) Nederlands Juristenblad, 1966 p 1-7.

⁴⁶ In the context of personal injury cases. See Lydia Charlier, ‘Het recht op mediation in letselschadezaken uit de kast’ (2020) 2 Tijdschrift Conflicthantering p 28-32.

⁴⁷ Dick Allewijn, ‘*Tussen recht en vrede: Mediation in de responsieve rechtsstaat*’ (2018) Den Haag: SDU Uitgeverij.

may not meet their needs.⁴⁸

Lastly, the restorative nature of mediation provides an additional element that makes mediation a suitable option for resolving medical errors. Apart from the inclusive and voluntary element of mediation, what is meant here is its participatory nature. Mediation requires voluntary and active participation, requiring individuals involved to express their needs and to actively (participate and) agree to a suitable solution for the consequences of medical errors.⁴⁹ This can help individuals to experience ownership of the solution and regain responsibility for the aftermath of the event.⁵⁰

A restorative approach also enables room for acknowledging responsibility and, more concretely, for apologies.⁵¹ In particular, the personal nature of restorative approaches – the personal contact between the parties – enables an opportunity to apologise.⁵² Compared to legal court cases, research shows that victims in restorative processes (e.g. mediation) receive apologies more frequently (72% versus 19%, in another study, 96% versus 7%).⁵³ Additionally, vice versa, when apologies have been made, room arises for an open, informal and personal dialogue between individuals, possibly facilitated by a mediator, that can contribute to the fulfilment of immaterial needs.⁵⁴ Interestingly, apologies contribute to a constructive, conciliatory attitude towards the transgressor⁵⁵ and decrease patients' desire to seek retaliation and punishment.⁵⁶

I.3.3. Disciplinary Procedures

Another option to react to medical error cases is filing a complaint with a medical disciplinary tribunal. The main objective of a disciplinary procedure is quite different from other settlement options; disciplinary law aims to maintain quality of care.⁵⁷ Its primary objective is of public interest. The patient's interests are of secondary relevance, and the patient's complaint functions as a 'trigger' only to ultimately maintain quality of care.⁵⁸ This is also expressed by the remedies it offers, imposing a measure on the doctor (warning, reprimand etc). For this reason, particularly from the doctor's perspective, a disciplinary procedure is punitive.⁵⁹ Moreover, next to the long lead time of the procedure, the lack of

⁴⁸ Liebman & Hyman 2005, supra note 44. See also Arno Akkermans 'En, heeft u al een claim ingediend voor schadevergoeding? Tijdschrift conflictantering' (2015) 3 p 30-31 and Geertruid Van Wassenae, 'Mediation: dé oplossing in letselschadezaken? Verkeersrecht' (2016) 18 p 49-56.

⁴⁹ Deborah Levi, 'The role of apology in mediation' (1997) New York University Law Review p 1165-1210.

⁵⁰ Laarman 2019, supra note 41, proposes the theoretical concept of restorative justice as a new perspective to the settlement of medical malpractices. Do note that mediation differs explicitly from the theoretical concept of restorative justice, though also mediation can have a restorative approach and both concepts aim to bring individuals closer together through i.a., contact in person. See also Charlier 2020, supra note 46.

⁵¹ Liebman & Hyman 2005, supra note 44.

⁵² Laarman 2019, supra note 41.

⁵³ Laarman 2019, supra note 41. See also Heather Strang, Lawrence W Sherman, Evan Mayo-Wilson, Daniel Woods & Barak Ariel, 'Restorative justice conferencing (RJC) using face-to-face meetings of offenders and victims. Effect on offender recidivism and victim satisfaction. A systematic review' (2013) Campbell Systematic Reviews p 1-59.

⁵⁴ Alex Brenninkmeijer, 'Excuses en conflictoplossing. Tijdschrift conflictoplossing' (2010) 4 p 27-30.

⁵⁵ Akkermans & Hulst 2014, supra note 11.

⁵⁶ Robbennolt 2005, supra note 10.

⁵⁷ Berber Laarman & Arno Akkermans, 'Compensation schemes for damage caused by healthcare and alternatives to court proceedings in the Netherlands.' in L van Vliet (ed.) *Netherlands Reports to the twentieth International Congress of Comparative Law*, Fukuoka (2018), Nijmegen, Wolf Legal p 1-30.

