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How acceptable is paternalism? A survey-based study of clinician and nonclinician opinions on paternalistic decision making

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Abstract

We conducted an empirical study to explore clinician and lay opinions on the acceptability of physician paternalism. Respondents read a vignette describing a patient with brain hemorrhage facing urgent surgery that would be lifesaving but would result in long-term severe disability. Cases were randomized to show either low or high surrogate distress and certain or uncertain prognosis, with respondents rating the acceptability of not offering brain surgery. Clinicians ($N=169$) were more likely than nonclinicians ($N=649$) to find the doctor withholding surgery acceptable (30.2% vs. 11.4%, $p=0.001$). Among clinicians, the doctor withholding surgery was more acceptable when prognosis was certain to be poor (odds ratio [OR] 2.04, 95% confidence interval [CI] 1.04, 4.01). There was no effect of surrogate distress on clinician ratings. Responses among lay public were more variable. Given the differences in attitudes across clinicians and lay public, there is an ongoing need to engage stakeholders in the process of end-of-life decision making.

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Author contributions

All authors contributed to the conception, design, and revisions to drafts. KB and DZ collected data and wrote the primary draft. DZ conducted the analysis.

Ethical approval

This study was reviewed by the University of Michigan Health Science Behavioral Science Institutional Review Board and determined to be exempt from review.

Keywords

brain injury; medicine; end-of-life issues; decision making; professional–patient relationship

In the United States, there is a strong emphasis on the principle of individual autonomy when making medical decisions (deBronkart 2015). However, medical circumstances may result in a patient being unable to appreciate the consequences of their choices, unable to weigh the relative risks or benefits of interventions, or unable to articulate a stable preference over time, and as such the patient may be deemed to lack the capacity to make particular medical decisions (Applebaum 2007). When a patient lacks decision capacity, clinicians often turn to individuals with knowledge of the patient's prior preferences and wishes to help make medical decisions the patient would have made had he or she retained capacity. These surrogate decision makers who are asked to help make medical decisions on behalf of the patient can face severe psychological and emotional burdens. These burdens can be exacerbated when surrogates are faced with making medical decisions for patients with poor prognoses (Schenker et al. 2012; Wendler and Rid 2011). To reduce this stress on surrogate decision makers, some clinicians may take the onus of decision making upon themselves (Dogan and Deger 2001; Hwang and Berant 2015). This practice has been termed “protective” paternalism (Hwang and Berant 2015), and has been proposed as a preferred way to make decisions in certain difficult situations (Roeland et al. 2014).

Advocates of protective paternalism claim that the good done by preventing the psychological burden to the surrogate outweighs the harm done by restricting the surrogate's authority to speak to the values and wishes of the patient (Long and Shuman 2016; Roeland et al. 2014). This approach challenges the predominant Western view that emphasizes the primacy of surrogate authority and thus generally insists that the decisions of the informed patient/surrogate be respected (Rodriguez-Osorio and Dominguez-Cherit 2008).

There are, however, certain situations where paternalistic decision making may be deemed more acceptable. For example, factors such as surrogate distress (Bester et al. 2016) or prognostic certainty (Tariman et al. 2013) may tilt the scales in favor of paternalistic decision making in the eyes of clinicians and nonclinicians.

“Protective” paternalism is ethically distinct from therapeutic privilege. Therapeutic privilege refers to a purposeful non-disclosure for the benefit of the patient (Richard Lajeunesse and Lussier 2010), while protective paternalism refers to a model of decision making where a surrogate decision maker is relieved of the responsibility of deciding. This distinction is particularly relevant because factors like surrogate distress and prognostic certainty may play a large role in determining the acceptability of protective paternalism while being less relevant in assessing the value of therapeutic privilege.

Given important differences in how clinicians and nonclinicians approach decision making for critically ill patients (Anderson Cimino and Ernecoff 2015; Cai et al. 2015; Thaler and Sunstein 2008) and how these groups differ in their interpretation of prognostic information (Zier et al. 2012; White et al. 2016), it is also likely that these two groups differ in their approach to paternalistic decision making. To explore these differences, we chose to focus

on the opinions of the lay public (nonclinicians) and clinicians about medical decision making in the context of acute neurological injury, where the sudden onset of new deficits, the inability of the patient to participate in decisions, time pressures for decisions about acute treatments such as brain surgery, and the inherent uncertainty surrounding neurological recovery (Luce and White 2009) make decision making especially fraught.

