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Physician morality and perinatal decisions

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ABSTRACT

Objective: Given the same set of "facts" (e.g. fetal prognosis) different physicians may not give the same advice to patients. Studies have shown that people differ in how they prioritize moral domains, but how those domains influence counseling and management has not been assessed among obstetricians. Our objective was to see if, given the same set of facts, obstetricians' counseling would vary depending on their prioritization of moral domains.

Design: Obstetricians completed questionnaires that included validated scales of moral domains (e.g. autonomy, community, divinity), demographic data, and hypothetical scenarios (e.g. how aggressively they would pursue the interests of a potentially compromised child, the degree of deference they gave to parents' choices, and their relative valuation of fetal rights and women's rights). Multivariate logistic regression using backwards conditional selection was used to explore how participants responded to the moral dilemma scenarios.

Results: Among the 249 participating obstetricians there was wide variation in counseling, much of which reflected differences in prioritization of moral domains. For example, requiring a higher likelihood of neonatal survival before recommending a cesarean section with cord prolapse was associated with Fairness/Reciprocity, an autonomy domain which emphasizes treating individuals equally (OR = 1.42, 90% CI = 1.06–1.89, p = 0.05). Honoring parents' request to wait longer to suspend attempts to resuscitate an infant with no heart rate or pulse was associated with the community domains (involving concepts of loyalty and hierarchy) of In-Group/Loyalty; OR 1.30, 90% CI = 1.04–1.62, p = 0.05 and Authority/Respect (OR = 1.34, 90% CI = 1.06–1.34, p = 0.045). Carrying out an unconsented cesarean section was associated with In-Group Loyalty (OR = 1.26, 90% CI = 1.01–1.56, p = 0.08) and religiosity (OR = 1.08, 90% CI = 1.00–1.16, p = 0.08).

Conclusion: The advice that patients receive may vary widely depending on the underlying moral values of obstetricians. Physicians should be aware of their "biases" in order to provide the most objective counseling possible.

Introduction

Patient counseling involves considerations of both facts and values [1]. While physicians' medical values (e.g. beneficence) are appropriate components of counseling, personal values (e.g. favoring small families) are not [2,3]. Nevertheless, personal values of all sorts may influence physician advice.

Individuals' personal values reflect a tacit prioritization of moral domains. Shweder et al. has suggested there are three main cross-cultural moral domains: community, autonomy, and divinity [4]. Differences in the way they are prioritized may lead to differences in moral values and attitudes. However the role of physicians' moral beliefs in perinatal counseling has not previously been assessed. This study was undertaken to determine how moral domains influence decisions that obstetricians make.

Methods

This study was approved by the IRB at Maimonides Medical Center. A convenience sample of obstetricians was recruited at three venues: an annual clinical meeting of ACOG, a District II ACOG meeting, and Grand Rounds in New York City.

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A questionnaire with three sections was developed based on focus groups of obstetricians and piloted among 10 physicians for comprehension.

(1) Demographics: gender, age, race, religion and a religiosity scale (0 = "Not religious at all", 10 = "Very religious").
(2) Moral domains. The 20-item Moral Foundations Questionnaire (MFQ) 7 is a validated instrument which measures five moral domains (expanded from Shewder's original three). Individual item consists of moral statements rated from 0 to 5 and higher ratings indicate greater personal value placed a statement. The scale includes two domains related to autonomy: Harm/Care and Fairness/Reciprocity; two domains related to community: In-group/Loyalty and Authority/Respect; and one domain related to divinity: Purity/Sanctity (note: domains will be referred to by the first word, not both the words before and after the slash, going forward). Each domain is scored by summing across items, with each domain scores ranging from 0 to 20. The Cronbach alpha values for the Moral Domain scales obtained from our sample ranged between 0.60 for Fairness to 0.71 for Purity. Comparable alpha values for the original MFQ subscales were 0.65–0.84 [5].
(3) Moral dilemmas. Participants were asked to respond to six hypothetical scenarios. These were designed as thought experiments, with a minimum of clinical data in order to focus respondents' answers on ethical considerations, not medical management:

Scenarios dealing with interests of a compromised child: Scenario (1) "*How would you respond if a cord prolapsed at a gestational age at which the fetus had an 80% chance of death and surviving fetuses had an 80% risk of profound impairment?*" Respondents were asked how strongly they would recommend a cesarean section on a scale ranging from −5 (strongly against) to +5 (strongly favor); Scenario (2) "*What minimal likelihood of a child's survival without major impairment would lead you to recommend a cesarean section if an umbilical cord prolapsed?*" Participants answered this by circling a number corresponding to a likelihood ranging by 5 point increments from 5% to 90%.

Scenarios assessing deference given to parents' choices: Scenario (3) "*If an extremely preterm infant were born with no heart rate and no pulse and the parents asked you to keep trying to resuscitate, how many minutes of Apgar 0 would pass before you would ask the pediatrician to stop trying to resuscitate?*" Respondents circled a number between 1 and 29 corresponding to the number of minutes they would allow. Scenario (4), "*If a 500 gm baby were born with Apgar scores of 2 and 2 at one and five minutes, and the parents said stop resuscitating how likely would you be to honor their request?*" Participants responded to this item using a Likert-type scale from −5 (i.e. Not honor request, continue resuscitation) to +5 scale (i.e. Honor request, stop resuscitation).

Scenarios assessing valuation of fetal/newborn rights and woman's rights: Scenario (5) "*A woman at term with no medical risks and a perfectly healthy fetus has a cord prolapse at 5 cm. She refuses a cesarean section for seemingly trivial reasons. A judge says he will grant you a court order to perform a cesarean section. Do you perform it (Yes/No)?*" Scenario (6) "*A newborn has a mysterious illness that will lead to death within 24 hours if it doesn't receive a marrow transplant from its mother. The mother refuses for seemingly trivial reasons. A judge says he will give you a court order to take the marrow. Do you take her marrow (Yes/No)?*"

Statistical analysis

Categorical data were described as frequency (percent), normally distributed continuous data were described as mean ± standard deviation, and data with outliers as median (interquartile range). Chi square tests tested for group differences in rates or percentages while two group *t*-tests tested for mean differences. Moral dilemma responses based on a continuous scale were dichotomized using a median split due to outliers. Univariate logistic regression was used to explore predictors of responses to the moral dilemma scenarios, while multivariate logistic regression with backwards conditional selection determined the strongest predictors. Regression results are reported in terms of odds ratio.

Since this study was exploratory in nature, a p-value <0.10 was used as the criterion for statistical significance for whether a possible predictor was to be selected and <0.15 for retention in a logistic regression model with backwards selection. Similarly, 90% confidence limits are reported for odds ratios in agreement with the level of significance.

A prior power estimation determined that we would need a minimum of 152 participants to have at least 80% power with alpha = 0.10 to detect a minimum correlation of r = 0.20 between variables, for example, the moral domain of autonomy and a participant's willingness to perform a cesarean section. In order to carry out secondary analyses involving subgroups of respondents, we recruited additional participants.

Results

Two hundred and fifty-four obstetricians were approached, and 249 agreed to participate; 122 recruited from the 2014 ACOG annual clinical meeting, 73 from the 2014 District II ACOG meeting, and 54 from Grand Rounds in New York City in 2014. As shown in Table 1, 26% were male, the mean ± SD age was 40.3 ± 12.9, forty-four percent were white, 27% African-American, 8% Hispanic, 17% Asian, and 5% were classified as "Other."

Moral dilemmas: distribution of responses

Figs. 1(A and B) and 2 (A and B) show the distribution of responses to the first four moral dilemma scenarios which had responses based on a continuum. While many of the responses tended to cluster around particular points along the scale, responses of the remaining participants showed considerable variability. In moral dilemma 1 (MD1), 36% of the respondents were strongly in favor of performing cesarean section in the event

Table 1
Demographic characteristics of the responders.