⁵⁸ Laarman & Akkermans 2017, supra note 18.

⁵⁹ This punitive nature has increased over time (see Hendriks A Tuchtrect, 'meer tucht dan recht' (2015) (39)5 Tijdschrift voor Gezondheidsrecht p 322-330.) and makes doctors feel 'criminalised' (see Laarman 2019, supra

personal contact between patient and doctor has been identified as detrimental.⁶⁰ A disciplinary procedure generally leaves little space for reconciliation⁶¹ and, in that light, presumably little room for apologies as well. This is why medical disputes tribunals aim to solve a complaint of a patient before the procedure in a personal meeting between the doctor and patient.⁶²

II. Methods

The studies previously discussed support the notion that monetary compensation is essential to settling medical error cases that have resulted in injury. That is, where financial losses have occurred, patients expect fair monetary compensation. Studies also demonstrate that assuming responsibility for the error and offering an apology can compensate for patients' immaterial needs and positively affect their willingness to negotiate and settle. However, while many studies explore current trends in medical error litigations and compensation for monetary losses, few studies have systematically investigated the impact of apologies and admission of responsibility for medical errors. This is important, as it is well known that many relevant aspects in resolving medical error cases are confounded: vulnerable patients may respond differently to harm and settlement procedures, and different medical errors generally follow different resolution paths. Formulated differently, much research is observational, which makes it hard to attach a causal effect to the admission of responsibility and apologies. Secondly, most research on the settlement of medical error cases has been conducted in the US, which has its particular litigation laws and culture. The finding's generalisability, therefore, seems to be limited, especially with regard to different legal and healthcare systems.

Using a vignette design, our study will investigate the impact of admission of responsibility and apology by a doctor for a medical error on the preferred settlement manner and desired compensation for pain and suffering. We do so in a heterogeneous convenience sample of different jurisdictions, i.e., the countries of origin of our multinational student group. Because we employ a vignette design, we can investigate this impact net of the impact of any confounding variables or factors which tend to be present in observational designs. While strong on internal validity, vignette studies are generally reductionist and qualitatively shallow. Therefore, we explicitly include qualitative methods in our study. to compensate for that

III. Design and Setting

III.1. Vignette and Questionnaire

In order to explore the effect of admission and apology for medical errors on the perceptions of ordinary citizens on a desired compensation for pain and suffering, and what kind of route for resolving the case would be most appropriate, we designed a vignette describing a case of medical error. It was a case in which a person had to undergo an operation in which a medical error was made, due to which they would suffer life-long debilitating physical complications as well as grief from the way their life would be fundamentally altered. The vignette was designed with an orthopaedic surgeon for realism.

Multiple versions of the vignette were created across which we varied, amongst others, whether or not

note 41 and Berber Laarman, Roland Friele, Renée Bouwman, Anke de Veer & Michelle Hendriks, 'Zorgverleners en burgers over het openbaar maken van door de tuchtrechter opgelegde berispingen en geldboetes' (2017) NIVEL.

⁶⁰ Yasmine Alhafaji, Brenda Frederiks & Johan Legemaate, 'Ervaringen van klagers en aangeklaagde artsen met het tuchtrecht' (2009) (13)3 Nederlands-Vlaams tijdschrift voor Mediation en conflictmanagement p 18-42.

⁶¹ Laarman & Akkermans 2018, supra note 57.

⁶² Personal contact in an early stage could prevent a medical disciplinary procedure (see Alhafaji & others, supra note 60 and Laarman & Akkermans 2018, supra note 57).

the surgeon admitted the mistake and apologised for it. The vignettes were originally created in English but were translated (and back-translated) to languages geared to the researchers' respondents, namely, Dutch, Spanish, Hebrew, German, Papiamentu and Croatian, reflecting the fact that respondents hailed from 10 different countries. Before the onset of the official process of data collection, the vignettes were piloted in the Netherlands and a number of other countries. The results of the piloting process showed that the vignettes did not cause any ambiguities or sensitivities. An example of the vignette can be found below.⁶³

A questionnaire asked respondents for their attitudes about the appropriateness of resolving the described case of medical errors through: 1) civil court process, 2) mediation process, and 3) by lodging a complaint to a disciplinary board. They were asked to express the extent to which they perceived these routes suitable on a scale of 1 (very unsuitable) to 5 (very suitable). Additionally, they were asked to explain their choices in an answer to an open question which facilitated the gathering of qualitative data. Subsequently, they were informed that the injured person, in addition to compensation for likely loss of income, wants to claim compensation in the form of damages for pain and suffering resulting from the medical error. Respondents were then asked to state an amount (in euros) of compensation for damages for pain and suffering which would be suitable in the described case. Lastly, they were asked to state their gender, age, and whether they had in the last 10 years been a party in a serious legal conflict involving lawyer's presence and court proceedings.

