

PAPER

Default options and neonatal resuscitation decisions

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ABSTRACT

Objective To determine whether presenting delivery room management options as defaults influences decisions to resuscitate extremely premature infants.

Materials and methods Adult volunteers recruited from the world wide web were randomised to receive either resuscitation or comfort care as the delivery room management default option for a hypothetical delivery of a 23-week gestation infant. Participants were required to check a box to opt out of the default. The primary outcome measure was the proportion of respondents electing resuscitation. Data were analysed using χ^2 tests and multivariate logistic regression.

Results Participants who were told the delivery room management default option was resuscitation were more likely to opt for resuscitation (OR 6.54 95% CI 3.85 to 11.11, $p < 0.001$). This effect persisted on multivariate regression analysis (OR 7.00, 95% CI 3.97 to 12.36, $p < 0.001$). Female gender, being married or in a committed relationship, being highly religious, experiences with prematurity, and favouring sanctity of life were significantly associated with decisions to resuscitate.

Discussion Presenting delivery room options for extremely premature infants as defaults exert a significant effect on decision makers. The information structure of the choice task may act as a subtle form of manipulation. Further, this effect may operate in ways that a decision maker is not aware of and this raises questions of patient autonomy.

Conclusion Presenting delivery room options for extremely premature infants as defaults may compromise autonomous decision-making.

BACKGROUND AND SIGNIFICANCE

Decisions regarding delivery room management for extremely preterm infants are complicated by the medical uncertainty of the infant's health outcomes and the significant health burdens that can ensue.^{1–3} Given this level of future ambiguity, guidelines emphasise a shared decision-making process between parents and physicians to enable parents to make decisions consistent with their own personal values while maintaining goals that are in the best interests of the infants.^{4–7} In neonatology, two models of counselling have been proposed by different committees within the AAP,^{7, 8} an *expertise model* and a *negotiated model* for decision-making, both which have been shown to be operational in the neonatal setting.⁸ Recently a third model of shared decision-making, *informed non-dissent*⁹ or default framing,¹⁰ has been proposed under certain circumstances in neonatology. It has been suggested that this model may alleviate some of the decisional burden felt by families making

these difficult choices for their imperilled newborns; some have suggested that these decisional burdens may be overwhelming for parents and, thus, medical professionals have the obligation to constructively support the decision-making process.^{11–12} All models support an active exchange of medical information by the physician for information about parental values relevant to the decision,^{4, 13–14} but vary to the extent with which choices are offered neutrally.

Defaults have been shown to strongly influence healthcare decisions^{15–19} and should be used with caution. Defaults, although rarely labelled as such, are effectively practiced every day in critical care medicine; for example, in the absence of a living will, previous conversations or advance directives, physicians will resuscitate dying individuals. In most circumstances, this is the appropriate default option because the safest assumption is that the patients would want to be resuscitated if they were able to express their wishes. However, under conditions where values and medical uncertainty influence decision-making, the power of the default needs to be critically evaluated and used judiciously. It has been shown in surveys of geriatric populations and younger individuals that defaults strongly influence preferences for end of life care.^{20–22} Studies have also highlighted the effect of defaults on organ donation.^{15–16} Parallel studies in neonatal medicine have not been performed.

OBJECTIVE

The primary objective of this investigation was to examine the effect of defaults on treatment choice for delivery room management for an extremely preterm infant. The null hypothesis is that presenting the course of action as a default would not impact decisional outcomes. A secondary analysis investigated whether the delivery room management option itself (eg, resuscitation care or comfort care) influenced the likelihood of accepting default options.

MATERIALS AND METHODS

This Institutional Review Board approved study was conducted using confidential survey methodology. It was administered to adult volunteers via the world wide web, recruited by the Center for Decision Sciences at Columbia University. Existing participants from the Center for Decision Sciences database, a sample which is representative of US adult population demographics within 5%, were invited to participate in the study by email. New participants were recruited through advertisements on websites as well. All participants were required to be at least 18 years old and participation was



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voluntary. There were no exclusion criteria. This study was included with other unrelated studies and was presented before other research content. Randomisation was computer controlled on a secure server using the PHP programming language. There were no restrictions or blocking.