Characteristic		
Male gender (N = 246)		65 (26%)[a]
Age (N = 207)		40.30 ± 12.89[b]
Ethnicity (N = 247)	Black	67 (27%)
	White	108 (44%0
	Hispanic	19 (8%)
	Asian	41 (17%)
	Other	12 (5%)
Level of religiosity (N = 236)		6.99 ± 2.00
Religion (N = 236)	Hindu	12 (5%)
	Jewish	21 (9%)
	Muslim	11 (5%)
	Protestant	75 (32%)
	Catholic	58 (25%)
	>One, Other	59 (25%)
Moral domains (N = 249)	Harm/Care	14.62 ± 3.26
	Fairness/Reciprocity	15.29 ± 3.06
	In-group/Loyalty	10.29 ± 4.02
	Authority/Respect	11.20 ± 3.68
	Purity/Sanctity	10.61 ± 4.58

[a] Frequency (percent).
[b] Mean ± standard deviation.

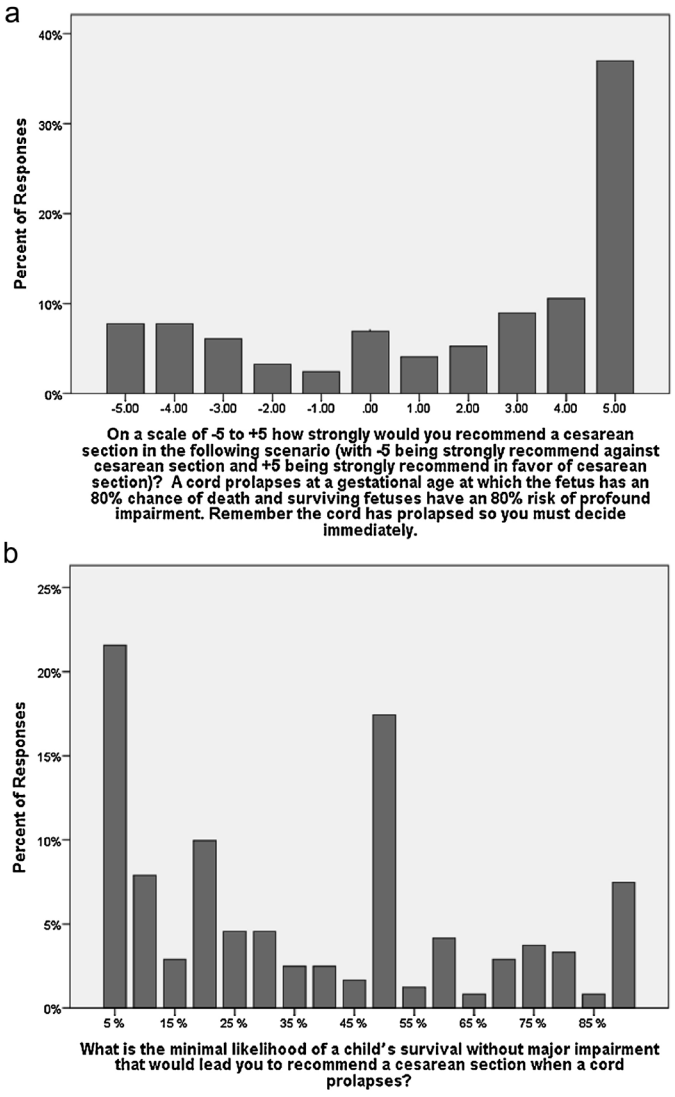

Fig. 1. (a) Distribution of responses to moral dilemma Scenario (1): recommend cesarean section after cord prolapse. (b) Distribution of responses to moral dilemma Scenario (2): likelihood of survival for cesarean section after cord prolapse.