III.2. Sample and Procedure

The data was collected by 17 fieldworkers who in total contacted 327 eligible respondents. The sample constitutes a convenience sample, as each of the fieldworkers sampled 20 respondents who were willing to participate with no other requirements than that the final sample would have reasonable spread over age, gender and occupational class. Given that the study was carried out under strict COVID-measures we allowed varying modes of administration, via zoom or any other video-calling, telephone, face-to-face at 1,5 meters distance or self-administration by respondents via e-mail. After giving informed consent, a total of 327 respondents agreed to participate in the research, 53.5% were women, and 46.5% were men. The average age of respondents was 37.1 years ($SD=16.8$). Moreover, 12.5% of respondents had been

⁶³ Marc is 35 years old. He is married and has two children. He works as a teacher at a secondary school. He is an avid games-person: very much into jigsaw puzzles and member of a cards club.

One day he falls with his bike and is referred to hospital. He has to undergo an operation on his hip. Afterwards the orthopedic surgeon, dr. Vincent Bremer, reports that the operation has gone well. However, after release from the hospital Marc's mobility becomes worse. During check-ups the surgeon, dr. Vincent Bremer, says that Marc's recovery seems to take longer than average, but he encourages him to be patient.

After 3 months, Marc can barely stand and is in permanent pain. He is unable to work. Marc consults an orthopedic surgeon from a different hospital, who states that Marc's surgeon has made a serious mistake. Marc will need an additional operation, and, worst of all, he will likely remain handicapped the remainder of his life, needing support in walking.

Marc is shocked and extremely sad. He writes a letter to dr. Bremer, confronting him with the findings of the second opinion. Marc is invited for a conversation at the hospital, in which the surgeon admits that the operation indeed was performed wrongly, shows that he himself is upset about what happened and offers his apologies. Marc consults a lawyer. The lawyer consults an independent expert in orthopedic surgery who after a thorough investigation confirms that Marc's operation was indeed conducted wrongly, so that medical malpractice has been established.

The lawyer contacts the hospital, and states that Marc suffered damages due to the medical malpractice of the surgeon who operated on Marc.

party in a civil court case. Given the COVID measures in place during the fieldwork, few questionnaires were filled out via face-to-face interviews (15.0%); the majority were sent out over e-mail (56%), another fifth administered (20.2%) via zoom or another kind of video-conferencing, and 8.9% comprised interviews conducted by telephone.

Respondents, like the researchers, hailed from varying countries: almost 34% was Dutch, the country from which the fieldwork was conducted, 12.5% German or Swiss, 6% percent were Israeli, 13% were Croatian. Groups of similar size came from South Africa and Colombia, and smaller numbers of respondents hailed from Canada, Italy or Hungary. We chose not to focus on nationality, language, country of residence or country of birth as the group investigated was extremely mixed and mobile and it would in that sense be hard to pinpoint their cultural background or the type of legal system, they were familiar with.⁶⁴ What is important for this article to note is that the investigated group hails mainly from continental Europe. However, to minimise the risk of confounding with respondents' backgrounds, each fieldworker was tasked with administering two different vignettes that were exactly mirrored.

Respondents were first presented with introductory information on the goals and procedure of the study, and informed about voluntary participation as well as the anonymity and confidentiality of their responses. After they had given informed consent, contact details of Victim Support Netherlands or Victim Support in the country of their residence were provided in case the study would elicit an emotional reaction or unpleasant remembrance in respondents. Subsequently, the respondents were presented with a description of the medical malpractice vignette, and asked to fill out answers to the questions.