The surveys depicted a hypothetical vignette of an impending delivery of a 23-week gestational age infant with a treatment option (either resuscitation or comfort care) presented as the default. The vignettes were constructed to be identical regarding general information about prematurity and descriptions of severe disability in lay terms. Care was taken to ensure that no framing bias was inadvertently incorporated into the general content, which had been previously shown to be operative in a study conducted by the investigators.²³ Participants were instructed that intensive care meant that infants received 'resuscitation and intensive care after birth'. Comfort care meant that the infants were 'allowed to die on their own after birth'. After reading this information the participant was then given a hypothetical vignette with prognostic information in terms of survival and survival without severe disability. Participants were randomly assigned to receive either the resuscitation default or the comfort care default vignette. The resuscitation default vignette read as follows: 'The doctor goes on to say that at this hospital infants born at 23 weeks will receive resuscitation, unless their parents object. If you decline resuscitation please check the box below'. The comfort care default read as follows: 'The doctor goes on to say that at this hospital infants born at 23 weeks will receive comfort care, unless their parents object. If you decline comfort care, please check the box below'.

Participants were then asked to provide information about demographics and potential covariates. Variables to be investigated for their relation to the treatment decision were chosen based on the premise that pre-existing perceptions and context cannot be ignored in investigating decisions.^{19 24–29} As there were few studies demonstrating what other factors may be important in parental decisions for resuscitation of premature infants at the time this research was undertaken,^{27 30} the authors previously specified variables to be tested for association with these decisions a priori.²³ In addition, experience with disability was included as a potential covariate.

Questions enquired whether sanctity of life or quality of life should be most important in making this decision as well as whether the participants preferred a paternalistic or autonomous decision-making style. The Duke Religion Index Scale³¹ was used to investigate individual differences in religiousness. There were yes/no questions about marital status, parenthood, experiences with prematurity, experiences with disability and pregnancy status. Participants were given the option to elaborate on the specific disabling conditions with which they had had experiences. Demographic information—including gender, immigration status and ethnicity—was also collected. Identifying information was kept in a separate secure database and not linked to the survey responses.

On average, time taken to complete this study was <15 min; no participant took more than 1 h. The participants were paid \$4 after completion of the survey. Participants were invited to contact the investigators with any comments or concerns, for example, anxiety or discomfort with the survey. No concerns were expressed by participants in this study.

In the primary analysis, the assigned default group was the independent variable and the decision of whether to initiate resuscitation was the dependent variable. In the secondary analysis, the assigned default group was the independent

variable and the tendency to accept or reject the default action was the dependent variable.

For the primary analysis, whether default framing would impact decisions to resuscitate, a sample size of 192 subjects was calculated to be necessary to detect an absolute difference between the two survey groups as small as 30%, estimating that 60% of participants in one of the groups would choose resuscitation,³⁰ with a p value of 0.05 and a power of 80%. The estimate that approximately 60% of the participants would choose resuscitation regardless of birth weight and gestational age was based on the study by Streiner *et al.*³⁰ A difference of 30% was chosen as the minimum difference to be detected between proportions based on the seminal experiments performed by Tversky and Kahneman.^{32–35}

Descriptive responses to the questionnaire are reported for the 5-point Likert Scale in the following manner: for sanctity of life, participants scoring 1 or 2 were considered to favour sanctity of life, participants scoring 4 or 5 favoured quality of life and participants scoring 3 did not favour one over the other; for decision-making style, participants scoring 1 or 2 were considered to favour paternalism, those scoring 4 or 5 favoured autonomy and those scoring 3 were interpreted as being indifferent between one decision-making style over another. For statistical analyses, these Likert Scale responses were transformed to binary variables in the following manner: for sanctity of life, participants were considered either to favour sanctity of life (scoring in categories 1 or 2) or not to favour sanctity of life (categories 3–5); for decision-making style, participants either favoured paternalism by scoring in categories 1 or 2 or did not favour paternalism by scoring in categories 3–5. In order to be considered as highly religious, participants had to score within the top two response categories for each question from the Duke Religion Index Scale.