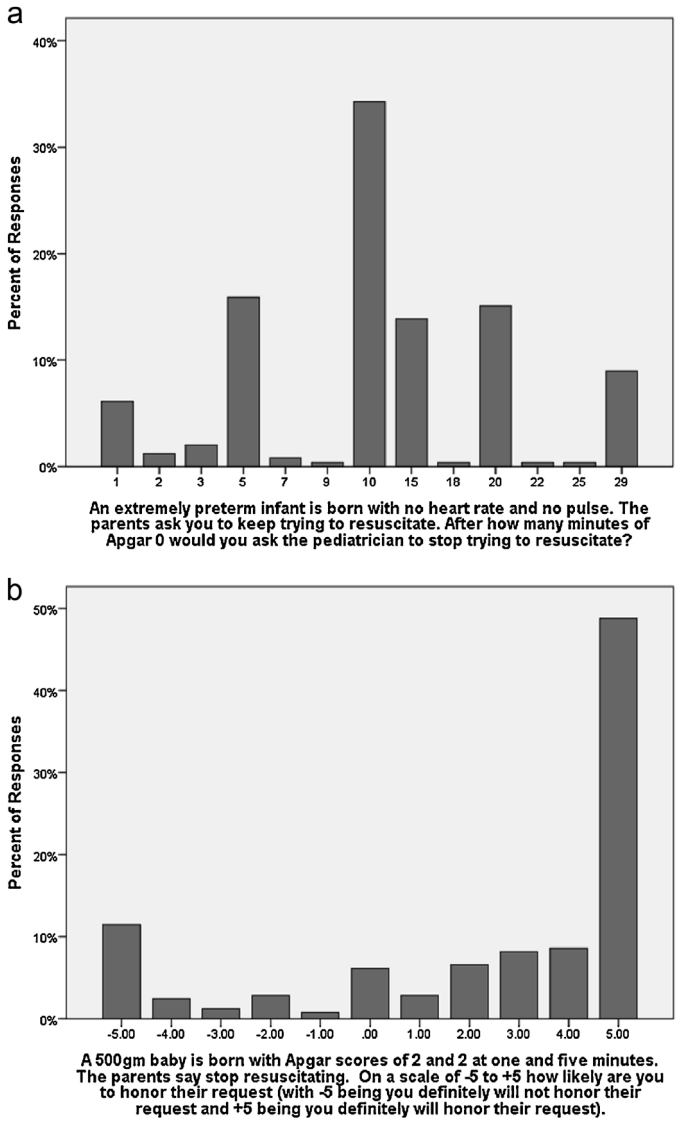

Fig. 2. (a) Distribution of responses to moral dilemma Scenario (3): time until stop resuscitation with Apgar 0. (b) Distribution of responses to moral dilemma Scenario (4): honor parents' request to stop resuscitation with Apgar 2.

of cord prolapse; the remaining responders were almost evenly divided across the rest of the scale, with a slight increase in responses at the "strongly not in favor" end. In moral dilemma 2 (MD2), 22% of respondents chose 5% as the minimum likelihood of survival that would lead them to recommend a cesarean section in the case of cord prolapse; 17% chose 50%, and another 8% chose 90%.

In moral dilemma 3 (MD3), 48% chose 10–15 min and another 25% chose more than five minutes as the time limit for trying to resuscitate an extremely preterm infant with no heart rate and no pulse; 2% chose 20 min or more; ranges that may reflect in part, physicians' limited awareness of outcomes of prolonged resuscitation. Finally, in moral dilemma 4 (MD4), 49% of the respondents would strongly honor the parents' request not to resuscitate an infant with Apgar scores of two at one and five minutes while 12% of the respondents would strongly not honor the parents' request.

Fig. 3(A and B) shows the different response patterns for moral dilemmas 5 (MD5) and 6 (MD6) for which the respondents made a simple yes/no choice. Although these two dilemmas were similar (unconsented surgery), one dealt with performing a cesarean section for cord prolapse while the other dealt with obtaining a marrow transplant from the mother. A significantly higher percent of respondents said "yes" to performing unconsented surgery in the case of a cesarean section for a fetus/neonate with a cord prolapse, than to performing a marrow aspiration from the mother *without* consent (56% vs 27%; $p < 0.001$).