We conducted a vignette-based survey of clinicians and members of the lay public (nonclinicians) to assess the acceptability of paternalistic decision making after an acute intracerebral hemorrhage. Our goal was to discover whether surrogate distress or prognostic certainty influenced the acceptability of paternalistic decision making among clinicians and nonclinicians. We hypothesized that paternalistic decision making would be more acceptable when surrogate decision makers displayed significant distress or when the patient's poor prognosis was presented with certainty. As a secondary aim, we sought to contrast clinician and nonclinician acceptability of paternalistic decision making, hypothesizing that clinicians would find paternalistic decision making more acceptable than nonclinicians.

Methods

Respondent populations

We used different strategies to recruit clinician and nonclinician respondents. Faculty, residents, fellows, nurses, nurse practitioners, and physician assistants who treat patients with intracerebral hemorrhage or critical illness (neurology, neurosurgery, or critical care) were recruited from a single academic medical center. Clinician recruitment occurred by introducing the study at department meetings, followed by an e-mail sent to departmental address lists with an anonymous survey link and two subsequent e-mail reminders sent at 5 days and 15 days after the initial e-mail.

The nonclinicians were recruited through a university-run health science research volunteer website, where an anonymous link to the survey was posted. The website is targeted toward the public. Given that the anonymous link for nonclinicians was posted publicly on the health research volunteer website, we could not calculate a nonclinician response rate.

For both groups, eligibility was assessed by self-report in a prescreening questionnaire utilizing deductive logic administered to all participants before the survey started. We included English-speaking adults aged 18 years or older with access to an Internet-enabled device. Clinicians had to be currently involved in direct patient care activities. Nonclinicians were excluded if they had major medical or mental health problems that would preclude them from being able to make medical decisions. Nonclinician respondents who self-identified as currently employed physicians, nurses, or physician's assistants were excluded.

Survey design

We created an online vignette-based survey where respondents read a hypothetical clinical scenario from the perspective of an objective third party. We chose a third-party perspective to avoid the distortion of prognostic information that can occur with relational enmeshment specifically in the context of brain injury (Suppes and Fins 2013). Two separate vignettes were presented, one in which an urgent decision about surgery had to be made, and another

in which a nonurgent decision about continuation of a ventilator had to be made. This manuscript focuses on the results of the urgent vignette, as the nonurgent vignette did not explicitly focus on paternalistic decision making.

The urgent vignette (full text in Supplement A) described a 75-year-old man who collapsed at home and was found to have an intracerebral hemorrhage. His daughter was his legally designated surrogate decision maker and had to discuss the possibility of urgent brain surgery with the physician.

Each vignette contained two factors that were randomly presented: (1) the level of certainty in prognostication, and (2) the amount of distress displayed by the surrogate. In all cases, it was stated that the patient would likely die without surgery, and even with surgery the patient would likely have a poor functional outcome. Respondents randomized to see “certain” prognosis were provided language like “no chance of him getting better,” “will be left with severe disability,” and “will not regain the ability to walk.” Respondents randomized to see “uncertain” prognosis were provided language like “very unlikely that he will get better,” “most likely will be left with severe disability,” and “small chance that he could regain the ability to walk.”

For surrogate distress, the daughter was described as either (1) “upset but [remaining] calm” and voicing understanding of the situation (low distress), or (2) weeping, appearing distant, and voicing that she felt overwhelmed (high distress). In both the low- and high-distress vignettes, the daughter told the physician that she was not sure what to do.

The language of the vignettes was pretested among researchers specializing in survey studies at the academic medical center where clinicians were recruited.

Primary and secondary outcome questions

After reading the scenario, the respondents were asked: “How acceptable do you consider each of the following approaches the doctor could take with the daughter?” Our prespecified primary outcome question was degree of acceptability of a paternalistic decision-making model in which “the doctor does not offer surgery.” Respondents were asked to rate the acceptability of this approach on a 4-point Likert scale (“completely unacceptable,” “slightly unacceptable,” “slightly acceptable,” and “completely acceptable”). Our prespecified plan was to dichotomize responses as acceptable or unacceptable for all analyses for ease of interpretation (DeCoster Iselin and Gallucci 2009).

We also examined respondent ratings of the acceptability of three additional decision-making models (doctor discussed surgery but recommended against it; doctor discussed surgery but left the decision to the daughter; doctor asked for permission to make the decision for the daughter). The four decision-making models—these three and the paternalistic model—were presented in random order (see Supplement B). A model with explicit shared decision making (Kon et al. 2016) was not included as this was anticipated to have such high acceptability as to be uninformative, along with difficulties in succinctly describing all necessary elements of shared decision making within the space constraints of the survey.