III.3. Analysis Method

For describing our sample properties findings, we will use simple descriptive statistics. Next, we perform three analyses. First, for analysing the impact of admission and apology by the doctor on respondents' preference for resolution modes, we will use analyses of variance, in which we add measured background variables as additional predictors to the model to control for any confounding as our design cannot be considered to be fully balanced. Second, we will code the open answers that respondents when asked for the reasons for their preference scores, employing a mixture of emic and etic coding styles. Our coding is etic as we searched for explicit reference in respondents' answers to the admission (or denial) and apology of the doctor. Two authors coded answers and retrieved themes that emerged. We will subsequently analyse which of these themes is associated with preference scores for a civil court case, mediation, and disciplinary board separately.

Lastly, we will describe what damages for pain and suffering respondents believed fair, and investigate whether that was impacted by an admission by the doctor, again over and above of particular respondent characteristics.

IV. Results

IV.1. Descriptives

Averaging over the different versions of the vignette, respondents tended to favour a civil court case ($M = 4.05$, $SD = 1.01$), followed by disciplinary board action ($M = 3.57$, $SD = 1.26$). Respondents were almost evenly in favour of or against mediation ($M = 3.11$, $SD = 1.32$). The sum of money respondents believed was fair as compensation for pains and damages varied greatly. Many respondents indicated a

⁶⁴ For instance, some had Bulgarian nationality but had been living in the Netherlands for a long time and were interviewed in English, some were recent Hungarian migrants to Canada, others were Dutch and had resided in the Netherlands since birth.

range that they believed reasonable, instead of one numerical value, of which we took the midpoint. The median amount chosen was somewhat below €100,000; however, 20% of respondents chose a value of €20,000 or lower, and roughly 15% believed an amount of €500,000 or higher was necessary, with 5% opting for amounts equalling €2 million or more. The variable is heavily right-skewed, so for further analysis, we recoded it into seven relatively evenly filled categories.

IV.2 Settlement Through Civil Court Case

Next, we analysed the impact of admission by the doctor on respondents' preferences for settlement through a civil court case. Although admission and apology did lower respondents' preference for a civil court case, its impact was nonsignificant ($F_{1,305} = 2.205$; $p = .139$). Open coding of respondents' answers revealed a number of themes. Respondents most often referred to compensation as a reason for their preference for a civil court case. Respondents indicated that a civil court case would be the best way to ensure that the patient would be compensated for their losses:

'In my experience, this is the only way [the patient] will get compensation for the damage suffered. Otherwise, she will not be able to get anything (neither compensation nor therapy).'

'[The patient] could receive full compensation for damages caused by medical negligence'

Some also mentioned that a civil court case would be necessary to arrive at a 'right' amount:

'Perhaps when the hospital (doctor) takes the fault, a civil case is not necessary. But in order to come up with the right compensation amount, it might be good to [let] a judge decide. It is not a small mistake.'

'The blame is settled, now the amount of compensation needs to be determined and a judge should supervise this decision'

Admission or denial by the doctor were often referred to. These referrals could go both ways: denial was a reason for being in favour of court settlement: *'Because the doctor did not admit'*. But respondents also stated to be in favour of a court case because the doctor had admitted wrongdoing: *'Doctor admitted the mistake; evidence seems clear - winning seems likely'*. A mirroring argument given was the following: *'Because of the admission of guilt there is no need to go to court'*.

The next most prevalent theme was *'justice'*, with respondents indicating that only a case before a judge could provide justice. The justice theme subsumes issues of justice as such, but also notions of fairness for both patient and doctor, and the doctor needing to pay justice, as the following examples show.

'[The] court system would provide a just and lawful outcome, which [the patient] deserves'

'A civil court suit would be the perfect opportunity for [the patient] to fight for their rights in a completely fair manner to [the doctor]'

'[The doctor needs to] serve justice. This is only really possible if [the patient] sues him'

Other extracted themes were *apology*, *punishment* (with quite a few respondents mentioning that a civil court case would serve that purpose), *truth-finding*, and remarks we subsumed under the label *burden of process* with respondents indicating that civil court cases can be draining - emotionally and financially. A few respondents mentioned that civil court cases could be *healing*, act *preventatively*, or should only be considered as second best or a *fallback* option, in case other modes of settlement were ineffective.