Univariate comparisons were made using χ^2 analysis. Multivariate logistic regression analyses incorporated all variables associated with treatment decision at a p value of <0.10 in univariate analyses. Backwards Wald elimination with all the variables was used to confirm this process. In addition, an interaction term was included in the separate analysis to test whether religiousness modifies susceptibility to the default effect. All analyses were performed using SPSS V.19.

RESULTS

A total of 600 subjects were recruited for the study in the spring of 2007. Two hundred and ninety-one people completed the study, of which 144 were randomly assigned to the resuscitation default and 147 to receive the comfort care default. The sample size was larger than anticipated because recruitment for participation was sent out in sequential waves; in order to meet our sample size, two waves were sent out. The approximately 50% response rate was in part due to the fact that participants received an invitation to participate twice (ie, a reminder invitation), but computer tracking ensured that only a participant's first response was included in the results.

Sample characteristics and demographics

As shown in table 1, the majority of respondents were female, of reproductive age, married or in a committed relationship, parents, not pregnant, US born, and Caucasian. Most were not highly religious. Most had experience with prematurity and experience with disability. There were no significant differences between the randomly assigned groups other than for parental status.

Table 1 Sample demographics

	n (%) Of respondents	Resuscitation default	Comfort care default	p Value
Female*	179 (63)	89	90	0.84
Reproductive age*	192 (67)	96	96	0.93
Married/committed relationship	190 (65)	93	97	0.80
Parents	202 (69)	89	113	0.005
Pregnant†	1 (0.3)	1	0	
US born*	259 (90)	126	133	0.30
Strongly religious	90 (31)	52	38	0.06
Experience with prematurity	188 (65)	96	92	0.47
Experience with disability	188 (65)	90	98	0.46
Ethnicity*				
Caucasian	229 (79)	115	114	0.79
African American	29 (10)	12	17	0.34
Asian	13 (5)	7	6	0.77
Hispanic	10 (3)	6	4	0.51
Other	4 (1)	2	2	0.73

*Some participants declined to answer these questions; therefore, the denominator for these variables was less than that the number of the total sample of 291.

Bold values represent significance with p value ≤ 0.05 .

†Too small to calculate p values.

As a whole, 20% felt that preservation of life was the most important factor in the decision, 29% felt that quality of life was most important, and 51% of the sample felt that both sanctity of life and quality of life were equally important. Forty per cent of the sample population preferred autonomous decision-making, 30% preferred paternalistic decision-making and 30% did not favour one over the other.

Likelihood of choosing resuscitation

In univariate analyses, resuscitation was significantly more likely to be chosen when it was presented as the default option (80% chose resuscitation) than when comfort care was presented as the default option (39% chose resuscitation; OR 6.54, 95% CI 3.85 to 11.11, $p < 0.001$). Gender, being married or in a committed relationship, being highly religious, experience with prematurity, and predominance of the importance sanctity of life in the decision were all significantly associated with the choice to resuscitate (table 2).

In a multivariate logistic regression model controlling for gender, marital status, religiousness, experience with prematurity and the predominance of sanctity of life (table 3), the resuscitation default, the predominance of sanctity of life and (less so) religiousness were significantly associated with the decision to resuscitate.