In addition, we evaluated whether respondents would want brain surgery for themselves if they were the patient (response options of “definitely not brain surgery,” “probably not brain surgery,” “probably brain surgery,” and “definitely brain surgery”). The survey concluded with a set of demographic questions, including age, gender, prior experience as a surrogate decision maker, presence or absence of an advance directive, and then demographic questions specific to each respondent group.

Statistical analysis

Descriptive statistics were calculated for responses to the primary and secondary questions. For the acceptability of paternalistic decision-making outcome, logistic regression models were used to investigate the effect of the randomized variables (prognostic certainty or surrogate distress) and respondent characteristics. Initial models were created to explore the interactions between the randomized variables, case order, and participant group (clinician vs. nonclinician). This analysis identified an interaction between prognostic certainty and participant group, and therefore subsequent regression models were stratified by participant group to facilitate interpretation.

In the clinician group, an initial model including only the randomized variables and case order was developed. The smaller sample of clinicians limited our ability to assess other potential covariates; however, we did look at two exploratory models: (1) a demographics model including randomized variables, case order, status as physician versus nurse, female gender versus male, and age (linear effect by age category); and (2) a physician specialty model (neurosurgery or pulmonary critical care vs. the reference group, neurology) adjusted for prognostic certainty.

For nonclinicians, the initial regression model included the randomized variables, case order, and an interaction between prognostic certainty and distress. Additional models were constructed exploring whether adding age, gender, experience as a surrogate decision maker, or having an advance directive (defined as a living will, durable power of attorney for health care, or other written document describing values and preferences around medical treatment) was associated with the response; only age and gender were found to have effects and were retained in the final model. Analyses were performed with SAS software version 9.4 for Windows (SAS Institute, Inc., Cary, NC).

IRB approval

This project was approved as exempt from full review by the University of Michigan Institutional Review Board (IRB) based on minimal risk to adult subjects with an anonymous survey (HUM00109973).

Results and analysis

A total of 959 respondents opened the survey (Figure 1). Of these, 924 completed the screening questions, and of those a total of 813 (79.3% [$n = 649$] nonclinicians, 20.7% [$n = 169$] clinicians) rated the acceptability of at least one decision-making model and were included in the analysis for a completion rate of 87.9%. We were not able to calculate a response rate for nonclinicians. In total, 386 clinicians received an e-mail invitation with an

anonymous link and 193 clinicians opened the survey for a clinician-specific response rate of 50%.

Overall, the respondent group (Table 1) was predominantly female and of non-Hispanic white ethnicity. Clinician respondents tended to be younger than nonclinician respondents. The nonclinicians tended to be well educated, with more than one-third having a bachelor's degree and another third having a master's degree or higher.

Overall, 15.3% of respondents considered the paternalistic approach of the doctor deciding to withhold surgery to be acceptable. Clinicians were more likely than nonclinicians to find the doctor deciding to withhold surgery acceptable (30.2% vs. 11.4%, $p < 0.001$). Table 2 contains the raw proportion of respondents finding the paternalistic approach acceptable, stratified by prognostic certainty and surrogate distress.

Preliminary analysis of the effect of prognostic certainty and surrogate distress indicated that there was an interaction between prognostic certainty and respondent category (e.g. the effect of prognostic certainty was different for clinicians than it was for nonclinicians). Therefore, subsequent analysis was stratified by respondent category.

In the clinician group, prognostic certainty increased the likelihood of finding the paternalistic approach acceptable (Table 3). There was no effect of surrogate distress on the acceptability of the paternalistic approach for clinicians.

Given the smaller clinician sample size, we had limited ability to adjust for other potential predictors. The first exploratory analysis assessing clinician demographics found no effect of nurses versus clinicians, gender, or age (linear effect by age category). The second exploratory analysis looked at whether physician specialty had an effect on the outcome. Half the members of the sample were neurologists, one-third pulmonary critical care specialists, and the rest neurosurgeons. No effect of physician specialty was found ($p = 0.11$). However, given the small sample size for this analysis, the point estimate and 95% confidence interval (CI) suggest the possibility that pulmonary critical care physicians (odds ratio [OR] 2.21, 95% CI 0.86 to 5.67, $p = 0.10$) or neurosurgeons (OR 3.14, 95% CI 0.92 to 10.64, $p = 0.07$) may find the paternalistic approach more acceptable than neurologists.