Moral dilemmas: predictors

In MD1 (cesarean section for fetus with poor prognosis) age was inversely related to being in favor of performing the cesarean section (OR = 0.97, 90% CI 90% CI = 0.95–0.99, p = 0.003) while non-white respondents were more in favor (OR = 1.70, 90% CI = 1.11–2.62, p = 0.04). Both factors remained significant after including them in a multivariate model with backwards selection: age, OR = 0.97, 90% CI = 0.95–0.99, p = 0.005; non-white ethnicity, OR = 1.94, 90% CI 90% CI = 1.20–3.14, p = 0.02. Choosing a higher likelihood of survival before recommending a cesarean section in the event of cord prolapse (MD2) was also significantly associated with non-white race (OR = 1.73, 90% CI = 1.12–2.67, p = 0.04) and with scoring higher in the moral domain of Fairness (OR = 1.45, 90% CI = 1.08–1.93, p = 0.04). The multivariate results

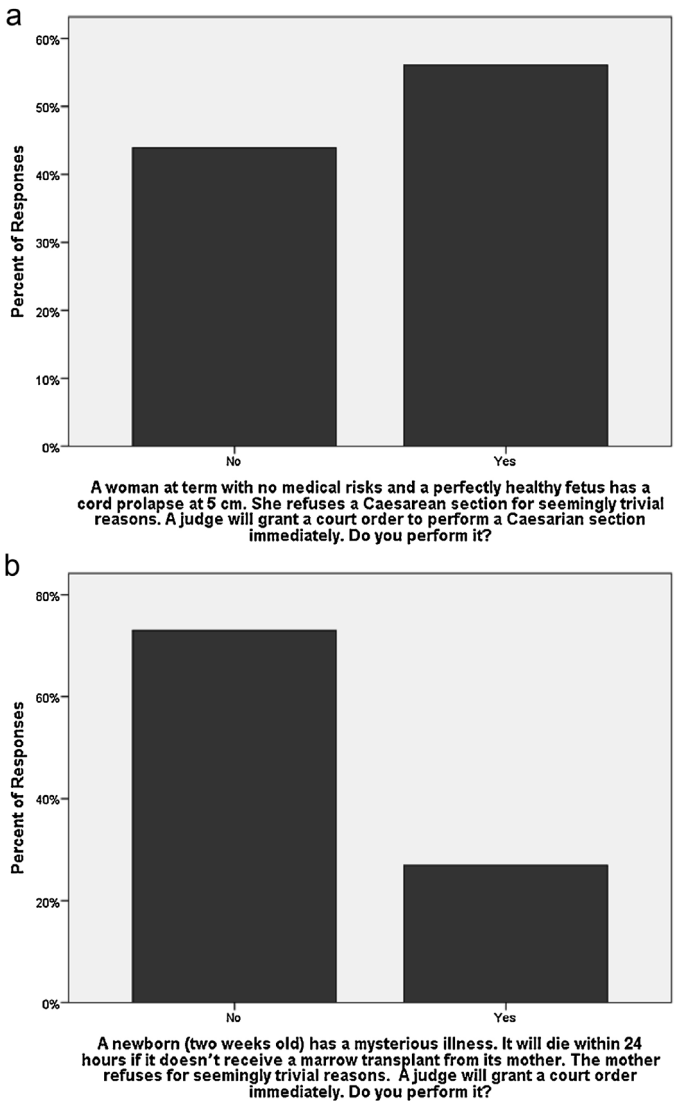

Fig. 3. (a) Distribution of responses for moral dilemma 5: perform cesarean section without mother's consent. (b) Distribution of responses for moral dilemma 6: perform marrow transplant without mother's consent.

were similar: non-white ethnicity, OR = 1.67, 90% CI = 1.08–2.59, p = 0.053; Fairness, OR = 1.42, 90% CI = 1.06–1.89, p = 0.05.