Likelihood of accepting the default option

In univariate analyses, participants who received the resuscitation default were more likely to accept the default treatment presented (81%) compared with participants who received the comfort care default (61%; OR=2.62, 95% CI 1.55 to 4.46, $p < 0.001$). Those participants who were a parent, were born in the USA, and had experience with prematurity, or had experience with disability were more likely to opt out of the proposed default action (table 4).

In a multivariate logistic regression model including all the terms found to be significant in the univariate analyses at $p < 0.10$, participants who received the resuscitation default remained more likely to accept the default option than those

Table 2 Bivariate relations with choosing resuscitation

Covariate	n (%) Of respondents choosing resuscitation	OR (95% CI)	p Value
Female	179 (64)	1.63 (1.00 to 2.65)	0.05
Resuscitation presented as the default	144 (80)	6.54 (3.85 to 11.11)	<0.001
Reproductive age	192 (61)	1.31 (0.80 to 2.17)	0.29
Married/committed relationship	190 (64)	1.65 (1.01 to 2.70)	0.044
Parents	202 (59)	0.99 (0.60 to 1.65)	0.98
Pregnant*	1		
US born	259 (60)	1.04 (0.47 to 2.33)	0.92
Strongly religious	90 (74)	2.61 (1.51 to 4.51)	<0.001
Experience with prematurity	188 (64)	1.67 (1.02 to 2.71)	0.040
Experience with disability	188 (59)	0.91 (0.57 to 1.48)	0.73
Caucasian	229 (62)	1.41 (0.79 to 2.55)	0.25
African American	29 (52)	0.676 (0.31 to 1.46)	0.32
Asian	13 (62)	1.05 (0.34 to 3.31)	0.93
Hispanic	10 (70)	1.56 (0.39 to 6.15)	0.52
Other*	6 (16)		
Preferred paternalism	88 (59)	0.98 (0.59 to 1.63)	0.94
Predominance of sanctity of life	58 (84)	4.79 (2.25 to 10.20)	<0.001

All ethnicity: $p=0.18$.

Bold values represent significance with p value ≤ 0.05 .

*Too small to calculate statistics.

who received the comfort care default. Those participants who were parents and those with experience with disability remained more likely to opt out of the proposed default (table 5).

DISCUSSION

Delivery room resuscitation was twice as likely to be chosen when it was presented as the default option. This effect on delivery room management decisions was greater than that of outcome framing in our previous study using the same type of decision vignette,²³ demonstrating that default effects are important influences on choices impacting autonomous decision-making models in neonatal resuscitation decisions.

This effect should not be dismissed by suggesting that delivery of a 23-week infant is a novel clinical context for which true preferences must be constructed on the spot and, therefore, autonomous choice does not exist. First, deeply held values help guide preference formation. Research has suggested this to be the case for this specific clinical scenario,³⁶ and this perspective is consistent with the idea that 'First, values exist—like body temperature—and people perceive and report them as best they can, possibly with bias. Second, people know their values and preferences directly—as they know the multiplication table. Third, values or preferences are commonly constructed in the

Table 3 Multiple regression model of significant bivariate associations with choosing to resuscitate

	OR (95% CI)	p Value
Resuscitation default	7.00 (3.97 to 12.36)	<0.001
Female	1.29 (0.71 to 2.34)	0.40
Married/committed relationship	1.35 (0.74 to 2.50)	0.33
Strongly religious	2.03 (1.07 to 3.85)	0.03
Experience with prematurity	1.16 (0.63 to 2.13)	0.64
Predominance of sanctity of life	4.40 (2.00 to 10.20)	<0.001

Bold values represent significance with p value ≤ 0.05 .