When assessing nonclinician attitudes about the acceptability of the doctor deciding to withhold offering surgery, we found an interaction between prognostic certainty and level of surrogate distress (interaction $p = 0.03$). A certain poor prognosis led nonclinician respondents to find the doctor deciding to withhold surgery to be less acceptable, but only in scenarios where surrogate distress was low (Tables 2 and 3). When surrogate distress was high, a certain poor prognosis did not change nonclinician opinions about the acceptability of the doctor deciding to withhold surgery when compared to an uncertain poor prognosis. High surrogate distress had a borderline effect in decreasing the acceptability of the doctor deciding to withhold surgery when poor prognosis was uncertain, and there was no effect when surrogate distress was high and poor prognosis was certain. However, there was a shift in the direction of the effect based on the certainty of the prognosis.

Among other predictors of acceptability to nonclinicians, we found that female respondents were less likely to find paternalistic decision making acceptable (OR 0.54, 95% CI 0.31 to 0.94). Additionally, older nonclinicians were more likely to find paternalistic decision making acceptable (OR 1.27 per age category, 95% CI 1.09 to 1.48).

Discussion

We found that clinicians were more likely than nonclinicians to support a course of action consistent with “protective” paternalism. However, clinician and nonclinician opinions of “protective” paternalism differed depending on the level of prognostic certainty and surrogate distress. Clinicians were more likely to find the doctor deciding to withhold the offer of an intervention acceptable if the prognosis was presented as certainly poor. However, clinicians did not change their acceptability based on the level of distress of the surrogate. Nonclinicians, however, found the doctor deciding to withhold the offer of surgery less acceptable when the prognosis was presented as certain and surrogate distress was low. Finally, when exploring demographic variables influencing respondent choices, clinicians showed a trend toward differences in acceptability by specialty. Nonclinicians who were younger and identified as female were less likely to find paternalistic decision making on surgery acceptable.

When the prognosis for recovery is considered extremely poor, paternalistic decision making favoring treatment de-escalation is considered more ethically permissible (Pontoppidan Abbott and Brewster 1976; Smedira Evans and Grais 1990). Furthermore, if the surrogate decision maker is perceived to be in extreme distress, “protective” paternalism may become more palatable to some (Schuster 2012).

There are several possible explanations for the differences between the clinician and nonclinician responses in our sample. Prior empirical research has shown that surrogate decision makers in the intensive care unit (ICU) generally prefer some form of a shared decision-making process (Heyland et al. 2003; Anderson et al. 2008), and few are willing to allow the physician to make the final decision (Johnson et al. 2011).

In addition, paternalism is generally broken down into two specific forms: “soft” paternalism, in which the preferences of a limited or nonautonomous patient (i.e., without decision-making capacity) are abrogated, and “hard” paternalism, where the preferences of an autonomous patient (i.e., with decision-making capacity) are abrogated (Feinberg 1986). “Soft” paternalism is generally more accepted than “hard” paternalism (Beauchamp 2009). It is possible that nonclinicians interpreted the doctor’s actions in not offering surgery as “hard” paternalism, specifically in denying the surrogate decision maker as conveyor of the patient’s last capacitated preferences an opportunity to fully explore all possible options. Clinicians, on the other hand, may have interpreted this as “soft” paternalism, in that the doctor in the vignette had judged that the surgery would not be beneficial to the patient who had lost decision-making capacity.

The observed differences may also reflect differences in clinician and nonclinician values regarding qualities that make life worth living. In the vignette presented, surgery would

result in significant morbidity for the patient even if successful, including loss of ability to perform basic activities of daily living and the need for ongoing invasive intervention. Clinicians have been found to be less likely than nonclinicians to desire invasive interventions for themselves (Periyakoil et al. 2014; Ubel Angott and Zikmund-Fisher 2013). This may be due to greater exposure to the negative consequences of failed interventions, differential consideration of the relative proportionality of harms, and being less likely to have a personal philosophy of life at any cost. These values may impact clinicians' acceptance of paternalistic decision making in this case, as it aligns with their personal values.