Employing the extracted themes as predictor variables, multiple regression (overall $F = 5.229$, $p = .000$; $R^2_{adj} = .127$) revealed that, over and above the denial or admission of error, the compensation ($\beta = .191$;

$p = .000$) predicted preference for settlement through a civil court case. Moreover, arguments against settling the case in court were burden of process ($\beta = -.234$; $p = .000$), apology ($\beta = -.133$; $p = .013$), and the fact that respondents regarded litigation a fallback option ($\beta = -.117$; $p = .028$). See Table 1, that gives the standardized regression coefficients and significance levels.

Table 1. Multiple regression results for prediction of preference of settlement in court

Variable	Regression coefficient	p -value
Admission	.082	.125
Apology	-.133	.013
Compensation	.191	<.001
Healing	.041	.449
Justice	.066	.245
Punishment	.003	.956
Prevention	-.013	.809
Truth-finding	.088	.103
Burden of Process	-.234	<.001
Second best/fallback	-.117	.028
Admission by doctor	-.077	.145

IV.3 Settlement Through Mediation

Next, we analysed the impact of admission by the doctor in the vignette on respondents' preferences for settlement through mediation. Also, here the impact of admission and apology was nonsignificant ($F_{1,299} = .179$; $p = .672$). Qualitative analysis of respondents' open answers on why they were in favour of or against mediation, again revealed a number of themes.

The most frequently mentioned argument against mediation was the fact that the doctor had denied the mistake.

'Doctor denies mistake, impossible'

The reverse occurred much less frequently; admission was seldom an argument in favour of mediation:

'Doctor admitted the mistake; seems open to finding a solution; can benefit Marc - won't have to endure the court system and can still be compensated well'

The second-most prevalent theme here was '*compensation*', although compensation played a quite heterogeneous role. We see for instance respondents stating that compensation will not be sufficient in mediation: *'[The patient] will not be able to get any compensation for the damage suffered' 'Probably less results for the patient'*, although the reverse was mentioned as well: *'The best option for achieving a high compensation'*, with some making this conditional on settlement in court: *'Could be useful in addition to a civil court only. Otherwise, the doctor may persuade the patient to settle for less'*

Subsequently, arguments often referred to *expediency*, with mediation being judged as 'faster', 'less stressful', 'less costly', and 'non-traumatizing', all compared to settlement in court. Mediation was also judged favourably with regard to a fourth theme, that of *reconciliation*:

'This may be good because it can consider the side of both the doctor and [the patient]. May be more accepted among both of them.' 'It would open a dialogue for both parties.' 'Parties can find a solution between them.' 'Could lead to an amicable resolution.'

One in 12 respondents said, however, that they regarded the case as simply *too serious* for mediation. Less often named aspects referred to *healing*, *mediation being suitable as a fallback option*, and a small number of respondents pointed out that they were hesitant to recommend mediation because of the *power imbalance* between the patient and the doctor.

Employing the extracted themes as predictor variables, multiple regression (overall $F = 6.854$, $p = .000$; $R^2_{adj} = .203$) revealed - again over and above the denial or admission as present in the vignette that a respondent had judged - that significant predictors of mediation preference were expediency ($b = .283$; $p = .000$), reconciliation ($b = .304$; $p = .000$) and healing ($b = .151$; $p = .003$); the only factor that significantly predicted low preference was that the medical consequences were too serious ($b = -.105$; $p = .041$).

IV.4 Settlement through Disciplinary Board

Next, we analysed the impact of admission and apology by the doctor in the vignette on respondents' preferences for settlement through a disciplinary board. Here, the impact of admission and apology was highly significant ($F_{1,305} = 7.874$; $p = .005$), with denial predicting respondents being in favour of resolution through a disciplinary board.

Many different arguments were mentioned for respondents' preference scores for disciplinary board action. The most frequently mentioned argument in favour of disciplinary board action was prevention: this argument does not refer to the case per se, but to the outer goal of protecting others from suffering a similar fate. One in four respondents mentioned this. Non-admission by the doctor played a prominent role too: this was by many considered especially aggravating, and by some a breach of ethical code that justified a disciplinary board procedure by itself.

Many respondents referred to a disciplinary board being able to produce an impartial and substantiated judgement of what had happened and whether it constituted a mistake in an otherwise competent doctor or whether the doctor should be considered not competent.

'[A] competent authority that can determine the extent to which the doctor has violated his duty'

'The council composed of experts must investigate and analyse the entire trajectory of the surgeon to take decisions'

The latter was also reflected in remarks by the respondents in which they stated that the board would be able to assess whether the mistake was part of a pattern of medical mistakes or a one-off mistake.