Table 4 Bivariate relations to accepting the default option

Covariate	n (%) Of respondents following the default	OR (95% CI)	p Value
Female	179 (69)	0.75 (0.44 to 1.29)	0.30
Resuscitation presented as the default	144 (81)	2.62 (1.55 to 4.46)	<0.001
Reproductive age	192 (69)	0.72 (0.41 to 1.27)	0.26
Married/committed relationship	190 (68)	0.71 (0.41 to 1.23)	0.22
Parent	202 (65)	0.34 (0.18 to 0.65)	0.001
Pregnant*	1 (100)		
US born	259 (69)	0.18 0.04 to 0.77)	0.01
Religiousness	90 (70)	0.94 (0.55 to 1.63)	0.84
Experience with prematurity	188 (66)	0.50 (0.28 to 0.87)	<0.014
Experience with disability	188 (64)	0.35 (0.19 to 0.64)	0.001
Caucasian	229 (69)	0.54 (0.26 to 1.11)	0.09
African American	29 (83)	2.07 (0.76 to 5.61)	0.15
Asian	13 (92)	5.09 (0.65 to 39.7)	0.09
Hispanic	10 (70)	0.94 (0.24 to 3.73)	0.93
Prefer paternalism	88 (69)	0.90 (0.52 to 1.56)	0.72
Predominance of sanctity of life	58 (69)	0.90 (0.48 to 1.68)	0.73

*Numbers too small to calculate.

Bold values represent significance with p value ≤ 0.05 .

process of elicitation.³⁷ Second and more importantly, regardless of whether a person has perfectly predetermined preferences, a decision maker should be afforded opportunities to make informed healthcare decisions unimpeded by the structure of the choice environment; this is a viewpoint widely supported by the AAP and other professional organisations.^{4–7} Decisions to forgo participation in decision-making is entirely acceptable and should be accommodated, but this abdication of responsibility must itself be an informed decision. Defaults jeopardise this process by subtly, but significantly, manipulating the perceptions of options without providing additional clarity or information to aid decision makers in making informed and value consistent decisions.

Several theories have been proposed to explain default effects. It may be that default options can be perceived as less effortful, wherein the participant chooses not to oppose a course of action already suggested; psychologically decisional avoidance has advantages in relieving the stress in complicated situations. Another possibility is that defaults may implicitly be interpreted as status quo; opposing the status quo may be considered a loss. It has been shown that people in general try to avoid losses and are asymmetrically sensitive to the potential downside of a risky choice.^{32–35} Another possible explanation for why defaults produce such strong effects may be that defaults are viewed as actual recommendations or the correct courses of action.^{15–19} In instances where people have less well defined preferences, defaults can exert more influence. Even when people have well-defined goals or values, they may not have clear ideas of how these end-states should be manifest as preferences or they may have strong but conflicting goals. Under these circumstances

Table 5 Multiple regression model: likelihood of accepting the default

	OR (95% CI)	p Value
Resuscitation default	2.54 (1.42 to 4.55)	0.002
Parent	0.39 (0.20 to 0.79)	0.08
US born	0.25 (0.06 to 1.12)	0.12
Experience with disability	0.35 (0.18 to 0.67)	<0.002
Experience with prematurity	0.54 (0.28 to 1.04)	0.07

Bold values represent significance with p value ≤ 0.05 .

defaults could also influence decisions.³⁷ These potential mechanisms by which default effects operate might well constitute inappropriate external influences on decision-making that compromise autonomy. In any case, it behoves medical practitioners to be aware of the potential influence that defaults can have on decisions makers.

At a societal level, it has been suggested that '(d)efault options may be set to serve several healthcare goals: to promote the use of interventions that improve healthcare, to reduce the use of interventions that place patients at risk, and to serve broader social agendas such as cost containment.¹⁷ It assumes that one option is far more superior, justified by arguments of beneficence. However absent such a clear specification of the right choice for most people, setting a default one way or another is unlikely to promote the interests of overwhelming majorities of people faced with this decision; it is difficult to justify any particular default option.¹⁷ In neonatology the benefits of resuscitation at extremes of prematurity are uncertain, difficult to predict and highly dependent on the decision makers values. Under limited circumstances, Feudnter and Kon^{9 10} suggest an informed non-dissent or default model for decision-making to help parents with decisions to withdraw life-sustaining therapy for neonates. However, in the absence of imminent death despite life-sustaining treatment or when parental preferences are not yet formulated or unclear, presenting either option as a default might be inappropriate if doing so, in and of itself, influences the parental decision. Therefore, under these conditions, it is important to evaluate how the potential use of defaults could 'influence behavior and of the ethical issues involved in intentionally setting them.¹⁷