Of note, responses to our vignette may also reflect other participant beliefs. Clinicians may feel that surgery in this context constitutes nonbeneficial, futile, or harmful treatment, given that it has very little chance of success and even if successful will likely leave the patient with serious functional deficits. In this context, clinicians may feel that their obligation to act only to benefit their patients justifies withholding nonbeneficial or futile interventions (Schneiderman Jecker and Jonsen 1996). Clinicians may also question or distrust the accuracy of surrogate decision makers in considering whether a patient would truly wish to live with major functional deficits. Prior data have shown that the accuracy of surrogate decision makers in predicting patient preferences is often poor (Shalowitz Garrett-Mayer and Wendler 2006). Nonclinicians who feel that life should be preserved at any cost might disapprove of the doctor in the vignette not offering surgery due to this vitalist belief rather than to a disapproval of protective paternalism specifically. However, previous research has shown that such a vitalist outlook is generally held by a minority of respondents, and therefore it is unlikely that this discrepancy accounts for our findings (Meropol et al. 2008).

In our clinician sample, surrogate distress did not change clinicians' assessment of the acceptability of paternalistic decision making. Clinicians may have standardized methods of decision making that are independent of surrogate-specific characteristics. Alternatively, clinicians could feel that standards of decision making must be consistent even in the face of surrogate distress. Finally, the language in the vignettes describing distress may have not have been fully representative of actual distress, which might cause a difference in response.

In our nonclinician sample, respondents found paternalistic decision making less acceptable in the face of prognostic certainty. One possibility is that nonclinician respondents reacted to the same prognostic information differently than clinician respondents. It has been shown previously that patients and their surrogate decision makers are more likely to doubt prognostication when presented as certainly poor or futile (Zier et al. 2009). Surrogate decision makers are also known to interpret prognostic information with an optimistic bias (Aggarwal Davies and Sullivan 2014). If nonclinician respondents did not believe the doctor's prognostication in scenarios where a poor prognosis was presented as certain but did believe the prognostication in scenarios where the prognosis was presented as uncertain, it could explain the observed differences. It has also been noted that surrogate decision makers find that uncertainty is unavoidable in prognostication, but also that inherent uncertainty allows for hope for survival and recovery (Prochaska and Sulmasy 2015). Another possibility is that nonclinician respondents did not interpret our randomized variables as we intended. Given practical constraints, we did not have an opportunity to pilot

test the language in our vignettes with the lay public as we did with clinicians. If the language we used to describe prognostic certainty did not properly convey the intended message to nonclinicians, the apparent discrepancy between clinician and nonclinician responses to prognostic certainty may be explained.

Finally, we conducted a number of exploratory analyses to investigate the effect of respondent characteristics on the acceptability of paternalism. Though findings should be interpreted with caution due to the small sample of clinicians, our results suggest the possibility that pulmonary critical care and neurosurgical physicians may find the doctor deciding to withhold surgery more acceptable than their neurology colleagues. This could reflect the role of surgeons and critical care physicians as gatekeepers of particular intense or aggressive interventions, including surgery and advanced life support, that drive them to operate as more “classical paternalists” (Falkum and Førde 2001). This finding should be tested with larger samples, but is consistent with prior work calling to decrease interspecialty variation in both ethical deliberation and training in primary palliative care skills (Harris et al. 2016). Among nonclinicians, younger age and female gender were associated with a decreased acceptance of paternalistic decision making. Younger patients and patients identifying as female tend to prefer greater involvement in decision making (Vicka and Scott 1998). Younger patients also tend to report less trust in the health care system compared to their older counterparts (Armstrong et al. 2006). These preferences may contribute to a broader dislike of paternalistic decision making in general among these patient subgroups.

This is a work of descriptive empirical ethics, and as such we are not arguing for or against paternalism. It may be argued that lay public acceptance of paternalistic decision making has no bearing on the ethical permissibility of such decision making. While the philosophical considerations are outside the scope of this article, the practical implementation of theoretically acceptable “protective” paternalism, such as process-based futility (Bosslet et al. 2015), will likely require further specification of the concept, greater work on clarifying the decision-making continuum, and investigation of public acceptance. Health care practices are subject to the values and norms of the society in which they reside. Policies, including institutional policies outlining when “protective” paternalism is acceptable, are often shared with patients when conflicts are encountered. Engaging members of the public regarding their concerns about this form of paternalism will be crucial in translating the philosophically and theoretically acceptable to acceptable in clinical practice.

The discrepancies discovered herein also suggest the need for further research across institutions. Institutional attitudes towards interventions like do-not-resuscitate (DNR) orders often shape the ethical views of trainees at all levels at such institutions (Dzeng 2015). Understanding clinician attitudes can be the first step toward understanding overall institutional attitudes and how to change the experiential training of medical trainees to account for these attitudes.