Honoring parents' request to wait longer before halting attempts to resuscitate an infant with no heart rate or pulse (MD3) was associated with In-Group (OR = 1.30, 90% CI = 1.04–1.62, p = 0.05) and Authority (OR = 1.34, 90% CI = 1.06–1.34, p = 0.045). Backwards selection yielded Authority as the stronger predictor.

Being more in favor of honoring parents' request to cease resuscitation for a child with low Apgar scores (MD4) was associated with religiosity, religious affiliation, and In-Group/Loyalty. Physicians with higher degrees of religiosity (OR = 0.93, 90% CI = 0.87–1.00, p = 0.10) and In-Group (OR = 0.78, 90% CI = 0.63–0.96, p = 0.06) were less likely to accede to the request while non-Christians were more in favor (OR = 1.53, 90% CI = 1.00, 2.33, p = 0.10). The logistic model using backwards selection yielded only non-Christian religious affiliation as the single non-redundant significant factor.

Responding "yes" to MD5 (carrying out a cesarean section over the objections of the mother) was associated with degree of religiosity (OR = 1.09, 90% CI = 1.01–1.17, p = 0.06) and Authority (OR = 1.35, 90% CI = 1.06–1.70, p = 0.04), Purity (OR = 1.25, 90% CI = 1.04–1.51, p = 0.05), and In-Group (OR = 1.28, 90% CI = 1.04–1.59, p = 0.06). After backwards selection, In-Group (OR = 1.26, 90% CI = 1.01–1.56, p = 0.08) and religiosity (OR = 1.08, 90% CI = 1.00–1.16, p = 0.08) remained the strongest factors.

Similarly, saying "yes" to MD6 (conducting a marrow transplant over the objections of the mother) was related to In-Group (OR = 1.49, 90% CI = 1.16–1.91, p = 0.008), Purity (OR = 1.39, 90% CI = 1.12–1.73, p = 0.01), and Authority (OR = 1.76, 90% CI = 1.32–2.35, p = 0.001). In the multivariate model with backwards selection, only Authority remained in the model: physicians who favored Authority were more likely to conduct a marrow transplant over the objections of the mother.

Comment

We have found that physicians' moral values correlated with physicians' responses to clinical questions. For example, those who prioritized sanctity (vs autonomy) were more likely to favor performing procedures without consent to save the life of a fetus/newborn. Moreover, physicians in general were twice as likely to support an un-consented cesarean section as they were to support un-consented marrow aspiration. Since (a) cesarean sections are more invasive, and (b) a neonate has rights as least as robust as a fetus, one would have expected that respondents would be as willing to perform a life-saving marrow transplant as a cesarean section. Our result suggests that the fetus may have a stronger hold on individuals' sense of sanctity than does a born child. These findings reinforce the insights of Lyerly who lamented the degree to which counseling of pregnant women seems to be unmoored from objective data [6].

The degree to which different obstetricians seeing the same data proffer different recommendations was seen in several of our analyses (e.g. obstetricians' opinions about recommending a cesarean section for a fetus with a guarded prognosis ranged from strongly in favor to strongly against). This suggests that sterile numbers per se do not dictate management plans. Rather factors intrinsic to providers, beyond prognostic numbers and parents' explicit wishes drive physician recommendations. Our data suggest that moral values play a role.

This study had limitations. While the scales we used are validated, they may still be prone to measurement error [7]. Despite that, these scales continue to be a mainstay of research in the social sciences with recent articles on the scales being cited close to 800 [5] and more than 4000 times [8], with the former article demonstrating the scales' construct [5]. Another concern is that the hypothetical nature of the questions [9]. While we tried to make the vignettes close to the real life experience of Obstetricians as possible, our scenarios were designed primarily as thought experiments without the multitude of details of an actual clinical situation. This approach to thought experiments has several precedents. Foot described a dilemma in which respondents decide whether to divert a train from a track with five girls to a track with one man [10]. If Foot had described the speed or torque of the train as it bore down on the girls on the track it might have added to the realism of the scenario, but it would also have changed the focus of respondents from ethics to physics. Accordingly, we compromised reality in order to avoid clinical distractions, and to focus narrowly on ethical aspects of the cases.