In order to understand the ethical issues involved in default consultation, it is helpful to explore issues related to coercion, manipulation and persuasion. Several frameworks of coercion exist. Ripstein argues that '(a)nything another person does that interferes with the capacity to set ends for yourself is therefore coercive, because it makes the question of which ends you will pursue depend upon the choice of that person.³⁸ Faden and Beauchamp argue that decisions can be shaped by a spectrum of influences ranging from coercion to manipulation and persuasion.³⁹ Boundaries between these categories can be difficult to define, but coercion is always considered a controlling influence that compromises autonomy, whereas persuasion is considered a non-controlling influence that appropriately facilitates choice by explicitly promoting specific concerns. Unlike persuasion and coercion, manipulation can represent degrees of controlling or non-controlling influences along a continuum. Faden and Beauchamp define manipulation as 'any intentional and successful influence of a person by non-coercively altering the actual choices available to the person or by non-persuasively altering the person's perceptions of those choices.³⁹ They described three general categories of manipulating influences which variably affect autonomy: manipulation of information, manipulation of options or psychological manipulation.³⁹ Although decision makers may receive essential information required in an informed consent model, even when default framing is used, we argue that intentionally manipulating the perception of options by way of using defaults compromises decision-making autonomy.

There are other findings in this study of interest. First, religious concerns are frequently cited as important determinants of parental decisions to withdraw care.^{27 28 30 40} In traditional framing experiments, contextual effects exert influences only when values are somewhat uncertain.^{32 34 35} Therefore, it is noteworthy that in even highly religious respondents whose

values might be expected to be more clearly salient, defaults still influenced decision-making. However, this study was not statistically powered to be able to determine whether highly religious respondents were more or less susceptible to default effects than those of decision makers who did not report being highly religious, nor is this study focused on exploring the interplay between religious values and preference formation. Second, although 30% of respondents preferred paternalistic decision-making, this preference was not associated with choosing the default option. This suggests the default effect does not operate through a conscious preference for paternalism, that is, accepting the default may not be perceived as relinquishing the decision to the physician. Third, the default option was more likely to be accepted in this study when the participant was randomised to receive the resuscitation default than when randomised to receive the comfort care default. This may indicate that there is a general preference for and, therefore, it is easier to accept an option that promotes sanctity of life over quality of life. Alternatively, it may be that people a priori believe resuscitation to be the default, thus demanding less cognitive effort resulting in it being more readily accepted. This hypothesis warrants more thorough population based surveys, evaluating resuscitation preferences and the fundamental underlying beliefs and values regarding this issue.

Weaknesses of this study were that an internet survey method was utilised, the survey was not pretested, the response rate was moderate and the context was hypothetical. In internet based surveys it cannot be determined whether participants are concentrating or are distracted when completing the questionnaire. Because the survey was not pretested, respondents may not have understood the alternative treatment option in declining the default or were confused by the choice vignettes. However, the pattern of observed results is consistent with other published behavioural research^{16 21 23 32} that has looked at both framing effects and default effects. This suggests the results are likely real and not simply the result of participant confusion or random responding. The response rate of 50% is consistent with online survey research as well as with response rates for clinical research;⁴¹ nonetheless, it is less than ideal. Because the context was hypothetical, certain unique components in the prenatal consultation experience that may impact decisions—such as shock, stress and illness—were not reproducible.