Limitations

The use of hypothetical vignettes may reduce the applicability to actual clinical care, though this design allowed us to efficiently recruit participants and experimentally manipulate certain variables. Our respondent pool was primarily non-Hispanic white, female, well

educated, able to readily access the Internet, and associated with a single medical center in the United States, all of which may limit generalizability. The opinions represented here may not reflect the opinions of those of varied sociodemographic status.

Dichotomization of the primary outcome variable may have resulted in loss of information and reduced our ability to detect subtler differences. Both clinician and nonclinician respondents who were more interested in shared decision making may have been more likely to complete the survey, introducing the potential for differential nonresponse. The nonclinician respondent pool was recruited from a health-care-focused volunteer website where an anonymous link was posted, which may make their opinions and experiences different from that of the general population. In addition, exclusion criteria were determined by self-report, so we could not independently verify eligibility.

Our study results represent self-predicted behavior, which can potentially differ from actual behavior. Empirical studies of surrogate decision makers in intensive care units have found that very few surrogates want physicians to make value-laden decisions for them (Johnson et al. 2011), and that the majority prefer some form of shared decision making (Heyland et al. 2003; Anderson et al. 2008), which are in line with our results showing low acceptability of paternalism among nonclinicians.

Conclusion

We demonstrated that the acceptability of “protective” paternalism differed drastically between medical professionals and the lay public, with prognostic certainty and surrogate distress causing differing effects between both groups. While “protective” paternalism may be acceptable in theory in certain situations, its implementation into compassionate, patient-centric clinical care requires further study.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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*810 respondents rated all models presented

Figure 1.
Study recruitment flowchart.

Table 1

Demographics.

Demographic category	Nonclinician sample, <i>n</i> , %	Clinician sample, <i>n</i> , %
Gender		
Female	503 (78.8%)	80 (49.1%)
Male	132 (20.7%)	82 (50.3%)
Transgender/other	3 (0.5%)	1 (0.6%)
Age (years)		
18–24	81 (12.7%)	3 (1.8%)
25–34	100 (15.7%)	54 (32.9%)
35–44	63 (9.9%)	52 (31.7%)
45–54	130 (20.3%)	26 (15.8%)
55–64	147 (23.0%)	24 (14.6%)
65–74	99 (15.5%)	4 (2.4%)
75–84	17 (2.7%)	1 (0.6%)
85	2 (0.3%)	0
Ethnicity		
Non-Hispanic white	537 (84.0%)	133 (81.6%)
Black	33 (5.2%)	1 (0.6%)
Hispanic (of any race)	18(2.8%)	4 (2.5%)
Asian	22 (3.4%)	18 (11.0%)
Other	29 (4.5%)	7 (4.3%)
<i>Prior experience as surrogate</i>	287 (44.7%)	90 (54.2%)

Table 2

Number of respondents finding paternalistic decision making acceptable.

Respondent category	Variable	Number finding acceptable: <i>n/N</i> (%)	
		Prognostic uncertainty	Prognostic certainty
Clinicians, <i>n</i> = 169	Low surrogate distress	10/44 (22.7%)	13/36 (36.1%)
	High surrogate distress	10/43 (23.3%)	18/46 (39.1%)
Nonclinicians, <i>n</i> = 642	Low surrogate distress	28/161 (17.4%)	10/159 (6.3%)
	High surrogate distress	16/162 (9.9%)	19/160 (11.9%)

Table 3

Effects of prognostic certainty and surrogate distress on acceptability of doctor deciding to withhold surgery.

Respondent category	Variable	Odds ratio [*]	95% Confidence interval
Clinicians [†] N= 169	Effect of prognostic certainty	2.04	1.04–4.01
	Effect of high surrogate distress	1.09	0.56–2.13
Nonclinicians, [‡] N= 642	Effect of prognostic certainty with low surrogate distress	0.33	0.15–0.70
	With high surrogate distress	1.24	0.61–2.50
	Effect of high surrogate distress with prognostic uncertainty	0.52	0.27–1.00
	With prognostic certainty	1.95	0.88–4.36

^{*} Odds ratio greater than 1 indicates that variable makes respondent more likely to find the doctor deciding to withhold surgery acceptable.

[†] Clinician models included prognostic certainty, surrogate distress, and case order.

[‡] Nonclinician models included prognostic certainty, surrogate distress, case order, and the interaction between prognostic certainty and surrogate distress.