'To document the maltreatment and to enable experts to evaluate what happened'

'Maybe there are more cases like this, it should be investigated if it was a one-time mistake or a pattern'

Even though only mentioned by three respondents, the wish to get this case on the doctor's record is part of a similar goal: namely to make sure that a team of professionals assess whether disastrous consequences the patient suffered were an accident or attributable to a structural failing, whether of the doctors' skills or as apparent through their 'recidivism'. The doctor's oath, licence, and competence were remarked upon too and are all closely related aspects.

In a different vein were remarks made that referred to the disciplinary board being able to punish the doctor, and hold the doctor accountable, pointing to retribution by peers.

'I believe that the surgeon is accountable in this case and should receive a disciplinary sanction'

Employing the extracted themes as predictor variables, multiple regression (overall $F = 12.319$, $p = .000$;

$R^2_{adj}=.350$) revealed that significant predictors of preference for disciplinary board action were prevention ($b = .289$; $p = .000$), professional fact-finding ($b = .181$, $p = .000$), to assess the doctor's history of mistakes ($b = .158$, $p = .001$), to judge and when necessary revoke the licence ($b = .127$; $p = .008$), punishment ($b = .119$, $p = .011$), to assess the doctor's competence ($b = .111$, $p = .020$), and to hold the doctor accountable ($b = .103$, $p = .028$). Apology predicted low preference for disciplinary board action ($b = -.325$, $p = .000$) and respondents venturing that disciplinary board action left no room for healing ($b = -.112$, $p = .017$).

IV.5. Damages for Pain and Suffering

Last, we investigated whether admission of mistake by the doctor impacted respondents' preferred type and amount of compensation for damages for pain and suffering. For this, we used the analysis of variance while controlling for confounding due to design unbalance. This was not the case: $F_{1,273} = .154$, $p = .695$, that is, doctor's admission of mistake did not impact respondent's preferences for compensation.

V. Discussion

Employing a mix of quantitative and qualitative analysis methods we investigated public perceptions on the resolution of medical malpractice damages. Our vignettes enabled us to investigate the impact of admission and apology by the culpable surgeon, our qualitative open-ended questions shed light on the considerations that shaped people's preferences.

The doctor's admission of the mistake and apology did not impact respondents' determination of the amount suitable to compensate the patient for their pain and suffering. Also, apology and admission did not significantly influence respondents' preference for a civil court case or mediation. Apology and admission of medical errors, while clearly relevant, in addition to that, emerged as less predominating in the settlement of medical malpractice cases than we had anticipated based on the – mainly US-based – literature.⁶⁵ It is, however, unclear to what this can be attributed. It may be that the causal effect of admission and apology, which cannot validly be ascertained in an observational study, is indeed small. It may, however, also be the case that the damages that our vignette described (a patient who is unable to walk properly for the rest of their life) are so serious, that admission and apology are unable to tilt the balance in favour of or against one or the other resolution mode, an explanation that our qualitative data do point to. Our study also revealed that admission and apology played a significant role in people's preference for disciplinary board action, but in a differential manner. Our study also added to the literature through analysis of the reasons respondents gave for their actions. Interestingly, admission of the medical was not so much considered a mitigating aspect, but it was non-admission and so denial that was by many considered as an especially aggravating element, mentioned as in a sense a breach of professional duty that by itself justified some disciplinary action. Consistent with the extant literature, a doctor's apology played the reverse role in respondents' preference for procedure in that an apology was associated with lower preference for disciplinary board action.⁶⁶

Respondents ventured various other arguments for their choices for each of the three resolution modes. These could be conceptualised as five types of arguments: legal (i.e., truth-finding, compensation, and fact-finding), moral (i.e., ensuring justice and punishment for wrongdoings), instrumental (i.e., the expediency of the process and (re)establishing power balance), restorative (i.e., facilitation of dialogue and amicable resolution), and preventative (i.e., preventing future errors). Apart from restorative arguments that we saw exclusively used in favour of mediation, and preventive goals mentioned most for

⁶⁵ Robbenmolt 2006, *supra* note 16.