CONCLUSION

Physicians must be cognisant that the way in which choices are presented could significantly alter decisions in ways that may not reflect the values of the family and, therefore, do not represent authentic choices. Give the results of this study, physicians should exercise caution in utilising the default model of decision-making especially because ameliorating the sense of responsibility for the decision is only postulated, not proven. Physicians who believe that recommendations should be included in delivery room management discussions with parents should not employ the defaults model to do so, as the cognitive processes go beyond simple recommendation or overt persuasion and may compromise autonomy. Future investigations should explore whether decisional burdens are in fact more effectively ameliorated by presenting options as defaults than by explicit recommendations supported by explicit rationale.

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REFERENCES

- Lorenz JM. Can rule-based ethics help in the NICU? Commentary Number 2. *Virtual Mentor*. 2008;**10**:630–4. <http://virtualmentor.ama-assn.org/2008/10/ccas2-0810.html> (accessed 20 Jun 2011).
- Lorenz JM, Wooliever DE, Jetton JR, et al. A quantitative review of mortality and developmental disability in extremely premature newborns. *Arch Pediatr Adolesc Med* 1998;**152**:425–35.
- Meadow W, Lagatta J, Andrews B, et al. Just in time: ethical Implications of Serial Predictions of death and Morbidity for Ventilated premature infants. *Pediatrics* 2008;**121**:732–40.
- MacDonald H; American Academy of Pediatrics, committee on Fetus and Newborn. Perinatal care at the threshold of viability. *Pediatrics* 2002;**110**:1024–7.
- Nuffield Council on Bioethics. Dilemmas in current practice: babies born at the borderline of viability. *Critical Care Decisions in Fetal and Neonatal Medicine: Ethical Issues*. London: Nuffield Council on Bioethics, 2006:67–87.
- ACOG Practice Bulletin: Clinical Management Guidelines for Obstetrician-Gynecologists. *Perinatal Care at the Threshold of Viability*. Vol. 38. Compendium of Selected Publications, 2002:551–7.
- Leuthner S. Decisions regarding resuscitation of extremely premature infant and models of best interest. *J Perinatal* 2001;**21**:193–8.
- Payot A, Gendron S, Lefebvre F, et al. Deciding to Resuscitate Extremely Premature Infants: how do parents and neonatologists engage in the decision? *Soc Sci Med* 2007;**64**:1487–500.
- Kon AA. The "Window of Opportunity" Helping parents make the most difficult decision they will ever face using an informed non-dissent model. *Am J Bioeth* 2009;**9**:55–62.
- Feudtner C, Munson D, Morrison W. Framing permission for halting or continuing life-extending therapies. *Virtual Mentor* 2008;**10**:506–10. <http://virtualmentor.ama-assn.org/2008/08/medu1-0808.html> (accessed 20 Jun 2011).
- Paris JJ, Graham N, Schreiber MD, et al. Has the Emphasis on autonomy Gone too far? Insights from Dostoevsky on parental decision making in the NICU. Special Section: the power of choice: autonomy, informed consent and the right to Refuse. *Camb Q Healthc Ethics* 2006;**15**:147–51.
- Montello M, Lantos J. The Karamazov complex: Dostoevsky and DNR orders. *Perspect Biol Med* 2002;**45**:190–9.
- Charles C, Whelan T, Gafni A. What do we mean by Partnership in making decisions about treatment. *BMJ*;1999;**319**:780–2.
- Batton DG; Committee on Fetus and Newborn. Antenatal counseling regarding resuscitation at an extremely Low gestational age. *Pediatrics* 2009;**124**:422–7.
- Johnson EJ, Goldstein DG. Default donation decisions. *Transplantation* 2004;**78**:1713–16.
- Johnson E, Goldstein D. Do defaults Save Lives? *Science* 2003;**302**:1338–9.
- Halpern SD, Ubel PA, Asch DA. Harnessing the power of default options to improve health care. *N Engl J Med* 2007;**357**:1340–4.
- MacKenzie CR, Liersch MJ, Finkelstein SK. Recommendations implicit in policy defaults. *Psychol Sci* 2006;**17**:414–20.
- Plous S. Models of decision making. In: Plous S, Zimbardo PG, eds. *The Psychology of Judgment and Decision Making*. New York: McGraw Hill, 1993:94–105.
- Kressel LM, Chapman GB. The default effect in end of life treatment preferences. *Med Decis Making* 2007;**27**:299.
- Kressel LM, Chapman GB, Leventhal E. The influence of default options on the Expression of end of life treatment preferences in Advance directives. *J Gen Intern Med* 2007;**22**:1007–10.
- Johnson EJ, Steffel M, Goldstein D. Making Better decisions: from measuring to constructing preferences. *Health Psychol* 2005;**24**:S17–22.
- Haward MF, Murphy RO, Lorenz JM. Message framing and perinatal decisions. *Pediatrics* 2008;**122**:109–18.
- Chilaka VN, Konjez JC, Stewart CR, et al. Knowledge of Down syndrome in pregnant women from different ethnic groups. *Prenat Diagn* 2001;**21**:159–64.
- Michie S, Smith D, Marteau TM. Prenatal Tests: how are women deciding? *Prenat Diagn* 1999;**19**:743–48.
- Kodadek MP, Feeg VD. Using vignettes to explore how parents approach end-of life decision making for terminally ill infants. *Pediatr Nurs* 2002;**28**:333–64.
- Hammerman C, Kornbluth E, Zadka P, et al. Decision making in the critically ill neonate: cultural background v individual life experiences. *J Med Ethics* 1997;**23**:164–9.
- Kupperman M, Feenya D, Gates E, et al. Preferences of women facing a prenatal diagnosis choice: long term outcomes matter most. *Prenat Diagn* 1999;**19**:711–16.
- Browner CH, Preloran M, Cox SJ. Ethnicity, bioethics, and prenatal diagnosis: the amniocentesis decisions of Mexican-origin women and their partners. *Am J Public Health* 1999;**89**:1658–66.