This study had several strengths, including its focus on perinatal decisions in fraught circumstances, and the large number of obstetricians who participated. In contrast to other studies [9], we had adequate power to address our primary hypothesis and we used validated scales. It is also reassuring that the findings were not counterintuitive (e.g. those who valued sanctity were more willing to perform an unconsented cesarean section for the sake of a child).

In sum, we found that physicians' prioritization of moral domains tracked with clinical judgments. These findings suggest that personal values may flavor the manner in which counseling is rendered. While attempting to reduce judgments based on personal rather than medical, values are a meritorious goal, modifying implicit bias is a difficult task [11]. However, research suggests that the first step to achieving that goal is for individuals to be aware of their biases and, second, to be concerned about the consequences of those biases [12,13]. Thus it is important for providers to at least become aware of their own personal attitudes and implicit biases so that patients can be the beneficiaries of the least biased counseling possible.

Disclosure

The authors report no conflict of interest or funding.

References

[1] Emanuel EJ, Emanuel LL. Four models of the physician–patient relationship. J Am Med Assoc 1992;267(April (16)):2221–6.
[2] Minkoff H, Lyerly AD. Doctor, what would you do? Obstet Gynecol 2009;113 (May (5)):1137–9.
[3] Ubel PA. Medical facts versus value judgments—toward preference-sensitive guidelines. N Engl J Med 2015;372(26):2475–7.
[4] Shweder RA, Much NC, Mahapatra M, Park L. The 'big three' of morality (autonomy, community, divinity), and the big three explanations of suffering. In: Brandt AM, Rozin P, editors. Morality and health. New York: Routledge; 1997. p. 119–69.
[5] Graham J, Nosek BA, Haidt J, Iyer R, Koleva S, Ditto PH. Mapping the moral domain. J Pers Soc Psychol 2011;101(August (2)):366–85.
[6] Lyerly AD, Mitchell LM, Armstrong EM, et al. Risk and the pregnant body. Hastings Cent Rep 2009;39(November–December (6)):34–42.
[7] Oliver E, Wood T. Moral intuitions or political rhetoric? A reexamination of ideological differences across the moral foundations scale. http://political-science.uchicago.edu/faculty-workingpapers/Oliver%20Wood%20Moral%20Foundations%20Paper.pdf [Accessed 16.06.15].
[8] Haidt J. The emotional dog and its rational tail: a social intuitionist approach to moral judgment. Psychol Rev 2001;108(4):814–34.
[9] Blumenthal-Barby JS, Krieger H. Cognitive biases and heuristics in medical decision making: a critical review using a systematic search strategy. Med Decis Mak 2015;35(May (4)):539–57.
[10] Foot P. The problem of abortion and the doctrine of the double effect in virtues and vices. Oxford: Basil Blackwell; 1978 [Originally appeared in the Oxford Review, Number 5, 1967].
[11] Lai CK, Marini M, Lehr SA, et al. Reducing implicit racial preferences: I. A comparative investigation of 17 interventions. [January 15]. Available at SSRN: http://ssrn.com/abstract=2155175 or http://dx.doi.org/10.2139/ssrn.21551755 [Accessed 15.06.15].
[12] Plant EA, Devine PG. The active control of prejudice: unpacking the intentions guiding control efforts. J Pers Soc Psychol 2009;96(March (3)):640–52.
[13] Devine PG, Monteith MJ. Affect, cognition, and stereotyping: interactive processes in group perception. The role of discrepancy-associated affect in prejudice reduction. San Diego, CA: Academic Press; 1993. p. 317–44.