⁶⁶ See Elango 2003, *supra* note 34 and Vincent & others 1994, *supra* note 35.

disciplinary board action, we see how the other kinds of arguments could be put forward for multiple resolution modes.

Compensation was used as an argument for mediation as well as for a civil court case. Justice, punishment and truth finding were arguments for a civil court case as well as disciplinary board action. While these expectations differed only minimally among respondents, the objectives of those procedures differ fundamentally.⁶⁷

Respondents regularly stated how they were in favour of a certain resolution mode as a 'second choice' or fallback option, or that one mode should first be tried after which a second mode could serve as a backup. Respondents, for instance, stated that mediation could first be tried as it was less draining but that if it would not pan out successfully, the patient could always resort to litigation. In that sense, we did not find principled arguments in favour of only one or the other option but found that respondents treated the options (and predominantly civil litigation and mediation) as a choice menu that can be navigated. This is also in line with how - definitely in the country in which the study took place and from where many respondents hailed - mediation is increasingly propagated as a first step after which litigation enters the stage once mediation is unsuccessful.

While civil litigation and mediation were sometimes regarded in combination, disciplinary board action assumed a somewhat separate position. Disciplinary board action was chosen for justice, punishment and for truth-finding. Preventative aims were often mentioned for disciplinary board action, although not exclusively. Two kinds of truth-finding emerged: in the particular case, for medical experts to assess what exactly had happened, but also for assessing whether this doctor can be considered competent, i.e. whether the medical malpractice should be considered an unfortunate mistake made by an otherwise qualified doctor, or whether it is symptomatic of this doctor not being competent. Accountability had two forms: towards the victim-patient and towards the medical profession.

The findings are largely in line with the literature on medical errors settlement and dispute resolution. Injured persons desire to prevent future errors (mainly by taking the case to the disciplinary board) and to be compensated for monetary losses as well as their pain and suffering. Respondents perceived a court case as the most suitable option for ensuring fair compensation - but a large variation among answers was present. Moreover, injured persons should according to our respondents ensure accountability for negligent actions mainly by taking the case to civil court and a disciplinary board.

While the results obtained from this study provide the field with relevant and multifaceted information, some methodological limitations were present. During the data collection, the researchers noticed that their respondents often had insufficient knowledge about types of settlement mentioned in our vignette. Some also had difficulties differentiating between compensation for monetary losses and compensation for pain and suffering. Moreover, respondents were perhaps not always able to notice (all) the relevant factors and characteristics of the case while reading the vignettes. Lastly, there is also the possibility that the case of medical error we described in the vignette was so severe (i.e., life-long severe handicap) that it could have left little room for the factor we varied (admission and apology) to impact the dependent variables.

Future (vignette) studies should investigate whether different cases of medical error yield similar results and whether more knowledgeable or experienced respondents (such as lawyers) would have different preferences and arguments. While it is valuable in itself to assess the perceptions of the public, medical error victims will generally seek legal counsel and the perceptions and goals of these professionals will in practice strongly influence the resolution process.

⁶⁷ Kruikemeier 2009, *supra* note 38.

VI. Conclusion

Our study, firstly, revealed a much smaller effect than anticipated on the basis of the observational and mainly US-based literature, on apology and admission. As we recommended, future studies should investigate whether this smaller effect is due to the particularities of our design or holds across different experimental and geographical settings. The fact that many respondents regarded the absence of admission and apology as behaviour that by itself called for disciplinary action warrants further attention too. Second, our study shed light on the pragmatic and flexible manner in which ordinary citizens weigh the pros and cons of different settlement modes. It also showed which procedures respondents think could be used as an alternative if the preferred one does not yield wanted results. Finally, our study showed how various kinds of aims play a role in choosing one or the other settlement mode - legal, moral, instrumental, restorative, and preventative.

DeclarationsEthics approval and consent to participate

Ethics approval: N.A.

Ethics approval for the study was not required as per Vrije Universiteit regulations, and not regarded as necessary given the minimally invasive and hypothetical nature of the vignette and brief questionnaire. All respondents freely consented to participate.

Consent for publication

All authors consented to the publication of the manuscript.

Availability of data and materials

Data and materials are available from the last author, Catrien Bijleveld (cbijleveld@nscr.nl). All details in the vignette included are invented and none of the comments hold any identifying information.

Competing interests

The authors declare that they have no competing interests.

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Author's contributions

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