30. **Streiner DL**, Saigal S, Burrows E, *et al.* Attitudes of parents and health care professionals toward active treatment of extremely premature infants. *Pediatrics* 2001;**108**:152–7.
31. **Hill P**, Wood R Jr. Scales of religious orientation. In: Hill P, Wood Jr R, eds. *Measures of Religiosity*. Alabama: Religions Education Press, 1999: 119–58.
32. **Tversky A**, Kahneman D. The framing of decisions and the psychology of choice. *Science* 1981;**211**:453–8.
33. **Rothman AJ**, Salovey P. Shaping perceptions to motivate healthy behavior: the role of message framing. *Psychol Bull* 1997;**121**:3–19.
34. **Tversky A**. Utility theory and additivity analysis of risky choices. *J Exp Psychol* 1967;**75**:27–36.
35. **Kahneman D**, Tversky A. Prospect Theory: an analysis of decision under risk. *Econometrica* 1979;**47**:263–91.
36. **Haward MF**, John LK, Lorenz JM, *et al.* Effects of description of options on parental perinatal decision-making. *Pediatrics* 2012;**129**:891–902.
37. **Slovic P**. The Construction of preference. *Am Psychol* 1995;**50**:364–71.
38. **Ripstein A**. Authority and Coercion. *Philos Publ Aff* 2004;**32**:2–35.
39. **Faden RR**, Beauchamp TL. *A History and Theory of Informed Consent*. New York, NY: Oxford University Press, 1986.
40. **Boss RD**, Hutton N, Sulpar LJ, *et al.* Values parents Apply to decision-making regarding delivery room resuscitation for high-risk newborns. *Pediatrics* 2008;**122**:583–9.
41. **Yehuda B**. Response rate in academic studies—a comparative analysis. *Hum Relations* 1999;**52**:421–38.

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